

Working paper



International
Growth Centre

Attitudes of Local People to Mining Policies and Interventions



Daniel K. Twerefou
Kwadwo Tutu
John Owusu-Afriyie
Kwame Adjei-Mantey

May 2015

When citing this paper, please
use the title and the following
reference number:
E-33107-GHA-1

DIRECTED BY



FUNDED BY



Attitudes of Local People to Mining Policies and Interventions

By

Daniel K. Twerefou, Kwadwo Tutu, John Owusu-Afriyie and Kwame Adjei-Mantey

May, 2015

Contents

Acronyms	4
Chapter One: Introduction.....	6
1.1 Background to the study.....	6
1.2 Research questions.....	7
1.3 Aims and objectives.....	7
1.4 Structure of report	8
Chapter Two: Research Approach and Methodology.....	9
2.1 Introduction.....	9
2.2 Desktop Research	10
2.3 Preliminary Stakeholder Consultations and Reconnaissance Survey	10
2.4 Survey	11
2.5 Focus Group Discussions and Key Informant Interviews.....	13
3. Chapter Three: Overview of Mining in Ghana.....	15
3.1 Socio economic environment.....	15
3.2 Mining Sector Reforms	16
3.3 Impact of Mining Sector Reforms.....	16
Chapter Four: Literature Review	21
4.1 Mining and Conflicts	21
4.2 Resettlement and Compensation.....	23
4.3 Small Scale Mining.....	25
4.4 Mining and the Environment.....	27
4.6 Alternative livelihood Programmes	30
Chapter Five: Results and Discussions	31
5.1 Introduction.....	31
5.2 Socio Demographic Characteristics of Respondents.....	31
5.3 Social Factors Influencing Attitude.....	32
5.3.1 Resettlement	33
5.3.2 Conflicts.....	39
5.3.3 Provision of social amenities	44
5.4 Economic Factors affecting attitude.....	46
5.4.1 Compensation.....	47

5.4.2 Unemployment in Mining Communities.....	52
5.4.3 Alternative Livelihoods Programmes.....	54
5.5 Environmental Factors Affecting Attitude	56
5.5.1 Land Degradation	57
5.5.2 Noise pollution.....	59
5.5.3 Water pollution	59
5.5.4 Cracks in buildings caused by vibration from blasting	60
5.5.5 Forest destruction	61
5.5.6 Air pollution	62
5.6 Small Scale Mining.....	63
5.6.1 Social and Environmental Problems of SSM	65
5.6.2 Income, poverty and inequality amongst SSM and Non-SSM Workers	67
5.6.3 Illegal Small Scale Mining	69
5.6.4 Factors Influencing Participation in Illegal SSM Activities.....	71
5.7 Attitude of mining communities towards Mining sector policies and interventions.....	75
Conclusions and Recommendations.....	76
References.....	81

Acronyms

ALP	Alternative Livelihood Program
CNC	Compensation Negotiation Committee
CSOs	Civil Society Organizations
CSR	Corporate Social Responsibility
EIA	Environmental Impact Assessment
EITI	Extractive Industries Transparency Initiative
EPA	Environmental Protection Agency
ERP	Economic Recovery Program
FDI	Foreign Direct Investment
FGD	Focus Group Discussion
GCM	Ghana Chamber of Mines
GDP	Gross Domestic Product
GETFund	Ghana Education Trust Fund
GLSS	Ghana Living Standards Survey
GoG	Government of Ghana
GPRS I	Ghana Poverty Reduction Strategy
GPRS II	Growth and Poverty Reduction Strategy
GSGDA	Ghana Shared Growth and Development Agenda
GSS	Ghana Statistical Service
ICMM	International Council on Mining and Metals
LI	Legislative Instrument
LSM	Large Scale Mines
MC	Minerals Commission
MDF	Minerals Development Fund
MDG	Millennium Development Goals
MESTI	Ministry of Environment
MIDR	Mining Induced Displacement and Resettlement
MLNR	Ministry of Lands and Natural Resources
MMDAs	Metropolitan
MoF	Ministry of Finance
MTDP	Medium Term Development Plan
NDPC	National Development Planning Commission
NGOs	Non Governmental Organizations
NHIFund	National Health Insurance Fund
NTFP	Non Traditional Forest Product
OASL	Office of the Administrator of Stool Lands
PMMC	Precious Minerals Marketing Company
PNDCL	Provisional National Defense Council Law
RNC	Resettlement Negotiation Committee
SAP	Structural Adjustment Program
SOEs	State Owned Enterprises
SPSS	Statistical Package for Social Sciences
SS	Small Scale
SSM	Small Scale Mining
SSMs	Small Scale Miners

TA Traditional Authority

Chapter One: Introduction

1.1 Background to the study

Many minerals can be found in Ghana including gold, diamond, bauxite, manganese, salt and other minerals such as granite, gravels, sand and clay. Gold, diamond, manganese and bauxite being the most important in terms of economic value and foreign exchange earnings.

Several challenges confronted the mining sector right after independence which made it difficult for the mining sector to expand and increase production. These include obsolete machines and equipment, deteriorating infrastructure, cumbersome import licensing and mining acquisition procedures, lack of foreign exchange and weak institutional and legal framework in which the sector operated (Twerefou et al. 2007), generally brought about by the unimpressive economic performance at that time. Gold production for example declined by about 60 percent in 1984 from the 1974 levels of 399 thousand ounces.

One component of the Economic Recovery Programme (ERP) and Structural Adjustment Programme, initiated in the early 1980s which aimed at reversing the economic decline was to increase the production of minerals for exports through the streamlining of policies and structures to encourage foreign investments in the sector. Thus, the Minerals and Mining Law was promulgated in 1986 and the Minerals Commission (MC) was constituted to provide a flexible minerals right and mining lease licensing and to formulate mineral policies. Through the MC and other mining sector institutions, the mining sector fiscal regime was revised, state-owned mines were privatized, favorable financial and legal provisions were made to encourage investments and mining sector institutions were strengthened.

Reforms in the 1980s yielded results, in that investments in the sector increased which had impacts on mineral production, export, employment. For example, FDI flows to the mining sector increased from about 165 million US\$ in 1995 to about 1 billion US\$ in 2012. Output and export of mineral products has also increased considerably. Total export earnings of the four major minerals – gold, diamond, manganese and bauxite have increased from 108 million US\$ in 1985 to about 5, 141 million US\$ in the year 2013. The share of mineral exports as a percentage of total merchandise exports has also increased from 27.8 percent in 1983 to 42 percent in 2012 and since 2006, mineral exports have been the major foreign exchange earner for the country.

Even though exploitation of minerals, especially gold has been taking place in Ghana for over a century, there are still many problems that has made it difficult for the industry to realize its full potential, especially in the area of employment, income and consequently contribution to growth. According to the Ghana Statistical Service, the contribution of the mining and quarrying sector has never exceeded 5% since 1990s though majority of Foreign Direct Investment has gone to the sector in the past two decades. It was only in 2011 and 2012 that the mining and quarrying sub-sector contributed about 8.5% and 8.8¹% respectively to Gross Domestic Product

¹ Growth figures here are reported based on 2006 basic prices.

GDP. The poor contribution of mining to GDP can be linked to the poor vertical and horizontal linkages of the mining sector with the rest of the economy.

Also, poor adherence to policies, regulations and interventions, especially by small scale mining has led to several negative environmental (surface water, ground water and air pollution, forest and land degradation, etc) and social (health problems, conflicts, etc) problems that have intergenerational consequences. In addition to this non-growth enhancing performance of the mining sector, several conflicts have emerged in mining communities – conflicts between local inhabitants and mining companies, communities and their chiefs, Small Scale Mines (SSM) and Large Scale Mines (LSM), etc., though a number of policies, regulations and interventions have been enacted to address the problems of mining communities. In recent years, the problem of foreigners, more specifically Chinese, undertaking SSM – an area reserved for Ghanaians has generated conflicts that has led to the loss of human lives in some cases. In general, in many mining communities today, the relationship between mining companies and the local community cannot be described as the best which may have downstream impacts on the sector if measures are not put in place to improve the relationship.

1.2 Research questions

The current development strategy of the country, the Ghana Shared Growth Development Agenda II (GSGDA II) aims at ensuring the continued pursuit of macroeconomic stability and the sustainable exploitation of Ghana's natural resource endowments that will propel the country into a full middle income status by 2020 with a per capita income of US\$ 3,000. One of the key themes through which this overall objective will be achieved is the acceleration of agricultural transformation and sustainable natural resource management. In the mist of this unclear attitude of mining communities towards mining companies, the achievement of this objective may be hampered since the industry thrives on the concerns of three key actors - government who owns the mineral, communities who own the surface rights and the mining companies who own the capital and expertise.

Research questions that arise are: What is the attitude of mining communities to mining policies and interventions? Why are mining sector interventions not providing the required results? Why do local people violate mining regulations? How can small-scale mining be made more meaningful for the economy? How can policy take into consideration local attitudes? What informs conflicts in mining communities? How can policies and interventions on mining be more effective?

1.3 Aims and objectives

The overall objective of the study is to assess the attitudes of mining communities towards mining sector policies and interventions. Specifically the study has the following objectives:

- Investigating the attitude of mining communities to mining policies and interventions
- Ascertaining why mining sector interventions are not providing the required results
- Investigating why mining communities violate mining regulations
- Investigating how SSM can be more meaningful for the economy
- Ascertaining what informs conflicts in mining communities

- Making recommendation on how to improve the efficiency and effectiveness of mining sector policies and interventions.

1.4 Structure of report

The structure of the report is as follows. Chapter one provides an introduction of the study. This is followed by chapter two which provides details of the research approach and methodology. Chapter three provides an overview of mining in Ghana while literature review is discussed in chapter four. Chapter five analyses and discusses the results and the last chapter concludes and makes policy recommendations.

Chapter Two: Research Approach and Methodology

2.1 Introduction

This chapter discusses how the research was designed focusing more on the methods employed to collect and analyze the data. The research methodology employed in the study is multidisciplinary and integrated, involving a combination of qualitative and quantitative data collection and techniques of analyses to assess the attitude of mining communities to mining sector policies and interventions. Specifically, the methodology focuses on understanding the attitudes of mining communities and the channels through which these attitudes transform into behaviour that affects communities' decisions to adhere to mining sector policies and interventions.

Attitude is defined by the Oxford Advanced Learner's Dictionary as the way a person thinks or feels about somebody or something. It expresses itself in the way a person behaves toward somebody, an issue or an institution. From the psychological perspective, attitudes are evaluative statements related to a person, object or event; either favourable or unfavourable and reflects tenacious disposition of people to react and behave in a certain way towards people and situations. Though attitude can be difficult to measure due to its arbitrary nature, many explicit and implicit measures and scales are used to measure attitude. According to Ferguson (2004), explicit measures tend to rely on self-reports or easily observed behaviours such as bipolar scales: good-bad, favorable-unfavorable, support-oppose, etc. and Likert scales. Implicit measures usually rely on an indirect measure of attitude since people can hold implicit prejudicial attitudes, but express explicit attitudes that report little prejudice (Whitley, 2010). In this work, we use both the implicit and explicit measures to examine the attitude of local people toward mining policies and interventions.

Attitude has mainly three components: the cognitive component which is the belief segment of an attitude that allows someone to form an opinion or perception about a person an object or a situation; the effective component which is the feeling segment of an attitude that allows someone to attach his/her emotions to the opinion that has been formed about a person, object or situation and the behavioral component that allows a person to attach a desire to behave or act in a certain way based on the emotions he/she attaches to the opinion about a person, object or situation.

Research shows that attitudes are rooted in genetics even though environmental consideration play a key role in the formation of attitude (DeAngelis, 2004). This follows that in order to assess the attitude of local communities to mining sector policies and interventions, we need to investigate the genetic and socio-economic conditions of the local people which informs their attitude to these policies and interventions.

To effectively assess the attitude of local communities towards mining companies, we sectioned our data collection into four main components - desktop research, preliminary stakeholder

consultations and reconnaissance, survey, Focus Group Discussions (FGD) and key informant interviews.

2.2 Desktop Research

The first component of the data collection process reviewed existing literature on factors that could influence the behaviour of mining communities to mining sector policies and interventions. The desktop research helped the team to map out key identifiable socio-cultural and socio economic issues that can influence the attitude of local communities. It also enriched the study in terms of providing policy relevant information and helped shape the design of primary data collection by producing relevant variables and research questions needed in the determination of the attitude of local communities towards mining sector policies and interventions. Data for the desktop research was obtained from both published and unpublished sources

2.3 Preliminary Stakeholder Consultations and Reconnaissance Survey

The second component focused on having preliminary discussions with keys stakeholders in the mining sector and a reconnaissance survey in mining communities. Specifically, meetings were held with mining sector stakeholders such as the Minerals Commission, Ghana Chamber of Mines, Environmental Protection Agency (EPA) as well as other Civil Society Organizations (CSOs) such as SSM association, Association of Mining Communities, Third World Network, Coalition of NGOs against Mining, Wacam, among others. The MC provided us with an introductory letter that enabled us to meet their District Officers, Metropolitan, Municipal and District Assemblies (MMDAs) while the Chamber of Mines facilitated preliminary meetings with some of their members. The CSOs also provided a lot of information on key informants in the communities.

Armed with the vital information obtained from the literature review and discussions with key stakeholders, the team undertook a reconnaissance survey in three main mining areas Tarkwa (Western Region), Obuasi (Ashanti Region) and Kenyasse (Brong Ahafo Region). Preliminary FGD were held with resettled communities, chiefs and elders, groups under alternative livelihood projects, groups that have been compensated, resettled communities, local NGOs as well as individuals in the community. Discussions with these groups centered more on their attitude to the mining policies and interventions and what informs that attitude.

Preliminary review of literature and discussions with these stakeholders' suggested that key issues that affect mining communities and consequently could affect their attitude towards mining sector policies and interventions include but not limited to:

- Resettlement
- Compensation
- Environmental degradation
- Employment
- Land use challenges
- Operations of SSM
- Alternative livelihood programmes

To better capture the attitude of local communities towards mining sector policies and interventions, factors that drive their attitude and to fill up data gaps emanating from the desktop research, a survey, focus group discussion and some key informant interviews were designed. These formed the third and fourth components of data collection.

2.4 Survey

Questionnaire development

The development and administration of a survey on the attitudes of local communities towards mining sector policies and interventions was the main medium for primary data collection. The main survey instrument was a questionnaire. The questionnaire was developed by the team taking into consideration the key issues in the local communities that can influence their attitudes towards mining sector policies as obtained from the earlier discussions and literature review. To simplify the overall format, the questions were grouped under these key issues: resettlement, compensation payments, conflicts, activities of small scale mines, Alternative Livelihood Programmes (ALP), among others. Some of the questions were closed to allow for consistency of responses and easy analysis of results, while others were opened to sufficiently allow individuals to provide information that would be vital to the study. The core thrust of the questionnaire was for the local people to confirm or otherwise the existence of these issues obtained from the preliminary consultations and literature review as a major contributor to their observed attitude towards mining sector policies and interventions, the extent to which these issues inform their attitude towards mining sector policies and interventions.

Sampling

The survey was conducted in all regions/districts where mining was being undertaken. Information obtained from the MC indicated that as at December 2013, there were 235 local and foreign companies holding prospecting/reconnaissance licenses of which 78.3% (184) were held by Ghanaian and the remaining 21.7% (51) being foreigners.

Our analysis indicates that these mining companies were located in 5 regions and 16 districts. About 59 towns and villages in these districts were randomly selected to participate in the survey. Appendix 1 provides information on the regions, districts and towns where the survey was undertaken. A combination of systematic and purposive sampling was used in selecting respondents from the communities and households were the sampling unit. With regards to the systematic sampling, an interviewer goes into a suburb in a town, picks a starting point on a street and interviews five houses at intervals of 10 houses. After that the interviewer visits another suburb in the same town until all the questions meant for that town is completed

An issue that confronted the team was how to make sure that specific people, who have been affected by a specific issue provided information on how that issue affects them and informs their attitude. The questionnaire was designed to solve this problem to some extent. It had a general section that every member in the community can respond and specific sections where specific people who have encountered those specific issues were invited to answer. This is where the purposive sampling came in. The specific sections were compensation, resettlement, alternative livelihood programme, small scale mining and conflicts. In summary, the specific people who were invited to answer questions on specific issues also answered questions on the general issues. A sample size (N) of 1500 households was interviewed. Out of this 575, 328, 111,

430 and 1448 answered the questions on compensation, resettlement, alternative livelihood programme, small scale mining and conflicts respectively. The distribution of the sample by the regions/districts/towns was based on the number of people directly employed by the mining company in that area.

Consultations and pilot survey

Preliminary work was done prior to the main survey. These, among others, included internal consultation with experts at the University of Ghana and elsewhere, relevant stakeholder ministries, NGOs specialising on mining issues, pilot survey and training of interviewers.

Initial internal consultations were made with Faculty Members in the University of Ghana. The questionnaire was circulated together with the project approach and methodology for Senior Members to make inputs. This resulted in the presentation of the research approach and methodology at a Departmental seminar. In addition, the questionnaire was discussed with other academics, MMDAs and other NGOs working in the mining communities for review.

Once the project approach and methodology was finalised, seven field supervisors were recruited and trained on the project objectives and the administration of the questionnaire for a full day. On completion of the training the questionnaire was piloted in 10 towns in the mining areas. This approach helped gauge the time needed to complete the questionnaire, assessed the level of clarity of the questions and provided each Team Member and supervisors an opportunity to comment on the interview process. Results from the pilot survey were used to review and update the questions.

Training

A training course was organized for interviewers - undergraduate students from the University of Ghana, who came from the areas where the survey was undertaken. The training, among other things, focused on the objectives of the research and instructed the interviewers on the level of information that constitutes an adequate response for each question. Interviewers were also taught how to probe and reduce strategic behaviour without imposing their own responses on the respondents. It also instructed them on how to integrate unanticipated but yet, revealing information that could arise during the implementation of the survey. The trainees were also introduced to general interviewing procedures and skills though most of them had already worked on similar projects and did have those skills. The principal training documents was the questionnaire and field manual.

The concepts, procedures and problems likely to be encountered on the field were discussed in detail during the training sessions based on the experience from the pilot survey. Interviewers also interviewed themselves as part of an evaluation process of the training programme supervised by the project team. The training did not end with the formal training but continued on the field through regular discussions with interviewers on issues arising from the field by the project team and supervisors. These, among others, helped resolve many errors and biases usually associated with surveys.

Field Operations

Fieldwork began in the first week of June 2014 and lasted for about two and a half months. While the task of the interviewers were to identify individuals based on the sampling framework, explain the purpose of the survey, conduct interviews through on-site face-to-face interviews and review the completed questionnaire, that of the supervisors were to review the completed questionnaire for completeness, consistency and accuracy and to coordinate the work of the interviewers to ensure that the desired information is obtained. To monitor and control the fieldwork and to make adjustments where necessary to individual interviewer's workloads, interviewers were asked to enter their itinerary and appointments on a planning form which was reviewed by the supervisors.

Data Analysis

Both quantitative and qualitative methods were employed to analyze the data. Double data entry was employed to help check errors in data capture. The data was analysed using mainly STATA and the Statistical Package for Social Sciences (SPSS) and the relevant information was obtained through sorting and cross-tabulation queries. The main parameters which were derived from the analyses of the data are the perceptions of the local communities on issues that confront them and how those perceptions have impacted on their attitude toward mining sector policies and interventions.



2.5 Focus Group Discussions and Key Informant Interviews

Since behavioral and attitudinal factors were to be evaluated, the team conducted FGD with key stakeholders groups such as SSM operators, Chiefs and Community Leaders, Youth representatives, resettled communities, compensated individuals, people who have participated in ALP, among others. The reconnaissance survey enabled the team to identify these groups and sites for the FGD as well



as developing guidelines on the broad issues for discussion. In all a total of 66 FGD were conducted in five major mining areas – Kenyasi, Obuasi, Tarkwa, Bibiani and New Abirem on specific issues. There were between 5 and 8 people in each FGD and cumulatively about 288

people in the five areas participated in the FGD. Appendix 2 provides summary of information on the groups interviewed for the FGD.

Furthermore, in-depth interviews with key informants in LSM, MMDAs, EPA, District Officers of EPA and MC, members of Resettlement Negotiation Committees (RNC) and Compensation Negotiation Committee (CNC) due to their peculiar area of expertise.

Challenges

Like any other study, some constraints were encountered. The first challenge was the lack of co-operation from interviewees. The research team anticipated that some of the individuals and institutions to provide the requisite information would not be cooperative, given the sensitive nature of the research. This problem was resolved by establishing cordial relations with the respondents and also providing education for the interviewers to enable them persuade respondents and probe for the requisite information. Interviewers were also incentivised to provide the required information.

3. Chapter Three: Overview of Mining in Ghana

3.1 Socio-economic environment

Since 2000, the country has fully implemented three development strategies - Ghana Poverty Reduction Strategy I (GPRS I) (2003-2005), Growth and Poverty Reduction Strategy II (GPRS II) (2006-2009), Ghana Shared Growth and Development Agenda I (GSGDA I) (2010-2013), and currently the GSGDA II (2014 to 2017) formulated to ensure continued pursuit of macroeconomic stability and the sustainable exploitation of Ghana's natural resource endowments that will propel the country into a full middle income status by 2020.

Implementation of these frameworks has led to some improvement in the socio-economic conditions in the country even though the gains made are quite fragile partly due to weak domestic value addition to primary products including mineral, poor savings and the vulnerability of the country to external shocks. Average annual GDP growth rate has improved from about 4.3 between 1990 and 1999 to about 7.2 percent between 2001-2013, reaching an all-time high of 14.4 percent in 2011, largely attributed to the oil discovery in 2007, with production starting in late 2010. The discovery of oil coupled with the rebasing of the country's GDP from 1993 to 2006 has changed the structure of the economy with the service sector contributing the largest to GDP followed by the industrial and agricultural sectors.

Implementation of these strategies has also led to improvement in many of the social indicators. Poverty headcount ratio has declined from 51.7 percent in 1992 to about 31.9 percent in 2005/2006 and to 24.2% in 2012/2013, even though inequality measured by the Gini coefficient increased from 35.3 percent in 1992 to 42.3 in 2012/2013. Unemployment remains a major socio-economic challenge especially the spiraling of graduate unemployment in the country.

Many of the health and education indicators such as Fertility Rate, Life Expectancy, Infant Mortality Rate, Maternal Mortality Rate, Under Five Mortality Rate, literacy rate, Gross and Net Enrolment Ratio have all improved. For example, life expectancy has increased from about 57 years in 2000 to 61 years in 2012 while literacy rates among adults aged 15 and above has increased from about 57.9 percent in 2000 to 71.5 percent in 2010.

With regards to the environment, the picture is not very encouraging since many of the environmental indicators are deteriorating. Climatic variability and change is being observed in Ghana and has got a net adverse impact on the economy. Natural resource depletion (sum of forest, energy and mineral depletion) as a percentage of Gross National Income has increased from about 8.0 percent in 2000 to about 15.0 percent in 2012 in line with fossil fuel energy consumption as a percentage of total energy consumption that increased from 23.4 percent in 2000 to about 37.4 percent in 2011. Deforestation is a major problem in the country. It is estimated that an average of 125,400 ha of forest cover in Ghana was lost per year between the period 1990 and 2010. The cost of environmental degradation is also estimated to be about 10% of GDP annually (World Bank, 2006; European Union, 2012).

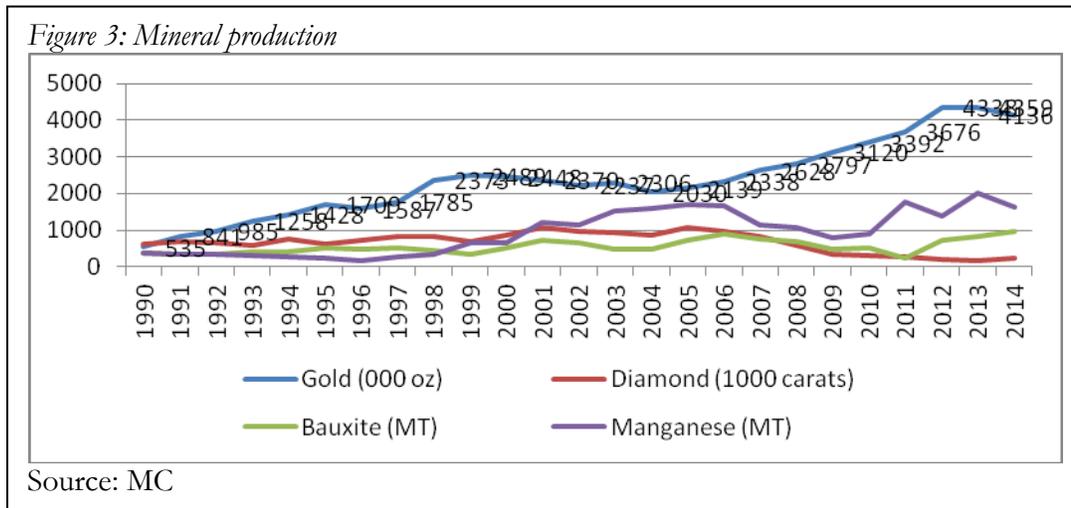
Despite these economic and social gains, Ghana continues to suffer many problems of underdevelopment: poverty, inequality, unemployment, social exclusion and the greatest challenges of raising the rate of economic growth and sustaining it over extended period of time.

3.2 Mining Sector Reforms

The Economic Recovery Programme (ERP) in 1983 sought to reverse the general economic decline in the country in the late 1970s and early 1980s. One area where emphasis was paid is the export sector, particularly, cocoa and the mining sectors, which was the largest contributor of foreign exchange earnings and had the potential to develop and expand under sound policy reforms and improvement in management. The mining sector reforms therefore started in 1986 with policies such as restructuring of mining sector legislation to make it more attractive to investors; strengthening of mining sector support institutions; de-emphasizing of state control in the mining industry; enhancement of the mining sector fiscal regime and the formulation of environmental guidelines in the mining sector as elaborated by Twerefou et al (2007). Today, there are about 11 main and 13 subsidiary legislations and guidelines that support mining in Ghana and has been presented as Appendix 3 .

3.3 Impact of Mining Sector Reforms

There has been a phenomenal response in foreign investment since the government introduced its economic reforms in the 1980s (Aryee 2001). Foreign Direct investments (FDI) to the mining sector increased from about US\$ 165 million in 1995 to about US\$ 1000 million in 2012 at an average annual growth of about 28%. With the exception of 2006, 2007, 2008, 2011 and 2012, the share of mining in overall FDI has



always been more than 40%. Overall, between 1995 and 2012, total investment in the sector amounted to about US\$ 8.6 billion compared to that of the non-mining sector of about US\$ 26 billion, indicating that about 33% of all investment into the country for that period has gone to the mining sector. Increase in investment in the non-mining sector in recent years can be attributed to the increase in oil investments. The bulk of the investment inflows in the sector has gone to gold mining.

As a result of the reforms, gold production which was about 535 thousand ounces in 1990 increased consistently to about 4,136 thousand ounces in 2014 at an average annual growth of about 9.8 over the period. Production of bauxite and manganese has also generally registered an increasing trend over the same period at an average annual increase of 10.5% and 11.9% respectively while diamond production has decreased at an annual average rate of 1.8%.

Increase in mineral production, particularly gold permitted the country to diversify its export earnings. The total value of major exports increased from about US\$ 439 million in 1983 to about US\$ 13,752 million in 2013 at an average annual rate of growth of 13.3%, while that of minerals alone increased from US\$ 122 million in 1983 to about US\$ 5,140.7 million in 2013 at an average annual growth rate of 14.5% driven mainly by gold exports which accounts for about 95% of all mineral exports for the period. For many years now, gold has remained the major foreign exchange earner. It is noteworthy that the mining sector remains the leading foreign exchange earner in gross terms since 1991. However, its contribution in net terms might not be that significant possibly resulting from generous incentives, especially the retention of more than 75 % of export earnings in foreign accounts. One estimate by Tutu (2011) indicates that in 2009, total injections from the mining sector amounted to about US\$ 668 million accounting for only 22% of total foreign exchange earnings. The share of mining in total government revenue has generally increased and has averaged about 14.8% over the period 1990 to 2012. With mining attracting about 33% of total FDI in the country from 1990 and 2013 and contributing less than 15 % to government revenue, one can conclude that its contribution to government revenue is not that significant.

Employment, Incomes and Growth in the Mining Sector

Information on the contribution of mining to employment, incomes and growth is not that encouraging. As indicated in Table 1 the share of mining and quarrying in total employment increased marginally from about 0.5% in 1991/1992 to about 0.7% in 1998/1999 but reduced to about 0.61% in 2005/06. The situation has improved in 2012/2013 with the value increasing to 1.6%.

Table 1: Employment of Active Population aged 15 and above

Sector	1990/91	1998/99	2005/06	2012/13
Agriculture	62.2	55	58.01	44.7
Mining/quarrying	0.5	0.7	0.61	1.6
Manufacturing	8.2	11.7	10.91	9.1
Utilities	0.1	0.1	0.2	0.4
Construction	1.2	1.4	1.69	3.3
Trading	15.8	18.3	16.64	19.5
Transportation/comm.	2.2	2.2	2.61	4.2
Financial Service	0.5	0.8	0.27	0.7
Community/social	9.3	9.8	9.03	16.5
Total	100	100	100	100

Source: GLSS III, IV, V, VI

Direct employment by the LSM indicates that total employment by the LSM has generally increased from about 22.5 thousand in 1995 to about 33.4 thousand in 2012 but decreased thereafter to about 20.5 thousand driven largely by employment of junior staff. Also employment of senior staff has increased while that of expatriates has remained somehow stable.

Earnings in the mining and quarrying sub-sector as presented in Table 2 shows a significant improvement from 1991/2 to 2012/13 as average basic hourly earnings in the sub-sector was the fourth highest compared to the other sub-sectors but it moved to the first position in 1998/9. In the year 2005/6, the mining sector trailed behind six industries in terms of average basic hourly earnings recording an average hourly earning of ₦0.80. Average hourly earnings in the sub-sector has however increased by 220% to about ₦2.56 in 2013, fourth highest compared to the other sectors. In general, one can conclude that incomes in the mining sector are generally higher than many other sectors.

Table 2: Average basic hourly earnings by industry of active population aged 15+

Sectors	1991/2	1998/9	2005/6	2012/13
Agriculture	0.0102	0.0512	1.57	0.69
Mining/quarrying	0.0185	0.1484	0.80	2.56
Manufacturing	0.0169	0.1156	0.63	1.07
Utilities	0.0131	0.1105	0.77	4.09
Construction	0.0187	0.1019	0.62	2.30
Trading	0.0182	0.1411	0.59	1.14
Transportation/comm.	0.0146	0.1187	0.49	3.72
Financial Services	0.0293	0.1454	1.54	2.49
Community/social services	0.0475	0.1035		
Hotels and Restaurants			0.64	1.40
Trade			0.59	1.14
Real estates			1.18	2.21
Public administration			0.78	3.40

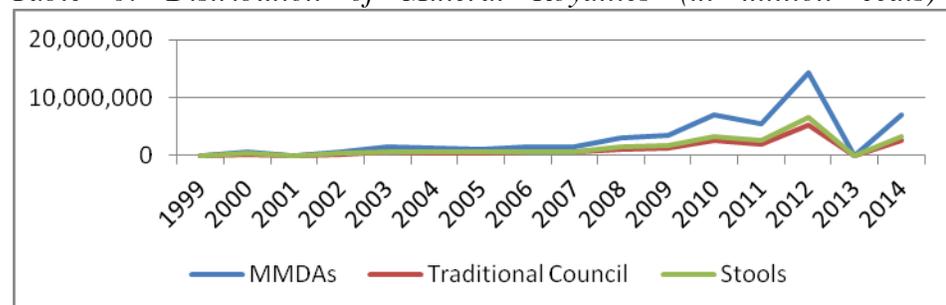
Source: Quarterly Digest of Statistics, GSS and GLSS V, VI

The extent of backward (purchase of goods and services from other sectors in the economy) and forward (material inputs into other industries) linkages of the mining sector to other sectors of the economy determines the extent of contribution to GDP. Between 1993 and 2010, the sector's contribution to GDP was always less than 6% and increased marginally by only about 0.6 percentage points over the period while employment on the average decreased by about 0.3% per annum over the same period in spite of the huge investment inflows. The poor linkage between the mining sector and other sectors of the economy explains its poor employment generation. Long term purchase agreements with monopolistic processing giants elsewhere to some extent makes it difficult to even have access to the gold produced. The little processing that is done in the country is done by the SSM. Poor value addition to mineral and the low use of local inputs in the production of minerals has made it difficult for the mining sector to contribute significantly to growth and consequently improving the livelihood of mining communities, a situation that can influence the attitude of mining communities to mining sector policies and interventions.

National Policies to Improve Livelihoods in Mining Areas

The Minerals Development Fund (MDF) was established in 1992 to generally recycle part of mineral royalties to local communities

Table 6: Distribution of Mineral Royalties (in million cedis)



Source: Office of the Administrator of Stool Lands

which hitherto benefitted the GoG solely by virtue of Article 257 (6) and section 1 of the 1992 constitution. To achieve this objective, the Office of the Administrator of stool Lands (OASL) was set up to establish stool land accounts for the various stools and to administer the funds using a clear disbursement procedure and formula. Specifically, 5% of mineral royalties received by the GoG is given to the OASL. The Office retains 10 % of this amount for administrative expenditure. The remaining 90% is shared among MMDA, Stools and Traditional Authorities (TA) in the ratio 55%, 25 and 20% respectively. Over the years, MMDAs have received the bulk of mineral royalties as dictated by the disbursement formula. (Figure 6)

A major problem confronting the administration of the fund as indicated by Chiefs in a FGD is the late payment of money to the Fund by the MoF and even in 2001 and 2013 no payment was made to the Fund to be disbursed to the communities, even though the mining companies pay the royalties on quarterly basis. The OASL also confirmed this assertion by the Chiefs. Also, the laws governing the disbursement of the funds to the OASL by the MoF does not specify any timeline unlike other funds like the GETFund where timelines for the disbursement of the money has been given and therefore, the government can decide to pay it anytime it deems fit. A recent report by MOF/EITI (2013) indicated that it takes about a week for the OASL to transfer funds to the MMDA, TA and the Stools if there are no issues and therefore delays can be attributed to the MoF. Chieftaincy and land disputes also pose a significant challenge to the administration of the fund. There are many chieftaincy disputes which in many cases end up in courts and in many cases the courts insist that the money should not be disbursed unless the case has been resolved. Such funds are put in excroll accounts and may be there for years.

Another issue is whether the monies transferred to the MMDA, TA and stools are used in the interest of the people. The Law stipulates that the TA and Stools are to use the funds to maintain their stools in keeping with their status and therefore many of them do not use the funds for developmental activities. The MMDAs also claim that they are governed by the local government Laws and therefore they cannot be compelled by anyone to use the funds in a specific way, such as using it to fund development activities in communities affected by mining, as the original objectives for setting up the fund dictates. One notable observation is that there are no strings attached to the funds allocated to the MMDA unlike other funds like the GETFund, NHIFund. This also provides an incentive for the MMDAs to use the funds in ways that are not commensurate with the objectives of the Fund. These issues to some extent explain the lack of development activities in communities seriously affected by mining and consequently their attitude towards mining sector policies and interventions. Indeed this was confirmed by a key informant:

The mineral royalties paid to the MMDAs are free monies that the assemblies use to cover up many issues. In many instances they are used to satisfy some political motives and not to benefit the people who are worse affected by the mining.

Many of these issues arise because there is no Regulation to the Law (Act...) that could limit the use of the funds to benefit the community. The OASL has drafted such a Legislative Instrument but the passage has remained a challenge.

Many mining companies as part of their Corporate Social Responsibility (CSR) have undertaken social projects in the communities in which they work to support the

development of the communities. Appendix 4 provides information on some of the development projects undertaken by the companies. At FGDs, participants commented on the relevance of some of the projects and that the cost involved are too high. Many of them were of the opinion that the cost of infrastructure provided through CSR is sometimes so high and believed that there is no value for money in those projects. To solve these issues a corporate social responsibility guideline has also been developed by the MC, which if well implemented could help solve some of these problems. Key themes of the **guidelines are:** Corporate Governance and Ethics, Human Rights, Workplace and Labour Standards, Health and Safety, Environmental Stewardship, Risk Assessment and Management, Material and Supply Chain Stewardship, Community and Social Development, Stakeholder Engagement and Compliance and Reporting.

In order to streamline CSR responsibility in mining areas, Newmont Ghana has instituted the Newmont Ahafo Development Foundation, summary of which is presented in box 4. This is a very comprehensive and laudable initiative that can promote transparency and improve well being and livelihoods of communities affected by mining. Many mines have bought into the idea. The challenge is how to operationalise it.

Box 2: Newmont Ahafo Development Foundation

The Newmont Ahafo Development Foundation (NADF) was created by Newmont Ghana Gold Limited as a medium for implementing its CSR to the communities where it operates. The company provides money for the Fund mainly by contributing one US dollar for every ounce of gold sold and one percent of net pre-tax income after consideration of all inter-company transactions in each year derived from the Ahafo Mining Lease

To ensure transparency, a Board of Trustees has been established with reputable members nominated by both Newmont Ghana and the community and responsible for the overall management of the funds through the evaluation and approval of projects submitted by the community towns, appointing a project coordinator and a financial controller, among others. Projects that are approved for implementation usually are the following: Human resource development; Provision of infrastructure; Provision of social amenities; Economic empowerment; Protection of natural resources and Support for cultural heritage and

Chapter Four: Literature Review

4.1 Mining and Conflicts

Conflict in mining communities is a major problem that confronts many resource rich countries that requires special attention. There are several issues that result in conflicts in mining areas which have the propensity to impact on the attitude of mining communities to mining sector policies and interventions. Twerefou (2007) elaborates on the different sources of conflicts in most African countries to include conflicts on royalties, land use conflicts, resettlement, survival of small scale mining, among others.

Hilson (2002), writing on land use conflicts in mining communities noted that over time, it has become increasingly difficult for mining companies, which demand a significant amount of land area to carry out their operations, to coexist peacefully with mining communities who to a large extent, depend on the land for their livelihoods and attributed the primary causes of land conflicts partly to poor communication between the mining sector stakeholders. Even though the author argues that there is no de facto strategy to deal with such conflicts, they recommend that improved community consultations, better coordination of the parties by local governments and better partnership between large and small scale miners could help reach compromises that will be quite satisfactory to conflicting parties.

Jenkins (2004) argues that historically, mining companies have employed what he terms “devil may care” attitude to the effects of their operations on communities and admit that mining companies have now resorted to CSR measures as a means of dealing with most of these conflicts. However, he was not sure if these CSR do yield socially responsible outcomes in reality or they remain just a means to get community members to ‘behave’.

Andrew (2002) writing on potential application of mediation to land use conflicts in SSM observed that SSM found mainly in remote areas of developing countries often generates land use conflicts with primarily LSM which sometimes involves armed conflicts, have significant adverse effects on both the environment and local communities. The author argues that frequently employed mechanisms for solving these conflicts by both government and LSM have not been able to fully reconcile the differences and subsequently, proposes mediation as a more effective means of achieving resolution even though it is not a panacea for dealing with all land use conflicts.

A study by Oxfam America (2009) on mining conflicts in Peru revealed that mining has been the major driver of Peru’s impressive growth since 2006. However, mining activities has led to rising conflicts and violence resulting from frustration by locals, not benefiting from huge profits of the companies, deterioration of living conditions poor communication and the fear that mining may contaminate local land and water sources. These has led to many demonstrations and social protests. The authors argue that actions taken by the government mainly focus on criminalization of social protests which was counterproductive. The study recommends government to focus more on strict policies and regulations and the better monitoring of these policies rather than the current approach. They also recommend that mining companies should ensure that there is

informed consent from the communities. Focusing on information disclosure on project costs and benefits to local communities could also help resolve some of these conflicts. Bebbington and Williams (2008) confirms the work of Oxfam America (2009) and emphasise that the conflicts run far too deep, and the end of the conflicts is not in sight as long as local residents believe that their land and water sources are under threat by of mining.

Thomson (2009), using experiences from Perumbalam Island in India argues that when the state allocates areas used by local communities for any livelihood sustaining activity to mining companies, the locals are bound to oppose because of the negative impacts they suffer from their activities. They recommend the state to be cautious with the allocation of such land so as not to damage the environment nor the livelihood of local communities.

Van de Sandt (2009) on mining conflicts and indigenous peoples in Guatemala revealed that mining investments by transnational companies in Guatemala has directly affected the livelihoods of local residents through decreased access to and control of land as land acquisitions took place in an atmosphere of coercion and intimidation of rights-holders by the company. In an environment of weak or non-existent legislations, weak institutional capacity of government agencies to ensure enforcement of existing policies, risk and anxiety over water competition, the only result would be tensions and occasional bursts of conflicts among communities and between communities and the mining company. Such an environment also divides the communities and creates fear and mistrust.

Davis and Franks (2011) examined the costs of conflict with local communities in the extractive industry with the objective of exploring the business case for improved community relations and risk management in the extractive industry. The authors found that among the costs incurred by companies as a result of mining related conflicts with communities are loss of time spent by staff on managing risk and conflict, cost of disruption to production, loss of value of properties, costs associated with discontinuation of operations, cost of injuries and deaths, among others.

Okyere (2014) analyzed Ghanaian cases of company-community disputes over gold mining and the underpinning issues, the dispute resolution strategies and the weaknesses in the existing framework. The study revealed that mining's enormous impact on the environment is not necessarily the physical, but also the social and cultural livelihood of communities. Disputes centered on compensation, resettlement packages, unfulfilled promises, mistrust and lack of proper ALP, and the dispute resolution strategies were seen as too bureaucratic, poorly connected to the cultural and social intricacies of local communities and primarily company oriented. The author proposes a new framework for mining community relationship that considers communities as integral and not peripheral in the general national framework for mining, a socio-cultural sensitive resolution framework connected to the peculiarities of each mining community, a re-conceptualization of conflict in a positive dimension in terms of providing avenue for understanding existing weakness in the mining company and community relations, development of sensitive, sustaining and empowering local ALPs and community led co-designed sustainable development plans.

In summary, conflicts in mining areas are widespread and are the result of a number of factors mostly relating to land use, water related environmental damage, neglect of host communities by

the mining companies, unfulfilled promises, non-payment of appropriate compensations, poor coordination between mines and communities by local and central governments, among others. The review has also made it quite obvious that conflicts are not only a setback to community progress. They are also detrimental not only to the economic objectives of communities but also the social and cultural objectives as well. Recognising that these conflicts are very important for national security is imperative because many of the conflicts that have arisen in countries in the sub-region such as Liberia, Sierra Leone are all associated with conflicts related to the exploitation of mineral resources (Twerefou, 2009).

4.2 Resettlement and Compensation

The issue of change is not an easy exercise, more so when it is dramatic and involuntary. There are many criticisms associated with resettlement and relocation programmes in mining communities. Though some of them are mere criticisms, others are real, genuine and require attention (Aubynn, 2002).

A major problem associated with resettlement and compensation payment is the valuation of property, for compensation, especially buildings and crops to be affected by mining. While some of the companies prefer using the market value of houses which are low because they are made of sandcrete or wattle and daub with raffia leaves, rural communities prefer the user values of their property which amounts to the provision of bedroom-for bedroom in the case of resettlements (Twerefou, 2009). In addition, the problem of providing alternative farmlands for farming is very difficult for the mines. There are instances where farmers have received significant compensations to settle themselves but fail to do so and resort to legal and civil agitation for more compensation, sometimes characterized by violent confrontation with mining firms (Tsekpo, 2002).

Terminski (2012) has observed that mining-induced displacement exists in numerous countries worldwide. However, it is only in developing countries that such displacement leads to several negative consequences. This situation could be attributed to the poor monitoring of compensation and resettlement programmes. Kumi (2014), writing on land compensation and community expectation in mining sought to explore the legal provisions in land acquisition and compensation in relation to community expectations in the Ahafo area of Ghana and noted that Ghana's statutes on compensation lag behind international standards. The author documented that there is no mutual understanding on the means of assessing assets for compensation payments and indigenes are not competent enough to negotiate for themselves during compensation negotiations. While communities perceived their compensation and resettlement expectations as moderate, mining companies view such expectations as unreasonable and without scientific basis.

Displacement has residual effects that could drive conflicts between mining companies and their host communities. Owen and Kemp (2014) have noted that household level dependency increases as people are displaced. They observe that companies may act on behalf of the state in providing goods and services for resettled communities where governments are either not willing or unable to provide. The challenge though is that much as these interventions by the mining companies could ease tensions in the short term and help ease access to land for mining, they

could be a recipe for future conflicts when the mining companies withdraw their assistance or fail to meet the expectations of resettled communities later on.

A study by the Ghana Chamber of Mines (GCM) (2008) to provide guidelines for clear compensation mechanisms to reduce litigation and ensure that affected communities are not made worse off found that about 84% of compensation recipients claimed that the value of their compensation packages received were below the losses they had suffered with regards to land, structure, immovable assets and incomes. The study further pointed that over 34% of respondents recommended that compensation should not only be cash payments but it should include alternative lands to keep local residents, particularly farmers, in business to sustain their livelihoods. Interestingly, the study recommends that compensations be ‘dollarized’ to hedge beneficiaries against inflationary issues and the effects of delayed payments. The findings from this study is in line with other studies where most compensated victims viewed the amounts received as nothing relative to the losses they have suffered with regards to land and crops, particularly.

Cernea (2008) writing on compensation and benefit sharing advocated for reforms in resettlement policies and practices. The author noted that many projects that displaced populations failed to resettle them sustainably and made them more impoverished. He counters governments’ positions and argues that compensation alone is not enough to prevent impoverishment of resettled communities neither can that alone restore their livelihoods lost and advocates for additional financing from economic rent and “windfall profits” to be invested directly into development of the communities. His study also observes that strong opposition to under compensation is growing in many countries and therefore governments should employ the well-known and tested mechanisms for benefit sharing to adequately compensate displaced residents, failure which could lead to conflicts as McLeod (2000) comments that such friction from compensation could pose serious conflicts as observed in Fiji.

Downing (2002) in a Mining Induced Displacement and Resettlement (MIDR) study claimed that MIDR is accompanied by the resettlement effect which is the loss of physical and non-physical assets including homes, communities, income earning assets, cultural sites, social structures, networks and ties, among others. These effects bring about risks which go merely beyond loss of lands and property. Among the risks the resettlement effect could introduce to displaced residents include unemployment, homelessness, food insecurity, increased health risks and disruption of formal educational activities. The danger is that the inability of resettled communities to mitigate these effects pushes them into what is known as “new poverty” as opposed to the “old poverty” displaced victims suffered prior to their displacement.

Evidently, the work of Downing (2002) confirmed that of Cernea (2008) that the payment of compensation and the resettlement of communities is not enough to sufficiently restore let alone improve incomes and livelihood in mining communities and the cost of mitigating the risk associated with compensation payments and resettlements have been left on the shoulders of the displaced victims who are the ‘weakest’ of all mining stakeholders. In response to such issues, Terminski (2012) contends that such mining induced displacements and resettlements should give due regard to human rights and humanitarian issues, environmental protection and sustainable development and recommend that mining companies even long after their

resettlement must bear the responsibility for their welfare by for example, providing resettled residents with sustainable jobs.

Hilson (2002) observed that in recent years, a number of mining companies have given insufficient compensation to communities, have not assumed responsibility for unanticipated events, and/ or have broken series of promises which have in one way or another resulted in conflicts and that such conflicts could be avoided if appropriate compensations which improve quality of lives are paid to affected communities.

In summary, though some mining companies have made strives to properly resettle people affected by mining, the inherent social, behavioral and cultural problems which have been largely neglected in the design and planning of resettlement schemes in many cases has made it very difficult for some resettled persons. Also compensation paid are low which leaves mining communities much impoverished.

4.3 Small Scale Mining

In recent times, SSM have become prevalent in mining communities and are causing many social and environmental problems to communities that have intergenerational consequences. In addition, SSM activities are generating many conflicts with some leading to the lost of lives.

Hilson and Yakovleva (2007) examined the dynamics of ongoing conflict, where indigenous SSM groups are operating illegally on a concession awarded to Bogoso Gold Limited (BGL). Despite being issued firm orders by the authorities to abandon their activities, leaders of SSM maintain that there are few alternative sources of local employment, which is why they are mining and that where they are working are of little interest to the company. The authors also concluded that mining sector reform under the auspices of the World Bank failed to address, comprehensively, several important community and social issues such as the dislocation and disempowerment of subsistence SSM usually results in community backlash.

Similarly, Amankwah and Enim-Sackey (2003) looked at the developments in the small-scale gold and diamonds mining industry in Ghana and proposed some strategies on how the concepts of sustainable development could be applied to the industry. In terms of development of the SSM, the study observed that, since the passage of the Small-Scale Mining Law in 1989, the small-scale gold and diamonds mining industry has received financial and technical support from local and international organizations the production of gold and diamonds has increase which has led to significant socioeconomic impact on individuals and communities. In terms of how the concept of sustainable development could be applied to the industry, the study recommends a good network and sound financial support for the key organizations in the minerals sector.

Hilson (2002) reports that SSM in Ghana have made important contributions to national gold output, foreign exchange earnings and employment since the enactment of the Small Scale Gold Mining Law in 1989, even though there has been increased environmental complications such as mercury pollution and land degradation in SSM areas. Recommendations made to improve environmental management of SSM include provision of assistance by the MMDAs and the academic community; designing and implementing industry-specific environmental management

tools and strategies; making concerted effort to prospect for deposits suitable for SSM which is key to preventing unnecessary exploration and commissioning a nation-wide industrial mercury study and the implementation of a mercury retorting programme.

Writing on SSM, Hilson, Hilson and Pardie (2007) criticized the approach taken by the Government of Ghana to address mercury pollution by SSM and observed that certain policies, technological and educational initiatives taken to address the mounting problem has proved marginally effective at best, having been designed and implemented without careful analysis of mine community dynamics, the organization of activities, operators' needs and local geological conditions. They recommend the situation to be improved with government-initiated dialogue with SSM, introduction of simple, cost-effective techniques for the reduction of mercury emissions; and effecting government-sponsored participatory training exercises as medium for communicating information about appropriate technologies and the environment.

Using interviews, observations and documentary sources of data, Owusu and Dwomoh (2012) examined the impact of illegal mining on the Ghanaian youth in the Kwaebibirem district in Ghana and found that poverty, ignorance and 'get-rich-quick' attitude of the youth are the motivational factors for illegal mining activities in the District. Further, the study found that illegal mining activities has negative impact on the youth in terms of high rate of student turnover, increase in teenage pregnancy, disrespect towards the elderly and engaging in undesirable behaviour such as smoking of 'hard' herbs and recommend the government to institute measures to discourage the youth from illegal mining activities if the country is to reap the full potential of these youth in the future.

Aryee, Ntibery and Atorkui (2003) examined the environmental impact of SSM in Ghana and found that the extent of environmental damage depends largely on the mining and processing methods being used and consequently identified three forms of environmental problems associated with SSM: impacts on the lithosphere (land degradation) , hydrosphere (water bodies) and the atmosphere (air pollution). This result is consistent with that of Yelapaala and Ali (2005).

A study by Nsohbono (2013) on the impact of SSM on the education of children in Ghana indicated that child labour in SSM has significantly impacted on the total development of children more specifically through the reduction in school attendance rates which leads to loss of interest in education. The root causes of child labour in SSM were identified to be poverty, inadequate educational and recreational facilities, broken homes and pressure from parents for children to work in SSM. Recommendations made to improve the situation included the need to change perception about child labour in SSM, channelling more effort towards tackling child labour in SSM by strengthening laws against child labour, provision of adequate school infrastructure and subsidies to mining communities to improve their livelihood. This result supports the work of Mireku-Gyimah (2011) who argues that child labour is on the increase and estimates that more than 2,000 children of school-going age are engaged in SSM.

Using semi structured interviews, validated self-administered questionnaire and observations, Hoedoafia, Cheabu and Korang (2014) investigated the impact of SSM on the living conditions of the people of the West Gonja District in the Northern Region of Ghana and concluded that their activities has contributed positively in improving the lives of the people in the form of

employment, revenue generation and meeting health, educational and basic family needs even though they conformed their associated social and environmental negative effects. They concluded that in the absence of a viable alternative source of livelihood, the West Gonja District Assembly should organize SSM into groups, assist them to acquire equipment needed for their operations and regularly monitor and control their activities.

Mwaipopo et al (2004) examined the role of SSM in reducing individual and household vulnerability and poverty and concluded that small-scale mining communities fare better in terms of poverty levels than other communities and that SSM has potential to increase people's livelihood security through wealth creation, asset accumulation and investment and consequently contribute to vulnerability reduction even though it is associated with high levels of risk.

There is a gender dimension to the impact of SSM. Yakovleva (2006) examined female employment in SSM in Ghana and its impact on their incomes, health and families using the Birim North District as a case study and found that the expanding SSM sector is causing a wide range of regulatory, environmental, health, economic and social problems, jeopardising long-term livelihoods of the rural communities, especially rural women and suggested that policy should not only address gender mainstreaming in SSM, but should also support women to pursue stable job opportunities to benefit their long-term wellbeing.

A study by Chupezi, Ingram, and Schure (2009) assessed the impacts of artisanal gold and diamond mining on livelihoods and the environment in the Sangha Tri-National Park landscape. The study found that artisanal gold and diamond mining impact on livelihood in terms of employment, income, provision of greater opportunities for education, health and shelter and causes direct but insignificant impacts such as diversions, siltation and sedimentation of water sources in terms of environmental impact. Only limited felling of trees or land clearance was observed by the study.

Hentschel, Hruschka, and Priester (2003) found that SSM harms the physical and social environment during the different stages of mining (exploration, exploitation, processing and closure) with the most important environmental problems being mercury pollution, cyanide pollution, direct dumping of tailings and effluents into rivers, improperly constructed tailing dams, acid rock drainage, improper closure, river damage in alluvial areas, river siltation, erosion damage and deforestation, landscape destruction, garbage and solid waste. These findings are consistent with Aryee, Ntibery and Atorkui (2003) and Yelapaala and Ali (2005).

4.4 Mining and the Environment

There are a lot of environmental issues in all the different stages of mining including land degradation, air pollution, discharge to surface and ground water, forest degradation, noise pollution, solid and liquid waste disposal, generation, storage, transportation and disposal of toxic substances as well as other health and environmental issues. The worrying issue is that these problems are interlinked with each other through a very complex relation and have intergenerational consequence. It is for this reason that they should be taken quite serious. Several studies have been done on the environmental effects of mining in both developed and

developing countries. Most of the studies have concluded that mining activities harm the environment.

Water

Water pollution through effluence discharges of mine waste, tailings and the dredging and sluicing into surface water is a major environmental concern. Dzigbodi – Adjimah (1996) contend that in some stretches of Birim, Ankobra and Offin Rivers there is no fish and attributes this largely to the discharge of mine tailings and pollution resulting from dredging and sluicing operations.

SSM activities pollute rivers and streams through the discharge of solid suspension and mercury during sluicing and amalgamation. This leads to siltation, coloration and chemical pollution of streams and rivers, which serves as drinking water for many mining communities (Aryee et. el, 2002). Akabzaa (2000) reports of aquifer dewatering in the Tarkwa mining enclave attributable to the excavation of vast lands which reduces the ability of boreholes, streams and hand-dug wells to recharge. Further, Rybicka (1996) assessed the environmental impact of mining and smelting industries in Poland and observed that the major effects in terms of contamination by heavy metals are in the pollution of air, soil, river water and groundwater systems and that about 50% of surface water flows do not even meet the water quality standards while the volume of waste produced by mining and processing industries was more than 660 million tonnes of spoils and 490 million tonnes of tailings.

A study by Liu, Coveney and Chen (2003) assessed the impacts of mining, smelting and panning activities on the aquatic ecosystem of the Lean River in south China by integrating the chemical, toxicological and ecological responses of single and multiple metals in overlying water, surface sediment and floodplain topsoil. The study found that deterioration of local environmental quality was induced mainly by two sources: strong acidity and a large amount of copper in the drainage from the Dexing Cu Mine and high concentrations of lead and zinc in the effluents released from many smelters and mining/panning activities in the riparian zone.

Land, soils and Forest Degradation

Mining especially using the open pit and SSM degrade forestlands which are the only source of livelihood for some local communities, in that, it destroys the vegetation, including the economic timber species and the natural forest regeneration of all age classes. Not only does mining take land from the local people but also degrade some agricultural lands that could have been available for farming as most of them are not reclaimed (Badasu et. el, 2001). Geoscience and Remote Sensing Symposium (2004) applied remote sensing and GIS technologies to investigate the temporal and spatial extent of environmental degradation from 1986 to 2000 in the Tarkwa mining area of Ghana and found that while most of the study area was a healthy ecosystem in 1986, by 2001, over 60% of the land was degraded to the point where it could not be used for any commercial activity and that additional 35,000 hectares of land has been polluted and remediation would be very expensive. The study therefore recommends the government to institute strict environmental regulations to protect mining areas.

Small scale mining activities are also increasing the chemical components of water bodies and soils. Bories, Ollivier, and Michel (1994) examined waste water from cyanidation process of

gold extraction and found that it principally contains simple cyanide, metal complex cyanide, mainly cuprocyanide, ferro-ferricyanides and thiocyanate. The authors also observed a total degradation of all cyanide at a dilution rate of 0.066 per day in soils.

There have been some social issues associated with mining. Yelapaala and Ali (2005) examined large and small-scale mining in Ghana's largest diamond mining town, Akwatia, and their impact on environmental degradation, health and livelihood of artisanal miners and concluded that while an increase in artisanal diamond mining has been a means of employment and income-generation for small-scale miners, there are some human development challenges, related to environmental burden from land degradation and health. Akabzaa (2000) also elaborates the impacts of mining on the social structure in the Wassa West District to include malaria, cerebro-vascular disorders, *and* drug addiction, among others.

Yeboah (2008) examined the environmental and health impact of mining on surrounding communities of Obuasi municipality in Ghana. His study revealed that mining activities have resulted in land degradation leading to limited land available for local food production and other agricultural purposes in the Obuasi municipality. In addition, the study found that there is pollution which has adversely affected major streams in the area like Kwabrafo, Pompo, Nyam, San and Akapori. Air and noise pollution are also evident in the area according to the study. The authors argue that the combined effects of environmental problems have culminated into health problems with high prevalence of diseases such as malaria, respiratory tract infections and skin diseases. This finding is in line with that of Kitula (2006) where it was discovered that mining practices in some mining areas in Tanzania has caused land degradation and damage to water quality as well as that of Yelapaala and Ali (2005).

Asare and Darkoh (2001) examined the socio-economic and environmental impacts of the Copper-Nickel Mine in Selebi-Phikwe, Botswana and found that the presence of the mine has led to rapid growth of the population through migration, which has outstripped the ability and capacity of the town's social services such as housing. Also, the study found that operations of the mine causes air pollution, which in turn adversely affects human health, soil, water and vegetation in the area as well as leading to scarcity of land for development of settlement, as about 40 hectares of land cannot be developed for human settlement due to pollution in the area.

A study by Akabzaa (2000) indicates that the average Infant Mortality Rate (IMR) and Maternal Mortality Rates (MMR) as well as malaria and tuberculosis incidence are all above the national levels while long hours of shift work sometimes results in family dislocation and disintegration as well as musculo-skeletal disorders and alcoholism (Forson, 2002).

Noise, Particulate matter and Chemical pollution

Noise disturbance and vibrations caused by blasting of rocks in mining areas leads to cracks in buildings while crushers in mine sites and noise generated from traffic movements to and from the mining site is a great nuisance to mining communities (Andoh, 2002). According to Tsidzi and Adofu (1993) noise in mining areas interfere with human activities such as sleep, speech and hearing as well as stress related diseases like hypertension.

Various activities of mines and their support industries results in the emission of airborne particulate matters such as sulphur dioxide (SO₂), Nitrogen dioxide (NO₂), carbon monoxide (CO) and smoke which are quite detrimental to human health. Activities that result in the emission of these particulate matters include burning of fossil fuel by trucks and equipments, drilling and blasting, site preparation and road construction, loading, heap leach crushing and other activities of assay laboratories that produce fumes. The heap leach method of gold beneficiation has the potential to contaminate ground water while the use of mercury by small-scale miners contaminates surface water. These are serious chemical pollution problems affecting mining communities.

4.6 Alternative livelihood Programmes

Alternative Livelihood Programmes (ALP) in mining communities provide alternative source of employment and income for local people, who have lost their primary occupations as a result of mining activities. Even though literature on the topic is not vast, a cursory look at what is available suggest that many ALP that are implemented in mining areas in developing countries do not have the requisite impact on the targeted community and are to some extent imposed on the people without their consent.

Sievanen et al. (2005) analyzed seaweed farming as an alternative to artisanal fishing in the Philippines and Indonesia and provided a framework for analyzing the ALP being implemented in Ghana's mining communities. They argued that the promotion of alternative livelihoods is based on the following assumptions: that small-scale fishermen are poor and therefore need to overexploit in order to earn acceptable incomes; that fishermen are willing to abandon farming in favour of other economic opportunities; and that fishers' engagement in alternative livelihoods will reduce pressure on fisheries. Thus, allowing these assumption to drive ALP in mining communities will make the outcome effective.

A study undertaken by Hilson and Banchirigah (2009) criticized the approach being taken in Ghana to implement ALP which assumes that the alternatives promoted are more attractive than SSM activity; that individuals are willing to take up these activities; and that the alternatives are wide-reaching and capable of alleviating poverty significantly. The authors found that these assumptions were not correct and that most of the economic activities being promoted proved highly unpopular with target groups and brought to the fore how little in tune the organizations championing ALP are with the mindsets and ambitions of the targeted populations. The authors recommend redesign of ALP for mining communities.

In terms of skill acquisition under ALP, Nyame (2002) observed that in 61 villages of the Western region, the youth were more interested in acquiring skills in the areas of masonry and carpentry than farming which was the proposed alternative while Carson et al. (2005) has observed that many re-tooling programmes undertaken under the ALP has had insignificant impact, mainly due to lack of financing available for participants to start new business ventures.

Chapter Five: Results and Discussions

5.1 Introduction

This section presents the analysis and discussions of the results. We begin by providing the socio-economic characteristics of the participants who participated in the survey. Further, we group the issues that inform attitude of mining communities into economic, social and environment and elaborate on them in subsequent sections. The section goes on to analyze the issues confronting SSM in detail, paying particular attention to factors that influence local participation in illegal SSM activities.

5.2 Socio Demographic Characteristics of Respondents

This section presents the socio-demographic characteristics of the respondents focusing on the age group, marital status, gender, level of education, primary occupation, religion and income level of respondents.

Age group, gender and marital status of respondents

As indicated in Table 4, about 29% of the respondents were between the ages 25 and 34 years whilst the age group 65-years plus had the minimum number of respondents (8%). Overall the average age of the respondents was about 41 years, which suggests that they are mature enough to provide credible responses to the questions. Males made up 61% of respondents while the remaining were females. Furthermore, majority of the respondents (62%) were married followed by 19% who had never married. The remaining were divorced/separated (8.7%), widowed (6.5%) and those on consensual unions (3.8%).

Table 4: Age Group of Respondents

Age Group (years)	Frequency	Percent
15 to 24	159	10.9
25 to 34	419	28.8
35 to 44	347	23.9
45 to 54	272	18.7
55 to 64	133	9.3
65 +	122	8.4
Total	1452	100

Source: Authors' Survey, 2014

Education Level of Respondents

With regards to the educational status of respondents, majority of the respondents (44%) had completed Junior High School (JHS) or Middle School while 17.8 % had completed Senior High School (SHS), Secondary or Technical School. However, only about 7.1% had attained tertiary education. Details of the results is presented as Table 5.

Table 5: Education Level of Respondents

Educational Level	Frequency	Percent
Never been to school	216	15.0
Pre-School	19	1.3
Primary	210	14.5
JHS/Middle School	639	44.2
SHS/Secondary/Technical	257	17.8
Tertiary	103	7.1
Total	1444	100

Source: Authors' Survey, 2014

Primary Occupation, Religion affiliation and ethnicity of Respondents

Information on the primary occupation of the respondents indicates that about 42.1% of the respondents are engaged in farming as their primary occupation whilst the minority of the respondents (0.22%) are engaged in fishing. Details of the primary occupation of the respondents is presented as Table 6.

Table 6: Primary/Main Occupation of Respondents

Primary Occupation	Frequency	Percent (%)
Farming	583	42.06
Manufacturing	19	1.37
Fishing	3	0.22
Mining	107	7.72
Trading	299	21.57
Handicraft	60	4.33
Services	175	12.63
Other	140	10.10
Total	1386	100

Source: Authors' Survey, 2014

In terms of the religious affiliation of the respondents, majority of them (85.28%) belong to the Christian faith, 10% belong to the Islamic faith while the remaining belong to other faiths. With regards to the ethnicity of the respondents, out of a total number of 1,435 respondents, about 80 percent were Akans and the remaining 20%, non-Akans.

Income Categories of Respondent

There was a high income disparity among the respondents. About 39 percent of the respondents earn between ₵0 and ₵ 200 a month with the average income being ₵ 127.23 whilst about 8.41% earn more than ₵ 1000 with the average income being ₵ 2,556.98 per month. Details of the income distribution is presented as Table 7. Overall, the average income of all the respondents was ₵ 530.80.

Table 7: Income Categories of Respondents

Income Categories (₵)	Frequency	Percent	Average Income (₵)
0 to 200	400	39.10	127.23
201 to 400	243	23.75	314.94
401 to 600	175	17.11	528.86
601 to 800	56	5.47	748.21
801 to 1000	63	6.16	971.98
Above 1000	86	8.41	2,556.98
Total	1023	100	530.80

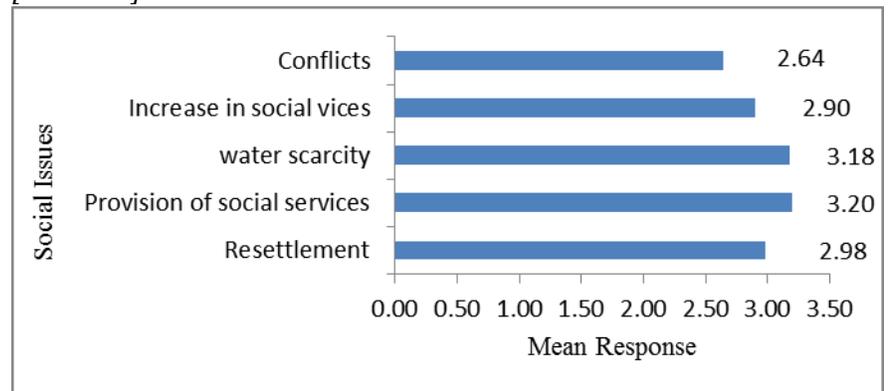
Source: Authors' Survey, 2014

5.3 Social Factors Influencing Attitude

Usually, mining companies operate in communities that have specific social and cultural setting and introduce their economic activity. This can have impact on different strata of the socio-cultural setting of the community. In situations where these socio cultural issues are not taken into consideration in the design phase of the mining activity, the results could have inter-generational consequence on the community. Today, such examples exist.

Key social issues that were identified to affect mining communities and consequently their attitude towards mining sector policies and intervention were resettlement issues, conflicts, inadequate provision of social services (e.g. education and health), water scarcity, increase in social problems (e.g. theft, prostitution, alcoholism, etc.) in the communities that can largely be associated with mining. In order to assess the extent to which these social issues impact on mining communities, respondents were asked to rank on a scale 1 to 5 (1 not a problem, 5 -a serious problem), the extent to which these issues were a problem.

Figure 8: Mean Rank of Social Issues in Mining Communities [N=1458]



Source: Authors' Survey, 2014

From figure 8, it could be seen that amongst the social issues, provision of social services is the most serious problem in mining communities with a mean rank of 3.2 followed by water scarcity with a mean rank of 3.18. This is consistent with the findings of Carrington and Pereira (2011) that about 76% of the local people in Queensland mining communities felt that mining has negatively impacted on provision of local services. Conflict is the least social issue with a mean rank of 2.64 while the rank of social vices and resettlement mimics that of those in the higher ranks.

In a gist, all the social issues had their ranks above the mean of 2.5 indicating that they pose a considerable challenge to the community and could affect their attitude towards mining sector policies and interventions. In the next sections we elaborate on some of these key issues.

5.3.1 Resettlement

Mining companies acquire concessions that sometimes include communities. In order to exploit the resources, the mining companies would have to resettle the community. When a decision has been taken by the mining company to resettle a community, a key issue that will determine the outcome of the resettlement is the process of resettlement. If the process is flawed, the outcome is likely to be sub-optimal leading to the dissatisfaction of affected people. Resettlement process right from taking the decision to resettle a community, negotiations of the resettlement package, movement of the community and the management of the resettlement community poses serious challenges that can impact on the attitude of communities towards mining sector policies and intervention. Several issues were probed about the resettlement process which could help explain the attitude of mining communities towards mining sector policies and interventions. These

include the knowledge of resettlement rules and regulations, resettlement negotiations, process, satisfaction with the resettlement package, challenges, among others.

Knowledge of resettlement rules and regulations

Knowledge about the modalities for undertaking an activity is very important because it is the guiding principle and the power that enable one to defend his/her stance. On the issue of resettlement negotiation, knowledge about the rules and regulations governing resettlement is very important because of the different educational background and skills of communities and the companies. Specifically, the average community member may not have the skills to better negotiate for a resettlement while the company usually may have the best brains as far as the issues are concerned. It is important to note that the level of benefits of the community will depend on the strength of their bargaining strength which depends on their knowledge in the area.

The Minerals and Mining Regulations, 2012 (Legislative Instrument (LI) 2175) is the main legislation that sets out the framework for resettling communities affected by mining. The LI has been well written covering many issues that are associated with resettlement. Section 6 (1) of the regulation provides that “...*the inhabitants shall be resettled by the holder on suitable alternative land and the resettlement shall have regard to the economic well-being and socio-cultural values of the persons to be resettled, with the objective to improve the livelihoods and standards of living of those persons.*” In general, the core thrust of the document is that livelihoods of resettled communities should not be worse off compared with their situation before the resettlement.

We sought to know from resettled communities if they have knowledge about the rules and regulations that govern resettlement, if those rules have been adhered to by the mining companies and if the resettled persons are satisfied with the resettlement processes and outcome. In the survey about 328 households that had gone through resettlement responded to questions concerning resettlement, which represents about 23% of the total respondents. For those who have been resettled, a little less than a quarter (23.3%) claimed to be familiar with the regulation guiding resettlement with nearly 63% reporting of not having knowledge on the regulation guiding resettlement. The remaining (13.9%) did not know if they had knowledge on the



Resettled community

regulations or not. This trend is worrying since resettled communities would not be able to know whether the regulation was duly followed in the resettlement process if they do not have good knowledge on the regulations guiding resettlement and will not be able to know their rights and responsibilities properly during the negotiations.

For those who claimed to be familiar with the regulation, about a third of them thought the regulation was well followed while 59% thought otherwise. The rest did not know if it was well followed or not. Respondents who

claimed the resettlement regulation was not well followed, 48.5% based their claim on the fact that the mines failed to fulfil their promise, 22.7% claimed the affected people were not more involved in the negotiation process, 7.6% claimed the mining companies used divide and rule tactics to break the negotiation strength of the communities, 7.6%, claimed the compensation packages were smaller than what were destroyed and the remaining 6.0 % claimed there was no agreement between communities and the mines.

Resettlement negotiations

The resettlement negotiation with the mining company is usually done by the Resettlement Negotiations Committee (RNC) on behalf of the affected people. The composition of the committee has been detailed in the LI. We therefore sought to know the extent to which the affected people were involved indirectly or informed on the resettlement negotiation. It was startling to know that only about 16% of the resettled respondents were aware of the processes through which the resettlement was negotiated with about 67% claiming to be ignorant of the processes. For those who claimed to be aware of the resettlement negotiation processes, more than half of them (51.7%) indicated that their representatives negotiated on their behalf while 24.1% explained that their rooms and farmlands were measured and replaced accordingly. Further, about 14.8 % explained that they were summoned to the village square and the processes explained to them while the remaining gave varied answers that suggest that the process was not familiar to them. The basic inference one can draw from these responses is that, very small number of the respondents were aware of the resettlement negotiation process and even for those who claimed to be aware of the processes through which resettlement negotiation were made, it was difficult for them to properly and carefully explain how the process worked implying that knowledge on resettlement negotiation processes was very poor among resettled communities.

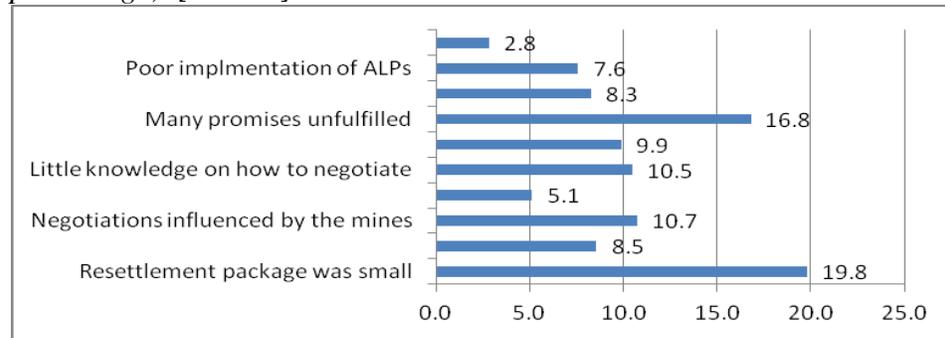
The selection of members by the community to the RNC is quite important since this Committee was responsible for all negotiations concerning the resettlement. The study therefore sought to know the extent of involvement of the respondents in the selection of members to represent them in the RNC and whether the members of the RNC consulted them in any way for their views during the negotiation process. Only 25.6% of the respondents reported of being involved in the selection of representatives for the RNC while two-thirds (66.1%) reported of not being involved. The remaining did not know if they were involved or not. This may imply that the RNC was not representative enough which may partly explain why majority of the resettled respondents were not satisfied with the outcome of the resettlement. Of those who reported of being involved in the selection of representatives for the RNC, 43.4% of them reported of not being consulted by their representatives in any way, 41.4% reported of being consulted by their representatives during the negotiations while the remaining (15.3%) did not know if they were consulted or not.

Satisfaction of package

The relatively high proportion of respondents who thought the resettlement regulations were not well followed reflected in how satisfied they were with the resettlement packages and conditions offered. More than 82% (270) of resettled residents expressed their dissatisfaction with the resettlement package, 15% were satisfied with the package and the remaining 1.4 % did not know if they were satisfied or not. With majority of resettled people being dissatisfied with their

resettlement packages, it is likely to breed resentment against mining companies or stakeholders in the resettlement process which could lead to a

Figure 9: Reasons given for dissatisfaction with resettlement package (in percentage) [N=270]



Source: Authors survey, 2014

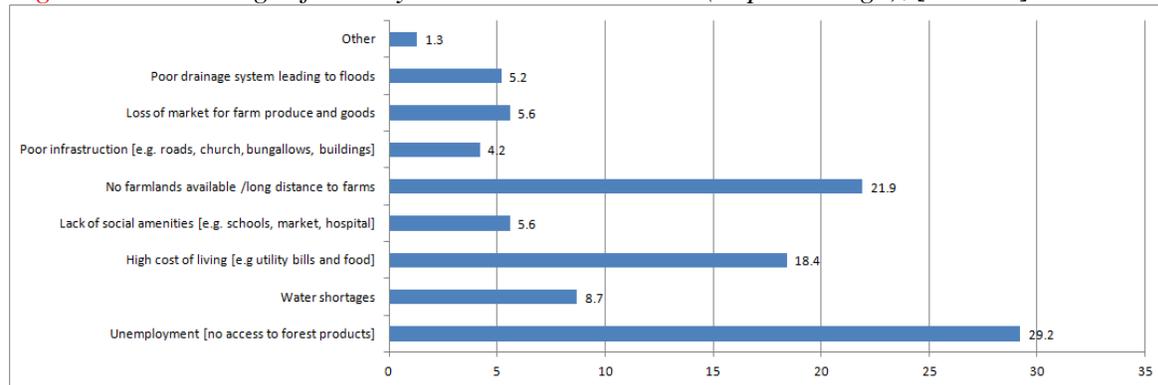
towards mining sector policies and interventions. Reasons given for the dissatisfaction with the resettlement package and conditions has been presented as figure 9. From the figure it could be seen that “Resettlement package was small” is the major reason that made it difficult for the communities to be satisfied with the resettlement package.

The few respondents (15%) who were satisfied with their compensation packages and conditions attributed their satisfaction to the fact that they now lived in new houses which are better than their former ones, received compensation for their crops and had some social amenities at their new locations.

Resettlement process and challenges facing resettled persons

With regards to the resettlement process, about two thirds (66%) of the resettled respondents were not satisfied with the resettlement process. Only 23% of them showed their satisfaction

Figure 10: Challenges faced by resettled communities (in percentage), [N=288]



Source: Authors’ survey, 2014

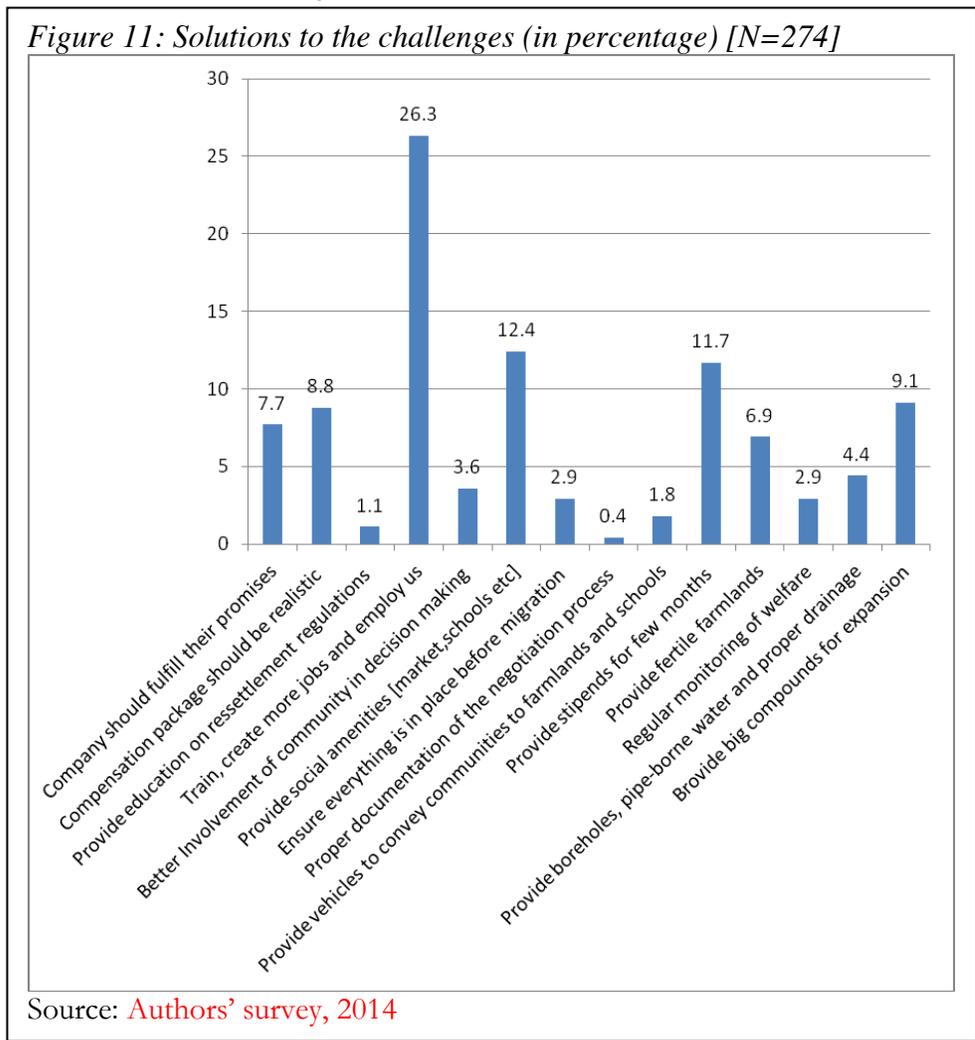
with the process while the remaining (11%) did not know if they were satisfied or not. Of those satisfied with the resettlement process, about 61% indicated that they were given sufficient notice for their relocation and that they were freely transported to their new sites. About 19% agreed that their terms were met by the mining companies before the resettlement making them happy with the process.

Resettlement beneficiaries complained of challenges they were facing as a result of the resettlement. Specifically, about 29.2 % indicated that they had been rendered unemployed and

do not have access to non traditional forest products while 21.9 percent reported of not having farmland or the distance to the farms are too long for them. This finding is consistent with Terminski (2012), which found that resettlement programmes in mining communities of developing countries have always led to negative consequences due to poor monitoring and evaluation. Details of the results are presented in figure 10. The other problems included deforestation and the rocky environment that makes movement difficult.

FGD with members from resettled communities confirmed these challenges and brought to the fore many challenges that exist in resettled communities that may not be considered as a big challenge by policy makers but has important implications on their livelihoods. Participants complained that lands that are obtained for them were too far that they cannot walk and have to go by vehicle which cost them a lot of money. In some communities, the land allocated to them

was formerly a Teak farm and therefore cultivating crops becomes difficult. There are also situations where land allocated to resettled communities cannot be used by them because other communities are claiming ownership to that same land. In addition non traditional forest products such as mushrooms, snails, bushmeat, among others, that in addition to increasing employment and incomes from their sale also provided a significant source of protein.



Unfortunately the community does not have access to them again which has impacted on their livelihoods. This confirms the finding by Downing (2002) that resettlement programmes in mining communities are associated with loss of physical and nonphysical assets including homes, communities, income earning assets, cultural sites, social structures, networks and informal ties.

Participants also claimed that the only benefit they can point to is the building and the environment that appears to be better than where they were at first but to move further was a major problem. Lack of employment and other benefits that they use to enjoy at their original abodes were no longer available. This has led to reduction in incomes and therefore economic activities do not thrive well in the communities. These assertions to some extent could be substantiated by the lack of economic activities in many resettled communities. In addition, the mines are not employing them and it is very difficult to follow up on other issues that the mining companies need to provide once they have been moved to the new place. Even when they come to look at the issues that are arising from the resettlement, solving the problem becomes another issue that they have to battle for a long time. This was expressed clearly by one of the participants:

Initially when you come and look at the building and the environment you are happy about the resettlement but when you move in and you start confronting the problem of how to sustain your family and that everything must be paid for, then you begin to feel disappointed.

It must be explained that without appropriate steps to mitigate the negative effects of these challenges on the lives of resettled communities, it may not be possible to expect a positive attitude to mining sector policies and livelihood.

Solutions to challenges

In order to inform policy on how to solve the problem associated with resettlement, respondents were asked to propose solutions to the challenges they face resulting from the resettlement. Suggestions made by the respondents are provided as figure 9. From the figure it could be seen that the provision of jobs is the most important way of solving the problems associated with resettlement as about 26.3% of the respondents alluded to that. This results is consistent with Terminski (2012) that mining companies even long after their resettlement programmes must be responsible for the welfare of the resettled communities by providing them with sustainable jobs. This is followed by the provision of social amenities (12.4%) and the provision of stipends for a few months (11.7%).

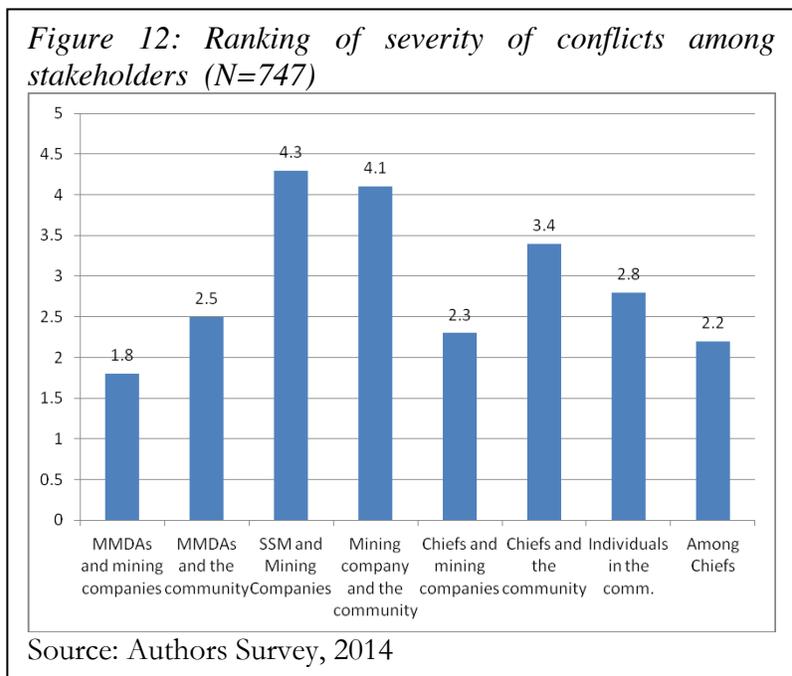
It is evident that unemployment and the provision of skills is a major problem in the country and therefore one cannot associate the problem of unemployment in resettled communities to only the resettlement. However, when one looks at the data very well, the problem of unemployment in resettlement areas could to some extent be attributed to the mining activity. The reason is that many rural people depend on the land for their livelihoods and therefore depriving them of the land and trying to push them to Alternative Livelihood Programmes (ALP) that are not well structured and for which they have not been practising for a long time will virtually make them worse off, especially in a situation where they are not well supported to transform into the new environment. It must be noted that change of any form is difficult and therefore where one has to change, there is the need to manage the change properly. In the case of resettlement the situation is rather intense as it involves the movement of a whole family- changing the whole livelihood system that a community has depended on over a long period and therefore needs to be implemented and monitored more carefully.

The few who agreed that resettlement had improved their livelihoods gave reasons such as neatness of new houses in new environment, good drainage system, the presence of social amenities such as electricity, schools, boreholes and good roads and the fact that resettlement has created the awareness of the need for formal education as reasons for the improvement in their livelihoods.

Overall we enquired from the resettled respondents if the resettlement has improved their livelihood. About 78.9 % of the resettled respondents were of the opinion that resettlement has not improved their livelihoods while 14.2% held the opposing view. However, 6.9% could not confirm if the resettlement has improved their livelihood or not. In general, if the large proportion of persons who said that their livelihood had not improved is interpreted on the basis of Section 6 (1) of LI 2175, together with the reasons given to justify their argument, then one can conclude that from the perspective of resettled communities the resettlement has not improved their livelihood, a situation that can negatively impact on the attitude of mining communities towards mining sector policies and interventions.

5.3.2 Conflicts

Mineral resources are vested in the President of the Republic who holds it in trust for the people of Ghana. These resources are to be used for the benefit of the entire nation. Its exploitation should not damage the environment or local communities' rights to livelihoods. If such condition does not exist, then it is possible that local communities will defend their livelihoods by opposing these activities which lead to conflicts as Thomson (2009) showed to have happened in the Perumbalam Island in India. By conflicts, this study is referring to any kind of dispute, misunderstanding or aggression that has occurred in mining communities as a result of the mining activity.



Conflicts in mining communities can occur between any of the following stakeholders – local communities, Chiefs, LSM, SSM, government and its authorities. The causes and nature of conflicts are wide and varied involving many of the issues earlier discussed. The study sought to know if mining has brought conflicts of any sort to the community. About 52% of the 1448 respondents who have been involved in a conflict and responded to the questions on conflicts

indicated that mining has brought about conflicts of various forms in the communities while 40% were of the opposing view. The remaining (8%) did not know if mining has brought any conflict to the community or not.

It is imperative to know among which groups the conflict is more severe. This would enable policy to know the areas where efforts should be more focused. In order to know among which groups the conflict is more severe, respondents were asked to rank on a scale 1 to 5 (1 minimal conflicts 5 – maximum conflicts), the severity of conflicts among the various stakeholders as a result of the mining. .

Expectedly, there are a lot of conflicts between SSM and LSM and between the LSM and the mining community as the mean rank was 4.3 and 4.1 respectively. Details of the ranking of conflicts between other stakeholders are presented as figure 12.

Interestingly, many of the respondents have not been involved in the conflicts as only about a fifth (19.8%) of them had participated in such conflicts with the remaining (79.2%) acting as observers of these conflicts. This could partially be attributed to the apathetic nature of many Ghanaians who always find it difficult to co-operate in fighting a common course and in many cases may like to free ride since that becomes the dominant strategy. In the next section we elaborate on the nature and extent of conflicts between the different stakeholders as well the possible causes and solution to those conflicts as obtained from the field.

LSM and SSM

With a mean rank of 4.3, conflicts between SSM and LSM can be considered as the most severe conflict between the stakeholders. These conflicts have arisen because SSMs have encroached on the concessions of LSMs and therefore the latter have to prevent them from working. This is consistent with the result of Twerefou (2007), which elaborates the survival of small scale miners as one of the possible causes of conflicts in mining communities.

However in many cases the SSMs claimed that the land allocated to the LSM originally belonged to them and therefore they have the right to work on it since that is where they earn their livelihood. Participants reported that such conflicts have taken rather unpleasant forms such as fighting and demonstrations which sometimes involve the use of weapons and the security agencies - police and military to intervene. Recommendations made include LSM seeding off part of their concession to the SSM, SSMs operating on their own boundaries, LSM training and employing the SSMs and local people and the proper regulation of both the SSMs and the LSM to ensure peaceful coexistence between. These recommendations are also supported by (2002) who recommend that better coordination of the stakeholders by local governments and partnership between SSMs and LSMs will foster peaceful coexistence.

LSM and community

Conflict between the LSM and the community is also widespread with a severity ranking of 4.1. Such conflicts are caused by:

- Failure of LSM to pay adequate compensations;
- Failure of LSM to employ local people;

- Failure of LSM to address issues arising from resettlement and non-fulfillment of promises;
- Destruction of land by the companies;
- Pollution of water sources which has led to frequent water shortages;
- Air and noise pollution that has led to many health problems;
- Discriminatory practices and exclusion of communities both from corporate and governmental decision-making in respect of leasing community land;
- Destruction of homes resulting from blasting.

These conflicts have taken the form of verbal exchanges, demonstrations and sometimes the use of weapons. This corroborates the study by Oxfam America (2009), which found that conflicts relating to mining activities have been in the form of many demonstrations and social protests.

Court actions have also been undertaken in some of the cases. In situations where the mines have had regular meetings with the community to solve their problems, employed youth, paid compensations regularly and timely, there has been significant cooperation between them. Suggestions made to resolve such problems include mining companies paying realistic compensation and on time, documenting and enforcing promises made, providing social amenities for the community and facilitating the provision of jobs.

FGD with compensated community members also suggested that there are also situations where strategic behaviour of communities has led to conflict between mining communities and the mine.

Box 2: Civil Society Organizations participation in conflict resolution: can it be a panacea to the many challenges faced by Mining communities?

The Wassa Association of Communities Affected by Mining (WACAM) was formed in 1998 by affected farmers which was later renamed *Wacam* in 2011 with the objective of fighting the negative impacts of mining on their livelihoods using a mixture of strategies such as community empowerment, campaigns and dialogue. Through a two-year dialogue process, *Wacam* and AngloGold Ashanti were able to resolve three major issues confronting the communities: human rights violations, water pollution and destruction of buildings as a result of blasting, most of which are legacy issues that the company had long failed to address. Currently all the documented human rights cases have been successfully disposed of with both victims and their families receiving compensation. The company has also addressed the problem of water pollution by providing boreholes in identified affected communities and is in the process of tackling the dilapidated buildings. *Wacam* has registered with all the MMDAs where it operates and the MMDAs to some extent rely on *Wacam* to resolve mining related problems by asking affected people to complain about destruction to their property by mining companies to *Wacam*. These interactions could suggest that a closer collaboration between MMDAs, mining companies and civil society groups could help reduce the problems of mining communities.

In general some of the apparent tension that evolves between local residents and mining companies has been summarised by Hilson (2009) as follows:

“In Ghana, an estimated 30–40 percent of gold-mineralized land is currently under concession to mining and mineral exploration companies. To pave way for this development, tens of thousands of villagers have been displaced to date, including in the range of 30,000 people in the Tarkwa locality, and more recently, over 3000 households in Kenyasi in the Brong-Ahafo Region. Moreover, there is very little land available to accommodate the country’s swelling SSM

population. The Ghana government has, for the most part, been unsuccessful in its efforts to persuade companies to release sections of demarcated concessions, which has forced it to use scarce funds to identify viable plots for small scale gold mining licenses.”

Chiefs and communities

Chiefs have had conflicts with communities mainly due to perceived selfishness and corruption on the part of the chiefs while others blame it on the lack of transparency in the dealings of the chiefs as far as mining issues and benefits are concerned. Other causes of conflicts had to do with resettlement and land ownership issues as well as unemployment in the communities. These conflicts have mainly taken the form of verbal exchanges and demonstrations and sometimes have been intervened by the police.

A major issue that the communities complained about is the sub-contracting of jobs to the Chiefs which creates a lot of mistrust between the Chiefs and the people. Specifically, in many mining communities the companies have sub-contracted some works in the community such as road construction, gardening in the mines, painting, among others to the Chiefs. The intention is to ensure that the Chiefs employ their locals in the implementation of these works and directly prove to the communities that they intend using their labour. Good as these intentions are, the problems one runs into is that since the Chiefs become direct employees of the mines it will be very difficult for them to intervene on behalf of the community if there is any problem. There is also the tendency for the mines to influence the Chiefs through juicy contracts. Participants also alleged that some of the Chiefs are directly on the payroll of the mines and therefore are not sensitive to their plights.

To resolve the conflicts that exist between chiefs and the communities, participants recommended that chiefs use the royalties in the interest of the community, play a neutral role in the dealings with the mines, find innovative ways of engaging the mines, ensure that there is transparency as well as meeting regularly with their communities to discuss issues.

The FGD also brought to the fore two other issues that brings about conflicts between Chiefs and the communities. These involve the process of acquisition of the land and the tenant-landlord issues. The process of concession acquisition is flawed with many problems. The procedure is that, when a concession is to be acquired, notification is posted at the MMDAs for two weeks and if there is no reservation from any member of the community, then the document is forwarded to Accra for processing. Usually the communities are not aware of the process and publication. They just wake-up one morning only to be told that the land has been acquired for mining, especially small scale mining which leads to a lot of conflict. With regards to the tenant - landlord issue, the problem is that, many tenants claimed that they have been on the land for a long time and their presence has ensured some sort of security on the land but usually when the Chiefs sell the land or give it out as concession, nothing is paid to them apart from the compensation for the crops on the land.

Conflicts among community members

Many individuals in mining communities have been engaged in conflicts that can be attributed to the mining activity. Conflicts among individual members are caused mainly by land ownership issues, disagreement on negotiation and compensation/resettlement packages as argued by

Twerefou (2007). Many of these conflicts have been in the form of verbal exchanges and fighting and has led to a lot of mistrust among community members. There are also situations where members in families are at loggerhead on issues brought about by mining. This was vividly explained by a key informant as follows:

When the mining company is coming, it is very difficult to know who is for it and who is against it. This affects our social cohesion and sometimes causes division in the communities, creating fear and mistrust.

Suggestions made to avoid conflicts among individuals in the community include providing education on the rules and regulations governing activities in the communities, provision of proper arbitration processes at the appropriate quarters, while others opined that mining should be discontinued completely in the communities.

MMDAs and LSM companies

Conflicts between MMDAs and the mining companies have been experienced but only on few instances as evidenced by a mean rank of 1.8. This implies that there is cooperation between mining companies and MMDAs. Where they disagree, the cause was attributed to some slight misunderstandings and the failure of the mining companies to pay some local taxes in some cases. The cooperation that exists between MMDAs and the LSM can be attributed to the fact that the MMDAs receive royalties from the mining companies and also depend on the companies for some support. There is also the perception that the MMDAs are obtaining some personal benefits from the mines and therefore are bound to cooperate with them on all issues. Such benefits have also allowed the mines to have confidence in the MMDAs and are prepared to cooperate with them. To avoid such conflicts it was recommended that taxes due to the MMDAs should not be waived in the negotiations and should be paid to them as required.

MMDAs and the Community

Conflicts between MMDAs and the communities have been expressed through peaceful demonstrations, verbal exchanges and in rare cases involve the use of weapons. With a rank of 2.5 one can conclude that there is a fair relationship between them. Conflicts between them are caused by failure of the MMDAs to channel the grievances of the community to the LSM, alleged bribery, corruption and misappropriation of funds from royalty payments on the part of the MMDAs, misunderstandings regarding issues of resettlement and compensation, among others. The conflicts that confront mining communities and the MMDAs could also be due to the fact that the MMDAs have not been able to re-orient their development plan around the activities of the mines in order to ensure that the activities of the mines are properly linked to development. In many development plans of the MMDAs that was examined, there seems to be no coherence between the development plans of MMDAs and the main activity in the district-mining

To resolve such problems it was recommended that the MMDAs should do more to support the communities in negotiations and try to forward grievances of the communities to the LSM. Participants also opined that the MMDAs must endeavour to use funds accrued from mining companies to develop their communities by providing social amenities and especially in solving the unemployment problems of the communities. Cooperation that exists between them was

attributed to the fact that the local representative of the community in the MMDAs has worked to ensure some good coordination between the two.

Conflicts among Chiefs

Conflicts among Chiefs have been mainly caused by misunderstandings arising from the sharing of benefits or royalties from mining as well as land disputes. The nature of the conflicts has been arguments between the Chiefs.

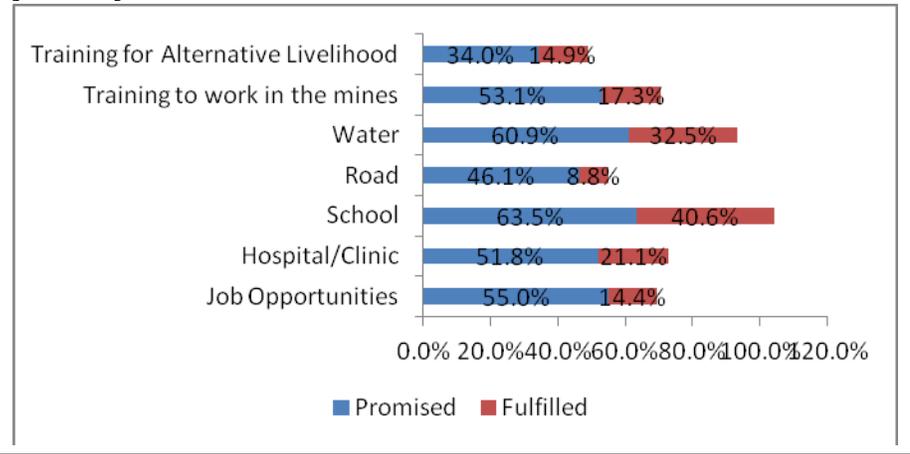
Chiefs and mining companies

The severity ranking of 2.3 between Chiefs and the mining companies implies that there must be more cooperation than conflicts between the Chief and the mines. This cooperation, participants attributed to the benefits of different forms that are received by the Chiefs from the mines. Participants also alluded that there are certain situations where some Chiefs have intervened on behalf of the community and this has brought about conflicts between the Chiefs and the mining companies.

5.3.3 Provision of social amenities

Many mining communities are not satisfied with the nature of social amenities that they have in their communities such as roads, schools, hospitals, etc. claiming that even though the government holds the resource in trust for the people of Ghana, they are the real owners of the resource and therefore should benefit more compared to others. The problem of poor provision of social service for mining communities is not the responsibility of mining companies but rather that of the government through the MMDAs. However, the communities claim that the mining companies do overuse some of their social amenities and infrastructure such as roads and are therefore bound to replace them. A major policy to resolve some of the developmental problems of mining communities is the use of resources from the OASL but as discussed in section 4, most of the funds may not be benefiting affected mining communities. Due to these and other issues, mining communities look up to the companies for the provision of social amenities and in many cases, form part of the requirement for getting the social licence to work in the community. Communities usually put a lot of premium on these benefits.

Figure 13: Promises Made and Fulfilled by the Mining Company [N=945]



roads and are therefore bound to replace them. A major policy to resolve some of the developmental problems of mining communities is the use of resources from the OASL but as discussed in section 4, most of the funds may not be benefiting affected mining communities. Due to these and other issues, mining communities look up to the companies for the provision of social amenities and in many cases, form part of the requirement for getting the social licence to work in the community. Communities usually put a lot of premium on these benefits.

One source of conflict that could affect the attitude of mining communities towards the mining sector policies is the extent to which mining companies fulfil their promises made to the

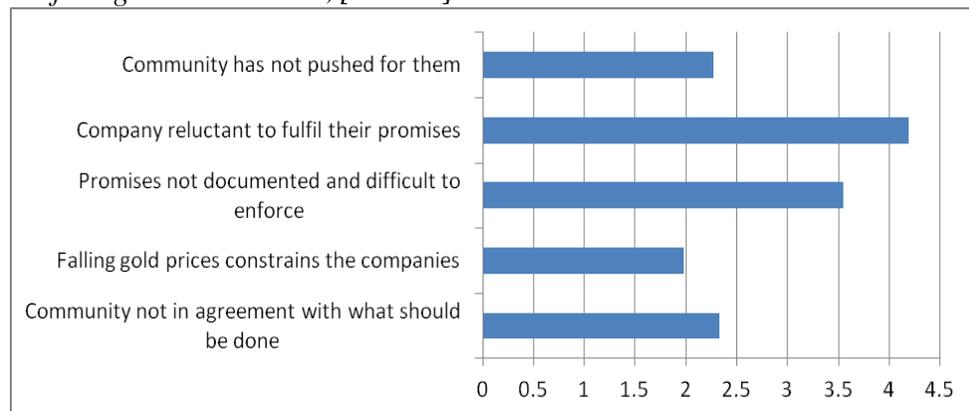
communities when they were about to start their mining activities. We therefore sought to know if the mining companies promised them any benefits from their activities and if those promises have been fulfilled. The results suggest that the mining companies made a lot of promises when they were about to start their activities but satisfying those promises leaves much to be desired. Specifically, about 64.8 % of the respondents reported that the mining companies made promises when they were about to start their business while 14.3 % were of the opposing view. The remaining did not know if they were promised any social amenities by the companies or not.

Figure 13 shows promises made to the local community and those that have been fulfilled. A cursory look at the result suggests that with the exception of the provision of water and schools where more than half of the promises made have been fulfilled. Of all the promises made, less than half has been fulfilled. Promises on the provision of jobs and roads are the ones that have been least fulfilled compared to the other amenities.

It is strange to understand why companies promise the provision of social amenities to the communities when they knew that it is the responsibility of the government and they may come in only through their corporate social responsibility programmes. FGD on the issue brought to the fore many issues that need to be streamlined. Participants alluded to the fact that mining companies, more specifically, the people who are employed to engage in the EIA usually say anything to convince the people and to have the social licence to come to the community. Once the social licence is obtained and the group involved with the EIA is not in active operation, the next thing is the implementation that is left to the company whose information may be limited as far as those promises are concerned. Participants also alluded to the fact that such meetings where promises are made are normally organised and documented by the company and not the community.

Memorandum of understanding is in many cases not signed on the promises made and therefore there is usually no documentation to support their claims for the provision of benefits promised.

Figure 14: Mean Rank of Factors Responsible for Companies Not Fulfilling their Promises, [N=935]



Source: Authors' Survey, 2014

To understand what communities thought about the factors that are responsible for the mining companies not being able to fulfil their promises, respondents were asked to rank on a scale of 1 to 5 (1 least responsible factor, 5 most responsible factor) the possible factors that has resulted in that. Analysis of responses as presented in Figure 14 indicates that “mining companies reluctant

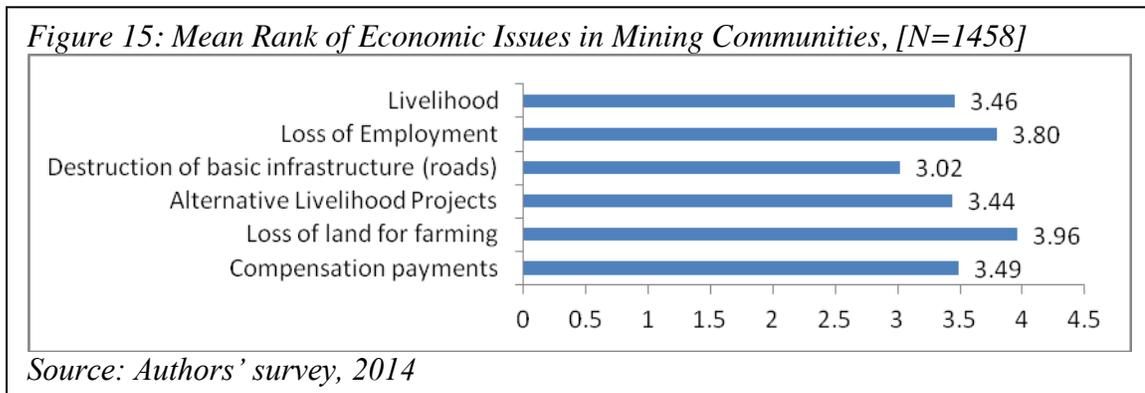
to fulfil their promises” received the highest mean rank of 4.19 while the least responsible factor is falling gold prices, which received a mean rank of 1.98. Indeed this view was shared by a key informant who had a lot of experience working with the mines as expressed as follows:

I have had the opportunity to travel to Australia and to Canada where similar companies that we have here are also working and I can tell you the community social relations are different. There, the companies see the community as part of them and therefore issues affecting communities are taken very serious. Here, the companies think it is different from the community and look at them as “aliens” whose issues could be addressed but based on a certain vaguely defined way of dealing with communities. The companies know very well what to do to solve the problems in a better way but they will not do it. Its all business-making money for the share holders.

These are issues that have a high propensity to influence the attitude of mining communities negatively toward mining sector policies and interventions and need to be addressed.

5.4 Economic Factors affecting attitude

Economic factors may largely affect the attitude of local people toward mining sector policies and interventions. The reason is that, the provision of basic amenities such as food, clothing and shelter depends on the availability of income which is the core outcome from economic activities. Example of issues in mining areas that may have impact on the economic conditions of mining communities include compensation payments, unemployment, ALP, loss of land for farming, destruction of basic infrastructure (roads), among others. We therefore sought to



ascertain the level to which these issues are a challenge to their economic development as a result of mining. Specifically, on a scale of 1 to 5 (1 - not a problem, 5 a serious problem) participants were asked to rank the extent to which compensation payments, loss of land for farming, alternative livelihood projects, destruction of basic infrastructure (roads), loss of employment and livelihood are a problem in their communities as a result of the mining.

Analysis indicate that all the economic issues present a problem to the community as they all recorded a rank of above 3 and an average rank of 3.49 with the highest being loss of land for farming and loss of employment which recorded a rank of 3.96 and 3.80 respectively. Evidently, these two results do correlate since majority of rural folks are farmers and therefore loss of farmlands will amount to loss of employment. This result is consistent with the findings of Sarfo-

Mensah, Adjaloo and Donkor (2009) which argue that acute unemployment is a major problem in the Obuasi municipality, a mining district in Ghana, due to the fact that the mining company has limited job openings for menial workers. Details of the result is presented as figure 15. In the next sections we elaborate on the key issues underlining the ranking so obtained in some of the major issues-compensation, unemployment and ALP.

5.4.1 Compensation

Compensation payments have been found to be one of the major issues that affect the economic conditions of mining communities, in that, the under valuation and consequently the under payment of lost items of an affected person will leave the person worse off all things being equal. One issue that poses a challenge to the payment of compensation is the valuation of items-crops, building, etc, for compensation. A notable observation is that many companies look at the direct use values of the items while communities may to some extent be looking at the total economic value of the item. Of course the solution is to use a

Coarse approach in which the parties should negotiate for the appropriate compensation but the difference in the knowledge of the parties as well as the negative strength will always determine the outcome of the negotiations. Such outcomes have the propensity to affect the attitude of mining communities in a positive or negative manner and to induce conflicts between the parties.

In examining the issues with compensation, we first sought to enquire from the respondents if any of their properties have been damaged as a result of mining. About 60% of the total respondents affirmed that their properties had been destroyed by the mining companies while 38.4 percent reported that their properties had not been damaged by the mining companies in multiple response mode. The remaining did not know if their properties have been damaged or not. This indicates the importance of compensation payments in mining areas since many people are involved. For those who have had their properties damaged, nearly 39% of them had only their crops damaged and 21% of had both lands and crops damaged. Details of the responses is presented as table 8.

Most of the mining communities were farming communities before the inception of mining in those areas and hence, farming had been the major source of livelihood for most households in those communities. This possibly explains why almost 80% of affected respondents have had their crops damaged.

Of those whose properties were destroyed, about 67% received compensation while the remaining (33%) reported of not receiving compensation for their damage. Reasons given for the non-payment of compensation by the 33 % who reported of not receiving compensation include failure of mining companies to pay compensations, mining companies arguing that crops cultivated belongs to them because they have already been compensated for the land, ignorance

Table 8: Properties of respondents damaged by mining companies

Property Destroyed	Frequency	Percent
Only Building	90	10.3
Only Land	60	6.9
Only Crops	340	38.9
Land and crops	191	21.9
Building and crops	85	9.7
Land and building	14	1.6
Buildings, land and crops	75	8.6
Other	18	2.0
Total	873	100.0

Source: Authors' Survey, 2014

of the procedures and processes involved in claiming compensations, rejection of the compensation package proposed by the mining companies during negotiations, among others.

Making compensation payments may not necessarily imply that recipients are happy with what they receive. Respondents who have received compensation were asked if they were satisfied with the compensation received since a positive attitude to mining sector policies and interventions is likely to flow from their satisfaction with the compensations received. About 83% indicated that they were not satisfied with the compensation received with only 15.2 % expressing their satisfaction with the compensation received. The remaining did not know if they were satisfied or not. Reasons given for the non-satisfaction of the compensation package were the meagre nature of the value paid for the property damaged. Regarding respondents who were satisfied with their compensations, reasons given for their satisfaction is that at least the compensation due them has been paid.

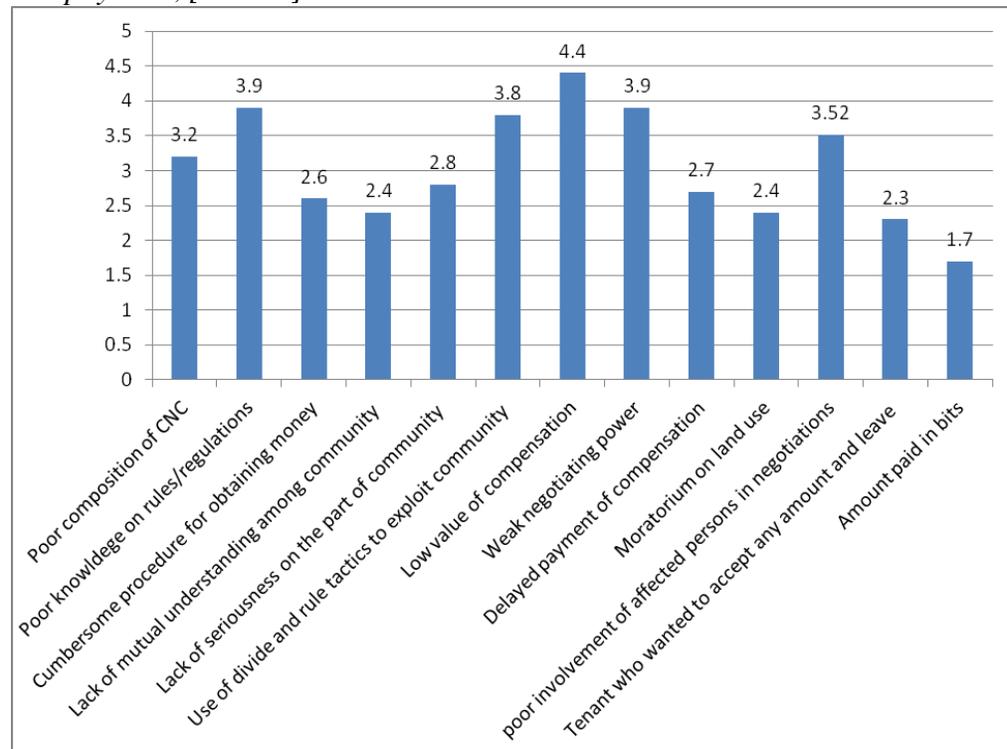
Compensation negotiation and payment

One major issue that is bound to bring peace in any contract negotiation is the strength of the negotiation parties involved in the negotiation. In situations where the parties have equal strength and knowledge on the issues under consideration, there is bound to be outcomes that will be more satisfactory to both parties. Mining companies are required to pay compensation based on the outcome of negotiations between the companies and the local residents. The Minerals and

Mining Regulations 2175, 2012 requires that a negotiation committee is constituted to negotiate with the mines on behalf of the local residents. The Regulation also permits the communities to employ the services of qualified persons to be paid by the mining company since the community

may not have that much expertise in the area of negotiations and valuation. Good as these

Figure 16: Ranking of problems associated with compensation negotiation and payment, [N=582]



Source: Authors survey, 2014

provisions are, one has to be very careful since that person could act in the interest of the mines since he/she is paid by the mines.

Since the strength of negotiations have significant impact on the outcome which could impact on their attitude towards mining sector policies and interventions, the study sought to know whether respondents who have been compensated were satisfied with the compensation negotiation and payment process. Two thirds of the respondents were not satisfied with the compensation negotiation and payment process while 18% of them answered in the affirmative with 15% refusing to take a position.

The compensated respondents who were satisfied with the negotiation and payment process attributed their satisfaction to the swift payments of the compensation, quick process of collecting the money (39%), easy process of collecting the monies (19%), fair compensation amounts (17%) and proper involvement in the negotiation process (10%). Those who were not satisfied with the compensation negotiation and payment process cited reasons such as weak negotiation (64%), low amounts paid as compensation, difficulty and delays in the payment process, poor involvement of affected people.

In order to assess the level to which some keys issues associated with compensation negotiations and payments affect the community, respondents were asked to rank on a scale of 1 to 5 (1- least problem, 5-serious problem) key issues that are normally associated with compensation negotiation and payment.

Results of the ranking indicate that low value of compensation, poor knowledge on rules and regulation, weak negotiating power, use of divide and rule tactics to exploit communities were the main issues that scored the highest point with a score of 4.4, 3.9, 3.9 and 3.8 respectively while the amount being paid in bits recorded the lowest rank of 1.7. Details of the results is presented as figure 16.

Information from the FGD organized for compensated individuals brought out many petty issues that may affect the attitude of communities towards mining sector policies and interventions. Participants argued that the CNC usually included many people who were not directly affected by the mining activity and therefore they were not able to adequately represent their interests. Such people were always interested in cooperating with the mines in exchange for favours such as employment.

Valuation of destroyed crops and other properties belonging to local communities is a major area that needs to be reconsidered and that plays a major role in the attitude of mining communities towards mining sector policies and interventions. Usually, the valuation should be based on values from the Land Valuations Board. Discussions with some key informants suggest that these values have not been revised for the past twenty years so they are very low. Even though the companies do not use these values in the negotiations and in cases where they are used these values are used as the minimum estimate, they provide an opportunity for the companies to have an advantage during the negotiations. The simple argument is that the companies can always argue that they are giving them more than the minimum stipulated by their own government, a situation that enhances their bargaining power. Setting the price at the maximum and allowing

the companies to negotiate downwards would have enhanced the bargaining power of the communities or better still setting a band for the two to operate based on realistic estimates, adjustable on annual basis would have been the best option.

Knowledge and participation in compensation negotiation

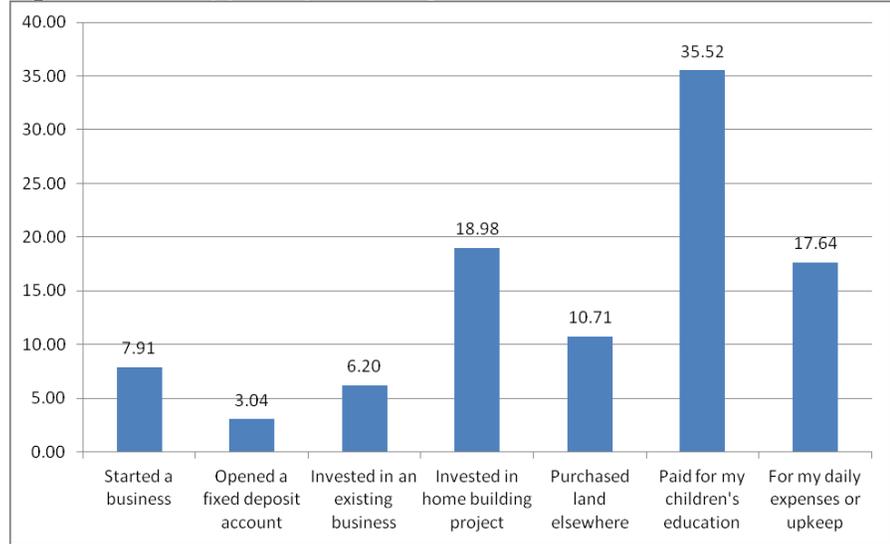
Knowledge on regulations on compensation payment is very important since it permits the parties to know their rights and responsibilities. The study therefore sought to find out the extent of knowledge of the respondents on the regulations of compensation negotiation and payments. Not surprisingly about 16% of compensated respondents claimed to be familiar with the regulations guiding compensation negotiations and payments while the remaining (84%) did not. Further probing of those who claimed to have knowledge on the regulations guiding compensation negotiations to ascertain the veracity of their claim revealed quite interesting results. Forty three per cent explained that lands and crops are to be valued based on size and the number of crops destroyed, 16% stated that affected persons should be compensated based on the affected person's quoted price, 13% said the law provides for owners of properties to be duly informed and negotiations held before the properties are destroyed, 9% claimed the law provides that affected persons receive half the number of houses and rooms destroyed and 4% said affected persons should be given food and allowances for a period after resettlement. Of those who claimed to be familiar with the regulation guiding compensation negotiation and payments, 32% believed the regulation was well applied while 52% held the opposing view.

Overall one can conclude that there is some knowledge on the regulations guiding the compensation negotiation and payment since all the explanations given have got bearing on the regulation. However a comprehensive knowledge is lacking. It is possible that compensation negotiation committee may have more knowledge about the Regulation which may have helped them in their engagements with the mines. However good knowledge of the regulation by the affected people may also help them to contribute meaningfully to the negotiations and to understand the outcomes

We sought also to ascertain the level of knowledge/awareness of respondents on the processes through which compensation negotiation and payments are addressed. About two thirds (68.8%) of the compensated respondents reported of not knowing/being aware of the process, 17% reported of having knowledge of them while the remaining (14.3) did not know if they have knowledge or not. This result implies that there is very little knowledge about the process of compensation. Also, only 24% of compensated respondents were involved in the selection of people to represent them on the CNC while the majority (76%) reported of not being involved. In such a case it is evident that the outcome of the negotiations is likely not to be accepted by the affected people. Furthermore, about 41.3% of compensated respondents claimed that their representatives did not consult them in any way during the negotiation process, 37.8 % reported of being consulted during the negotiations for their views and comments while the remaining (20.9%) were not sure if they were consulted at or not. This result cannot be considered as appropriate since a high proportion of the respondents were not involved in selecting people to represent them.

The minerals and mining regulations (L.I. 2175) section 2 (3) provides that “*the claimant and the holder of the mineral right may appoint a committee to negotiate the amount of compensation...*” Thus, if majority of the participants are reporting of not participating in the negotiations and not being consulted well during the negotiations then one can conclude that there are serious flaws in the negotiations that can affect the attitude of the community in a negative way. This suggests that more should be done to ensure that members of the CNC are chosen based on majority decision and that there are constant interactions between the members and the affected people. These issues were confirmed in the FGD with compensated individuals, but key informant interview with some members of the CNC indicated that the affected people were not very much interested in these issues and in many cases did not attend meetings meant to discuss these issues due to apathy or and the fact that they had other more pressing issues to attend to. They alluded to the fact that they can make a little influence on the negotiations since the mines have already determined what they want to pay.

Figure 17: Uses of funds from compensations [N=522]



Source: Authors' survey, 2014

One major issue that may have impact on the attitude of the communities is the use of the amount obtained from the compensation. The reason is that if the money is put to good use and benefits are reaped from it, their attitude towards the policies and interventions are likely to be positive. However, in situations where they are unable to use the money in a way that may yield some returns, their attitude towards the policies and interventions may not be favourable once the money is exhausted.

Evidently the compensation as earlier discussed are paid mainly on crops and farmland which serves as a source of livelihood for community members. It was expected that community members would invest their compensation packages in income generating ventures for their sustenance. About thirty six per cent of respondents who have received compensation payments used the amount to fund their wards' education while about 18% spent their package on their daily upkeep. Details of the responses is presented as figure 17.

Evidently the manner in which these compensation packages are used will tend to have short term problems for the beneficiaries. The reason is that the majority who invested the money in their wards education and in building projects will reap benefits somehow only in the medium to long term while those who use it for their daily up-keep will spend the amount within a few

months. It is only those who purchase land, started new business or invested in their existing business may be able to have some short term benefits to survive on. However this group of people form only a small percentage. The result is that it is possible for those who have received compensation to form a negative attitude once they have exhausted their money.

One issue that has the propensity to affect the attitude of mining communities is the moratorium placed on economic activities in certain mining areas, especially on farming. Moratorium is a ban on the use of a person's property (land) when compensation has not been paid for the acquisition of lands. The study revealed that about 70% of compensated respondents did not have moratorium put on the use of their lands while 26% confirmed that their lands were placed under moratorium. The remaining did not know if moratorium was put on their lands or not.

Suggestions to Improve Compensation Issues

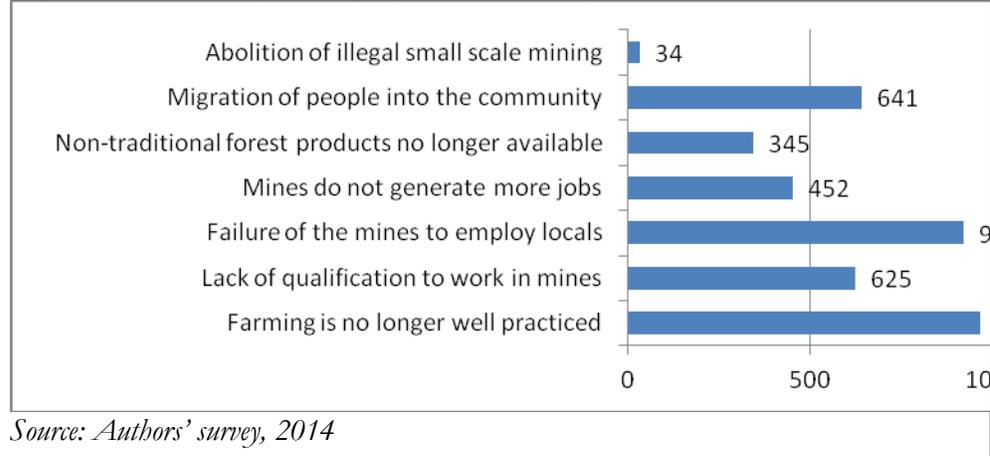
Respondents shared their views on how to make compensation negotiations and payments more meaningful to both communities as well as mining companies. About 37% suggested that more affected persons should be involved throughout the negotiations and payment processes, 25 % suggested that valuation should be realistic and must depend on current values, 9% suggested that communities should be educated on the regulations on compensation negotiation and payment, 8.2% suggested that there should be strong institutions to ensure that policies and regulations regarding compensation payments are effectively carried out while 15 % suggested that the mining companies should be fair, transparent and fulfil their promises. The rest suggested the proper documentation of promises. It is very worrying that only 9% suggested that the communities should be educated on the regulation on compensation negotiations and payments since majority of the respondents (84%) claim that they do not have any knowledge on compensation negotiations and payments. This could imply that although ignorance of the regulations is a problem, the local people do not see it as a problem. It could also mean that the communities are aware of the law but are behaving strategically.

5.4.2 Unemployment in Mining Communities

Unemployment is a major problem in Ghana but in the mining areas one is tempted to think that the situation will be more intense. The reason is that in mining areas which are mainly rural in nature, the most important economic activity is farming and therefore taking their land for mining activities would only result in unemployment, especially in an environment where the system to ensure the shift from farming to other economic activities using media such as ALP are not well developed and implemented. A study by Aragon and Rud (2013) on Ghana noted that increase in mining from the late 1990s to 2005 resulted in a decline in agricultural productivity in mining areas by 40% compared to areas further away from mining communities largely as a result of loss of lands for farming which has implications on employment and poverty as rural poverty in mining areas increased by 18% over the period.

As earlier alluded to, loss of employment was ranked by the respondents as one of the most important problems affecting mining communities. In order to ascertain if mining has contributed to the unemployment situation in the communities, respondents were asked whether the employment situation before the establishment of the mines was better than at present. About 53% of the respondents stated that the employment situation before the establishment of the mines was better relative to the present situation whilst 25% had the opposing view. This results indirectly collaborates with the work of Oxfam America (2009), which found deterioration of living conditions caused mainly by unemployment as one the conflict-igniting problems in mining communities. The remaining (22%) did not know whether the employment situation has improved or deteriorated since the establishment of the mines. This implies that the initial assertion of mining increasing unemployment is confirmed as majority of participants affirmed that mining activity has worsened the employment situation of the local people as a result of the locals loosing their farmlands to the mines.

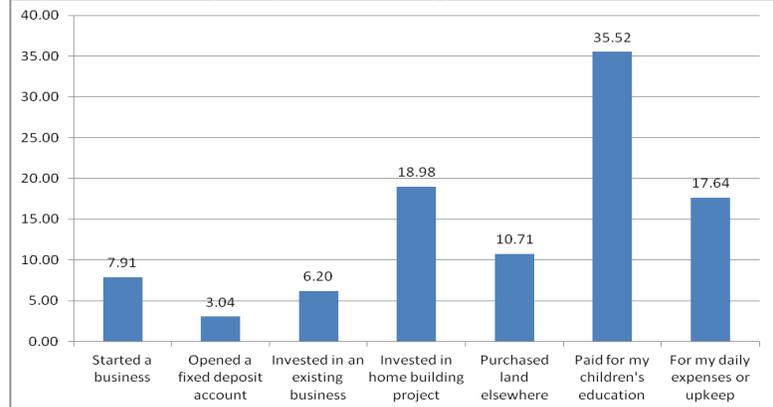
Figure18: Causes of Unemployment in Mining Communities [N=1317]



With regards to the causes of unemployment in the communities, participants mentioned many causes. Key among them include farming no longer a predominant activity (24%) failure of the mines to employ local people (23%), non-availability of traditional forest products (9%), lack of qualification to work in the mines (16%), among others. Details of the results is presented as in figure 18.

Respondents also provided some recommendations on how to make mining more beneficial to the local communities. These include employing more local people, providing more social amenities to facilitate job creation, making ALP more meaningful to the community, ensuring that the mining companies are strictly monitored and regulated to

Figure 19: Frequency of ALP (in percent) [N=110]

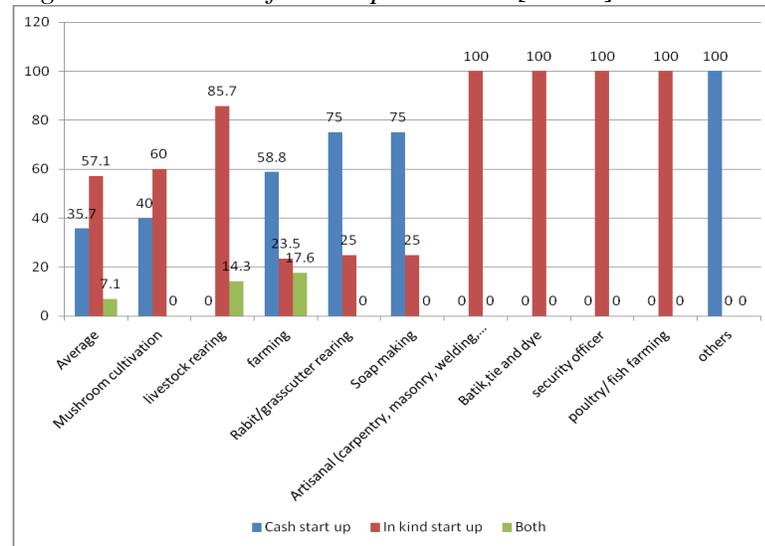


make sure that they fulfil their promises, educating and resourcing the SSM by both government and the LSM to transform, facilitating the payment of adequate compensation by assisting affected persons to bargain well, better involvement of the affected persons in decision making on ALP, adequate public education and actions on benefits and costs of mining to the community, proper reclamation of land, facilitating community unity on issues concerning them.

5.4.3 Alternative Livelihoods Programmes

One activity that is being implemented in mining communities to reduce unemployment and improve the welfare of communities affected by mining is the ALP. ALP usually does not demand normal daily hours of work like formal jobs which requires that individuals spend between 6-8 hours on the job on daily basis and are therefore flexible in addition to improving the incomes and livelihoods of mining communities.

Figure 20: Nature of start-ups in ALPs [N=62]



Source: Authors' survey, 2014

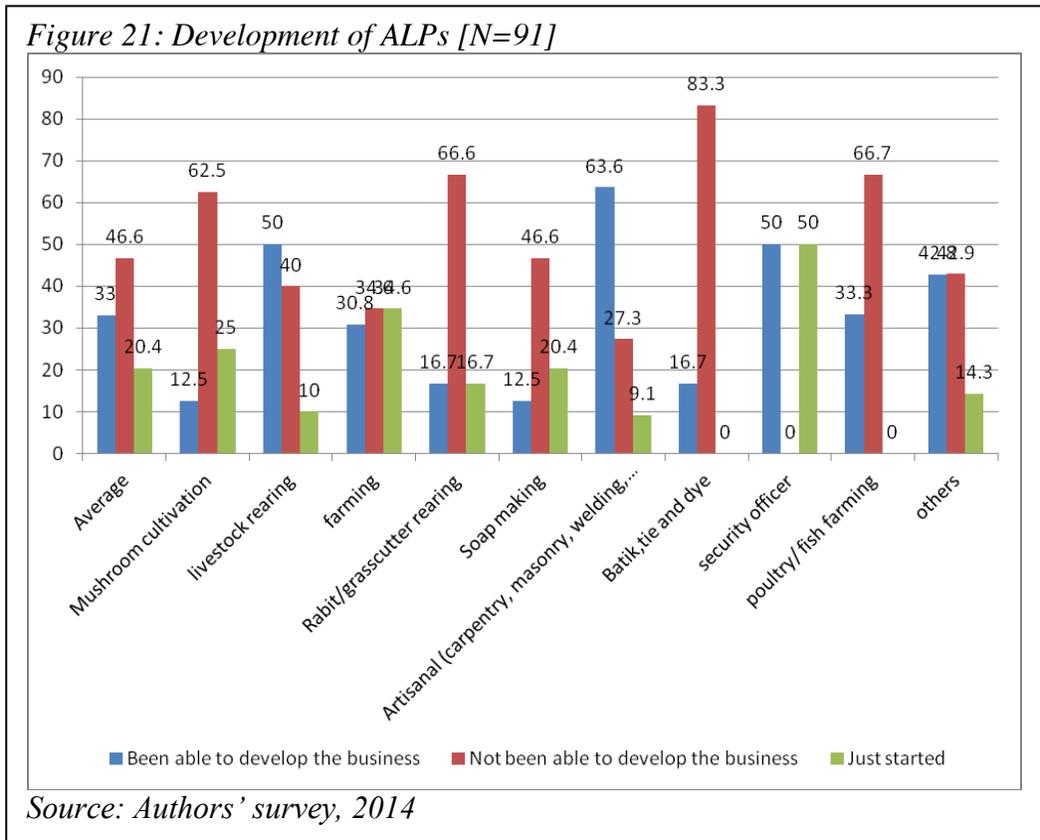
We therefore sought to know if respondents have benefits from such programmes and if such problems have achieved their objectives. Interestingly only about 8% of the respondents (N=111) have benefited from any ALP. An outstanding feature of the ALP is that participants are provided with training as about 85.3% of the beneficiaries of ALP have received some training. All beneficiaries of mushroom cultivation, livestock rearing and rabbit/grasscutter rearing, artisans and security officers had received some training.

Most of the ALP focused on farming followed by Artisanal (carpenters, masons, etc), soap making, etc as indicated in figure 19. For those who have benefited from ALP, about 56% obtained some start-up capital to develop the business while the remaining (44%) reported of not being given any start-up capital. Regarding the nature of the start ups given, it was observed that on average, 35.7% of beneficiaries received cash start-ups only, 57.1% received in kind start ups only while 7.1% received both cash and in-kind start-up.

The following categories of ALPs had only start ups in kind: artisans; batik, tie and dye, security men, poultry/fish farming. These in kind start ups were mostly tools for artisans and inputs such as seedlings and livestock for those engaged in agricultural ALPS. The other categories received start ups in either cash or both.

For those who received cash start-ups, the value ranged between €50 to €800 with an average value of €365. Those into farming received the lowest cash start ups while those into livestock rearing received the highest cash start ups.

Being able to develop the ALP



provided plays an important role on the attitude of mining communities in that, if beneficiaries are able to develop the business it would improve their livelihoods which will have a positive impact on their attitude towards mining sector policies and interventions. We therefore enquired from the beneficiaries of ALP if they have been able to develop their businesses. On average, about 33% had been able to develop their businesses while a greater proportion of 46.6% had not been able to develop their businesses. About a fifth (20.4%) had just started their businesses and therefore were not in a position to respond to the question. The category of ALP beneficiaries that have not been able to develop their businesses well included beneficiaries who were in batik, tie and dye, poultry/fish farming, mushroom cultivation while those who have been able to develop their businesses included artisans, security men and those engaged in livestock rearing (figure 21).

Reasons given for the success in developing the businesses included the presence of large and ready markets, hardwork and commitment, experience, the availability of finance, acquisition of training and the ability to roll back profits into the business while those who could not develop their businesses attributed it to inadequate capital, death of livestock and birds (for those in poultry and animal rearing), dependence on the proceeds from the business for survival, absence of market for the product and failure to complete the training programme.

FGD with beneficiaries of ALP confirmed many of the issues discussed. Participants opined that the ALP is an imposition and therefore the overall interest is not there. According to them, they are being forced to go into a business in which they have never engaged in and the structures to

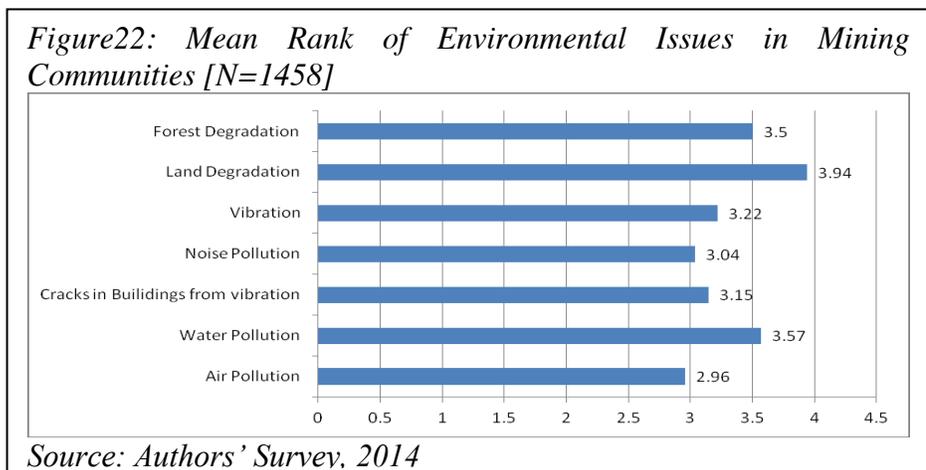
help them get a job or even to develop the value chain is not there. The amount provided as start up was also too small that sometimes one feels that the energy he/she is putting in for that small investment is not worth it. This was angrily expressed by one of the participants in this way:

If the white man new rabbit/livestock rearing and mushroom cultivation were profitable business than mining he would not have left his country to come and mine gold here. We are miners and the activity gives us money. Changing our profession and asking us to rear sheep/rabbit and cultivate mushrooms in which you earn virtually nothing is an insult to this community. Everything is on the white man. Why can't the government look at us and help us to develop our business?

Overall one can conclude that ALPs has not benefited majority of the people and the benefits to those who have gone through the programme is not very encouraging which has not helped them to effectively develop the business. The ALP has also been an imposition and therefore many people are not interested. There are also issues like non-availability of markets and adequate financing facing beneficiaries of ALP.

5.5 Environmental Factors Affecting Attitude

Preliminary discussions with the communities indicated that environmental factors have seriously affected their attitude to the mining companies and made it difficult for them to adhere to the mining policies and interventions. Key environmental



problems mentioned by the communities include air pollution, water pollution, cracks in buildings caused by vibration from explosions, noise pollution, vibration, land degradation and forest degradation.

In order to examine these environmental factors, respondents were asked to rank on a scale 1 to 5 (1 - not a problem and 5 - serious problem), the extent to which these environmental issues are a problem to them as a result of the mining. Figure 22 presents results of the ranking.

From figure 19, it could be seen that amongst the environmental issues in mining communities, land degradation is the most serious problem with a mean rank of 3.94. Water pollution was the second most important environmental issue in mining communities with an average rank of 3.57, followed by forest degradation (3.5), vibration (3.22), cracks in buildings due to vibration (3.15), etc. The least environmental problem was air pollution with an average rank of 2.96. These results are consistent with that of Kitula (2006) which found that land degradation, water

pollution, among others are major problems in some mining areas in Tanzania. In the next sections we elaborate on these environmental problems as it affects the people.

5.5.1 Land Degradation

Mining, more specifically LSM as an economic activity requires large tracts of land, resource intensive and generates high concentrations of waste and effluents. Twerefou (2009) elaborates on activities

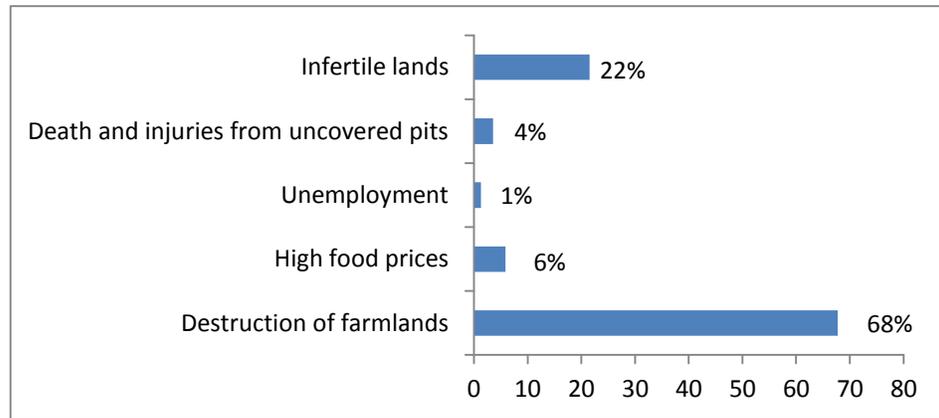
that cause land degradation to include prospecting/exploration activities including the digging of pits and trenches; mine site surface facilities, including mine surface excavations and amenity

buildings; processing plants, storage sheds, dumps and dams, and residential/commercial areas; water and sewage treatment plants; refuse disposal sites; power line and road access ways, among others. Even though these mining companies obtain vast tracts of land, at any particular time they will be working on a small fraction of that land. Information obtained from the MC indicates that about 10,521.30² km² of land has been given as concession to various mining companies. Out of these only about a quarter is used for the actual mining activity. This deprives mining communities from having access to farmlands and in many situations these lands are lying idle, which can be used by communities.

Information from the survey indicates that destruction of farmlands is the most significant effect of land degradation in mining communities. Specifically, about 68% of the respondents stated that land degradation leads to destruction of farmlands, 22% of the respondents stated that land degradation leads to infertile lands as indicated in figure 23, confirming the work of Badasu et al (2001), which found that mining degrades agricultural lands that could have been used for farming but are left unused.

Other effects of land degradation include death and injuries from uncovered pits, which has got indirect impact on unemployment, and high food prices. Evidently, many mining communities live on subsistence basis and are therefore deeply linked to the land. Degradation of the land leads to many environmental problems and deprives them of their livelihood, a situation that can significantly influence their attitude towards mining sector policies and interventions.

Figure 23: Effects of Land Degradation on Mining Communities [N=1088]

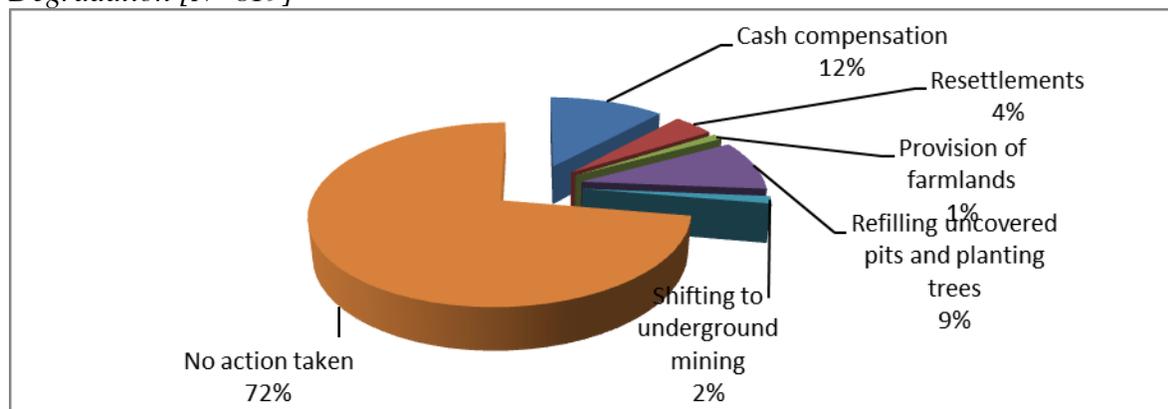


Source: Authors' Survey, 2014

² The above figure may not be accurate since some of the licenses have expired, under the review process and may not be renewed.

As indicated in figure 24, the mining companies are paying cash compensation, resettling communities, providing farmlands, refilling uncovered pits and undertaking afforestation projects to resolve land degradation and scarcity in mining areas. However, majority of the respondents (72%) stated that no action has been taken by the mining companies to resolve the problem of land degradation. Probing during FGD with the communities brought to the fore, concerns of the communities. There are large pits left by the mining companies which pose great danger and health risk to mining communities while large tailing dumps left by the companies are full of chemicals that affect them.

Figure 24: Action taken by the Mining Companies to Resolve the Problem of Land Degradation [N=819]

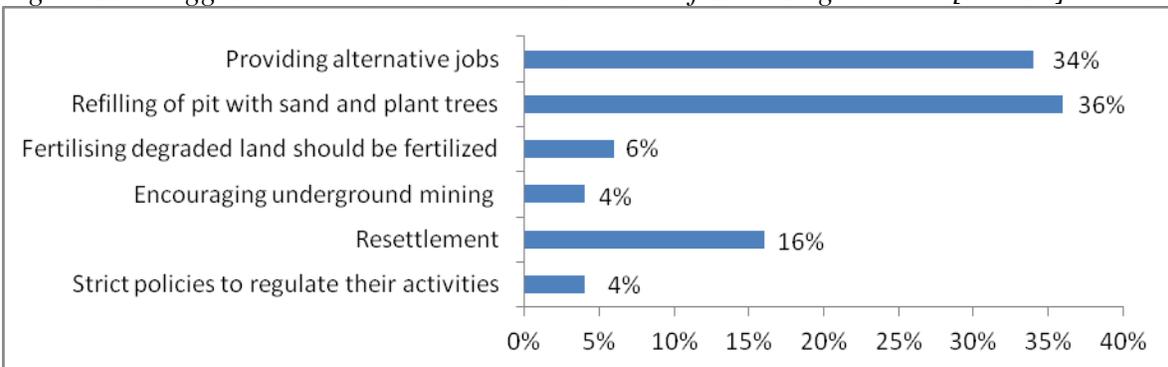


Source: Authors' Survey, 2014

A worrying situation is that many of the mining communities are not satisfied with the actions being undertaken by the companies to resolve the problems associated with land degradation. Specifically, about 91 percent of the respondents were not satisfied with the measures being taken to resolve the land problem.

Solutions proposed by the respondents to curb the issues of land degradation has been provided

Figure 25: Suggested Solution to Curb the Problem of Land Degradation [N=814]



Source: Authors' Survey, 2014

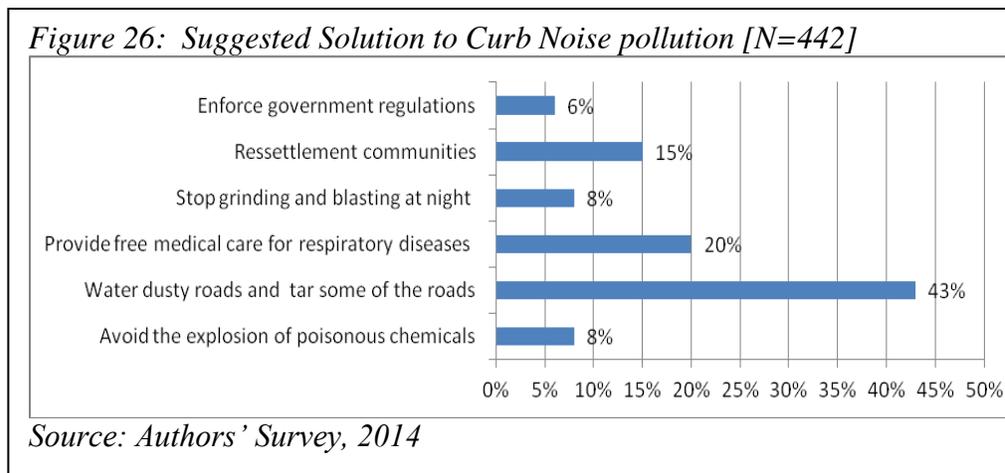
as figure 25. Evidently, one can conclude that some of the proposals made by the respondents

such as refilling of pits and planting of trees, fertilising degraded lands should all have been taken care of if environmental management plans are being implemented strictly.

5.5.2 Noise pollution

Many mining companies generate a lot of noise through blasting, movement of vehicles carting the ore, crushing of the ore and the movement of conveyor belts that transport the ore to the plants. This noise can sometimes be a nuisance to mining communities especially if they are generated at night. In terms of the effect of noise pollution on mining communities, majority of the respondents (53%) reported that noise pollution leads to sleepless nights while 37% reported that it leads to hearing related problems. Ten percent of the respondents stated that noise pollution leads to fear and fright. These findings are consistent with Tsidzi and Adofo (1993), which found that noise pollution in mining communities affect human activities such as speech, sleep and sense of hearing.

In terms of the actions taken by the mining companies to resolve the problem of noise pollution, about 92% of the respondents stated that no action has been taken by the company to resolve the



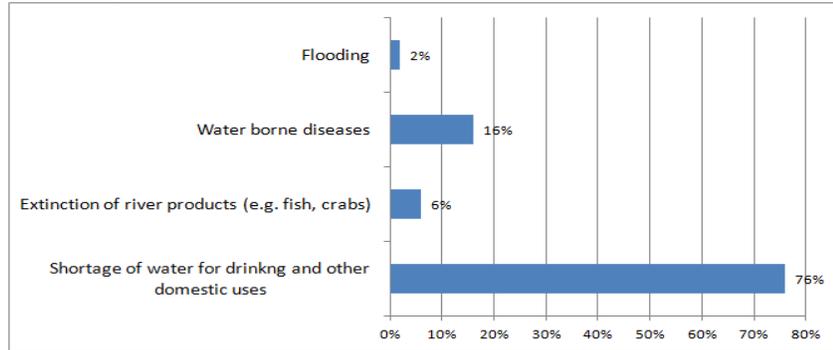
problem of noise pollution while 5% stated that the mining companies reduced the noise by using sophisticated machines (see figure 26). Others (3%) include, informing the communities before blasting and moving far from the communities to undertake their activities. In general over 90 % of the respondents were not satisfied with the measures being implemented by the companies to curb noise pollution. Measures proposed by respondents to curb noise pollution in mining communities, has been presented as figure 26.

5.5.3 Water pollution

Surface mining requires the use of water for many activities. The used water albeit goes back to the environment in a polluted form. In some mining companies, rivers in the concessions are dammed to provide the water required for the production activities, depriving inhabitants downstream of the use of water from the river not only for household activities but also the direct benefits that the river provides like fish. Issues like water shortage, water pollution and the reduction of the resource that the water bodies provide are therefore serious problems for mining communities.

The respondents confirmed this with majority (76%) of them reporting that pollution of water bodies by mining activities leads to shortage of water for drinking and other domestic uses while 16% stated that it leads to water borne-diseases. Others include the extinction of water resources such as fish, crabs and flooding.

Figure 27: Impact of Water Pollution on Mining Communities [N=790]



Source: Authors' Survey, 2014

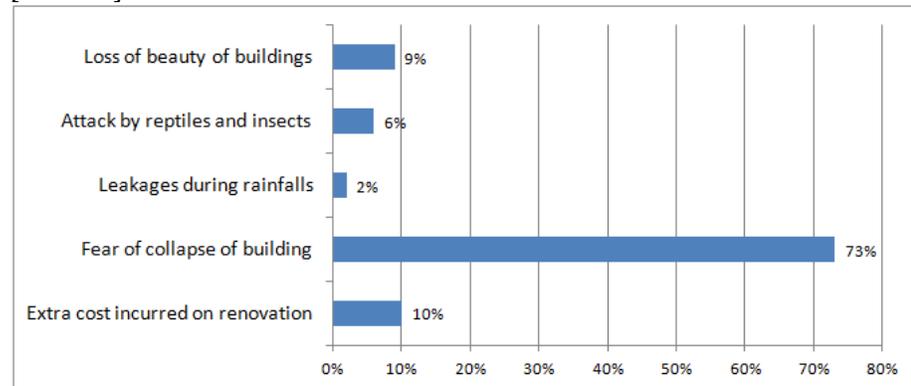
Unlike the other environmental problems, information from the respondents suggests that the mining companies are doing more to curb the problem of water shortage and to some extent water pollution in mining communities. Majority (63%) of the respondents stated that the mining companies have provided boreholes and pipe borne water in order to resolve the problem of water scarcity even though about 37% of the respondents stated that no action has been taken by them to resolve the problem of water pollution.

Inspite of these efforts about 70 percent of the respondents were not satisfied with the solutions being provided to resolve the problem of water pollution and scarcity. The non satisfaction of communities with the solution to the water problem seems to be confirmed as about 80 percent of the respondents recommended the provision of water to curb the problem. (see figure 28).

5.5.4 Cracks in buildings caused by vibration from blasting

One activity of many mining companies is the use of explosives to blast the ore in which the gold is found. Some of the vibrations are so high that they can affect the communities by creating cracks in their buildings aside the noise that they generate. These cracks have some

Figure 29: Effects of Vibration and Cracks on Mining Communities [N=384]



Source: Authors' Survey, 2014

impact on the communities. As indicated in figure 26, about 73 percent of the respondents who

answered this question were afraid of their buildings collapsing as a result of the vibrations, 10% incurred extra cost to renovate their buildings, 9% reported of their building defacing while about 8 percent were attacked by rodents or had their buildings leaking during rainfall (see figure 28). Similar observations has been made by Ando (2002) who argued that noise disturbance and vibration lead to cracks in buildings due to blasting of rocks in mining communities.

With regards to the actions that the mining companies undertake to resolve the problem of cracks in buildings caused by vibrations from blasting, one can conclude that the communities are not happy as majority (67%) of the respondents who answered this question stated that no action has been taken. Only 23% and 10 percent of the respondents reported that the mining companies brought masons to patch the cracks and were provided with cement or money to buy bags to undertake the patching respectively. Overall about 86 % of the respondents were not satisfied with the actions taken to resolve the problems associated with cracks in buildings caused by vibrations from blasting.

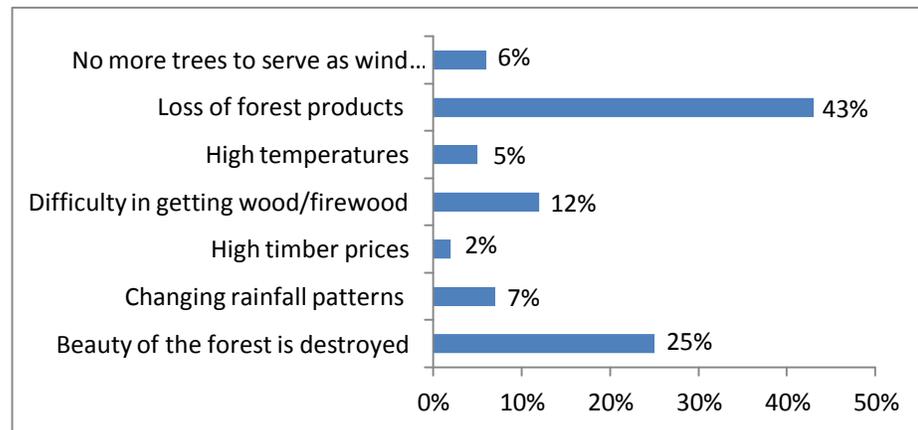
During FGD, communities were much worried about the processes they go through to be able to get the companies address their issues. They claimed that it takes them a lot of time for the companies to assess the cost of the damage and even when the damage has been assessed, undertaking the necessary action to ameliorate the problem is also another issue. In certain situations they have to battle the companies before the problem is solved. One has to observe that the impact of the cracks on the communities is real and could lead to other problems such as being attacked by rodents. The question is that in the event of such a thing happening, will the mining company be prepared to address it as their responsibility or leave it to the affected person?

Suggestions made to resolve the problem associated with blasting included stopping the blasting activity and providing cement to repair cracked and damaged buildings (68%), moving the blasting activities far from settlements (11 %), resettling the communities (18%) and strictly implementing policies on blasting if there are any (3%).

5.5.5 Forest destruction

Minerals in Ghana are mainly found in the rainforest zones (Western, Brong Ahafo and the Ashanti regions) where forests abound. Evidently many mining communities depend on these forests for their livelihoods and therefore

Figure 30: Effects of Forest destruction on Mining Communities [N=433]



degradation of forests reduces the natural resources on which their livelihoods depend. Specifically, in addition to providing direct benefits such as bushmeat and medicinal resources, forests also provide indirect benefits such as microclimate, wind shield, among others. Mining in forest zones reduces these direct and indirect benefits that are enjoyed by communities. This was confirmed in the survey as 43% of respondents reported that mining has resulted in the loss of forest products such as bushmeat, mushrooms, medicinal herbs; 25 % reported of the destruction of the scenic beauty; 12% reported of the difficulty of getting firewood, among others. Details of the results is presented as figure 29.

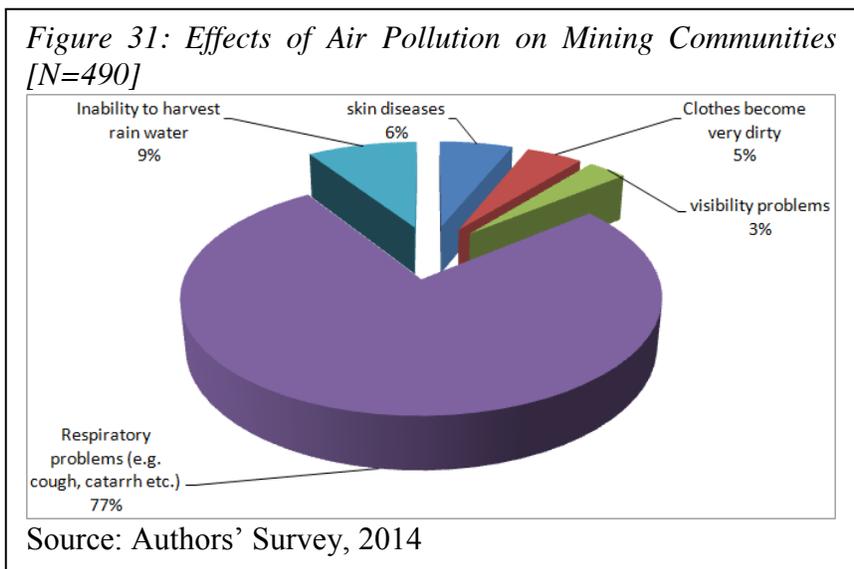
The issue of mining activities depriving mining communities’ access to non traditional forest products was argued forcefully by the communities during the FGD. Participants alluded to the fact that NTFP like collection of snail, mushrooms, among others, provided them with significant income and source of protein during the rainy season but all these can no longer be found with the operations of the mining activities as alluded to by one of the participants.

Before these mines became operational, bushmeat, snails, mushrooms, etc. were in abundance in this area and we could go out in the morning to collect them. In addition, to selling some for income we also prepared soup with them something that our great grandfathers did which helped them in diverse ways. Today we cannot find them again because of the mining activities. In areas where they are available, we are not allowed to pick them. All these things are not even taken into consideration in negotiations.

With regards to what is being done to reduce forest degradation caused by mining companies, majority of the respondents (78%) were of the view that no action is being taken by the companies to resolve the problem of forest degradation while the remaining (22%) held the opposing view. Suggested solutions to curb the problem of destruction included the implementation of re-afforestation programmes (73%); strict enforcement of government regulation (16%) and asking the mining companies to stop working in forest zones (11%)

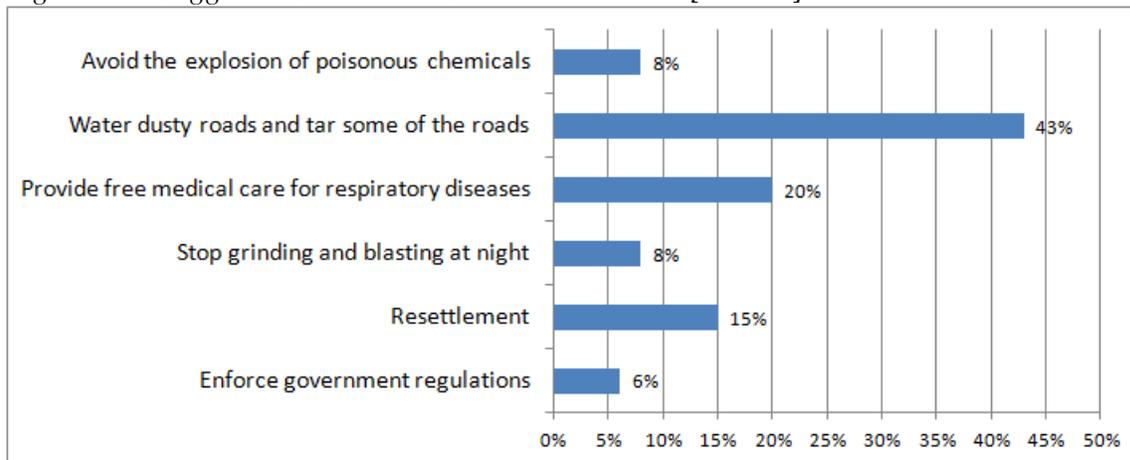
5.5.6 Air pollution

Transportation of the ore to the mine sites, pouring of tailings at tailing dumps, etc by mining companies leads to air pollution which has some health implications and other consequences. Our survey confirmed this as 77% of the respondents who answered this question reported that air pollution has led to respiratory problems such as cough and catarrh in the area. Nine percent of the respondents



reported that air pollution results in their inability to harvest rain water, 6% reported that it causes skin diseases, 5 % reported of their cloths becoming dirty and 3 % reporting of visibility problems.

Figure 32: Suggested Solution to Curb Air Pollution [N=382]



Source: Authors' Survey, 2014

The respondents also alluded to the fact that very little action is being taken by the mining companies to resolve the problem of air pollution as majority of them (76%) reported that no action has been taken to resolve the problem of air pollution. Nineteen percent reported that the mining companies sometimes water the road, 1 percent reported of the mining companies educating them not to drink rainwater; 2 % reported of the company contracting medical teams to screen and diagnose diseases while 1 percent reported that the mining companies have procured equipment to trap the dust. Overall, the communities were not satisfied with the actions being undertaken to reduce air pollution as about 90 percent reported of not being satisfied with the solutions provided.

In order to curb the problem of air pollution in mining communities, majority of the respondents (43%) suggested that they should water dusty roads constantly and tar some roads while 20 % reported that free medical care should be provided for respiratory diseases. Details of the results are presented as figure 29.

5.6 Small Scale Mining

The importance of mining, including SSM in driving inclusive growth and poverty reduction has been highlighted by many including Asante (2003), ICMM (2007) and Aubynn (2009). The government of Ghana recognising this potential, passed the Small-Scale Gold Mining Law in 1989 (PNDCL 218) that required SSM to register their operations and be legalised. Unfortunately, many SSMs are not registered, operating as informal entities, largely not compliant with any law, disorganised and pose considerable health, safety and environmental risks to Ghanaians.

Box 3: Types of SSM

Traditional - The mining business, more specifically gold and other precious metals has been passed on from one generation to the other in an **area** together with the skills and to a sizeable number of family members and therefore it is part of their traditional livelihoods. In such areas mining is the main source of income.

Seasonal – mining is a secondary economic activity which is undertaken during the lean agricultural periods and therefore follows the agricultural seasons. It enables participants to ensure income security and usually involves migrants of individual family members who leave their agricultural lands to seek mineral wealth.

Permanent co-habitation - Involves situations in which SSM, usually from nearby communities create permanent habitats close to LSM working in the tailings or downstream of the larger operations and develop permanent relations with the LSM.

Shock - These are SSM Shock operators who have experienced some sort of economic collapse, drought, conflict, unexpected commercial mine closure, geographic or other shocks and are compelled out of need to derive a new income to survive

Influx - This occurs when new mineral areas are discovered and the mineral type lends itself to small-scale excavation, transport and sale which leads to the sudden influx of thousands of individual miners in a short period who over time could merge and cohabit.

Source : Gyan-Baffour (2003)

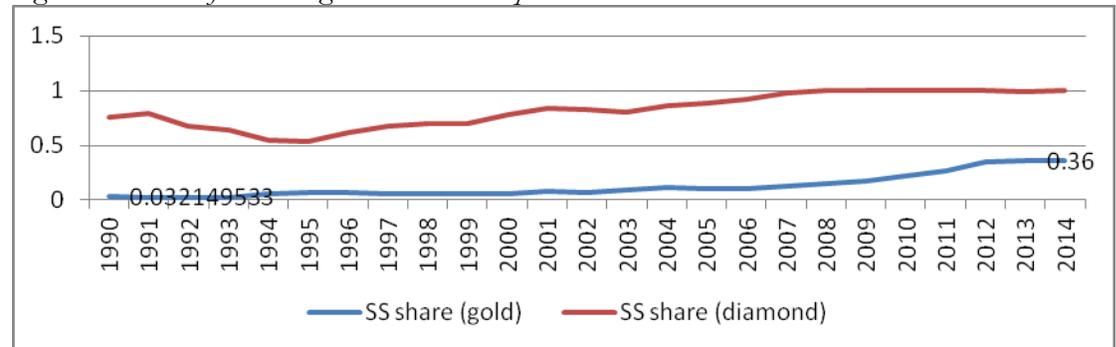
In Ghana two types of SSM can be identified- officially registered SSM and the illegal SSM popularly known as galamsey³, though they are all classified as one in many situations. Even though information on the size

of illegal SSM is readily not available, guestimates by the MC and the PMMC indicate that less than 30% of SSM are registered and the sector currently employs about a million Ghanaians. This implies that majority of SSM are operating illegally and that SSM can largely be associated with galamsey. Gyan-Baffour (2003) elaborates on five main types of SSM which has been summarised in Box 3.

Information from the MC indicates that out of the 10,521.30 km² of land under various concessions⁴, only 1.72 percent has been allocated to SSM.

Even though the amount of land allocated to SSM is not that large compared to that of the LSM, their

Figure 33: Share of SSM in gold and diamond production



Source: MC

³ means ‘gather them and sell’

⁴ These include Mining Leases, Prospecting License, Reconnaissance License and Small-Scale License

production and direct and indirect employment creation is relatively significant and has increased over the years. Since the implementation of the reforms in the 1990s majority of diamond obtained is produced by SSM while gold production has increased considerably. Specifically, while the share of small scale diamond production in total diamond production was about 76% in 1990 and increased to about 99 % in 2014, that of gold production which was about 3% in 1990 increased to about 36 % in 2014. With the current abysmal support of the sector and the resulting outcomes, one can conclude that with the right policies, SSM can be developed into a vibrant industry to benefit Ghanaians.

5.6.1 Social and Environmental Problems of SSM

The contribution of SSM to socio-economic development as well as the social and environmental problems that they generate has well been documented by many authors in the literature as discussed in section 3.

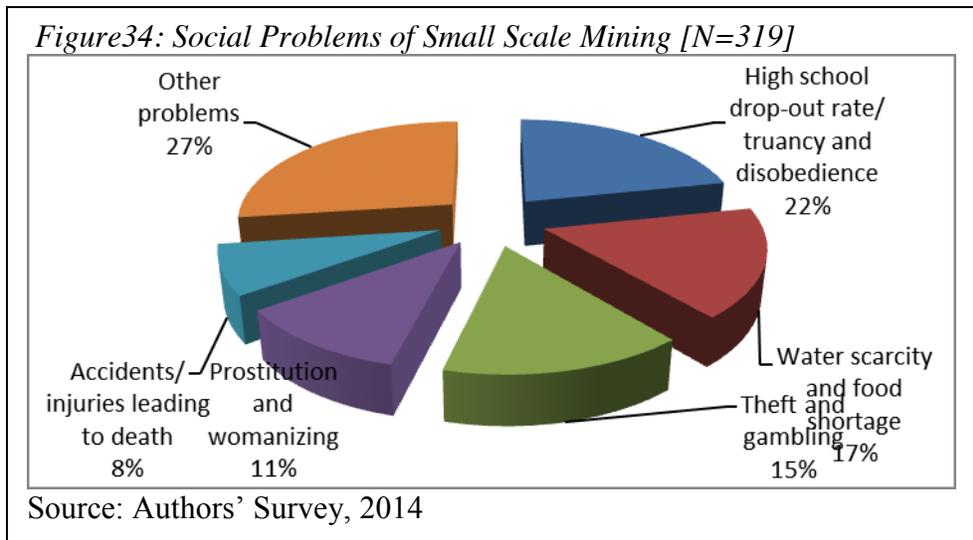


In order to social and may affect policies and questions about that of their challenges respondents posing specific and their the 319



ascertain respondents' view about the environmental impact of SSM which communities' attitude towards mining interventions, we sought to ask them how SSM impacts on their lives and families. In spite of the many posed by SSM, majority of the were of the opinion that SSM was not social problems to the respondents families. Specifically, about 61.3% of respondents reported that SSM does not pose any specific social problems to them and their families while 33.5% of them responded in the affirmative. The remaining (5.2%) however did not know whether SSM pose any specific social problems to them or their families. The reason for this occurrence could be that many of them possibly may be benefitting directly or indirectly from the SSM and may not want to see them as posing social problems to the community. Also, SSM provides employment for the people which helps them to improve their livelihoods.

For those who responded in the affirmative, 22% were of the opinion that SSM causes high rate of school drop-out/ truancy and disobedience, 17 % reported of water scarcity and food shortage, 15 % reported of theft and gambling as presented in figure33. The other social problems included smoking, alcoholism, armed robbery, high prevalence of teenage pregnancy, prevalence of

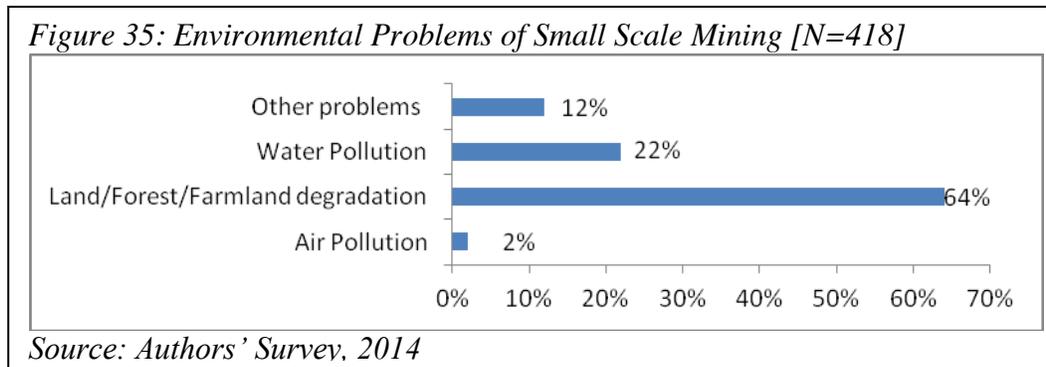


malaria and other diseases, destruction of property/farmlands and conflicts. This is consistent with Owusu and Dwomoh (2012), who found that illegal SSM activities have negative impact on the youth in terms of high

rate of student turnover, increase in teenage pregnancy, disrespect towards the elderly and engaging in undesirable behaviour such as engaging in narcotics.

The situation seems a little different with regards to the environmental impacts of SSM as a slight majority (51.9) of the 419 respondents reported that SSM generates specific environmental problems whereas 42.3% were of the opposing view. The remaining (5.8%) did not know whether SSM generates environmental problems or not.

For those who responded in the affirmative, about 64% of them reported that SSM causes



land/forest/farmland degradation; 22% stated that it causes water pollution and 12% stated that the activities of SSM lead to other problems such as soil erosion, vibration and noise pollution. Details are presented as figure 34. This results are similar to the findings of Hilson (2002) who found that there has been increased environmental complications such as mercury pollution and land degradation in small-scale gold mining areas of Ghana.



The environmental and social problems discussed above were confirmed in many of the FGD where participants listed the social and environmental problems of SSM to include:

- Causing environmental degradation
 - Lacking the requisite job skills/knowledge,
 - Creating conflict,
 - Not contributing to the development of the community
 - Not being registered and regulated
 - Lacking government support,
 - Causing health related problems
- Not paying taxes to the government
 - Causing death
 - Leading to school drop-out and social vices

This attributes conform to many of the characteristics of SSM highlighted by Hentschel et al (2002).

5.6.2 Income, poverty and inequality amongst SSM and Non-SSM Workers

In order to ascertain if SSM provides high incomes and helps to improve the socio economic conditions of the respondents compared to those who are not in SSM, we investigated the income levels, poverty and inequality among these two groups. The average income of workers in SSM was about ₦587.52 and higher than those who were not in SSM -₦459.06. This supports the fact that the welfare of SS miners could be higher than those who were not in SSM and therefore getting them out of business will at least require incomes commensurate with what they are obtaining currently. Not surprisingly, many of the respondents also knew that income from SSM is higher than those in non-SSM.



Specifically, about 73.8 % of the respondents reported that income from SSM is better than that from other informal sector jobs like farming or fishing whilst 20.4% were of the opposing view.

Similar observation was made by Cheabu and Korang (2014) on SSM activities in the West Gonja of the Northern region of Ghana. The remaining (5.8%) did not know if income from SSM is better than that from other informal jobs or not. In a weak regulatory environment, SSM workers who are economically rational agents and looking at their short term gains will continue their activities unless clear strategies are put in place to support their transformation to the formal sector.

It is also imperative to note that high income from SSM helps to improve the local economy, an argument that was largely supported during the FGD and vividly expressed by one of the participants:

“I am a trader in this community. My business booms because of the SSM activity. Although I do not benefit directly from their activities, the SSM workers buy a lot of my goods. I saw this vividly when the soldiers came after them. For a month my sales reduced significantly. My business nearly collapsed and I was really scared.”

The high incomes from SSM collaborate with poverty incidence among the two groups. Poverty incidence⁵ amongst SSM workers was around 15.03% and lower than that of non-SSM workers (18.50%). Similarly, extreme poverty incidence was lower among SSM workers (6.54%) compared to the non-SSM workers - 8.55%. This could imply that SSM contributes to poverty reduction in mining communities as elaborated in the GSGDA I and II. In terms of income inequality as depicted in table 9, income distribution among SSM work is quite high than those in non SSM. Specifically, while SSM workers in the highest quintile have about 61 % of

Table 9: Income Distribution amongst SSM and Non-SSM Workers.
[N for SSM=62 and N for Non-SSM=117]

Income	SSM Workers		Non-SSM Workers	
	Income (GH¢)	Percent (%)	Income	Percent
1st	5,254	2.45	8,296	3.29
2nd	14,520	6.76	20,860	8.26
3rd	24,160	11.25	30,665	12.14
4th	40,260	18.75	52,600	20.83
5th	130,500	60.78	140,100	55.48
Total	214,694	100	252,521	100

Source: Authors' survey

⁵ We use an upper poverty line of ₵1,314 and a lower poverty line of ₵792.05 as used in GLSS 6 Report

the total incomes of all SSM workers, those in the lowest two quintiles have only 9.21% of the total income. The corresponding figures for non-SSM workers were 55.5 and 11.55%.

Activities Undertaken by Small Scale Miners

In order to know the activities in the SSM to enable the right actions to be directed at those activities, we sought to know all the activities involved in SSM as well as the number of people who undertake those activities. Evidently, the main activities undertaken by the SSM include washing of gravels (16.4%), carrying load (20.7%), digging and chiselling (33.3%). Details of the other activities which are to some extent more skilled has been presented as table 10.

Table 10: Activities Undertaken by SS Miners [N=...]

Activities in SSM	Frequency	Percent
Washing of gravels	53	16.36
Carrying of loads	67	20.68
Digging/chiselling	108	33.34
Secretary	5	1.54
Purchasing land for operations	5	1.54
Buyer of Gold	16	4.94
Mechanic	3	0.93
Electrician	2	0.62
Excavator Operator/Driver	23	7.10
Messenger	5	1.54
Administrator/Supervisor	21	6.48
Laboratory Technician	11	3.40
Security	5	1.54

Source: Authors' Survey, 2014

5.6.3 Illegal Small Scale Mining

Illegal SSM, popularly known as “*galamsey*” as earlier discussed has become common in Ghana’s mining sector. Our study indicated that out of 430 people, who have worked or are working in SSM, 59.10% of them have worked or are working in an illegal/unlicensed SSM company whilst the remaining 27.2% have worked or are working with legal SSM. The remaining (13.7%) did not know if the company they worked for or are working for are legal or not. This compares favourably with guestimates by Aubynn (2010) that less than 30% of SSM have been registered.

At a FGD with the SSM it was learnt that they do have some knowledge about the licensing procedures since many of them have had engagement with the MC and have listened to advocacy programmes on radio on the issues but detailed information on the issues is quite lacking. Specifically, they confirmed that the procedure involves, undertaking land survey, registering the land and obtaining operating license. However they could not explain in detail the procedure for obtaining a license. They were also aware about the need not to pollute the environment but what will actually constitute environmental pollution or the standard for environmental compliance was not very clear to them. Some of them confirmed attending some training on the management of chemicals and the SSM in general but were quick to add that those training were sometimes not tailored to their needs.

With regards to the formalization of their businesses, many of the SSM were a little reluctant and sited problems that confront them as well as hindering their quest to register to include:

- Non availability of economically-viable land with the resource since the LSM has access to all the gold-rich lands.
- High cost of registration.
- Undue delay and cumbersome registration processes that takes place at the head office of the MC.
- Slow response of the MC to their registration applications.
- The attitude of MC and other authorities who see SSM as only a problem.
- Political interference in the allocation of blocked-out areas for SSM.
- Harassment of legal SSM by security personnel.
- Influx of Chinese nationals taking over reconnaissance and prospecting mining concessions with the connivance of Ghanaian concession owners.
- Traditional authorities allocating to themselves, the power of allocating land for illegal mining activities.

Many of these issues such as the long and twining registration process has been identified as a major disincentive for the formalization of SSM by Hilson and Potter (2003) and Aubynn (2010).

In terms of risks/hazards faced by illegal small scale miners, the most frequent risks/hazards are death, injuries, body pains, cave-ins and to some extent malaria whilst the least frequent risks are fire outbreaks

With regards to taking protective measures to guard against the risks/hazards, the SS miners are on the average not doing badly as some measures are being taken to resolve the problem.

Table 11: Risks/Hazards Faced by Small Scale Miners [N=...]

	Risks/Hazards Rate		Protection Rate	
	Frequency	Percent	Frequency	Percent
Heart problems	9	2.45	4	44.44
Noise/ Vibration	2	0.54	0	0.00
Body pains	37	10.08	18	48.65
Death	138	37.60	84	60.87
Foot rot/Swollen palm	4	1.09	2	66.67
Skin rashes/body itching	8	2.18	4	50.00
Fatigue	7	1.91	3	42.86
Malaria	10	2.72	3	30.00
Armed robbery	3	0.82	2	66.67
Injury	131	35.69	73	55.73
Fights	3	0.82	2	66.67
Fire Outbreak	2	0.54	2	100.00
Cave-ins	13	3.54	7	53.85
Total	367	100	204	55.59

Source: Authors' Survey, 2014

A notable observation is that majority of illegal SSM workers are not compensated by their employers when they incur risks/hazards. Specifically, about 58.2% of the illegal? respondents reported of not being compensated by their employers for the risks while 41.8% are compensated for the risk they face. This could be an indication that many illegal small scale miners work at their own risk without compensation.

Respondents, who are working or have worked in a SSM, were asked whether they were engaged in another occupation before switching to their current job. About 66% of them stated that they were engaged in another occupation before switching to SSM whilst the remaining were not. For those who were working currently in SSM or had previously worked in other jobs,

about 62.2% reported that working in SSM earns them more income than their previous jobs while the remaining (37.8%) were of the opposing view. Considering the benefits from working in SSM such as income and employment and the social and environment problems of SSM, about 60.1% of the SS operators reported of their willingness to work in the sector while the remaining (39.9%) were not. This finding indicates that SS miners are quite confident with their job and will continue unless more effort is directed at helping them to transform.

In order to ascertain the willingness of SSM workers to move from their current risky job to a less risky one, they were asked if they would prefer an alternative job in the informal sector that is less risky and commensurate with their educational status. About 83.0 % of the SSM workers would prefer to move out of the sector while 12.8 % of them would not. The remaining (4.2%) did not know if they would prefer an alternative job that is less risky and commensurate with their educational status. This could imply that majority of local people are into illegal mining because of lack of alternative source of employment and therefore the provision of alternative employment commensurate with their educational status and possibly current income would help solve the problem.

5.6.4 Factors Influencing Participation in Illegal SSM Activities

Several household, economic and environmental factors may account for the participation of individuals in illegal SSM. In order to identify these factors that influence participation in illegal SSM activities which will enable us to recommend policies to curtail their activities in mining communities, we estimate a logit model. The dependent variable is participation in illegal mining, which is one (1) when the individual is working or has worked for SSM that is not duly licensed by the MC and zero (0) if otherwise. The explanatory variables were community and individual characteristics as indicated in table 12.

Table 12: Logistic Regression of Factors Influencing Participation in Illegal SSM

<u>Depend. Variable: Participation in illegal SSM Activities</u>				
<u>Variable</u>	<u>Marginal Effects</u>	<u>Z</u>	<u>Confidence Interval</u>	
Community Characteristics				
<i>Economic:</i> Loss of Land for farming	0.009	0.39	-0.038	0.057
Loss of employment	0.034	1.48	-0.011	0.079
Loss of livelihood	0.074***	3.37	0.031	0.117
<i>Environmental:</i> Forest Degradation	0.005	0.22	-0.039	0.049
Land Degradation	0.021	0.84	-0.028	0.070
Water pollution	-0.051**	-2.31	-0.094	-0.008
Individual Characteristics				
Log of Age	-0.107***	-4.81	-0.151	-0.064
Gender –Male	0.144***	5.8	0.095	0.192
Basic Education	0.027	0.9	-0.031	0.084
Secondary Education	0.055	1.3	-0.028	0.138
Tertiary Education	-0.103***	-3.45	-0.161	-0.044
Household head	0.064***	2.79	0.019	0.108
Unemployed	0.013	0.24	-0.091	0.116
Log of Income	-0.004	-1.15	-0.011	0.003
Number of obs	1457			
LR chi2(14)	122.64			
Prob > chi2	0.000			

*** sig at 1 percent significant levels

As indicated in table 12 community variables that affected participation in illegal SSM were loss of livelihoods and water pollution, while the individual level factors were age, gender, tertiary education and the household head.

More specifically, in terms of the influence of community characteristics, loss of livelihood possibly due to mining activities by large scale miners increases the chance of participating in illegal SSM activities by 7.4% *ceteris paribus*. These findings could imply that economic problems in mining communities increase the chance of participating in illegal SSM activities.. Furthermore, when water pollution becomes a problem due to mining activities, it reduces the chance of participating in illegal SSM activities by 5.1% *ceteris paribus*. This could be due to the fact that when water bodies are polluted the problem of water shortage becomes so acute that residents are not prepared to allow the SSM to engage in their activities which further pollutes the water.

With regards to individual characteristics, a 1% increase in age reduces the chance of participating in illegal SSM activities by 10.7%. This could be attributed to the fact that working in illegal SSM requires a lot of physical strength and as the individual ages, it reduces his chance of participation. In terms of gender, the study finds that males are more likely to participate in illegal SSM than females. This may be due to the fact that most illegal SSM activities require a lot of physical strength and males naturally possess that strength more than females.

On education, the study finds that an individual with tertiary education is less likely to participate in illegal SSM activities than an individual with no education. This was expected because in mining communities, the locals with high level of education have higher chances of being employed by the large scale mines more than their uneducated counterparts. Therefore, the uneducated, in an attempt to survive economically, engage in illegal SSM activities. Furthermore, being a household head increases the chance of participating in illegal SSM activities by 6.4% more than being a household member. This may be due to the fact that household heads have more financial burden than household members.

One observation is that even though illegal SSM workers are aware that the companies they are working for are illegal, they feel safe in their work in terms of being arrested and prosecuted by authorities. Out of a total number of 242 respondents, who are working or have worked for illegal SSM companies about 147 of them (60.74%) reported that they feel/felt safe working for the illegal SSM company while the remaining 95 (39.2%) do/did not feel safe. This brings to the fore the weak regulatory and enforcement systems in place. Indeed this was confirmed in the FGD as participants agreed that the illegal SS miners have the support of the authorities and vividly expressed by a key informant:

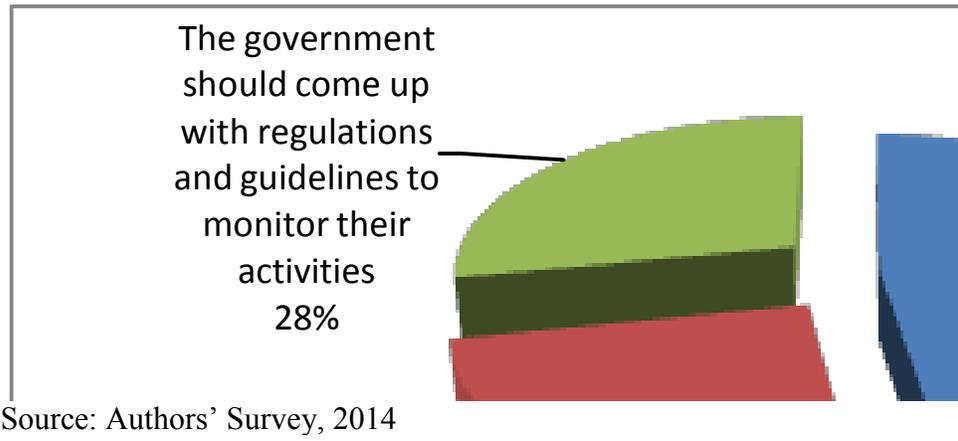
Many people in government are behind the SS. If I mention the names of people who are investing in the SSM you will be amazed. In many cases we get information about operations before the police come so we are not scared about what we are doing.

Making SSM more meaningful for the economy

In order to achieve the study’s objective of how SSM can be made more meaningful for the economy, respondents were asked to state what can be done to make SSM more meaningful to the economy

As shown in figure 36, 48 % of the respondents would want the activities of SSM to be licensed and legalised, 28% would want government to provide simplified regulations for the SSM while

Figure 36: Measures To Make SSM More Meaningful for the Economy [N=791]

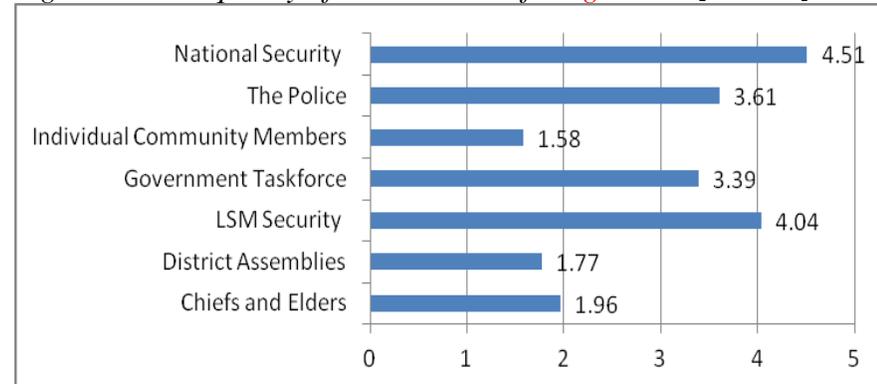


Source: Authors’ Survey, 2014

24% would like some facilitation for the SSM to have modern technology if they are to contribute more meaningfully to the economy. These recommendations are similar to Hilson and Pardie (2007), who recommended that introducing simple, cost-effective techniques for the reduction of mercury emissions and effecting government-sponsored participatory training exercises as medium for communicating information about appropriate technologies and the environment are appropriate strategies for addressing mercury pollution in the artisanal and small-scale gold mining sector.

Since many SSMs are not registered, one finds it very difficult to know the clear-cut institutional arrangement that exist to control their activities. In order to know effectiveness of efforts being made by various regulatory and enforcement agencies to control the activities of SSM, respondents were asked to rate on a scale of 1-5 (1 means less effort/ frequent, 5 more effort/frequent) the frequency/efforts of various regulatory and enforcement agencies to control their activities in the past 5 years.

Figure 37: Frequency of Disturbance of Illegal SSM [N=324]



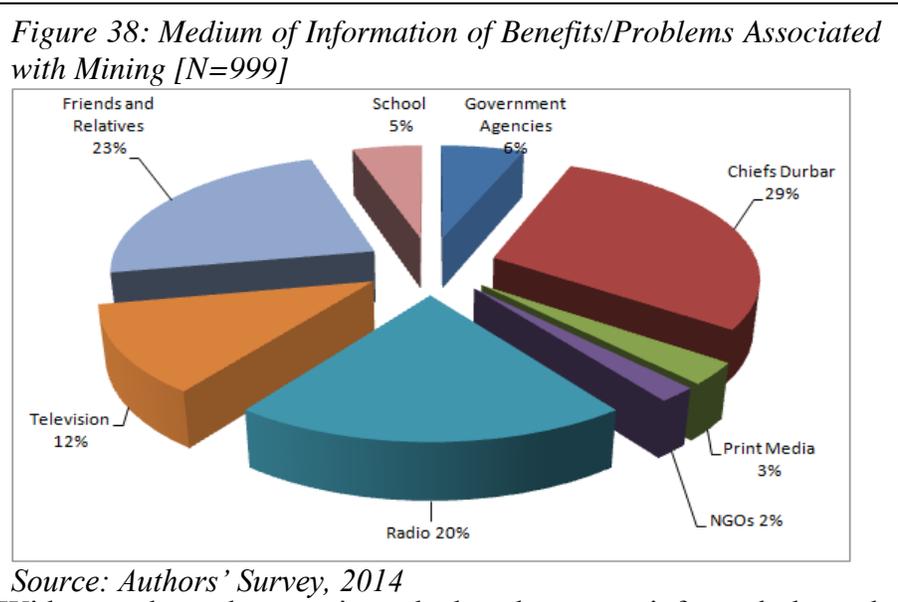
Source: Authors’ Survey, 2014

From figure 37, it could be seen that the agencies that try to control the activities of illegal SSM are national security, the police and the LSM security with mean ranks of 4.51, 3.61 and 4.04 respectively. This, to some

extent, conforms to the work of Aybunn et al. (2010) that established that SSM workers would prefer not controlled by the national security.

During the FGD, participants to some extent confirmed this by alluding to the fact that the ability of institutions like Traditional Authorities, MMDAs and individual community members and local police to control the activities of the illegal SSM is quite limited because some of them are directly or indirectly linked with their activities. The most effective means recommended was the use of national security and task force or the security establishment of the LSM. Effective as the use of such enforcement institutions maybe, there is the need to educate the SSM about the effects of their actions, provide them with other livelihood alternatives or facilitate their transformation to the formal sector.

One major reason that may be making it difficult for mining communities to adhere to mining sector policies and interventions may be the type and nature of information flow from one party to the other. In order to know whether the local people received information that mining was going to take place in their communities, respondents were asked whether they were informed before the mining activity started in their communities and also if they were informed of the problems associated with mining. Analysis of the responses indicate that about 65 % of the respondents were informed while about 16 % were not informed. The remaining did not know.



With regards to the question whether they were informed about the problems associated with mining, almost half of them reported of being told about the problems that mining brings while the remaining reported of not being informed. Cross tabulation analysis indicates that about 40 % of the respondents were informed that mining was going to take place and its negative consequences. These results could suggest that initial information on the mining activity as well as the problems that mining brings were to some extent communicated to the people.

As indicated in figure 38, the most effective media for communication of information to the mining communities were chiefs' durbar, friends/relatives, radio, television, government agencies, school, print media, NGOs, in order of decreasing effectiveness.

5.7 Attitude of mining communities towards Mining sector policies and interventions

In order to know the major drivers of the attitude of the mining communities to mining sector policies and intervention we use equal weights and aggregate the specific issues under economic, social and environmental, earlier discussed above on a scale of 1 to 5 (1 - not a serious problem, 5 -most serious problem). The results indicate that overall, economic challenges are the most pressing issues in mining communities that forces them not to pay heed to mining sector policies and interventions with a mean rank of 3.53, followed by environmental issues with a mean rank of 3.38 and social issues with a mean rank of 2.95 (see figure 39).

Figure 39: Mean ranking of drivers of attitude of local community to mining sector policies and interventions [N=1458]

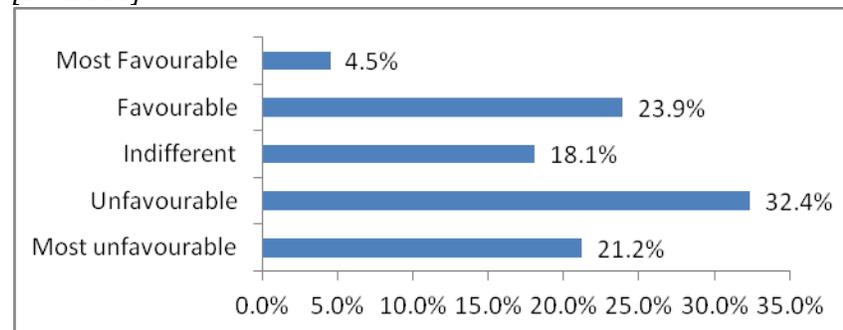


Source: Authors' Survey, 2014

The view of the mining communities can be justified, in that, if one considers the fact that mining communities are mainly subsistence farmers and miners, then taking away their land without providing any viable sustainable alternative leaves them no option than to look for any way of surviving economically. This may mean defying all policies and interventions to make a living for themselves and their families. This could largely explain their attitude towards mining sector policies and interventions

Based on the above discussions, we enquire from respondents on the whole their attitude toward mining companies. We did this by asking them to rank on a scale of 1 to 5 (1-Most unfavourable, 5-Most unfavourable) their attitude towards mining sector policies and interventions. Results of the ranking is presented as Figure 40

Figure 40: Attitude of Local People toward Mining Companies [N=1446]



Source: Authors' Survey, 2014

From figure 38, it could be seen that generally, majority of the local people do not have favourable attitude toward mining sector policies and interventions. About 53.6 % of the respondents have either most unfavourable or unfavourable attitude towards mining sector policies and interventions while 28.4% had most favourable and favourable attitude towards mining sector policies and interventions. About 18.1 % were indifferent.

This result also corroborates well with a question that sought to ascertain if respondents would prefer returning to their situation before the mining activity began. Majority (59%) of the respondents' preferred to be returned to the situation before the mining activity began whilst 25.4% did not. The remaining 15.6% did not know.

Conclusions and Recommendations

A major conclusion that emanates from our study is that many mining communities have unfavourable attitude toward mining sector policies and interventions as a result of economic, social and environmental challenges that confront them resulting largely from the mining activity with the most important one being the economic situation that they find themselves. Specifically, economic challenges could be considered as the driver of the unfavourable attitude of mining communities towards mining sector policies and interventions followed by environmental and social challenges. These challenges have made it difficult for many mining communities to earn a decent living and majority of them would prefer to be returned to their earlier situation before the mining activity began.

Key issues in mining areas that have impact on the economic conditions of mining communities include compensation payments, unemployment, ALP, loss of land for farming, destruction of basic infrastructure, among others. With regards to social challenges the key issues revolve around resettlement, conflicts, inadequate provision of social services, water scarcity, increase in social problems while the environmental issues focuses on land and forest degradation, water, air and noise pollution.

In the area of compensation and resettlement negotiations and payments, inadequate knowledge about the rules and regulations governing resettlement and compensation negotiation as well as the poor capacity of local people to negotiate with internationally reputed mining conglomerates with all the expertise has made it difficult for communities to obtain fair deals in the negotiations. There is also a serious problem with the constitution of CNC and RNC. Lack of trust and pursuance of individual interests as well as divide and rule tactics used by the companies sometimes make it difficult for communities to unite around issues while poor consultation and inadequate involvement of affected people in the formation of the CNC and the RNC makes it difficult for them to achieve the desired results.

Valuation of properties damaged are low largely due to the poor negotiation skills of communities and the government established values that sometimes serves as the minimum basis for valuation. Even though these values in many cases serve as minimum estimates, the idea that these are government established values give the companies a higher negotiation power since any increase from the base is taken as an improvement even though the value may not be commensurate with the damage. As such, many mining communities are dissatisfied with the compensation and resettlement packages they receive. A worrying situation is that affected people in many cases are not able to channel the amount through income generating activities but rather some of them use it on long term investments that makes short term sustenance difficult.

Overall, majority of resettled and compensated people are of the opinion that the packages they receive has not improved their livelihoods.

Unemployment remains a major challenge in many mining communities since the basic resources on which livelihoods of mining communities depend on- land and forest are taken away from them. Usually lands that are given to them are far off in a distance or associated with problems while many inhabitants have not got the skills required by the mines. ALPs meant to partially supplement the incomes of mining communities has not benefitted majority of the people and the benefits to those who have gone through the programme is not very encouraging which has not helped them to effectively develop the business. The ALP has also been an imposition not driven by demand and therefore the interest to the people is not wholly there while issues such as unavailability of markets and adequate financing are major challenges facing beneficiaries of ALP. These challenges have made it very difficult for the few who has benefitted from the programme to develop their businesses even though some of the programmes have high potentials.

Various forms of conflicts occur between different stakeholders. The most frequently occurring ones were between SSM and LSM and between LSM and the mining community. Reasons for the latter can be attributed to the failure of LSM to pay adequate compensations, employ local people, address issues arising from resettlement; non-fulfilment of promises made, pollution and destruction of land by the companies while that of the former can be attributed to unemployment in the community and claim by SSM that they are the original owners of the land. There is some cooperation between MMDAs and mining companies and between Chiefs and the mining companies attributable to royalty payments and some support they gain from the mining companies which in many cases does not benefit the community, especially with regards to the royalty payments since there are no guidelines on the use of funds from the OASL.

The study revealed that environmental problems experienced by mining communities in order of decreasing seriousness are land degradation, water pollution, forest degradation, vibrations, cracks in buildings with the least problem being air pollution. These problems have led to loss of arable land for farming and consequent unemployment and high cost of food, loss of non-timber forest products, inadequate water resources and their products, such as fisheries, diseases such as respiratory and water borne diseases and sometimes death and injuries from uncovered pits. Some efforts are being made to resolve the environmental problems such as provision of water, reforestation, etc. However, majority of the respondents opined that what is being done is not enough.

Small scale mining activities are prevalent in most of the mining districts. Many of the SSM are unregistered and therefore illegal. Even though the activities of SSM are illegal, there are potentials for the sector to contribute significantly to poverty reduction as evidenced by the increase in production and the employment that they generate. Though communities opined that SSM does not pose serious social challenges, the environmental challenges that they pose was quite enormous from the communities' perspectives.

Incomes in SSM was quite higher than those of the non –SSM while regulations of the sector is weak suggesting that in the mist of high employment people in SSM may still continue their activities. In spite of these, there are a considerable number of SSM workers who will like to shift to other sectors if the right incentives are provided. Factors that were found to explain the participation in illegal SSM by the local people include loss of livelihood, lack of alternative job opportunities, water pollution, gender, education and age. There are a lot of risks/hazards associated with SSM even though some precautions are taken by workers of SSM.

Many illegal SSM will like to graduate from informality to formality but are hindered by factors such as: non availability of economically-viable lands with the resource since the LSM has access to all the gold-rich lands; high costs of registration; undue delays and cumbersome registration processes that takes place at the head office of the MC; apathetic attitude of the MC to their registration applications; attitude of MC and other authorities who see SSM as only a problem; political interference in the allocation of blocked-out areas for SSM; harassment of legal SSM by security personnel; influx of Chinese nationals taking over reconnaissance and prospecting mining concessions with the connivance of Ghanaian concession owners and traditional authorities allocating to themselves, the power of allocating land for illegal mining activities.

Recommendations

General

It must be recognised that it is only value addition to primary products such as minerals and the use of local inputs in production that has the capacity to facilitate industrialization through vertical and horizontal linkages of the mining sector with other sectors of the economy. Going forward, the emphasis should be on increasing value addition to mineral products and the use of more local inputs in the production process. This is the only way of ensuring that the mining sector is vertically and horizontally linked to other sectors of the economy as well as creating sustainable and decent employment that can bring about growth in mining communities which will enable mining communities to better appreciate mining sector policies and interventions.

A major way out of the current situation is to develop guidelines on community mining relations on many issues that tend to affect mining communities. These guidelines will make it easier to assess the efforts by both communities and the mines to ensure that they negotiate in good faith and respect the negotiations that they have agreed upon. Monitoring systems should be strengthened to ensure that mining companies are operating according to the laws and regulations.

Specific

Conflicts

- Develop and approve LI and related guidelines on the use of royalties by MMDAs, TA and Stools.
- Monitor and guide consultation processes of the mining companies as well as proper documentation of all the consultation processes related to mining.

- Facilitate mining companies to embrace communities as integral part but not as peripheral in their activities.
- MMDA should orientate District Plans around the activities of mining companies to ensure that there is vertical and horizontal linkages of mining with the local economy to ensure proper vertical and horizontal integration of the mining activity with the local economy.
- There should be clear guidelines that spell out how new farmlands would be acquired for resettled communities and the distance between their new homes and the location of the farmlands.
- Mining companies and regulatory bodies should intensify monitoring and evaluation after resettlement to address quickly any emerging but unforeseen negative impacts of the resettlement. Guidelines should be provided on many of the issues that affect mining communities. For example if there is a crack in a building resulting from mining, the guideline should focus on how to address the issues with timelines.
- The role of stakeholders such as Chiefs should be well defined to ensure that there no adverse selection and moral hazard issues associated with their actions and also to ensure that transparency prevails.

Compensation and resettlement

- Provide adequate knowledge and awareness of the regulations relating to compensations and resettlement.
- Provide adequate and effective representation of affected persons on the negotiation committees by increasing it from the current number of three persons.
- Valuation of properties should be realistic and updated annually using economic instruments and analysis.
- Provide guidelines for the negotiation process that involves some consultation of the affected people.
- Provide significant support to the negotiation committee by the government agencies.
- Define the issues of livelihood properly and undertake independent monitoring and evaluation studies to assess livelihoods. Such studies should be funded by the government.
- Appointment of experts to support communities in negotiations should be made and paid for by government since an expert paid by the Mining company will not be fair to the communities.

Alternative Livelihood Programmes

- Increase the number of people in the ALP.
- Re-organise the ALP to make it more meaningful by taking into consideration, funding, demand as well as value chain development.
- Efforts should also be focused on community ALP in order to increase economics of scale.

- Increase the share of royalties recycled to the mining communities through the OASL and provide guidelines that will make it more beneficial to communities affected by mining activities.

Environmental issues

- EPA should be resourced to improve on their monitoring and evaluation role.
- Treatment of respiratory diseases directly attributable to the mining activity should be made free and borne by the companies operating in the communities.
- Natural resources accounting should be undertaken to assess the environmental cost of mining so that appropriate resource rent can be levied on companies.

Small Scale Mining

- Simplify the procedure for registering SSM and if possible fund the registration and allow them to pay over time.
- Enhance support to SSM to enable them refine their production process.
- Encourage LSM to “adopt “ and nurture SSM to formality through incentives.
- Encourage LSM to seed off part of their excess land to SSM.
- Facilitate for SSM to have modern technology.
- Enhance government-sponsored participatory training exercises as medium for communicating information about appropriate technologies.

References

1. Akabzaa T., (2000). Boom and Dislocation: Environmental Impacts of Mining in Wassa West District of Ghana. Published by the Third World Network, Accra.
2. Amankwah, K.R. and Anim-Sackey, C. (2003). Strategies for sustainable development of the small-scale gold and diamond mining industry of Ghana, *Resource Policy*, Vol. 29, pp 131-138.
3. Andoh, A. A. C., (2002). Mining and the environment in proceedings of the national mining conference on “Mining, the Environment and Sustainable Development”. K. Barning and B. Dorgbetor (eds). Published by the MC, Accra.
4. Andrew, J. S. (2002). *Potential application of mediation to land use conflicts in small-scale mining*. *Journal of Cleaner Production* 11 pp. 117-130.
5. Aragon, F.M. and Rud, J.P. (2013). Modern Industries Pollution and Agricultural Productivity: Evidence from Ghana. International Growth Centre Working paper no. 2014/09
6. Aryee, B. N. A., Ntibery, B. K., Atorkui, E. (2002). Trends in small-scale mining of precious minerals in Ghana; a perspective on its environmental impacts. *Journal of clean production*, vol. 11, pp 131-140.
7. Aryee, B. N. A., Ntibery, B. K. and Atorkui, E. (2003). Trends in the small-scale mining of precious minerals in Ghana: a perspective on its environmental impact. *Journal of Cleaner Production* Vol. 11, No. 2003, pp. 131–140.
8. Asare, B.K. and Darkoh, M.B.K. (2001). Socio-Economic and Environmental Impacts of Mining in Botswana: A Case Study of the Selebi-Phikwe Copper-Nickel Mine. *Eastern Africa Social Science Research Review (EASSRR)* Vol. 17, No. 2, pp. 1-42.
9. Aubynn, A. T, (2002). Resettlement Relocation and Compensation in the proceedings of the national mining conference on “Mining, the Environment and Sustainable Development”. K. Barning and B. Dorgbetor (eds). Published by the MC, Accra
10. Aubynn, A. (2009). Sustainable solution or a marriage of inconvenience? The coexistence of large scale mining and artisanal small-scale mining on the Abosso Goldfields concession in Western Ghana. *Resources Policy*, 34, 64-70
11. Aubynn et al. (2010) Final report on Mainstreaming Artisanal and Small Scale Mining. A background to policy advocacy.
12. Badasu, D. M., Benneh, G., Awusabo-Asare, K., Kendie, S. B. And Abane, A. M. (2001). Resource Exploitation, Livelihood, and Prospects of Migration into the Western Region. A Paper Presented at the National Conference on Migration and Livelihood in Contemporary Ghana. Published by ISSER, University of Ghana, Legon.
13. Bebbington A. and Williams M. (2008). *Water and Mining Conflicts in Peru*. *Mountain Research and Development*, 28(3):190-195. 2008.
14. Bories, A., Ollivier, and P. Michel, G. (1994). Microbial degradation of metal complexed cyanides and thiocyanate from mining wastewaters. *Environmental Pollution*, Vol.84, No. 1, pp. 59-67
15. Carrington, K. and Pereira, M. (2011). Social Impact of Mining Survey: Aggregate Results Queensland Communities, School of Justice, QUT, Brisbane.

16. Carson, M., Cottrell, S., Dickman, J., Gummerson, E., Lee, T., Miao, Y., Teranishi, N., Tully, C. and Uregian, C. (2005) Managing mineral resources through public-private partnerships: mitigating conflict in Ghanaian gold mining. Working Paper WWS591c, Woodrow Wilson School of Public and International Affairs, Princeton University.
17. Cernea, M. (2008). *Compensation and benefit sharing: Why resettlement policies and practices must be reformed*. Water Sciences and Engineering Vol 1, No. 1 pp 89-120
18. Chupezi, T.J., Ingram, V. and Schure, J. (2009). Impacts of artisanal gold and diamond mining on livelihoods and the environment in the Sangha Tri-National Park landscape. A Paper presented to Center for International Forestry Research (CIFOR).
19. Coakley, G. J. (1999). The Minerals Industry of Ghana, in *US Geological Survey Minerals Yearbook*. Area report: International 1997, Africa and the Middle East volume III. The US State Department of the Interior.
20. Davis R. and Franks D. M. (2011). *The costs of conflict with local communities in the extractive industry*. Social Responsibility in Mining 2011, Santiago, Chile.
21. Downing T. E. (2002). *Avoiding New Poverty: Mining-Induced Displacement and Resettlement*. Mining, Minerals and Sustainable Development No. 58
22. Dzigdodi-Adjimah, K. (1996). Environmental Concerns of Ghana's Gold Boom: Past Present and Future in *Ghana Mining Journal*, Vol. 2, No. 1 pp 21-26
23. Eagly, Alice H., and Chaiken Shelly. 1998. "Attitude, Structure and Function." In *Handbook of Social Psychology*, ed. D.T. Gilbert, Susan T. Fisk, and G. Lindsey, 269–322. New York: McGowan-Hill.
24. Forson, S. A. K. (2002). Health and Mining in *Proceedings of the National Mining Conference on Mining, the Environment and Sustainable Development*. K. Barning and B. Dorgbetor (eds). Published by the MC, Accra
25. Ghana Statistical Services (GSS), Quarterly Digest of Statistics, Various issues
26. Ghana Statistical Service (GSS), Ghana Living Standards Survey III and IV. Accra
27. Gyan-Baffour, G. (2003). Artisanal Mining and Poverty [Online]. Available at: <http://casmsite.org/Documents/Elmina%202003%20-%20Workshop%20%20Poverty%20Reduction%20-%204.pdf> [Accessed: 23rd June, 2007].
28. Ghana Chamber of Mines (2008). *Standardise compensation payment in the mining sector*. Accessed at <http://ghanachamberofmines.org/en/our-publications.php>
29. Ghana Statistical Service (GSS). (2000). Population and Housing Census.
30. Hentschel, T., Hruschka, F. and Priester, M. (2002). Global Report on Artisanal and Small-Scale Mining MMSD Report No. 70. January 2002. England: IIED and WBCSD.
31. Hentschel, T., Hruschka, F. and Priester, M. (2003). *Artisanal and Small-Scale Mining: Challenges and Opportunities*. IIED Publications, London.
32. Hilson, G. (2002). *An overview of land use conflicts in mining communities*. Land Use Policy 19 pp 65-73
33. Hilson, G. and Banchirigah, S.M. (2009). Are Alternative Livelihood Projects Alleviating Poverty in Mining Communities? Experiences from Ghana. *Journal of Development Studies*, Vol. 45, No. 2, 172–196.
34. Hilson, G. and Yakovleva, N. (2007). Strained Relations: A Critical Analysis of the Mining Conflict in Prestea, Ghana, *Political Geography*, Vol. 26, pp 98-119
35. Hilson, G., Potter, C., 2003. Why is illegal gold mining activity so ubiquitous in rural Ghana? *Afr. Dev. Rev.* 15 (2), 237–270

36. Hilson, G. (2002). The Environmental Impact of Small-Scale Gold Mining in Ghana: Identifying Problems And Possible Solutions, *The Geographical Journal*, Vol. 168, No. 1, pp 57-72.
37. Hilson, G., Hilson, J.C. and Pardie, S. (2007). Improving Awareness of Mercury Pollution in Small-Scale Gold Mining Communities: Challenges and Ways Forward In Rural Ghana, *Environmental Research*, Vol. 103, No. 2, pp 275–287.
38. Hoedoafia, M.A., Cheabu, B.S.N., and Korang, V. (2014). The Effects of Small Scale Gold Mining on Living Conditions: A Case Study of the West Gonja District of Ghana, *International Journal of Social Science Research*, Vol.2, No.1.
39. ILO (1993). Annual Report, 1993. Geneva
40. ICM (2007). Working Together: How large-scale mining can engage with artisanal and small-scale miners. International Council on Mining and Metals guidance report.
41. Jenkins H. (2004). *Corporate Social Responsibility and the Mining Industry: Conflicts and Constructs*. Corporate Social Responsibility and Environmental Management 11 pp. 23-34.
42. Kumi, S. (2014). *Land Compensation and Community Expectation in Mining Context: A Case Study of Ahafo Gold Mine*. An Unpublished MSc Thesis, Kwame Nkrumah University of Science and Technology.
43. Kitula, A.G.N. (2006). The environmental and socio-economic impacts of mining on local livelihoods in Tanzania: A case study of Geita District. *Journal of Cleaner Production*, Vol.14, pp. 405-414.
44. Liu, W.X., Coveney, R.M. and Chen, J.L. (2003). Environmental quality assessment on a river system polluted by mining activities. *Applied Geochemistry*, Vol.18, No.5, pp. 749–764.
45. Mwaipopo, R., Mutagwaba, W., Nyange, D. and Fisher, E. (2004). Increasing the Contribution of Artisanal and Small-Scale Mining To Poverty Reduction In Tanzania: Based On An Analysis Of Mining Livelihoods In Misungwi And Geita Districts, Mwanza Region. A report prepared for the Department for International Development (UK).
46. Nyame, F.K. (2002) Mining sector development and environmental project: local economic development (LED) projects in mining communities in Ghana (Phase II). Report Prepared for the Minerals Commission, Accra, Ghana.
47. Nsohono, A.B. (2013). The Impact of Galamsey Activities on the Education of Children. An Unpublished M.A. Thesis, Department of Sociology and Social Science, Kwame Nkrumah University of Science and Technology.
48. Okyere, S.A. (2014). *Mining, Environment and Community Conflicts: A Study of Company Community Conflicts Over Gold Mining and its Implications for Local Community Planning in Ghana*. Icar/20 Tecnica E Pianificazione Urbanistica.
49. Owen, J. R. and Kemp, D. (2014). *Mining-induced displacement and resettlement: a critical appraisal*. *Journal of Cleaner Production* 87 pp. 478-488
50. Oxfam America (2009). *Mining Conflicts in Peru: Condition Critical*
51. Owusu, E.E. and Dwomoh, G. (2012). The Impact of Illegal Mining on the Ghanaian Youth: Evidence from Kwaebibirem District in Ghana. *Research on Humanities and Social Sciences*, Vol. 2, No. 6, pp. 86-92.
52. Rybicka, E. H. (1996). Environmental impact of mining and smelting industries in Poland. *Geological Society, London, Special Publications*, vol. 113, pp.183-193, doi:10.1144/GSL.SP.1996.113.01.14

53. Salami, M. B. (2001). Environmental Impact Assessment Policies, their Effectiveness or Otherwise for Mining Sector Environmental Management in Africa in *Mining Development and Social Conflicts in Africa*, Published by the Third World Network, Africa.
54. Sarfo-Mensah, P., Adjaloo, M.K. and Donkor, P. (2009). Youth Unemployment Challenges in Mining Areas of Ghana. Global Challenges Series.
55. Sievanen L., Crawford, B., Pollnac, R. and Milne, N. (2005) Weeding through assumptions of livelihood approaches in ICM: seaweed farming in the Philippines and Indonesia. *Ocean and Coastal Management*, vol. 48 No.3–6, pp. 297–313.
56. Terminski, B. (2012). *Mining-induced displacement and resettlement: social problem and human rights issue*. Genf, 2012; URN: <http://nbn-resolving.de/urn:nbn:de:0168-ssoar-327774>
57. Tori DeAngelis, 2004. Are beliefs inherited? *Monitor on Psychology* Vol 35, No. 4, April 2004,
58. Thomson, K. (2009). *Development policies, state interventions and struggles for livelihood rights in coastal communities in Kerala, India: A case study of the Cochin clam fishery*. *Ocean and Coastal Management* (52) pp. 586-592.
59. Tsekpo, A. (2002) Rent Seeking Behavior in mining Community: A Sustainable Livelihood Strategy? *The Researcher*, volume 13, No. 1, Newsletter of the Institute of Social Statistic and Economic Research (ISSER).
60. Tsidzi, K. E. N. and Adofo, R. A. (1993). Some Environmental Aspects of Mining and Related Activities in Ghana in *Proceedings of the National Seminar on Current Development in the Mineral Industry of Ghana*. Tsidzi K. E. (editor). IMME, UST, Kumasi Ghana, pp 126-131.
61. Tsikata, F. S. (1997). The Vicissitudes of Minerals Policy in Ghana. *Resource Policy*, vol. 23, pp9-14.
62. Tsikata G. K., yaw Asante, Gyasi E. M. (2000). Determinants of Foreign Direct Investments in Ghana. Published by the overseas Development Institute (ODI) and the University of Ghana
63. Twerefou D. K., Aryeetey Ernest and Osei Baffour (2007). Impact of mining sector Reforms on output, employment and Incomes, 1992-2002” ISSER Technical Publication No. 75, ISSER, University of Ghana, Legon .
64. Twerefou D. K (2009). A Study on Mineral Exploitation, Environmental Sustainability and Sustainable Development in EAC, SADC and ECOWAS Regions, African Trade Policy Center Work in Progress No. 79. Addis Ababa, Ethiopia
65. Van de Sandt, J. (2009). *Mining conflicts and Indigenous Peoples in Guatemala*. Guatemala Country Report prepared for the study: Environmental degradation, natural resources and violent conflict in indigenous habitats in Kalimantan-Indonesia, Bayaka-Central African Republic and San Marcos-Guatemala.
66. Whitley, B. E. (2010). *The Psychology of Prejudice & Discrimination*. United States: Wadsworth Engage Learning.
67. Yakovleva, N. (2006). Perspectives on Female Participation in Artisanal and Small-Scale Mining: a case study of Birim North District of Ghana. The Centre for Business Relationships, Accountability, Sustainability and Society, Working Paper Series No. 35.
68. Yakubu, B. R. (2002). Towards Sustainable Small Scale Mining in Ghana *Proceedings of the National Mining Conference on Mining, the Environment and Sustainable Development*. K. Barning and B. Dorgbetor (eds). Published by the MC, Accra.

69. Yeboah, J.Y. (2008). Environmental and Health Impact of Mining on Surrounding Communities: A Case Study of Anglogold Ashanti in Obuasi. An Unpublished Master of Arts thesis, Department of Geography and Rural Development, Kwame Nkrumah University of Science and Technology.
70. Yelapaala, K., & Ali, S. H. (2005). Multiple scales of diamond mining in Akwatia, Ghana: addressing environmental and human development impact. *Resources Policy*, Vol. 30, No. 3, pp. 145–155.
71. World Bank, Agence Française de Développement and Royal Netherlands Embassy (2006). Ghana Country Environmental Analysis, Environmentally and Socially SD Department, Africa Region, Report No: 36985-GH

List of Appendices

Appendix 1: District and town which participated in the survey

Region	District	Community
Eastern	Birim North	Nyafoman
		Yayaso
		Afosu
		New Abirem
		Adausena
		Noyem
	East Akim	Kyebi
	Akwadum-Ayigbe Town	
	Abuakwa South	Akyem Kyebi
	Atiwa West	Kwabeng
Ashanti	Obuasi	Obuasi
		New Dokyiwaa
	Asante Akim Central	Konongo
		Obenimase
		Nyaboo
		Agyareago
	Odumase	
Western	Ellembelle	Nkroful
		Salman
		Teleku-Bokazo
	Bibiani Anwiaso	Bibiani
		Sefwi Akaasu
		New Obrayeko
		Etwebo
		Ntakam
	Sefwi Wiawso	Paboase
		Chriano
		Akoti
	Prestea-Huni-Valley	Odumase
		Kwame Niampa
		Huni-Valley
		Damang
		Tarkwa
		New Tokunaso
		New Atuabo
		Bogoso
		Atobrakrom
		Anikoko
	Kojokrom	
	Tarkwa-Nsuaem	Nsuta-akyem
		Akoon
		Brahabeabom
		Tarkwa
		Abontuako
		Green compound
		Malop Link 1
		New Adisah Mile 8
		Agege Mile 5
		Iduapriem
		Badukrom
	Amenfi East	Wassa Adamanso
		Dompim

		Wassa Abenabena
	Ahanta West	Anlokrom
Brong Ahafo	Asutifi North	Kenyasi
		Gyedu
		Ntotroso
		Wamahinso
	Domaa Kantinka	
Central	Upper Denkvira	Ayanfuri

Appendix2: Number of groups who participated in the FGD on specific issues in different areas

	Kenyasi	Obuasi	Tarkwa	Bibiani	New Abrim
Youth representatives	1	1	1	1	1
SSM operators		2	1	2	
Chiefs and Community leaders	2		2	1	1
Resettled individual	2	2	2		2
Compensated individuals	2	2	2	1	2
Community members	2	2	2	2	2
ALP beneficiaries	1	1	1	1	1

Appendix 3 :List of Legal Instruments on Mining Statutes

- a. The Constitution, 1992
- b. Minerals and Mining Act, 2006 (Act 703)
- c. Minerals Commission Act, 1993 (Act 450)
- d. Environmental Protection Agency Act, 1994 (Act 490)
- e. Water Resources Commission Act, 1996 (Act 522)
- f. Forestry Commission Act, 1999 (Act 571)
- g. Local Government Act, 1993 (Act 462)
- h. Internal Revenue Act, 2000 (Act 592)
- i. Ghana Revenue Authority Act, 2009 (Act 791)
- j. Office of the Administrator of Stool Lands Act, 1994 (Act 481)
- k. Precious Minerals Marketing Company Act, 1989 (PNDCL 219)

Subsidiary legislations

- a. Minerals and Mining (General) Regulations, 2012 (LI 2173)
- b. Minerals and Mining (Support Services) Regulations, 2012 (LI 2174)
- c. Minerals and Mining (Compensation and Resettlement) Regulations, 2012 (LI 2175)
- d. Minerals and Mining (Licensing) Regulations, 2012 (LI 2176)
- e. Minerals and Mining (Explosives) Regulations, 2012 (LI 2177)
- f. Minerals and Mining (Health, Safety, and Technical) Regulations, 2012 (LI 2182)

- g. Environmental Assessment Regulations, 1999 (L.I. 1652) ('Environmental Regulations');

Other documents

- a. Ghana's Mining and Environmental Guidelines, 1994;
- b. Operational Guidelines for Mineral Exploration in Forest Reserves for Selected Companies, 1997;
- c. Environmental Guidelines for Mining in Production Forest Reserves in Ghana, 2001;
- d. Guidelines for the Preparation of Feasibility Study Reports, 2009;
- e. Mine Closure and Post-Closure Policies;
- f. Guidelines for Corporate Social Responsibility in Mining Communities;

Appendix 4: Corporate social responsibility

To be updated

Company	Project and cost	Location
AGC, Obuasi	<ul style="list-style-type: none"> • Empretec training for the youth in alternative skills • Facilities for piggery, cattle and poultry rearing • \$800,000 fruit and vegetable experimental farm to train the youth in the cultivation of pawpaw. Ranges and passion fruits • . Instituted training programme for local artisans at annual cost of 618,134,780 • This is being done to give employable skills to the beneficiaries. • After the two-year programme, the Adansi West District Assembly will assist in setting up their own businesses. • PSI on cassava and oil palm plantation An initial 2000-acre land has been released free of charge to the Adansi West District Assembly as farm plots for allocation to interested persons. To further demonstrate it's commitment, AGC has released 14 housing units at it's Watreso housing estates for use by technical personnel who will assist the farmers in their operations. • Purchase of lower and upper primary books for the Adanse West District Community Library project at a cost of 25 million. • AGC has so far provided 82 communities with 95 water systems at a cost of US\$980,000 • The company has and continues to support community projects including; Subsidized health care, Free bus services within the company's operational area, Free seedlings for afforestation, Free materials for projects and road rehabilitation and land filling projects, Education and electrification 	Obuasi
AGC, Ayanfuri	<ul style="list-style-type: none"> • Release of Ayanfuri Mine residential accommodation valued at about 5 billion to upper Denkyira District Assembly for conversion to a Teacher Training College 	Ayanfuri
AGC, Bibiani	<ul style="list-style-type: none"> • Bakery, piggery, farming and soap making. Free seedlings for afforestation. Land filling projects and free materials for projects and rehabilitation 	Glamco site, Bibiani
Gold fields, Abosso	<ul style="list-style-type: none"> • Education at a cost of US\$240,679 and construction of classroom blocks. • Health facilities at cost of US\$10,0721 at Atuabo Clinic; rehabilitation of Tarkwa Hospital mortuary. • Upgrading of Brahabebom-Tarkwa road atUS\$6,700. • Construction of a well with hand pumps at Samaho/Huniso area at a cost of US\$42,829. • Alternative livelihood projects costing US\$30,250. Phases I and II of alternative training programmes. Batik , tie and dye, animal husbandry and crop cultivation. 	Huniso, Samaho, Yareyeya Atuabo and Tarkwa Samaho/ Huniso
Bonte Goldmines	<ul style="list-style-type: none"> • In 2002 commissioned the Fisheries Department of the Ministry of Agriculture to conduct a survey into the fish farming potential of the concession. • Social investments 2001-2002 Electricity/ power supply at a cost of 223 million Water and sanitation – 259 million 	Bontefufuo near Nkawie

	Education – 71.6 million Health – 21 million Road repairs/ transport – 100 million Other social investments – 11 million	
Ghana Manganese Company	<ul style="list-style-type: none"> Markets Social investments Education – 314 million Health – 75 million Electricity – 61 million Roads – 4 million Water – 48 million Alternative Livelihood Skills – 116 million CBUD training for communities Snail farm Nsuta Agro-processing machine Markets 	Nsuta
Ghana Bauxite Company	JHS building, electricity poles and boreholes valued at US\$94,888	Awaso
African Mining Service	<ul style="list-style-type: none"> Health – One off donation of US\$40,000 of hospital supplies to Tarkwa District Hospital Roads – Communities Adjacent to the AMS facility at Bankyire/ Tarkwa at US\$12,000 	Tarkwa Bankyire
Company	Project and cost	Location
AGC, Obuasi	<ul style="list-style-type: none"> Empretec training for the youth in alternative skills Facilities for piggery, cattle and poultry rearing \$800,000 fruit and vegetable experimental farm to train the youth in the cultivation of pawpaw. Ranges and passion fruits Instituted training programme for local artisans at annual cost of 618,134,780 This is being done to give employable skills to the beneficiaries. After the two-year programme, the Adansi West District Assembly will assist in setting up their own businesses PSI on cassava and oil palm plantation An initial 2000-acre land has been released free of charge to the Adansi West District Assembly as farm plots for allocation to interested persons. To further demonstrate it's commitment, AGC has released 14 housing units at it's Watreso housing estates for use by technical personnel who will assist the farmers in their operations. Purchase of lower and upper primary books for the Adanse West District Community Library project at a cost of 25 million. AGC has so far provided 82 communities with 95 water systems at a cost of US\$980,000 The company has and continues to support community projects including; Subsidized health care, Free bus services within the company's operational area, Free seedlings for afforestation, Free materials for projects and road rehabilitation and land filling projects, Education and electrification 	Obuasi
AGC, Ayanfuri	<ul style="list-style-type: none"> Release of Ayanfuri Mine residential accommodation valued at about 5 billion to Upper Denkyira District Assembly for conversion to a Teacher Training College 	Ayanfuri
AGC, Bibiani	<ul style="list-style-type: none"> Bakery, piggery, farming and soap making. Free seedlings for afforestation. Land filling projects and free materials for projects and rehabilitation 	Glamco site, Bibiani
Gold fields, Abooso	<ul style="list-style-type: none"> Education at a cost of US\$240,679 and construction of classroom blocks. Health facilities at cost of US\$10,0721 at Atuabo Clinic; rehabilitation of Tarkwa Hospital mortuary. Upgrading of Brahabeom-Tarkwa road at US\$6,700. Construction of a well with hand pumps at Samaho/Huniso area at a cost of US\$42,829. Alternative livelihood projects costing US\$30,250. Phases I and II of alternative training programmes. Batik , tie and dye, animal husbandry and crop cultivation. 	Huniso, Samaho, Yareyeya Atuabo and Tarkwa Samaho/ Huniso
Bonte Goldmines	<ul style="list-style-type: none"> In 2002 commissioned the Fisheries Department of the Ministry of Agriculture to conduct a survey into the fish farming potential of the concession. Social investments 2001-2002 Electricity/ power supply at a cost of 223 million Water and sanitation – 259 million Education – 71.6 million Health – 21 million 	Bontefufuo near Nkawie

	Road repairs/ transport – 100 million Other social investments – 11 million	
Ghana /Manganese Company	<ul style="list-style-type: none"> • Markets Social investments Education – 314 million Health – 75 million Electricity – 61 million Roads – 4 million Water – 48 million • Alternative Livelihood Skills – 116 million CBUD training for communities Snail farm Nsuta Agro-processing machine Markets 	Nsuta
Ghana Bauxite Company	JHS building, electricity poles and boreholes valued at US\$94,888	Awaso
African Mining Service	<ul style="list-style-type: none"> • Health – One off donation of US\$40,000 of hospital supplies to Tarkwa District Hospital • Roads – Communities Adjacent to the AMS facility at Bankyire/ Tarkwa at US\$12,000 	Tarkwa Bankyire

The International Growth Centre (IGC) aims to promote sustainable growth in developing countries by providing demand-led policy advice based on frontier research.

Find out more about our work on our website
www.theigc.org

For media or communications enquiries, please contact
mail@theigc.org

Subscribe to our newsletter and topic updates
www.theigc.org/newsletter

Follow us on Twitter
[@the_igc](https://twitter.com/the_igc)

Contact us
International Growth Centre,
London School of Economic and Political Science,
Houghton Street,
London WC2A 2AE

IGC

**International
Growth Centre**

DIRECTED BY



FUNDED BY



Designed by soapbox.