## AN ASSESSMENT OF THE IMPACTS OF NEWMONT GOLD GHANA LIMITED (NGGL) ON THE SOCIO- ECONOMIC DEVELOPMENT AFTER SIX YEARS OF OPERATION IN THE BIRIM NORTH DISTRICT.

By



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#### DECLARATION

I hereby declare that this thesis is my own work towards the MA and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgment has been made in the text .

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#### ABSTRACT

The Birim North District used to be one of the forested region Districts in the country. Parts of these were however reserved to ensure their sustainable use. The area also had records of peasant farmers in some parts of the District. The vegetative cover had been reduced by the activities of these peasant farmers, lumbering activities and illegal chain saw operations. This has been worsened by the incidence of bush fires in the area, over exploitation and illegal mining activities which is on the upsurge.

This research adopted both quantitative and qualitative method of data collection, analysis and reporting in providing socio-economic development effects of the activities of the NGGL. Also, the study depended on secondary data such as journals, publications, and primary data from households, various institutions, and Opinion leaders for its sources of information, analyses and reporting. The interview covered households, opinion leaders, business owners, NGO's and NGGL management.

It became evident that, although NGGL has not started extraction, there is a high tendency of destroying the environment, the Company is committed to high standards of environmental protection as well as worker health and safety. The district has also benefited from the operations of Newmont Ghana Gold Limited in the areas of water, electricity extensions, employment and revenue generation.

It is recommended that, the Birim district supports the operations of Newmont Gold since it has a lot of prospects for the development of the District. This would be in the

Implementation of most if not all of the development priorities of the District and also invest in other districts to generate more revenue for future development projects.

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## **\LIST OF ABBREVIATIONS AND ACRONYMS**

ALPs	Alternative Livelihood Programmes
BND	Birim North District
BNDA	Birim North District Assembly
CBD	Convention on Biological Diversity
CCC	Community Compensation Committee
CCD	Convention to Combat Desertification
CEA	Cumulative Effects Assessment
CSR	Corporate Social Responsibility
EAP	Environmental Action Plan
EIA	Environmental Impact Assessment
EIR	Extractive Industries Review
EPA	Environmental Protection Agency
ERP	Economic Recovery Programme
GCM	Ghana Chamber of Mines
GFL	Gold Fields Limited
HIV	Human Immune Virus
IMF	International Monetary Fund
LBA	Licensed Buying Agent

#### LRP Livelihood Restoration Programme

- NGGL Newmont Ghana Gold Limited
- NGOs Non-Governmental Organisations
- OICI Opportunity Industry Centre Industrialization
- PMMC Precious Minerals Marketing Corporation
- SAP Structural Adjustment Programme
- SEA Strategic Environmental Assessment
- SPSS Statistical Package for Social Scientist
- STD Sexually Transmitted Diseases
- UNCTAD United Nations Council for Trade and Development
- UNDP United Nations Development Programme
- UNEP United Nations Environment Programme
- WBG World Bank Group

#### **CHAPTER ONE**

#### **GENERAL INTRODUCTION AND BACKGROUND OF STUDY**

#### 1.1 Introduction

The mining sector as well as other extractive sub-sectors such as quarrying, sand winning and salt has been known to be one of Ghana's major foreign exchange earners. In 1998, the sector contributed about \$793 million to the country's economy amounting to 46 percent of gross foreign exchange earned in that year (Ismi, 2003). Gold mining contributed over 90 percent of the total value of minerals output. In terms of employment, the mining sector is also estimated to employ about 20 000 people of the country's labour force representing 35 percent of those employed in the industrial sector (Ismi, 2003). Thus the general contribution of mining and its related activities to the socio-economic development of the communities in which they are carried out is immense.

In spite of the benefits, the sector is faced with many socio-economic, political and environmental problems which have raised questions of its importance as far as the total cost and benefit analysis of the operations of the mining industries within the various communities are concerned. An area where a question of the mining sector's importance has been raised is community cohesion and cultural sustenance. These communities' clashes mostly result from the payment of compensations for natural and other resources destroyed by the mining activities.

There is also the environmental degradation issue resulting from the inability of mining companies to sustain the environmental quality of the communities in which they operate. These environmental concerns have been exacerbated by the activities of small scale illegal mining operations (galamsey). This has become a nuisance over the last fifteen years. As a result, it has generated serious environmental concerns of mining in the country.

The foregoing presentation of the country's mining sector leaves one wondering about what the exact impact of mining companies are to the various communities in which they operate. The intellectual debate has it that the impacts of the various mining activities are geographically related and hence is different from place to place and from company to company. This study, therefore, is aimed at assessing the impact of mining activities by Newmont Ghana Gold Limited (NGGL) on the socio-economic development of the Birim North District within a period of six years of operation. This would provide a basis for future policy interventions in the District.

#### **1.2 Statement of Research Problem**

The mining sector, in particular, has gradually gained prominence over the last six years as the only local sub-sector generating enough financial resources within the Birim North district (Birim North District Assembly, 2006). In spite of this fact, illegal mining activities have rather taken the lead with its associated environmental and socio-political problems. Nevertheless, over the same period Newmont Ghana Gold Limited (NGGL) has been prospecting for large scale mining of gold in the District. A similar activity of the company is also going on in the Brong Ahafo region where actual mining has started in Kenyasi and its environs.

In the face of the foregoing discussions, this study therefore is an attempt to assess whether the activities of NGGL have any socio-economic development role to play in the Birim North District after six years of their existence or whether the company's entry into the District will worsen its socio-economic problems. As a result, the study seeks to ask the following questions;

- 1. What is the role of Newmont Ghana Limited in environmental sustainability programmes of the District?
- 2. What are the impacts of Newmont Gold Ghana Limited on the socio-economic development of the selected communities and the districts at large?
- 3. What is the company's involvement in the provision of social services and its effects on socio economic development of the district?
- 4. What is the contribution of Newmont Gold Ghana Limited to employment generation in the Birim North district?

#### **1.3** Objectives of Study

The main aim of the study is to assess the socio-economic impact of the NGGL in the socio-economic development of Birim North District after six years of their existence. Specifically, the study aims, among other things, to achieve the following objectives:

- To assess the role of Newmont Ghana Limited in environmental sustainability programmes of the District.
- To examine the impacts of the activities currently being undertaken by the company in the selected communities and other parts of the districts on socio economic development.
- To assess the company's involvement in the provision of social services and its effects on socio economic development of the district; and
- To assess the contribution of Newmont Gold Ghana Limited to employment generation in the Birim North District.

#### **1.4 Study Proposition**

The study is based on the proposition that mining activities have the potential of affecting the socio-economic activities and development of the communities in which they take place. It therefore calls for mitigation measures to curtail unforeseen impacts of such mining activities.

#### **1.5 Scope of the Study**

Geographically, the study is limited to the Birim North District. However; the study will identify and study into details the communities in which the company is operating.

Contextually, the study considers the activities of Newmont Gold Ghana limited in the Birim North District.

Conceptually, however, the study will concentrate on assessing the impacts of NGGL on the socio-economic development of the Birim North District since its operations in the area.

#### **1.6 Definition of Relevant Terms**

This identifies and explains the technical terminologies used/ to be used in relation to the study which will enable readers to understand the degree of application in our part of the world.

#### 1.6.2 Mining

Mining is the extraction of <u>valuable minerals</u> or other <u>geological</u> materials from the earth, usually from an <u>ore</u> body, <u>vein</u> or (<u>coal</u>) seam. Materials recovered by mining include <u>base</u> <u>metals</u>, <u>precious metals</u>, <u>iron</u>, <u>uranium</u>, <u>coal</u>, <u>diamonds</u>, <u>limestone</u>, <u>oil shale</u>, <u>rock salt</u> and <u>potash</u>. Any material that cannot be grown through <u>agricultural</u> processes, or created <u>artificially</u> in a <u>laboratory</u> or <u>factory</u>, is usually mined. Mining in a wider sense comprises extraction of any <u>non-renewable resource</u> (e.g., <u>petroleum</u>, <u>natural gas</u>, or even <u>water</u>).

#### 1.6.3 Development

Various definitions have been given to the word 'development'. However, the views of these people depend on the situation in which they find themselves. Development is conceived as a state of human well being rather than as a state of national economy. This concern was expressed in a statement known as the Cocoyoc Declaration which was adopted by participants at a seminar organized by the United Nations Council on Trade and Development (UNCTAD) and the United Nations Environment Programme (UNEP) in Cocoyoc, Mexico in 1974. This declaration states:

'Our first concern is to redefine the whole purpose of development. This should not be to develop things but to develop man. Human beings have basic needs: food, shelter, clothing, health, education. Any process of growth that does not lead to their fulfilment- or even worse, disrupts them-is a travesty of the idea of development (Conyers and Hills, 1974)'.

Morrill (1999) defined development as the gradual change progressing through a number of stages towards some sort of state expansion, improvement, or completeness of a state in which the subject's true identity is revealed. This explains development is not static and can also not be achieved within a short period of time; rather it goes through processes which aim at improving the living conditions of people.

#### 1.7 Approach and Methodology

This section basically discusses how the research was carried out, including the choice of research methods and data to be collected, sampling techniques and instruments used in carrying out the research.

#### 1.7.1 Types and Sources of Data gathered.

Since the study aims at providing socio-economic development effects of the activities of the NGGL within the selected district, both quantitative and qualitative method of data collection, analysis and reporting was adopted and used for the study. Again, the study depended on both secondary and primary data for its sources of information, analyses and reporting.

The primary sources of data were households and various institutions at both the community and district levels. Opinion leaders and key informants within the selected communities where NGGL operates were also interviewed. Other primary sources were focus group discussions and personal observation of the various communities. The secondary sources include published research articles, journals and publications, websites, published and unpublished works on mining and development in the Birim North District.

#### 1.7.2 Research Design

A case study approach was adopted for the study. As a result, it will help to gain in-depth knowledge into the factors which explain the complex nature of the relationship between socio-economic development and mining in the Birim North District

Again, because a particular geographical area has been selected for detailed studies, it allows for the collection of very extensive and detailed data to produce an understanding of the socio-economic development impacts of the Newmont Ghana Gold Limited in Birim North District.

On the other hand primary data were gathered from the district administration, officials and staff of NGGL and members of the communities in which the company is operating.

#### **1.7.3** Sampling Design

The nature of the study allowed the use of purposive sampling where the mining communities within the Birim North District will be studied. The Sampling method was chosen instead of a complete census in order to save time and cost. The simple random sampling method was used to afford every individual in the selected communities' equal chance of being selected for the study. This is so because this method does not bias on which individuals to interview but rather makes it open and leaves it to chance. This allows all categories of people to be interviewed.

The Sample size for the study was 200 people out of a population size of 123,579. This was done by sampling the views of the community, NGO's, District Assembly, those in business and management of the company (NGGL).

#### **1.7.4** Methods of Data Collection

The main data collection instruments used for the study were questionnaire administration and interview schedules with the selected sample population and key management officials in the various stakeholder agencies. Focus group discussions, field observation and opinion leaders/ key informant interviews were also conducted at the community level. These were done to put the perceptions of socio-economic effects of mining in its proper perspective.

#### 1.7.5 Methods of Data Analysis and Presentation

The data collected, that is both qualitative and quantitative data, were analyzed with the aid of Excel and Statistical Package for Social Scientists (SPSS) computer software to provide descriptive statistics such as standard deviations, regression analysis e.t.c and the formation of frequency tables, plotting of pie charts, bar graphs etc. Qualitative analyses covered the communities' perceptions about the company's activities and relationships with members of the communities.

#### 1.8 Justification

The research has the following justification.

The research document would provide a database for the district especially the mining communities within the Birim North District.

Also, the study would provide empirical evidence of social and economic effects of mining in the district to inform the District Assembly on how to deal with mining companies to pre-empt unforeseen damage to humans and the environment.

The findings of the study would serve as a good reference for policy formulation in the direction of mining impacts on socio economic development.

The study is intended to assist mining companies in adopting sustainable environmental practices as regards their daily operations.



#### CHAPTER TWO

# THE ROLE OF MINING IN THE SOCIO-ECONOMIC DEVELOPMENT 2.1 Introduction

While there remains substantial controversy as to whether mining is destructive to socioeconomic and environmental conditions, there is also a growing consensus that mining is a major contributor to economic development and poverty reduction in the areas they are carried out. The link between mining and socio-economic development is therefore not clearly defined (UNDP, 2003). This scenario has generated a wide range of debates among non-governmental and civil society organizations worldwide. In Ghana, however, the debates has been raised to an all time high in current times due to the fact that, the country has a lot of mining zones with mixed socio-economic development indicators and levels.

The development of any community as well as the improvement in the welfare of its people is highly dependent on the type of economic activities her people are engaged in. It is important however that these economic activities are rewarding and ensure environmental sustainability (Kennedy, 1997).

#### 2.2 Global Perspective of Extractive Industries

It is difficult to imagine life today without minerals at home, at work, in schools, on the roads, in all our buildings. For centuries societies have engaged in mineral extraction. Often, entire communities depend on mining and energy enterprises for their livelihood. Societies and economies depend heavily on the extractive industries in the stages of exploration, extraction, refining, recycling, transportation, and use of minerals. These companies provide direct and indirect employment, economic development, and a means of meeting basic needs. Governments often receive a good deal of income in the form of

taxes and royalties, yet they are under increasing scrutiny over how they allocate revenues earned from such companies (UNDP, 2003).

Today, however, the oil, gas, and mining sectors face serious criticism about the social and environmental impacts of their industries. Companies must deal with several difficult challenges to meet expectations of economic development, the creation of quality jobs, respect for human rights, and high returns for investors. Public perceptions of the extractive industries as a whole are rather negative, and enterprises are vulnerable to local and international pressure. Maintaining a socially acceptable environment to operate requires companies to make major investments in social and environmental performance. The involvement of the World Bank Group (WBG) in extractive industries is the subject of intense debate among critics of this sector as well as its supporters. The Extractive Industries Review (EIR) was established in July 2001 to consider these issues. It was practical exercises designed to achieve concrete solutions that will help the World Bank Group continue to make progress in alleviating poverty on a sustainable path (UNDP, 2003).

According to the UNDP (2003), economic growth is a prerequisite for long-term incomepoverty alleviation to occur in a country. If extractive industries are a source of economic growth, then they should at least have the potential to contribute to poverty alleviation. The historical record of impacts of extractive industries in contributing to economic growth has been minimal. While some resource-rich countries have outstanding records of growth and poverty alleviation, others have shown little economic growth or have even experienced negative growth (UNDP, 2003).

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#### 2.3.1 Mineral Extraction, Poverty Alleviation and Sustainable Development

Sustainable development refers to policy initiatives aimed at the provision of the basic needs of the current population without the neglect of generations yet unborn. The UN Conference on Environment and Development in 1992, followed by the World summit on Sustainable Development in 2002, strongly promoted the need for the sustainable development model to replace the conventional "Economic Development Model" that still prevails. Since 1992, the World Bank Group has contributed significantly to the global discussion and movement toward a sustainable development model in which poverty alleviation is a central focus (UNDP, 2002).

The United Nations Committee on Economic, Social and Cultural Rights has defined poverty as a human condition characterized by sustained or chronic deprivation of the resources, capabilities, choices, security and power necessary for the enjoyment of an adequate standard of living and other civil, cultural, economic, political and social rights. Accordingly, poverty alleviation, involves more than simply increasing peoples incomes; it involves improving people's capabilities, rights, and security (UNDP, 2002).

Sustainable mining has as its main objectives; sustainable development of human societies, communities, and environments. No mine will continue to produce indefinitely. But indigenous societies and undisturbed ecosystems can prevail for long periods of time and can continue to improve over time. From the perspective of this review, extractive industries are important only in the extent to which they contribute to or detract from this objective (UNDP, 2002).

Finally, different people have different understandings of poverty, poverty alleviation, and sustainable development. This is especially the case for indigenous peoples, for whom secure, effective, and collective rights to lands, territories, and resources traditionally owned or otherwise occupied and used are fundamental to their economic and social development, to their physical and cultural integrity, to their livelihoods and sustenance, and to their understandings of poverty and poverty alleviation. Sustainable development and sustainability are therefore fundamentally related to ensuring indigenous people's ability to maintain, perpetuate, and further develop their cultural integrity, including their various relationships with the human, spiritual, and natural worlds-all of which are inseparably intertwined (UNDP, 2002).

#### 2.3.2 Challenges of Environmental Sustenance by Extractive Industries

The sustainability concept of countries with substantial natural resources exploitation has been varied, as noted earlier. Some countries have achieved notable successes; others have experienced dismal failures. Benefits to society are enhanced if extractive industries contribute to the development of much-needed infrastructure and help communities through employment and the provision of health care and education, all the while safeguarding the environment (World Bank, 2001). Transforming natural resource exploitation and wealth into poverty alleviation therefore presents a number of challenges for countries, communities and the companies concerned.

Improper disposal of mine wastes can pollute the entire environment (water, soil, air) in communities around the mining sites. Mining industries can also lead to social disruption and cause conflict among communities. Existing communities may be displaced to make way for new mining activities which also has a high tendency of attracting migrants into mining communities causing an imbalance in the socio-cultural structure resulting from problems such as alcoholism, gambling, prostitution, and violence against women etc. Women are often particularly at risk from the social disruption caused by new projects. Communities may become dependent on the benefit from an extractive industry's project, and they can turn into "ghost towns" if they have no alternative source of income when the project closes (ICMM, 2006).

There is a risk that cost and benefits arising from extractive industries are shared unevenly. Although local communities bear the negative social and environmental impacts of extractive industrial activities they receive little of the revenue. Indigenous peoples and local communities depend on their environment for their livelihoods, through agriculture or fishing, and therefore became particularly vulnerable to environmental damage. Again, women often bear the brunt of the burden, for instance through having to walk longer distances to get clean water. The poor, lacking the necessary skills and education, often fail to benefit from jobs created in the extractive industries; in many cases, employees are brought in from outside of the communities hosting the mines (ICMM, 2006).

In a number of countries, extractive industries have been linked to human rights abuses and civil conflict. Such abuses have been documented, for example, in cases where the military monitors the projects of extractive industries. Indigenous peoples and local communities may be forced off their lands to make way for projects, and those protesting the development may be locked up or physically harmed. The large economic rents generated by the extractive industries may help provoke or prolong the civil conflict. Indigenous peoples are particularly vulnerable since they have a strong connection to their land, and their unique way of life can be destroyed if they are displaced by the project (ICMM, 2006).

Countries need to decide on the best way to exploit their natural resources. Government need to think about how to capture the most value from these industries: whether to use local companies for development, for example, or to grant licenses to foreign companies.

The use of the latter means that, there is a risk that project inputs, including labour, will be brought into the country and that profits will be repatriated to shareholders, who often live elsewhere. On the other hand, foreign companies often have access to better technologies and are accountable on international markets. The question is how to maximize the value-added within a country from the development of its resources.

Ghana, as a developing country has battled strongly with the challenges discussed above as far as its mining industry is concerned. As a result, the next section discusses the historical trend of the country's mining industry bringing to bear the benefits generated for the development of the economy and vice versa (ICMM, 2006).

#### 2.4 Historical Development of Mining in Ghana

Ghana is endowed with bauxite, diamonds, gold and manganese. However, the mining sector has been dominated by the gold industry over the years in terms of foreign exchange earnings. For example the share of gold in total earnings from all minerals stood at almost 89% in 1988 and rose to 90% in 1994. Mining dates back to the pre-colonial days and even continued secretly under ban through the colonial days to post – independence becoming a major economic activity in rural communities' in the 1980s. The country's mineral endowment potential is well know internationally and documented (Keatley, 1992, Strongman, 1994).

#### 2.4.1 History of Mining Regulation in the Early 1900s

In 1902, the mines department was set up by the British government to regulate the activities of mining in the then Gold Cost. The department performed its functions in conjunctions with the traditional authorities in the mining communities. Their roles included the granting of concessions and monitoring the technical, administrative and

social aspects of mining. The mining companies were private companies, which implied that the Gold Coast government implemented privatization policy on mining. Concern about the land and environmental degradation has been expressed since the early decades of the, twentieth century, notably since the 1930s (Agyepong, 1987). Due to this Mining Rights Regulations Ordinance was introduced in 1925. During this period, mining activities concentrated on underground mining so there were not much environmental problems.

When Ghana gained independence in 1957, the then Prime Minister nationalized all the mining companies hence emphasis was shifted from privatization to state – owned. it must be emphasized here that mining at that time had minimal environmental effects and conflicts were absent, as almost all the mines were underground concessions and the communities had small population. Several ordinances were passed during this era to regulate the mining companies which were then state – owned. This was because after the then Prime Minister had succeeded in annexing power from the colonial government; he wanted to directly control the mining companies. When President Nkrumah was over-thrown in 1966, Ghana went back to Privatization policy (Strong, 1994)

During President Acheampong's era, the government took over majority of the mining companies and left a few in the hands of the private sector. When he was over thrown, the government privatized the mining sector. This is notable of the fact that a vision for the mining sector in Ghana was missing. Between the early 1950's and the beginning of the 1960's, several enactments empowered various official agencies to exercise executive responsibilities as far as the care and protection of the environment and resources including mining were concerned. In addition, a number of research institutes were established. The responsibilities for environmental resources were therefore widely distributed, with no one agency having an oversight of the wider environment or significant portions of it. After the mining boom in the 1960's, mining output stated declining due to inefficiencies of management and direct state control (World Bank, 2001).

For decades, up to the 1980s, no new mine was opened in Ghana due to a myriad of problems faced by the mining sector. Investors and potential investors alike were unwilling to invest in the sector, as a result of the disabling economic, financial, institutional and legal framework within which the sector operated. Ghana became economically bankrupt in 1980. By 1983, there were just four gold mines producing 236,000 ounces. Beginning in 1983, Ghana implemented International Monetary Fund (IMF) Structural Adjustment Programs (SAP'S) and Economic Recovery Programme (ERP) focused on export – led growth, which included measures to devalue the currency and remove various barriers to trade. Upon the advice of the IMF, Ghana relaxed mining regulations nurtured investment by the mining industry through generous incentives and tariff reduction during the mid 1980s and 1990s (World Bank, 2001)

#### 2.4.2 Current Mining Regulation in Ghana

In March 1988, the government of Ghana initiated a major effort to put environmental issues on the priority agenda. The exercise culminated in the preparation of the strategy (Environmental Action Plan, 1991) to address the key issues relating to the protection of the environment and better management of renewable resources. The Environment Action Plan provided a coherent framework for intervention deemed necessary to safeguard the environment.

One major principle of sustainable development, which was the key word, was to provide a framework for integrating development and conservation, in terms of laws, institutions, and policies. The Plan sets out an environmental policy for Ghana and makes the attainment of a high –quality environment a key element in the country's economic and social development. It also provides guidance and sets out an Action–Oriented Strategy that specifies the role of sectoral Ministries, Agencies, Non–Governmental Organizations (NGOs), and indeed of every Ghanaian in its implementation. It is recognized that the realizations of the objectives in the EAP and the national environmental policy can be attained only through collaboration and cooperation among institutions with responsibility for various aspects of resource management and environmental protection (Environmental Protection Council, 1991)

Environmental laws, a Ministry of Environment Science and Technology, an advisory National Committee for the Implementation of Agenda 21, and a fully mandated environmental administration were established. This administration advocated a progressive attitude towards environmental management in this relatively fast developing country. This sectoral arrangement of institutional responsibilities has been a characteristic of the management of the environment and resources in the country. Twenty-two departments, commissions, corporations, and institutes have been identified in Ghana as having responsibilities range from policy formulation, survey and evaluation, planning, production, conservation, research, and training to monitoring.

The generous fiscal concessions granted in the Mining and Minerals law of Ghana (PNDC Law 153 of 1986) contributed to the increased investment in the extractive sector of the country. The generous incentives include:

- Capital allowance of 75 per cent in the year of investment and thereafter 50 per cent on a declining balance basis.
- Investment allowance of 5 per cent in year of investment.

- Exemption from import duties on plant, machinery and equipment imported exclusively and specifically for mining.
- Capitalization of approved exploration expenditure.
- Possibility of deferment of payments for stamp, registration duties as well as payment of royalties.
- A portion of foreign exchange as high as 90 per cent and a minimum of 55 per cent earnings may be retained in external accounts to meet qualifying foreign payments.

At the institutional level, the Ghana Chamber of Mines (GCM) played a virtuous role in coordinating activities in the industry on behalf of its members. All the major firms in the industry are members. A key objective of the GCM is the formulation of proposal for legislation, regulations, byelaws and all measures, which will impact positively on the mining sector (Ghana Chamber of Mines, 1996).

The Government of Ghana regularized the activities of small- scale miners in 1989 through the Small Scale Gold Mining Law (PNDCL 218). Government's main objective for the mining sector at the commencement of the ERP was to quickly attract investments in to the sector to help turn around the general economy optimal of the country. In spite of all these efforts by successive governments coupled with poor implementation of the ERP, the problems of achieving an ecologically and environmentally comprehensive perspective on resources and the resource processes in these circumstances are many and have impeded optimal management.

Problem still existed in developing the relevant concepts and the institutional framework to take in the functions of a single agency charged with overseeing the varied facets of the environment. Environmental management continued to be *ad hoc* and sectoral through the specialized committees of the EPC, for example, natural ecosystems, human settlements industrial pollution, water, and hazardous chemicals. The environmental problems persisted and increase in occurrence and intensity. Notable were deforestation, soil erosion, water and air pollution. Decision reached by the committees could not be effectively implemented, and the EPC had to rely of the goodwill and understanding of the Ministries and Agencies concerned. The EPC was criticized of taking over the responsibilities of other institutions owing to the inability of these agencies to perform their assigned roles effectively. There are a number of mining related laws and regulation that have been put in place to promote and regulate the extraction and marketing of various minerals in the country. The following is a summary of the various laws affecting the mining sector in Ghana. Some of these Legislations include:

- The 1992 Constitution, the Minerals and Mining Act, 2006 (Act 703)
- Minerals Commission Act, 1993 (Act 450)
- Precious Minerals Marketing Corporation Law, 1989 (PNDCL 219)
- State Gold Mining Corporation [Acquisition of Assets Amendment] Decree, 1968 (NLCD 218)
- Diamond Mining Industry Protection Regulations 1927, (No 9/1927)
- Mineral (Offshore) Regulations 1963, (L.I. 257)
- Mining Regulations 1970 (L.I. 665)
- Mineral (Royalties) Regulations 1987 (L.I. 1349)
- Kimberly process Certification Act, 2003 (Act 652)

The main legislative framework for mining in Ghana is laid down in the constitution and the Minerals and Mining Act, 2006 (Act 703). Within this legal frame work, the State is the owner of all minerals in Ghana Article 257 (6) of the Constitution provides that every mineral in its natural state in, under or upon any land in Ghana, rivers, streams, water courses throughout Ghana, the exclusive economic zone and any area covered by the territorial sea or continental shelf is the property of the Republic of Ghana and shall be vested in the president on behalf of and in trust for the people of Ghana. Thus, regardless of who owns the land upon of under which minerals are situated, the exercise of any mineral right requires, by the law, a license to be granted by the Minister for miles who acts as an agent of the state for the exercise of powers relating to Minerals. Mineral rights are legally defined to include the right to reconnoitre, prospect for, and mine minerals.

To have a body that regulates and manages the utilization of mineral resources in Ghana, the 1992 Constitution mandated parliament to established a Minerals Commission six months after the coming into force of the constitution and this was done through the passage of the Minerals Commission Act, 1993 (Act 450).

This Act, which came into force on 31st March 2006, revised and repealed many of the laws on mining in Ghana. It was passed to streamline Ghanaian law on mining to reflect new thinking, new developments and international best practices in the mining industry and to consolidate it with the enactment on small – scale gold mining.

An objective of the Act is to provide an internationally competitive framework that ensures a stable and equitable tax engine; of particular relevance to Corporate Social Responsibility (CSR), the object of the law is also to take cognizance of environmental protection as well as community interest with a view to providing a firm basis for the development and sustainability of mining in Ghana (Minerals Commission, 2004). However, these laws and ordinance were formulated as and when problems arose to ensure that the problems do not re-surface. Hence proper planning of sustainable resolutions was not done and recent conflicts are evidences.

#### 2.4.3 History of Small Scale Mining in Ghana

Small scale mining in Ghana dates back to pre-colonial days and even continued secretly under ban through the colonial days to post-independence, becoming a serious economic activity in rural communities in the 19980's.

From the 19<sup>th</sup> century, Ghana has witnessed three jungle gold booms. The first jungle boom targeted gold Wassa and Asante with local and foreign investors establishing mines in these areas from 1874. The second jungle boom, which began in late 1930s, saw an increase in gold export from 6 million pounds to 9 million in 1946 – 1950. The second jungle boom was associated with the colonial government banning private local gold miners and indigenous mining after 1933 from operating. This was also marked by the beginning of large – scale mining by British and other foreign investors. The resource that was once for the local people was reverted completely to other people. The colonial masters consolidated the takeover of indigenous properties with laws (World Bank, 2004).

During the third jungle boom beginning from mid – 1980s, Ghana's mineral sector has undergone massive changes based on the advice from World Bank and other development partners of Ghana. The World Bank's role has further supported changes in law that allowed foreign mining companies to invest directly in Ghana giving a global direction of economic growth and investment. The change in direction was both political and economical where decisions on mining, which were a bit unclear, move from local people to international level (World Bank, 2004). The Government of Ghana regularized the activities of small scale Miners in 1989 through the Small Scale Gold Mining Law. It is from this law that a definition of small scale mining in the Ghanaian context is obtained. The proliferation of illegal and informal small scale mining activities either on mining concessions or along alluvial deposits necessitated the promulgation of the small scale mining law. The Small Scale Mining Law (2004) defines small scale mining as the "mining of minerals by any method involving substantial expenditure by an individual or group of persons not exceeding nine in number or by a co-operative made up of ten or more persons". The objectives of the regularization of small scale mining are:

- 1. To provide employment in rural areas for those who could make a living out of the activity, and reduce rural-urban migration;
- To absorb some of the workers who were being retrenched as a result of the Structural Adjustment Programme, being implemented at the time – particularly those affected by the downsizing of the state –owned mining companies.
- 3. To regulate activities of small scale miners to ensure that acceptable mining practices are employed with minimum damages to the environment;
- 4. To provide ready market for the minerals produced by small scale miners to ensure that receipts from the sub-sector is channelled into the mainstream economy thereby reducing the incidence of smuggling of precious minerals;
- 5. To stimulate rural capital formation

The legalization also provided for the rationalization of the licensing arrangement that would provide small-scale miners direct legal access to the resource, technical and financial support and an official purchasing and marketing mechanism. The latter was achieved through the establishment of the Precious Minerals Marketing Corporation (PMMC) in 1989, which replaced the Diamond Marketing Corporation, then responsible for the purchase and sale of diamonds only (Minerals Commission, 2004).

Other regulatory provisions for the sector are the Mercury Law and Precious Mineral Marketing Law (PNDC Law 219) which widen the scope of the hitherto Diamond Marketing Corporation to include small scale gold marketing. In spite of this provision, the incidence of illegal mining, popularly called Galamsey still goes on.

#### 2.4.4 The Operating Environment of Small Scale Mining

There are two categories of licensed small scale mining operators. These are:

- 1. Co-operative Ownership, and
- 2. Individual Ownership

In all cases of ownership, there are a number of people engaged to help carry out the various activities, for example digging, carrying, washing, planning, etc. The financier of the operation could be the owner or a Licensed Buying Agent (LBA), who may provide funds for equipment/implements and also feed the workers. Where the mineralization is 'good', there is always influx of migrant workers, sometimes attracting foreign nationals even outside Ghana. The workers may be either on their own, paying prescribed fees to the owners in addition to "loans" collected, or be paid workers. In all these cases, there is always an understandable of who holds the authority at the site. The communities are so much influenced by the small scale mining, sometimes to the extent of having been "hijacked' by these workers that they become unwelcome neighbours (Strongman, 1994).

Ashanti and Western regions are two southern regions very prominent in mining activities in Ghana. The two regions boast of both large scale mining activities and numerous small scale and informal mining scattered over the region. The largest mining company Anglo Gold Ashanti is located in Obuasi in Ashanti Region. The small scale and informal mining activities are either operated on portions of the concessions of large scale mining allocations, on designated mining areas or within alluvial deposits with placer gold deposits where minerals have been informally discovered. Alluvial gold and diamond deposits occur in stream gravel, river flats, old river terraces and beach gravel. The activities of small scale miners are either legal or illegal. The illegal small scale miners, also known as the informal miners are commonly known as Galamsey (Akabzaa, 200)

#### 2.5 Case Studies of Corporate Mining in Ghana

Tarkwa and its surrounding villages, have nearly a century of gold mining history. Socially, Tarkwa's long mining history and the concentration of mines with the attendant resettlement and relocation problems and the related issue of compensation negotiation and the frequent clashes between the communities and mining companies over environmental issues have given rise to environmentally conscious population. Thus there are emerging social movements among the population around mining and its impacts. Apart from mining, other economic activities are in the area of wood processing, agriculture, textile manufacture and metal processing. Small-scale industries in milling, cassava processing, carving, craft, and carpentry, tailoring and distributive trading exist.

The mining industry is considered the most important sector in the area. There is a concentration of 8 of Ghana's 14 large-scale mines in the area producing a significant proportion of the country's gold output (See Table 2.1). In addition the only manganese mine is located within this area. There are more than 100 registered small scale gold and diamond mining companies in the area together with more than 6000 unregistered (illegal) or galamsey operators. There is in addition, about 30 local and foreign exploration companies exploring for gold and diamonds in the area (Ghana Chamber of Mines, 2006).
Company	Location	Start	Mining/Processing Method
GFL	Tarkwa	1993	U/G, Open cast/heap leach
TGL	Teberebie(Tarkwa)	1990	Open cast/heap/leach
BGL	Tarkwa	1990	Open Cast/CIL
GAG	Iduapriem(Tarkwa)	1992	Open cast/heap/leach
Barnex (Prestea)Ltd.	Prestea	1997	U/G, Open Pit/CIL
Sankofa Gold Ltd	Prestea	1995	Tailings Treatment/CIL
Abosso Goldfields	Abosso	1997	Open Pit/CIL
SGL		1999	Open Pit/CIL

Table 2.1Mining Companies Operating in Tarkwa

Source: Compiled from Companies Environmental Impact Assessment, 2008

Apart from Goldfields (Ghana) Limited and Barnex (Prestea) Limited which have underground mines in addition to their surface operations the rest including the manganese mine are open pit mines with all the gold mines having cyanide heap leach operations. These surface mines exploit low-grade ore with capital intensive methods and minimal labour requirement compared to underground mines.

In terms of employment, the presence of large mining sector support companies employ a significant number of people. In addition, legal and illegal small-scale mining employ a much larger labour force. The number of people employed by the various companies has been captured in Table 2.2 on the next page.

Company	<b>Total Labour</b>	Expatriate	Expt/total
TGL	941	29	0.0308
GAG	536	26	0.491
BBG	1058	32	0.0302
GGL	1459	21	0.0121
Barnex	1580	N/A	N/A
Sankofa	143	3	0.0163
GMC	732	4	0.0066
Small scale and galamsey	6000		

Table 2.2:Employment Statistics from Mines in Tarkwa

Source: Minerals Commission, 2004

From the table above, it is evident that mining activities in Tarkwa presents the inhabitants as well as in-migrants opportunities directly or vice versa. The impacts are diversified within the community and other neighbouring settlements.

# 2.5.1 Health Impacts

The process of gold mining and processing involve various activities which give rise to various environmental related diseases. During the process of mining, blasting excavates rock. The blasting is accompanied by thundering noise and vibration of the ground. It produces a lot of dust, thus, increasing the particulate matter in both air and water.

Similarly, during processing, toxic chemicals such as cyanide, arsenic, sulphur dioxide and other gases are produced with very serious health consequences. In addition large craters generated from open mines become major breeding grounds for malarial mosquitoes. According to data collected by the Third World Network from the District Health Directorate, the common mining related diseases observed in the area over the last 10 years include:

- Vector borne diseases such as malaria, schistosmiasis and onchocerciasis
- Respiratory tract diseases especially pulmonary tuberculosis and silicoses
- Disease of the eye especially acute conjunctivitis
- Mental cases

Statistics from the above discussions suggest that mining impact related to diseases such as malaria, diarrhoea, upper respiratory diseases, skin diseases, acute conjunctivitis and accident are the top ten diseases in the area. Apart from the above diseases, a number of mining related diseases are said to be on the increase. Reported cases of mental disorders are on the increase. Again, mental cases related to arsenic dermatitis have been observed in the Bogoso area where Bogoso Gold Mines operates an open pit gold mine (Akabzaa, 2000).

It also came to light that Sexually Transmitted Diseases (STD) are on the increase. There are increased cases of syphilis and HIV in the area. The main cause of the increasing incidence of STD is also attributed to the large expatriate employees who patronize the prostitutes in the area. Another group blamed for the spread of STD is the galamsey community. The galamsey operators have been described as having a high propensity to spread and therefore attract a lot of prostitutes to their work sites (Akabzaa, 2000).

# **2.5.2 Social Impacts**

The concentration of mining activities and the increasing number of exploration companies operating within the environs of Tarkwa have had obvious social implications. The boom in mining activity has triggered massive migration of all kinds of people to the place. The population growth rate is, therefore, above the national average and might even be double.

Apart from the Mining and exploration companies, there has been a recent influx of other mining sector support companies such as contract miners, security organizations, catering & restaurant services, transport, explosives, equipment leasing groups, road and building contractors. These create jobs and hence support the efforts of government towards poverty reduction and socio-economic development. In addition, the growing displacement of communities in the periphery of the Tarkwa Township has resulted in the migration of unemployed youth to the town. These youth hitherto lived in make shift structures in the forest or in hired rooms in villages such as Atuabo, Teberebie, Old Damang, Mandekrom, Old Iduapriem, etc. (Kennedy, 1997).

Also, irresponsible male family heads that opted for relocation instead of resettlement collected their cash compensation and subsequently abandoned their families who have been pushed into the town to live in shacks. The result of this is that there has been an increase in social problems in the area. These are mentioned and discussed below:

#### 2.5.3 Prostitution

One major complaint concerning the erosion of social values among the communities contacted relates to increases in prostitution. According to Akabzaa, there are two types of sex workers in the area: mobile and resident sex workers. The mobile sex workers come mainly from Takoradi, Cape-Coast, Accra, Kumasi and Obuasi. Their main targets are the expatriates working with the mining companies and prosperous galamsey operators. Some of these sex workers had initially come to Tarkwa with the hope of trading or getting a decent job, but soon lose hope and take to prostitution as a survival measure. It is believed that the growing incidence of HIV cases in the Western region is as a result of high rate of prostitution into the area.

# 2.5.4 Drug and Alcohol Abuse

It is common place among many residents of Tarkwa that additive drug-culture is growing in the area. The use of drugs and alcohol is a growing sub culture of the galamsey business in particular. The drugs are consumed with the belief that they would stimulate them to work hard. The galamsey business, which involves excessive physical exertion, is tasking and risky hence, the high drugs used such as the marijuana and cocaine (Kasanga, 2002).

# 2.5.5 High Cost of living

Tarkwa is one of the towns in Ghana with a very high cost of living. One reason for this is that there is a wide variation in incomes. For example, the salaries of the Ghanaian

staff in the mines are indexed to the US dollar. As a result their incomes exceed by far those employed in the government sector. In addition, the expatriate staffs are paid internationally competitive salaries. Given these disparities, pricing practices tend to favour those with high incomes (Akabzaa *et al*, 2001).

Secondly, the emphasis on the mining industry has shifted attention from food production. Lands that were previously used for farming and those that could be so used have been swallowed up by mining considerable, creating the conditions for increased food prices.

# 2.6 Physical/ Environmental Impacts

There are various ways in which mining and related activities have impacted the physical environment.

#### 2.6.1 Air Pollution

Air pollution resulting from the activities of mining and mining support companies emanates mainly form high airborne particulate matter, black smoke, noise and vibration resulting from blasting activities. The main sources of airborne particulate matter (respirable dust, sulphur dioxide (SO<sub>2</sub>), Nitrogen dioxide (NO<sub>2</sub>), Carbon monoxide (CO) and black smoke) include the following activities: site clearance and road building, top soil stripping and dumping, open pit drilling and blasting, stripping, loading and haulage, vehicular movement, ore and waste rock handling, and leap leach crushing by companies doing heap leach processing. Others include fumes from roasting of sulphide ores by Assay laboratories and Prestea mines and refining processes. This has resulted in the high incidence of bronchitis in the area (Park, 1987).

High Sulphur dioxide  $(SO_2)$  content in the atmosphere given rise to acid, as it subsequently produces sulphuric acid (H<sub>2</sub>SO<sub>4</sub>). According to Park (1987), at toxicity

limits of -0.5-1g/1, there are no visible effects on health, but toxicity greater than 1.5g/1 can result in breathing difficulties and from 200g/1 and above can cause great discomfort. Its harmful effects include asthmatitis, bronchitis respiratory disorders, lung, eye and heart disorders.

#### 2.6.2 Noise and Vibration Effects

A major complaint of residents in the area relates to noise and vibration effects of blasts conducted at a number of open pits in the area. There is widespread and deafening noise from operations of all the surface mines in the area. One needs to be in Tarkwa around 2 p.m. to late evening to appreciate this problem. The frequent blasting in the mines and the resulting ground vibrations has caused cracks in many buildings in the area. The greatest impacts of blasts come from GAG and TGL due to the fact that their operations are close to the township and they operate on much higher elevations. One of the worst affected is the Fiaseman Secondary School situated less than kilometres away from the TGL surfaces mine. Many of the buildings of this school have very serious cracks (Akabzaa, 2000)

# 2.6.3 Surface and Ground Water Pollution

The concentration of six strip-mining operations within the area is a major source of surface and ground water pollution in the area which include the following:

- Chemical pollution of ground water and streams;
- Increased sediment load resulting from siltation;
- Increased faecal matter and other particles in streams, wells and boreholes; and
- Dewatering of ground water aquifers.

The main concern of the communities has been potential cyanide contamination of surface and ground water resources by large-scale mining operations and mercury contamination from small scale and galamsey operations. But chemical pollution could also come from explosives mishandling and sulphur dioxide fumes from the companies. Apart from these chemicals, heavy metals from mining operations find their way to streams and also percolate into ground water. A concentration of these metals above a certain threshold can be injurious to human and fish health.

Samples taken from a stream in the Teberebie village resettled by TGL confirmed the community's fear that the stream might be polluted (Vinorkor *et al*, 2006). The stream draws its water within the concession. Its catchment area is the operations site of TGL. Analysis showed augmented levels of faecal matter (126 counts/100ml), suspended solids (16mg/1), and low pH (5.11). Despite the community's fears about the wholesomeness of the water, they are forced to drink from it because the boreholes provided by TGL do not produce water

Following the complaints, the company rushed to provide them with hand-dug wells. However, results of water sampling indicate that these wells are as heavily polluted as the stream itself. The unsatisfactory alternative water sources provided by GAG are a clear manifestation of the non-involvement of the communities in the sitting of facilities for them. It is important that the communities and specialized water providing agencies should be involved in the supply and management of water for the communities (Vinorkor *et al*, 2006).

The galamsey activities in these communities are a major contributor to pollution in the streams. It is obviously expected to be high as galamsey operators use significant volumes of mercury in gold processing in some of these streams. Similarly, cyanide

levels are expected to be high as these streams are served by small streams whose catchment areas harbour cyanide containment facilities from GAG and TGL. The team did not measure cyanide levels due to the fact that cyanide is easily degradable by sunlight. Secondly, high rainfall in the area during the time of sampling could mar the results due to heavy dilution. Though cyanide in these streams could form other compound within sediments, sediment analysis was not done.

# 2.6.4 Land and Vegetation Degradation / Loss of Biodiversity

One reason why open pit gold mining has recorded so much damnation from residents of the area is the destruction of large tracts of land for various purposes associated with mining. These include: sitting of mine, heap leach facilities, waste rock dump sites and the open pit mines, residential and office accommodation, roads, new resettlements for displaced communities, workshops etc. It is estimated that at the close of mining a company would use up 40 - 60 % of its total lease space for the above facilities. The results are that large tracts of land are cleared with the removal of topsoil and vegetation. This leaves the area to the vagaries of the weather (Mireku- Gyimah, 1990).

The extensive land clearance associated with open pit mining has also resulted in the destruction of vegetation, biodiversity cultural sites and some natural water bodies such as streams, ponds and lakes in the area. It has destroyed the habitat of wildlife and the once rich tropical forests with their economic timber species. GFL environmental impact assessment document and a report from the EPA acknowledged that the area, which once had abundant species, can now boast of nothing but rich avifauna (Mireku-Gyimah, 1990).

# 2.7 Lessons from Tarkwa on the Impact of Mining

Gold mining and its refining processes though a major contributor to national development also present a spectrum of diversified environment and social development problems. A thorough investigation into the impact of mining in Tarkwa has proven that, environmentally, there are several incidences of ground water, air and noise pollution. Also, critical among the problems are the loss of vegetation, land degradation, destruction of the biodiversity which results in the destruction of livelihoods for many.

The social impacts of mining in Tarkwa mostly result from the loss of livelihoods and the influx of in-migrants into the community to seek for employment opportunities. Most often since majority of the people are not equipped with the basic skills to be deployed in the mines, they are unable to find for themselves decent jobs. As a result, they result to prostitution and drug abuse which leads to high incidence of crime in the mining communities and other adjoining areas. The cost of living in Tarkwa is relatively high compared to other communities in the district because of the presence of the mine and also the notion that mine workers are rich, commodities of goods and services are relatively higher.

Clearly, there is an urgent need to critically assess and establish preventive and control mechanisms in the Birim North District to minimise these effects on the community and maximize the benefits likely to accrue from the mining activities.

# 2.8 Conflicts in Mining Areas

This section looks at how issues that have been dealt with in the minerals industry have culminated in conflicts. (Akabzaa, 2000) described the causes of present social conflicts around mining communities as follows:

• Struggle for self determination;

- Fair distribution of benefits on mining projects;
- Land use conflicts;
- Struggle against pollution and land degradation;
- Conflicts over compensation for land, crops, houses etc;
- Struggle for socio cultural survival; and
- Struggle between small scale miners and large companies

An original draft of the Mineral Law provided that "A holder of a mining right shall in consultation with the Minister responsible for mines provide a percentage of its earning as may be prescribed by Regulations under the Act for community development". This provision does not appear in the Act as passed by Parliament given the immense lobbying efforts by constituents on both sides of the fence during the deliberations on mining bill in Parliament, this is not surprising. Mining activities impact a lot on social, economic, political and cultural life of people living in mining communities. As a result, mining companies behave in any manner they deem fit with communities and this has created a wide range of conflicts. This constitutes a major setback for the Mining Sector in Ghana.

# 2.9 Conceptual Framework

Literature reviewed thus far, points to basic fact that all communities endowed with mineral resources could be exploited for their benefit or otherwise. The results is determined greatly by the mode of exploration or excavation, the established institutional framework within which mining companies operate, mitigation measures such as the Environmental Impact Assessment, Social Impact Assessment, etc as well as the degree of involvement of the local people.





Source: (Adapted and modified from sustainable development concept, UN 2006)

Mining has a high tendency of bringing about sustainable development if only the adverse effects of the design, implementation, and operation of the mines are mitigated, avoided, rectified or compensated. Conceptually, therefore, the study is based on the linkages of impacts that exist between the activities of mining companies and the social, economic and environmental changes of mining communities as depicted in Figure.1

From figure.1, the study looks at the entry of the NGGL into the Birim North District as the first stage of investigating into the impacts of the company on the socio-economic development of the District, it must however be indicated that the impacts can be seen as both positive and negative. Conceptually, however, these impacts have been categorized into Environmental, Social and economic (see Figure.1). Depending on the institutional framework within which the activities of mining companies are undertaken, these impacts may lead to sustainable socio-economic development or otherwise. This study therefore looks at the possible impacts of NGGL's activities in the Birim North District using the theoretical framework shown in Figure.1

# 2.10 Summary of Literature Findings

Debates about inappropriate industrialization, conservation, and securing natural resources will continue to rage. Unless we address the need for stakeholders to mediate environmental conflicts, the potential conflicts will continue to deepen economic uncertainty at a moment in our national development when we can least afford it. There are few agreed-on mechanisms for resolving environmental conflict. Sustainable development is a desired goal and to reach it, stakeholders must be willing to work with government to implement the principle of co-operative decision-making and share responsibility for the implementation and management of social and environmental issues.



#### **CHAPTER THREE**

# **BIRIM NORTH DISTRICT IN CONTEXT**

# 3.1 Introduction

This section of the study critically looks at the profile of the study area in terms of their political boundaries, location in the national and district contexts, physical characteristics and other peculiar features of essence to the study areas. The localities within which Newmont Ghana Gold Limited (NGGL) operates are also highlighted and depicted and illustrated below.

# 3.2 Physical and Natural Environment

#### 3.2.1 Location and Size of the District

The Birim North District was carved out of the former Birim District Council in 1987 as part of the Government's decentralisation programme to promote effective decentralised governance and speed up the development of the area. It is founding the Eastern region and bordered by Kwahu West to the north, the Asante Akyem South, Amansie East and Adansi South districts all in the Ashanti region to the west, Birim South district to the south and Atiwa and Kwaebibirem districts to the east. The district has a very strategic location especially its capital New Abirem as it is situated among major commercial towns such as Nkawkaw, Oda and Kade. With improved road conditions linking the district to these commercial centres, the economy of the district stands a better chance of being improved. New Abirem can be described as a nodal or a confluence town as it is located at the meeting point of the Nkawkaw- Oda-Kade roads (Birim North District, 2006).



Figure .3.1: Birim North District in Regional and National Context

Source: Kumasi Metropolitan Assembly, 2008

The district covers an estimated total land area of 1,250 square kilometres. It covers about 6.47 percent of the total land area of the Eastern Region.



Figure .3.2: Context Map of Birim North District

Source: Birim North District Assembly,2008.

#### **3.2.2 Relief and Drainage**

The district is mostly undulating and mountainous in nature. The area to the east of Akoasi up to the northeastern part of the district has an elevation of about 244 metres above sea level. Also, the area from Amunana Praso in the north to Tweapiase in the east, New Abirem and Hwiakwai in the south and Ntronang and Praso Kuma in the west rises to a height between 243-183 metres above sea level. The central part of the district comprising the area stretching from the south of New Abirem, the district capital through Nkwateng, Brenase, Ofoase, and Ayeribi to Otwereso in the south and Akokoaso in the east can be described as very low lying areas. This area rises to a maximum height of 61 metres (Birim North District, 2006).

The district is drained mainly by two great and historical rivers, the Pra and its tributary the Birim, which is a tributary of the Pra River their major tributaries. The Pra River serves as the boundary between the district and the two districts in the Ashanti Region, while the Birim River serves as the southern boundary of the district. (See figure 3.2) The tributaries of these rivers include the Nwi, Mamang, Adechensu, Sukrang and Afotosu. All these rivers and streams flow generally from the northeast to the southwest to join the Pra, which flows southwards and enters the sea in the Western Region.

# 3.2.3 Geology and Soil Types

Greater part of the district is underlain with granite and both upper and lower Birimian rock formation of phylite, schist, greywacke and metavolcanic and quartzes. These rocks have high potential for ground water extraction. The district lies almost wholly in the main mineral deposit area of the region accounting for the large mineral prospecting and exploration by a number of firms and small-scale mining operation in gold and diamond. The soils of the district can be classified into five broad categories. These are: Swedru-Nsaba/Ofin Compound Association; Atewa-Atukrom-Asikuma-Ansum Compound Association; (Birim North District, 2006).

Juaso-Manso-Debia Association; Bekwai-Oda Association; and Birim-Chichiwere Association. The distribution of the above soil types in the district has been depicted by figure 3.3





Figure. 3.3: Distribution of Soil types in the District

Source: Birim North District Assembly, 2008

# **3.2.4** Climate and Vegetation

The area falls within the wet semi-equatorial climatic zone that experiences a double maxima rainfall pattern. Rainfall peaks during periods, namely March to July and August to October, with rainfall figures between 150cm and 200cm. Temperatures range between an average minimum of 25.2 degrees Celsius and a maximum of 27.9 degrees Celsius and has a relative humidity of about 55-59 per cent throughout the year. This high amount of rainfall and moderate temperatures has contributed to the sustaining agricultural activities in the district especially cultivation of food crops and tree crops such as oil palm and cocoa. The vegetation of the area consists of Semi-deciduous forest with rich undergrowth of climbers. The forest contains large species of economic trees. These trees are highly valuable for the timber industry. The district is home to nine forest reserves (Birim North District, 2006).

#### 3.2.5 Condition of Natural Environment

The Birim North district is one of the forested districts in the country. Parts of these forests have been reserved to ensure sustainable use of the natural resources resulting in the creation of nine forest reserves to preserve part of the original vegetation in the district. However, a number of factors have contributed immensely to the reduction of the forest cover in the district. Prominent among these are poor farming practices, lumbering (especially the activities of illegal chainsaw operators), indiscriminate felling of trees without replacement and isolated cases of bushfires. Human activities such as farming and timber felling are causing the depletion of the forest vegetation in the district. These human activities especially along the banks of the Pra River have resulted in its headwaters getting dry up every year during the dry season every year. This normally causes perennial water shortages in communities, which depend on it for their water supply.

The deforestation within the district has been caused by isolated cases of bushfires, over exploitation and illegal mining activities. Though the number of bushfires in the district is on the decline, there has been an upsurge in illegal mining activities especially in the Noyem area of the district. Undrained pits are common sites in the area. Also with commencement of mining activities by Newmont Ghana Gold Ltd, particular attention should be paid to environmental protection in the district (See table 3.1for land use in the district).



#### **CHAPTER FOUR**

# THE SOCIO ECONOMIC EFFECTS OF NEWMONT GHANA GOLD LIMITED ON THE BIRIM NORTH DISTRICT

# 4.1 Introduction

This chapter aims at analyzing and presenting data collected from the field. It essentially captures the perceptions of a cross-section of the respondents in the selected mining communities across the district. In addition, the opinions and views of the key players in the gold mining industry such as the District Assembly (planning officer), Opportunity Industry Centre Industrialization (OICI), Traditional Authorities, and Farmers' groups, as well as Youth groups, have all been captured.

Much of the opinions reflected in the ensuing sections are mainly those of individuals and groups of community members specifically, peasant household heads the youth and women in communities who will be directly affected by actual mining activities by NGGL. They also represent the opinions of traditional leaders and elders, chiefs and community leaders, clan and family heads, unit committee members, assembly members and local leaders. For this reason the chapter devotes part of its pages to treating the socio-economic characteristics and background of the respondents to the case study survey.

# 4.2 Socio-Economic Characteristics of Respondents

The socio-economic characteristics and background of respondents are of relevance to the study because it has a direct correlation between with issues relating to resource extraction and resource management issues. This is because of the establishment of relationships that exist between socio-economic variables such as sex, age, level of income and expenditure patterns and minerals extraction. The extraction of minerals to a large extent leads to destruction of properties, loss of livelihoods as well as the biodiversity and ecosystem services which more than the resources needed for material welfare and livelihoods. In view of these, analysis of the socio-economic profile of the District whose day to day activities are directly affected by the operations of Newmont Ghana Gold Limited (NGGL).

Primary information was solicited from a sample total of 200 respondents in both one-onone questionnaire administration and focus group discussions. Majority of the respondents were males (60 percent), while female respondents accounted for the remaining 40 percent. Out of the 60 percent males interviewed, 83 percent where household heads who are traditionally responsible for making decisions regarding resource utilization and management. In terms of age characteristics, most of the respondents fall between 25 and 60 years of age as in Table 4.1. This is most important in cases where respondents are supposed to give a retrospective account of changes which might have occurred within and around their communities over time.

Age	Male	Female	Total
25-30	60	30	90
31-35	24	12	36
36-40	26	13	39
41-45	24	12	36
46-50	20	10	30
51-55	10	5	15
56-60	12	6	18
61-65	8	4	12
66+	16	8	24
Total	120 (60%)	80 (40%)	200 (100%)

**Table.4.1: Age-Sex Distributions of Respondents** 

Source: Field Survey, March 2008



Figure 4.1 A Cohort Pyramid Showing the Age and Sex Structure of respondents

The age distribution as illustrated in Figure 6 is very significant statistically in explaining the age structure and composition of the District's overall population. It reinforces the assertion that the District's population is disproportionately dominated by an active labour force age group (25-55years). Majority of respondents (65 percent) were married whiles 20 percent were single. The remaining 15 percent were widowed, divorced or separated. Average household size was three (3) with eight children per household. This household size confirms that the number of dependants is relatively equal to the population in the active labour force group as given by the dependency ratios. The mean age of male household heads is 56 years and 53 years for females.

The urban centres however reveal a different trend; the gap between the age of male households' heads and that of female heads is quite wide with the mean ages being 54 and 44 years respectively. This conforms to the rural-urban differences in the African

setting where the mean age of male household heads is often higher than that of the female.

Activities	Major	Proportion	Activities	Minor	Proportion
Agro-Related	120	60	Agro-Related	58	38.7
Industrial Sector	15	7.5	Industrial Sector	10	7.5
Services	15	7.5	Services	18	12
Transport Operation	2		Transport Operation	10	6.6
Commerce/Petty Trading	48	24	Commerce/Petty Trading	34	22.7
		No.	Galamsey	20	12.5
Total	200	100	Total	150	100

 Table 4.2: Respondents' Occupation Status

Source: Field Survey, March 2008



Figure 4.2: A Bar Chart showing the Occupation of Respondents

The District is dominated by the agriculture sector. Farming remains the major employer and a major source of livelihood. Table 4.2 indicates that about 63% of the respondents

Source: Field Survey, 2009

were engaged in subsistence agriculture as their main employment. This compares with the National and District average of 55 percent and 73.5 percent respectively. Employment in trading, service, industrial, and transport sector follow in that order. The proportion engaged in the agriculture is high due to the fact that the District is endowed with fertile soil (forest ochrosols) and a favourable climatic condition supporting the cultivation of both cash and food crops. The establishment of institutions such as Agro processing industries and Agricultural Research Institute promote agricultural activities in the District. This therefore means that land is the most important resource for the people. Hence, it stands to reason that mining activities will therefore have a great impact on the livelihood of the greater majority. The survey revealed that 80 percent of the respondents were engaged in other secondary economic activities or occupation. The most common secondary activities indicated were petty trading, teaching, small-scale mining, palm oil production and other artisanal activities.

Activities	Average Monthly Income/ per Head
Agriculture	GH¢ 95
Service	GH¢ 250
Commerce	GH¢ 60
Remittance	GH¢ 50
Loans	GH¢ 0
Mining	GH¢ 100

 Table 4.3 : Source of Respondents Income

Source: Field Survey, March 2008.

Table 4.3 depicts household income and their major source. It can be observed that incomes from the service sector which comprises mostly of government workers are within the high income brackets. Although 63 percent of the respondents were farmers with an average monthly income being  $GH\phi$  95, the service sector which represents only

5 percent of the respondents, had an average monthly income of  $GH\phi$  250. This shows that majority of the people are in the low income bracket as stated in the District plan.

From table 4.4, out of the 200 respondents interviewed, about 102 respondents representing 51 percent had land of 7acres and above in the communities in which Newmont will be operating. Clearly, the operation of the mining company will affect crop cultivation in the District there by affecting the majority who depends solely on crop cultivation for their livelihood and general well being.

**Table 4.4: Land Size and Ownership** 

<b>Response</b> Category	Frequency	Percentage (%)
1-2acres	16	8
3-4acres	32	16
5-6acres	50	25
7acres and above	102	51
Total	200	100

Source: Field Survey, 2008.





Source: Field Survey, 2009

Being a tropical rainforest region, the District has been a major attraction for tenant farmers for the cultivation of cash crop farms mainly cocoa and oil palm. However, the tenancy agreements i.e. "abunu" and "abusa" that exist in the District are seen as obstacles and impediments to 'development'. This thought is shared by most of the stakeholders in the mining industry, as well as traditional landowners and chiefs who hold the land in trust for their local communities.

# 4.3 Community Perceptions and Expectations about NGGL

Community perceptions about the activities of Newmont Ghana Gold Limited (NGGL) were very positive. Majority (82%) of the various communities members within their proposed operational areas were of the view that the mining activities has served as a reliable source of employment especially among the youth. The traditional authorities on the other hand think it's an opportunity for more development projects to come into their areas'. In addition, it is one of the main sources of royalties to the traditional authorities which to them is the major sources of development funds. However, a small percentage of the chiefs were of the view that the mining activities has led to loss of land to their communities. The Birim North District Assembly was very optimistic of revenue for development projects as well as jobs for the unemployed youth in the District.

Although most mining companies, in theory, recognized the need that local communities on whose land gold is mined are given priority in terms of employment, in reality this is not very much the case. The difficulty is that most of the mining communities are predominantly rural in outlook, which lack even the most basic skills required for working modern mines. In all the mining community's surveyed, less than 10 percent of the local indigenes were engaged as part of the District's formal mining workforce. Even among the few locals employed in the mines, majority (70%) were miners and labourers who performed only manual and menial jobs on the mines thereby falling at the lowest rungs of the job ladder.

It was evident that given the low level of education and low skills available, only a tiny proportion of local inhabitants and indigenes would have secured jobs on the mines even if these employment opportunities were largely available. The greater part of the people interviewed in these communities have been peasant farmers for most part of their adult lives with apparently no technical skills that could effectively be deployed for mining operations.

# 4.3.1 Community Knowledge of Operation

Of the 200 respondents, 80 percent were of the view that NGGL have been in the District for close to 6years. Most of these people have stayed in the area for more than 8 years and as such were in a better position to recollect events as they unfolded. Again, because most people were involved in the negotiation process through the various compensation committees in their communities, it has led to the people been more informed about NGGLs activities in the District. Besides, the BNDA involvement has improved the communities' acceptance of the NGGL as well as their readiness to cooperate with them when ever the need arises. This was however, base on the companies experience in their Ahafo mines.

# 4.3.2 Conflicts

The most widespread complaints among the respondents related to initial exclusion of some communities members from the processes and procedures concerning compensation. "Compensation decisions are taken in Accra (the capital city) without the concerns of those of the local folks". Of the 200 respondents 54 percent were of the view

that there was no problem or conflict between the communities and NGGL but the remaining 46 percent confirmed cases of conflicts on the basis that they have not been duly compensated. This is as a result of the fact that the community members who were selected to be members of the Community Compensation Committee (CCC) were not people whose land has been affected by the activities of NGGL resulting in the fixing of low prices for both individual and community properties. Again, most communities' members see the chiefs to be bias in the selection of people for employment in the mines.

# **4.3.3** Compensation Determination and Payments

A major contentious issue in the relation between the mining company and the local communities has had to do with adequate compensation payments by NGGL to the communities to offset the loss of property-mainly farms and residential facilities, affected or destroyed through mining operations. Compensation determination and payments have been a source of protracted conflicts in several parts of the District. Section 71(i) of the Minerals and Mining law of Ghana, 1986 (PNDCL153) provides for compensation payments. It states:

"The owner or occupier of any land subject to a minerals right may apply to the holder of any disturbance of the rights of such owner and for any damage done to the surface of the land, buildings, works or improvements or to livestock crops or trees in the area of such mineral operations"

Referring to the above, it is usually the case that monetary compensation paid to affected local community persons covers only the crops on the farm and residential structure and not the land per se. Compensations also mainly cover the current estimated value of the crops and not the source of livelihood of the farmers, which have been permanently impaired. According to Kasanga (2002), the formula commonly used in Ghana is the head count method of crops destroyed, multiplied by a historically fixed government rate for various crops in such an inflationary economy. This to him is a major cause of poverty among affected farmers. As a matter of fact, no amount of compensation adequately cater for the loss of valuable agricultural lands, forestlands, wildlife resources and water bodies degraded as well as the growing numbers of people dislocated through mining operations in the district.

Community perceptions and views about the issue of compensation determination and payments by the mining have been varied and mixed. From the case study survey, 46 percent of the respondents had received one form of compensation or the other as by the year 2007. The amount paid was done on either weekly or every fort night through a local rural bank (Mponua Rural Bank). The affected farmers were grouped and each group was paid one after the other in an interval of two weeks. This was largely attributed to the involvement of the Birim North District Assembly as well as Opportunity Industrialization Centre for International (OICI), an NGO brought to the district by Newmont to build the capacity of the affected communities' towards Alternative Livelihood Programmes (ALPs) and the traditional authorities as well as the community members.

Compensation payments are facilities designed to assist mining affected individuals in this case, mostly peasant farmers in the mining areas. It is expected that such compensation sums would be invested in alternative economic ventures to keep these farmers at least at the same welfare levels prior to the loss of their farming based livelihoods. As a result, the OICI and the BNDA instituted Livelihood Restoration Programme (LRP) targeted at those whose land has been affected. These people were taking through training by OICI for sustainable livelihood programme such as batik tie and dye, soap making, etc. The Livelihood Restoration Programme Committee (LRPC) comprises of one member each from the District Assembly, Newmont, Traditional Authority, community, with OICI acting as the facilitators. This Committees main duty was to vet those community members on whose land has been by the activities of Newmont. Most of the people under this programme were those people who were compensated about five years ago but did not go through any training and as a result has misuse their monies. So they were being taking through LRP to restore their livelihood, however, this is based on their ability to present a business plan. In addition, the committee also monitors the progress of those on ALPs.

Members of the various communities whose residential houses were affected by the activities of Newmont; new ones were put up for them through the CCC working in consultation with the affected individuals. Most of the committees meetings are held at the premises of the District Assembly with the District Chief Executive or the Coordinating Director as the Chairman. With this, the Assembly acted as a regulating board regulating the relationship between the community and Newmont.

# 4.4 Effects of NGGL Operations

The operation of Newmont Ghana Gold Limited for the past six years has brought tremendous improvement in the socio-economic lives of the District as well as its inhabitants. This can be attributed to the fact that the mining activities in the District, likewise any other in Ghana, is serving as growth poles attracting other supporting facilities and infrastructure into the District causing in-migration. In this way, the sustenance of local 'economic prosperity' hangs on the longevity of the mines to a very large extent. In the case of Birim North District, prior to Newmont's entry, the District had never seen large-scale gold production and according to the management of Newmont the company will be in the District for at least fifteen years. Although, the company has not yet started actual mining, its activities so far has impacted on the district both in the area of social and economic development.

# 4.4.1 Economic Effects

Although, Newmont is yet to start actual mining activities, their exploration activity has resulted in a mark improvement in the district's development. For instance, the company been paying tax of GH¢ 25,000 per month to the District Assembly since 2005. This has improved the revenue generation of the Assembly and has therefore put the assembly in a good position for the provision of facilities and improvement in infrastructure in the District. This is because with the deprived nature of the district which means low revenue generation, couple with paltry common fund the assembly finds it difficult to meeting its developmental agenda. Hence, the coming in of Newmont has actually impacted on the economic development of the District.

In terms of employment, about 78 percent of the respondents were of the view that NGGL has help to increase employment opportunities for the teeming unemployed youth who hitherto have to engage in peasant farming and hence resulting in low incomes. The difficulty is that most of the mining communities are predominantly rural areas, lacking basic skills required for working in modern mines. It is worth mentioning that, even among the few locals employed in the mines, majority were miners and labourers who performed only manual and menial jobs such as security, drivers, messengers, and the like on the mines thereby falling at the lowest rungs of the job ladder.

It was evident that given the low level of education and low skills available, only a tiny proportion of local inhabitants and indigenes would have had secured jobs on the mines even if these employment opportunities were largely available. In view of this, the company through its agent, Opportunity International Centre For Industrialization (OICI) has been taking majority of the communities' members whose life will be affected by the mining activities through vocational training in the area of soap making, powder, tie and dye, snail rearing etc, to serve as a source of alternative livelihood for them.

With respect to trade, there has been a mark improvement, since the mining activities has help to increase the population of the area and hence increase in trading activities especially in the area of foodstuffs like plantain, palm oil as well as construction materials such as cement, concerts blocks, and roofing sheet. In this direction, Newmont has been buying all their materials suppliers from the communities as well as instructing their sub contractors to also do likewise. With this improvement, it has help to accelerate economic development as it is evident by the number of new shops openings, hotels, restaurants, filling stations, banks just to mention a few. Such development has

#### 4.4.2 Social Effects

The social effects of mining in the Birim North District as in other areas of the country are several and varied. These include the direct and indirect effects of mining activities on human health, increased migration and its social consequences and the displacement and disorientation of traditional communities and settlements. Others include social deviance and increase in social vices.

# • Effects of Mining on Human Health in the District

Mining's effects on human health have been widely and extensively documented. They range from mild to fatal mine accidents, which cause severe injury and death and which are rampant especially in mines equipped with poor health and safety standards. Several of the diseases and health disorders associated with mining are caused through the various processes and stages involved in the mining operation. For instance, the nexus between fine dust discharge into the air through various mining operations and respiratory tract diseases has been well documented. Similarly, the various stages of mineral processing including ore roasting (calcinations), mineral beneficiation, amalgamation etc, produce and release various toxic chemicals including cyanide, arsenic compounds, sulphur dioxide, mercury etc, into soils water and air, with both situational and downstream effects. These have the potential to cause chemical poisoning of both human and livestock.

From the field study, at least 95 percent of respondents identified malaria as the most prevalent disease of which majority claimed they suffer at least three major attacks, on the average, from the disease annually. The cause they attributed to frequent and excessive mosquito bites. However, there is hardly any comprehensive evidence, which links the very high incidence of malaria in the District to mining activities of Newmont. But this was attributed to the fact that the District is a tropical wet region, with very heavy annual rainfall, natural climatic conditions are very ideal and favourable for the mass breeding of the malaria vector.

In view of this, Newmont has taking upon itself to educate community members about the need to use treated mosquito net as well as under taking regular mass spraying of these areas. In addition, the company in collaboration with the security agent has succeeded in driving away these illegal small-scale miners, who are the cause of this problem. Health authorities in the District have acknowledged the increase in the incidence of Sexually Transmitted Diseases (STDs) including Gonorrhea, Syphilis and HIV/AIDS. Infection cases of STDs including HIV/AIDS in the District have been rising steadily since the arrival of Newmont. From only 20 officially recorded HIV/AIDS cases in 2003, the District now records close to 150 as at December 2007. This is base on the high rate of migration on account of gold mines and increase urbanization of hitherto traditional communities in the District. The gold industry in Ghana as in other African countries is particularly susceptible to the AIDS scourge on account of the relatively high incomes of mineworkers in otherwise deprived communities. Historically, the sex industry has tended to thrive in and around most mining communities (Aubynn, 1998).

Miners and for that matter, galamsey workers are considered a high-risk group for HIV infection in the District. In this direction, Newmont in collaboration with the District Assembly has been embarking on mass education in the various mining communities to sensitize its members on the need to stay away from illicit sex and the use of condoms. This education takes place whenever the company organizes its monthly fun games in the communities. These fun games are also use to mobilize the youth for communal works; through this the company hope to achieve social cohesion among the various communities.

# Provision of Infrastructure and Social Amenities

The mining company although is yet to commence actual work they have provided some significant infrastructure and social amenities for the communities which they will be operating in. At least 75 percent of the respondents expressed satisfaction with the quantum and quality of work done by the company so far especially in the area of basic amenities such as portable water, schools, health facilities, electricity, and feeder roads. The table below depicts the statistics of the various projects undertaken by NGGL since they started operations in the Birim North District.

Some of the respondents also expressed the uncertainty for the company as far land degradation, environmental pollution within these communities should the extraction of the gold commence. They added that although the company has embarked on developmental projects, the degree of destruction could undermine these developmental efforts if preventive or control mechanisms are not put in place.

# Table.4.5: Distribution of Social Amenities provided either solely or jointly by Newmont and the Communities

Facility	Date completed	On- going	Communities
Renovation of school building (45)	2007		New Abirem, Hwekwae
Construction of bole hole (22)	2008/2007	5	Adausena
Provision of street bulb (6)	2007		New Abirem, Afosu
KVIP (14)	Dec. 2007		Afosu, Yayaso, Ntronang
Rehabilitation of school block	2005		Mamaso
KVIP (9)	May 2008		New Abirem
Police Station 17	Nov. 2007	100	New Abirem
Roads 14		14	New Abirem
Community information centre	2007	2	All mining communities
Construction of new Abirem primary	2007	7	New Abirem
Community Notice Board 2	2006		All mining communities
Building of K'G Block 2	<	1	Afosu
Renovation of school park	ANE NO	2	Hwekwae
Provision of electric poles	2003		All mining communities

Source: Newmont Gold Ghana Limited, 2008
#### **CHAPTER FIVE**

#### SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Summary of Findings

This section of the study lays emphasis on, with respect to the objectives of the research, the major findings of and their implications on the development process of Birim North District. Also, in a bid to maximize benefits accrued from the activities of Newmont Ghana Gold Limited and to reduce or alleviate the socio-spatial and environmental consequences which hinder sustainable development, plausible recommendations will be made with respect to the findings stating clearly stakeholders and their responsibilities to enhance effective implementation when the need arises.

## 5.2 Findings and Implications

The analysis of data acquired from the field revealed certain issues concerning the purpose of the study. These issues included the relationship between NGGL and the community, the activities of NGGL and their contributions to the entire development of the District. The findings to a large extent confirmed what literature discussed earlier with some few emerging cases pertaining to Birim North District.

## 5.2.1 Relationship between Newmont Ghana Gold Limited and the Community

From the analysis of the field data, it became evident that almost all the respondent are aware of the operation of Newmont Ghana Gold Limited in the District and also attested to the fact that they are hopeful for their presence and feel optimistic that their activities will impact positively in the District through generation of employment for the youth and provision of basic facilities. It worth mentioning that although the mining company has been in operation for six years, actual extraction of minerals has not started but feasibility studies and other administrative works on the proposed mining areas are underway. The District Assembly, the Traditional Authority and Unit Committee members in the proposed mining areas in the District as well as NGGL are effectively collaborating to ensure the successful operation and maximisation of benefits. As a result of this, a Community Compensation Committee (CCC) has been established to resolve compensation issues regarding the destruction of food crops and loss of land. On the contrary, there are minor conflicts between affected persons and the Committee resulting from the non involvement of the local people in the determination of appropriate compensation. Opportunity Industrialization Centre for Industry (OICI), an NGO has been brought to the District by Newmont to build the capacity of the affected communities' towards Alternative Livelihood Programmes (ALPs) and the traditional authorities as well as the community members.

# 5.2.2 Activities of Newmont Ghana Gold Limited in the District

According to the survey, Newmont Ghana Gold Limited has been in operation in the District for six years still embarking on feasibility study and other administrative requirements. The company indicated that they hope to be in operation in the district for the next fifteen years contributing to the general development of the district and country as whole. Although they have not started extraction which has a high tendency of destroying the environment, the Company is committed to high standards of environmental protection as well as worker health and safety, and benefiting host communities.

### 5.2.3 Contributions of NGGL to Socio-Economic Development of the District

Just as mining operations has contributed enormously to the development of Ghana, the District has also benefited from the operations of Newmont Ghana Gold Limited in terms of both economic and social aspects of their lives. However, there are few concerns with respect to the delays and payment of appropriate compensations for affected persons in the mining areas.

#### 5.2.3.1 Economic Effects

- The activities of Newmont Ghana Gold Limited have resulted in the payment of tax and royalties to the District Assembly and the Traditional Authorities respectively is serving as a reliable source of revenue for carrying out development projects improve livelihoods and standard of living in the District. The District Assembly clearly stated that with the revenue from NGGL, they can now carry out their development projects with little dependency on the government.
- In terms of employment generation, the company has employed about 78 percent of the youth in the District as to provide labour for the mines even though majority of them are not well educated there by lacking relevant skills needed for the mines. As a result, the company has embarked on capacity building to equip the youth with basic skills to be adopted in the mines. In view of this action by the company, there has been a reduction in unemployment in the District.
- Also, the mining activities of NGGL are serving as a growth pole in the District attracting supporting facilities and infrastructure as well as in-migration of inhabitants of other districts. As a result of the influx of people and the construction of a new market by the company, there has been a tremendous improvement in trading activities there by increasing the income base of the traders who are mostly women in the District. In support of these developments, the Newmont has also established cooperative groups for the women to put forth and if possible, address issues for the maximisation of benefits among them.

• The OICI is also providing vocational training for its members to equip them with basic skills to engage in their own forms of production such as soap making, effectively high yield methods of farming, etc. Some of the youth are also employed as security personnel and drivers

#### 5.2.3.2 Social Effects

Majority of the respondents expressed satisfaction as far the development projects of NGGL in the District was concerned. For the past six years, the company has been able to carry out a number of development projects ranging from the construction of boreholes, construction, rehabilitation and renovation of schools, construction of KVIPs and Police Station to enhance security, installation of electricity poles, etc. A number of communities have benefited from these development projects. These communities include: New Abirem, Hwekwae, Adausena, Afosu, Yawaso, Ntronang and Mamaso. This has improved the standard of living of the communities through the improvement of education and health; promotion of safety and security in the communities; and provision of transport networks.

Also because of the high incidence of malaria in the District, the company has embarked on mass education in some communities on the need to use treated mosquito nets as well as under taking regular mass spraying of these areas to prevent malaria which reduce production and income levels. In addition, the company in collaboration with the security agents has succeeded in driving away illegal small-scale miners, who are the cause of this problem and other related respiratory diseases.

Despite the developmental projects Newmont has embarked on, the issue of adequate compensation for loss of properties in the affected communities pose an issue of disagreement between the victims and the company.

#### **5.2.4 Prospects of NGGL in the District**

The existence and operation of Newmont in the District pose a lot of prospects for the development of the District. According to the Company, they intend spending the next fifteen years in the District. As a result, the District is likely to benefit from the diversity of development projects Newmont will embark on which will eventually lead to the socio-economic development of the District. Also, the District Assembly will be able to generate and mobilize substantial revenue from the Company, equipping them to implement most if not all the development priorities of the District and also invest in other districts to generate more revenue for future development projects.

### 5.3 Conclusion

The increase in mining investment in Ghana since 1989 has resulted in a significant increase in mineral production and the generation of external earnings which are appropriately channelled to the provision of infrastructure and the general development of the country. Locally, the operation of Newmont Ghana Gold Limited in the Birim North District has imparted positively through the provision of infrastructure and revenue base of the District. On the contrary, since NGGL has not started actual extraction of minerals, the uncertainty of the degree of environmental degradation and loss of valuable natural resources in the District pose a lot of fear in many of the respondents if the adoption of preventive mechanisms such as the EIA is taken likely.

Clearly, the need for integrating environmental protection and management is of heightened importance in the development agenda of the country and the global economy at large. As a result, effective collaboration of all stakeholders as well as an uninterrupted support from the government can provide the necessity for performance and impact assessment to optimize the benefits and reduce the negativities of the mining activities in the District.

## 5.4 **Recommendations**

Effective and successful mining activities have a greater propensity of facilitating the development process of the country. As a result, identifying and proposing plausible solutions to development programmes, projects and activities is very essential in ensuring sustainable development, the key to national growth and poverty reduction. Based on the findings of the study, recommendations have been made to optimise benefits of the mining operations in the Birim North District and minimise, if possible eradicate its negative impacts on the environment. These are as follows:

#### 5.4.1 Environmental Impact Assessment (EIA) as a prerequisite for mining

For development to be sustainable there is the need to integrate environmental protection/management in development planning. Mining in Ghana and the world over, has serious consequences on the environment which leads to the loss of vegetation, deterioration of biodiversities, land degradation, ground-water and air pollution. It is worth mentioning that ground-water pollution from mineral effluents has serious health infections posing a critical risk for the communities in the District and beyond who rely on hand dug wells for their domestic source of water supply.

For these impact to be mitigated, it is recommended that, since actual exploration has not commenced in the District, the Assembly, Traditional Authority and NGGL should employ and strengthen mechanisms such as the Environmental Impact Assessment (EIA), Strategic Environmental Assessment (SEA), Cumulative Effects Assessment (CEA), etc and ensure its efficient operationalisation to supply decision-makers with appropriate indication of the likely consequences of the design, implementation and operations of the mine. This, if properly used, will lead to informed decisions about potentially significant actions and positive benefits to both proponents and the population at large.

#### 5.4.2 Effective Collaboration and Coordination among Stakeholders

It is evident that many of the problems that arise in the institutional setup are to a large extent caused by lack of coordination and dialogue resulting in the shirking of responsibility many a times bringing about poor performances.

The above clearly suggests the need for an effective collaboration and co-ordination among stakeholders such as NGGL, District Assembly, Traditional Authority, Environmental Protection Agency, Ministry of Mines and Forestry to ensure the successful operation of the mines in the District. For this to be realized, effective dialogue procedures should be established through periodic meetings, seminars on the state and progress of the mines in the District. This can provide a conducive platform for deliberations of pertinent issues as well as discussing and finding solutions to identified challenges relating to the operations of Newmont in the District and vice versa. This notwithstanding will enable the maximization of the net benefits accruing from the mine for both the government, the District and Newmont.

## 5.4.3 Routine assessment of mining operations

Since Newmont intends embarking on mining activities for the next fifteen years, it is recommended that the Company together with other Local Agencies or Departments perform a physical assessment of the mining activities and its impact on the environment every 5 years to ascertain the level of damage caused. The findings will then be discussed and preventive measures instituted in the medium term development plans of both NGGL as well as the District Assembly. Thus, by so doing, will ensure and promote close supervision of the operations of NGGL and the degree of environmental degradation at every point in time for appropriate actions to be taken.

### 5.4.4 Public Consultation on the Mining Procedures and Processes

Public consultation has been traditionally understood as a process of communicating to affected group and the interested public a design, consequences, benefits, duration and so on of a proposed project. This, however, forms part of the data collection process for the Social Impact Assessment of a project in an area. As a result, Newmont Ghana Gold Limited should interact with these affected groups so as to be able to address their concerns especially on compensation of destroyed properties resulting from mining activities. Also for interested public persons, this offers them the opportunity to ask questions and voice their concerns. The proponent after analysing these inputs may modify the project to accommodate these ideas, needs or concerns. When this is done proponent then returns to the community and stakeholders and presents the project showing where changes have been made and explaining why other suggested modifications could not be made. Investigations have proven that the success of projects of this scale greatly depends on the degree of participation or involvement of the local people.



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## **APPENDIX I**

# SAMPLE QUESTIONNAIRE AND SURVEY INSTRUMENTS

## KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

# FACULTY OF SOCIAL SCIENCES

# THESIS TOPIC: AN ASSESSMENT OF THE IMPACT OF NEWMONT GHANA GOLD GHANA LIMITED (NGGL) ON THE SOCIO-ECONOMIC DEVELOPMENT AFTER SIX YEARS OF OPERATION IN THE BIRIM NORTH DISTRICT

## **QUESTIONNAIRE FOR COMMUNITY RESPONDENTS**

This questionnaire is designed to solicit information on the above topic for the purpose of of r

producing a master's dissertation. Please be assured that respondent's confidentiality is of paramount concern to the researcher. In view of this please answer the questions in your candid and objective opinion as possible.
1. Community Date
HOUSEHOLD DATA
Demographic Data from Household
(Tick appropriate box)
2. Sex of Respondent a) Male b) Female
3. Age of Respondent
4. Marital status of Respondent: a) Single b) Married c) Windowed d) Divorced
e) Separated
5. Position in household: as Husband b) Wife c) Grandmother d) Sister e) Brother
f) Others (Specify
6. How many people live in this house?
7. How many people are in your household?
8. How long has the Newmont Ghana Gold Limited (NGGL) been operating in your community?1.1-3yrs2. 4-6yrs3. 7-9yrs4.10yr
9. Have you encountered any problem/differences with NGGL? Yes[] or No []
If yes, what kind of problem?

1. Lack of compensation2. Land taken away3.LossofJobs4.others(specify)

10. In your view what do you think were/are the causes of such differences? .....

11. What were the community's initial reactions to the activities of the NGGL? Indicate for the various categories of people

- a. The youth-----
- b. Traditional authorities------
- c. Assembly representatives/ unit committee members-----
- 12. Who has been affected by the activities of NGGL? -----
- 13. Have they been duely paid compensation by NGGL? Yes [ ] or No [ ]
- 14. If yes, how does NGGL pay compensation to the affected persons? ------
- 15. Has NGGL been involved in the provision of social facilities to your community? Yes () No ()

16. If yes, indicate the type of infrastructure provided

Facility	Date completed	On-going
	The	
1		2
245.10.		9
Y	W JSANE NO	

17. How were/was the above achieved? ------

18. What are some of the important benefits the community derives from the operations of

NGGL in the following areas?

1. I	Economic			
2. S	 Social			
19. How has the	 eir activities	s affect	ted the community neg	gatively in the following areas?
1. Ecor 2. S	nomic Social	K	NUS	
20. What is your	main source	e of wa	uter?	
a. Pipe Wa	ater [	]		
b. Well	[	1		
c. Bore ho	ole [			
d. Stream		1		
e.			Others	(Specify)
21. How has the a	activities of	NGG	L affected your source	e of water?
22. What is the qu	uality of yo	ur wate	er?	
a. Very go	bod	[	]	
b. Good		[	SANE NO	
c. Bad		[	]	
If bad, why?				
23. What is the si	ze of landh	olding	in this community?	
a. 1-2acre	S	[	]	
h 2 1 aar				
0. 5-4 acte	es	[	]	

- d. 7acres and above [ ]
- 24. Which major diseases affect the household members?
  - a. Malaria [ ]
  - b. Chicken pox
  - c. Others (specify)
- 25. Which health facilities are patronized by the household members?

Г

ſ

1

1

]

1

1

- a. Hospital
- b. Community health centre [
- c. Traditional
- d. Private

26. What is your reason for your choice? -----

27. What is the distance to access health facilities?

- a. One kilometer
- b. Two kilometers
- c. Three kilometers
- d. Four kilometers and above [ ]

28. What is your main source of income? .....

29. Name other sources of income? .....

ACTIVITIES	CTIVITIES   MAJOR SOURCES			MINOR SOURCES		
	Amount	Amount	Amount	Amount	Amount	Amount
	(Daily)	(Weekly)	(GH¢) Monthly	(Daily)	(Weekly)	(GH¢) Monthly
Agric						
Service						
Commerce						

Remittances			
Loans			
Others (specify)			



# **QUESTIONNAIRE FOR NGGL -MANAGEMENT**

This questionnaire is designed to solicit information on the above topic for the purpose of producing a master's dissertation. Please be assured that respondents' confidentiality is of paramount concern to the researcher. In view of this please answer the questions in your candid and objective opinion as possible.

- 1. Position of officer responding:
- 2. Address:

3. Telephone: Fax: 4. E-mail: 5. How long has your company been in existence in this community? 6. What problems does the company encounter with the community? 1. Community Demonstration 2. Illegal mining 3. Road blocks 4. Community/Company Leadership ability 5. Other, please specify..... 7. In your view what do you think were/are the causes of such problems? 8. How has the problem been solved? ..... 9. Does your organization pay compensation to land owners? 10. How does your organization address the concerns of the communities? 1. Compensation 2. Employment 3. ALP 4. Other ventures 11. Who are your major collaborators and what are their roles? 12. How did your organization commence mining exploration in the communities? ..... 13. What are the community's initial reactions and how do you manage that? 14. What are your Corporate Social Responsibilities to the communities? 15 How are these CSR produced and maintained?

.....

16. Have the people been prepared for Alternative Livelihood Programmes in terms of training?

.....

17. Were the people provided with any financial assistance? What were they?

.....

18. What has been the impact of these programmes according to community feedback?

.....

19. What are some of the key policy areas you are concerned with?

.....

20. How does your company benefit from the provision of corporate social responsibilities to the communities?

.....



# **QUESTIONNAIRE FOR NGOs –OICI**

This questionnaire is designed to solicit information on the above topic for the purpose of producing a master's dissertation. Please be assured that respondents' confidentiality is of paramount concern to the researcher. In view of this please answer the questions in your candid and objective opinion as possible.

- 1. Position of respondent
- 2. Name of Agency
- 3. Address
- 4. Telephone
- 5. E-Mail

6. How long has your company been in the district and what are your functions?

.....

Fax

7. How are you involved with the mining company in this community?

.....

8. What projects have you implemented for the company so far?

9. In your opinion, how has your organization's activities impacted on the lives of the mining

Communities and people?

Socially.

Economically.

10. What do you think have been the impact of the projects on the lives of the people?

11. How does your outfit monitor and evaluate the ALPS designed for the mining company?

.....

12. How do you measure the impact of mining on host communities?

.....

13. What problems do you encounter in planning and implementation of ALPS?

14. What has been the nature of those problems?
15. How has these problems been solved?
16. How do you see the way forward?

# **QUESTIONNAIRE FOR PEOPLE IN BUSINESS**

Demographic Data from Household

- (Tick appropriate box)
- 1. Sex of Respondent a) Male b) Female
- 2. Age of Respondent
- 3. Marital status of Respondent: a) Single b) Married c) Windowed d) Divorced
- e) Separated

4. Position in household: as Husband b) Wife c) Grandmother d) Sister e) Brother

- f) Others (Specify)
- 5. How many people live in this house?
- 6. How many people are in your household?

# **Businesses**

- 7. Name and type of job
- 8. Location of activity
- 9. How long have you been in this activity?
- 10. Was your activity informed by the mining company? Yes ( ) No ( )
- 11. If not, what has been the company's influence on sales.

Negative

Positive

12. Would you want to continue doing this or you would want to stop? Why:

Relationship with mine workers

- 13. Have you changed jobs over the last 6 years? Yes ( ) No ( )
- 14. If yes, from which job to which job?
- 15. Has any of your household members been employed by NGGL 1. Yes 2. No.
- 16. If yes, how many? Male ( ) Female ( )

## **QUESTIONNAIRE FOR THE DISTRICT ASSEMBLY.**

- 1. Position of officer responding.
- 2. Address
- 3. Telephone Fax
- 4. E- mail

5. For how long has NGGL been in the district? 1.1 yrs 2. 4-6y 3. 7-8yr 4. 10yrs.

6. Who are the major collaborators and what are their roles?

7. Have you encountered any problems/ differences among the major stakeholders in the naming industry?

Yes ( ) No. ( )

8. If yes, what was the nature of these problems?

9. How was this problem solved?

10. What has been the nature of the relationship between the Assembly and NGGL?

.....

11. What has been the Social Responsibility of NGGL to the district in the following areas?

Education.....
Health....
Water & Sanitation...
Environment....

13. How is the Assembly involved in ensuring that citizens are duly compensation for land,crops?



