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## **EVALUATION OF IMPLEMENTATION OF THE SUSTAINABILITY AGENDA FOR SUSTAINABLE DEVELOPMENT IN A DEVELOPING COUNTRY**

### **Abstract:**

This study investigates the types and implementation of sustainability in a developing country. Sustainability is a major driver in the development and implementation of strategy and business operations in recent times. There is the call for organisations to develop sustainability agenda to ensure the long-term maintenance of systems economically, socially and environmentally.

Although there is a growing body of literature in the developed countries on the sustainability agenda in the mining industry, in developing countries however; there is limited research conducted in the mining industry. This paper therefore investigated the types and implementation of the sustainability agenda in Ghana's mining industry. Due to the scarce relevant research in this area and the peculiar cultural and administrative distance between developing and developed countries, this study adopted a qualitative research approach using the interview tool to develop a deeper meaning and understanding into the types and implementation of the sustainability agenda. Data was analysed using the thematic and narrative analysis.

The findings showed that although sustainability agenda is practised in Ghana, the most prevalent types of sustainability agenda in Ghana's mining industry took the form of Social interventions. For implementation, various programmes and activities are undertaken based on the social interventions.

### **Keywords:**

Sustainability Agenda, Triple Bottom Line, Sustainable Development in Mining Industry, Emerging Markets

## INTRODUCTION

This research aims to investigate the types of sustainability agenda in Ghana's mining industry. Sustainability is critical in recent times to organisational development and sustenance. The lack of long-term maintenance of systems could lead to shareholders withdrawing from companies, insurers likely to increase cost or reduce coverage, regulators may increase supervision, and withdrawal of funds by financial institutions (Lins & Horwitz, 2007). According to Elkington, (1998), businesses must focus on the triple bottom line of sustainability which includes economic, social and environmental value. Sustainable mining put a lot more emphasis on the social and the environment, whilst the economic adds value to a company as well as protecting its social license to operate. The impacts from business activities on society come in series from environmental issues like pollution, social issues like erosion of cultures etc. this is why firms are obligated to restructure their mission and vision goals towards sustainable actions, and Ghana's mining industry is no exception (Crane & Matten, 2010).

Ghana is well known for natural resource as such as gold, bauxite, manganese and diamond which contributes significantly to the socio-economic development of the country. Ghana is a developing country with a population of about 25 million people and a democratic country. The mining sector plays an important role in the socio-economic development of the West African state. It contributes over 12% to the government's revenue and 41% of total export earnings annually (The Ghana Chamber of Mines, 2010), and has a GDP of 6.8%. It contributes a minimum of 3% of the mining company's gross output every quarterly. The Ghana Chamber of Mines (2010) recorded an impressive performance by the mining industry in 2010 in terms of fiscal contributions to the state. However, mining activities does not only have economic impact but a direct impact socially and environmentally. Due to the nature of the operations, it has the potential to change the natural setting of the communities and its surroundings where they operate, hence the need for sustainable measures to ensure the long-term sustainability of these activities.

We contribute to the sustainability literature in the following ways; first, not much research has been done and written about the sustainability of the mining industry in Ghana hence the motivation for this research. By investigating sustainability agenda in three of Ghana's mining industry, we are able to evaluate the types of sustainability agenda followed by emerging markets in Africa particularly Ghana; secondly, assess the impact of sustainability agenda on operations of Ghana's mining industry in relation to the economy and communities within which these mining companies operate and the barriers to effective development and implementation of sustainability agenda to achieve sustainable development. These contributions will therefore assist organisations, organisational researchers, academics and sustainability practitioners to understand how the sustainability agenda is operated in this particular emerging market. This research will go a long way to help the many Ghanaian firms in the mining industry to improve on their sustainability agenda and will serve as a guide (Lins & Horwitz, 2007).

The rest of this paper is organised in the following ways; the next section reviews literature on definition of sustainability, sustainability in the mining industry and the types of sustainability agenda. This is followed by the methods for collecting data and analysis, findings and discussions. The final part is the conclusion, implications, limitations and further studies.

## LITERATURE REVIEW

Sustainability has been defined by many and in different ways in the literature. The World Commission on Environment and Development (1987) define sustainability as the *“development that meets the needs of the present without compromising future generations to meet their own needs”*. This definition does not state exactly the kind of development and what it should entail even though it is the most widely used definition. Talbot & Venkataraman (2011) also define sustainability as a concept which involves people, planet and the maximization of profit for absolute value of undertakings. This definition also fails to give the specific activities associated with people and planet that should be maximized for profit. The search for a common acceptable concept and definitions for sustainability cannot be singled to one particular organization (Hopkins, 2002). Although, there are many definitions considerations of sustainability, for the purpose of this research we adopt the definition by Crane & Matten (2010); *the long-term maintenance of systems according to the environmental, economic and social considerations*. This definition captures the specific activities that are considered in sustainability.

### Sustainability Frameworks

There are many frameworks of sustainability however there are no universally accepted indicator sets backed by data, theory and analysis in policy for measuring sustainability (Parris & Kates, 2003). This is due to the ambiguity and plurality of purpose related to measuring, and uncertainty of the terminology of sustainable development. Parris & Kates, (2003) for example proposed a framework for measuring sustainability development that differentiates goal indicators and policy responses. Veleva & Ellenbecker (2001) provides a frame work that measure the progress of sustainable production systems; which includes a twenty-two core indicators and a detailed guidance for their application in addition to eight-step model which provides a context for indicator implementation. Furthermore Hacking & Guthrie (2008) developed a framework which brings together all the different approaches and attempted to tackle the inconsistencies associated with the terminologies and by application of the framework helps to identify the features usually promoted for improving the sustainable development directedness of assessment.

Although, these framework sets out how to measure sustainability, the ambiguity and complexity of understanding what sustainability was not resolved. The most used framework which attempts to categorise what sustainability entails is Elkington's (1998) triple bottom line (TBL; 3BL) of sustainability. According to Elkington (1998) sustainability is not only about adding economic value to businesses but, the responsibility of adding

value should be extended to the environmental and social aspects of the business and stakeholders. This is why sustainability has become an important new goal for business ethics. In furtherance of this, Richards (2009) describes the TBL as a tool which helps firms in the re-examination of their social and environmental performance in determining the real value of the firm and its products. There are three standard perspectives of the TBL which are economic, social and environmental.

### **Triple Bottom Line**

Sustainability is known to have originated from environmental management and later resource management (Hediger, 1999). The main issue here is to ensure that physical resources are effectively managed for future generations. The firm which benefits from natural resources in a society must ensure that it has sustainable environmental practices and policies in order to minimise the impact of its operations to the environment. It must ensure that it reduces its carbon footprints, manage the consumption of energy and non-renewables and the reduction of waste as well as disposal of waste in a healthy toxic free manner. In the mining industry for example, the continued use of renewable resources oil, steel, and gold, and should be well managed so that future generations can also enjoy Crane & Matten (2010). The main negative environmental issues connected with mining activities is pollution which is related to water usage and energy which leads to global warming due to emissions from explosives used. Also these firms use water to wash their ores to get the metals. For example gold mining firms mix chemical called cyanide with water which leads to contamination of the community's main sources of water especially if the water is not well treated and recycled.

The main focus of the economic perspective is performance of firms often referred to as profits. The profit here is not the traditional corporate accounting definition of profits as a rent in monetary returns only but rather profits under TBL refers to the real economic impact on the firm's economic environment which is enjoyed by the society as whole. Therefore it is the responsibility of management to develop, produce, and market their products or services in the long-term survival of the firm (Crane and Matten, 2010). To achieve these firms develop and implement strategies to help raise share prices, market shares and revenue (Crane and Matten, 2010). The firms should also refrain from economically unsustainable activities such as paying of bribes, building of cartels and not adhering to regulations which undermines the overall performance of the market. The economic aspect is not complete unless other social benefits are included in the package such as building schools, hospitals, and police stations and paying corporate tax to help the running of the country as a whole.

The social perspective is a new development added to the environmental and economic perspectives. It is seen to be the least attended to compared to the other two perspectives (Scott, et al., 2000). The social perspective of the sustainability agenda focuses on fair and beneficial practices towards labour and the community within which they operate. It is aimed at responding to community concerns or doing what is termed as social justice by businesses through using part of their profits to addresses disparity

in education, health, unemployment. Further, the firm should pay fair salaries to its employees, provide employees with safe good working conditions and refrain from using child labour and exploitation of its employees or communities. The millennium challenge goals by the United Nations encompass social developmental challenges which support the TBL sustainability agenda and it hopes to eradicate these challenges in the communities and countries globally through governments and businesses by the year 2015 (Newell & Frynas, 2007).

From the literature, (Richards (2009) TBL is increasingly seen as a potential to provide firms with niche business opportunities and the ability for firms to provide products and services which are socially, environmentally and economically beneficial to society, practices to enhance operations, networking and relief to government in the provision of social amenities through social entrepreneurship approaches. Although there are many benefits to TBL, it has also been criticized. Some critics have argued that the economic perspective is often elevated as the most important internal aspect whilst the environmental is portrayed as external and the social aspect becomes the peripheral or miscellaneous of the sustainability agenda which is not analytically derived but merely based on the ideology of capitalism (Van Eeten and Roe, 2002). Others (Friedman et al. 1977) have stated that businesses have their core responsibility which is economic viability based on their operations hence; the TBL is harmful because it diverts the attention of firms from value adding benefits to society from operating effectively on their core business activities to non-core business activities such as social activities which does not add value. These critics states that the businesses through their economic profit are already providing to other areas of the society through focusing on their businesses and there is no need for the categorisation in the three different aspects of sustainability. Furthermore, measurement and quantification of the economic, social and environment benefits to society is difficult as there are no properly developed measurements systems to evaluate the impact. It is important therefore for firms to develop a process to measure, control and report sustainability agenda in line with stakeholder expectations using appropriate tools such as sustainability evaluation and reporting system (SERS) (Perrini & Tencati, 2006). Constant sustainability reporting on firms economic, social and economic programs through data collection, communication and responses from stakeholders therefore improves sustainability agenda of firms (Global Reporting Initiative, 2012).

Others have merely dismissed it as a way through which corporate entities try to avoid responding to the social responsibility in society. Even though the traditional position for the main responsibility of business is to make profit for their owners there is a strong link between the relationship of businesses and society and this assertion has become stronger lately to an extent that the behaviour of firms in terms of ethics and social issues is almost always questioned (Campbell, et al., 2011).

Although there are criticism leveled against the TBL framework, it is generally held that the incorporation of good social conditions and people, the preservation and sustainable maintenance of the environment and the economic value of business is an important

way of how businesses should assist to in the sustainable development and preservation of human society for future generation.

### **Mining and Sustainability**

Mining is one of the main sectors that face a lot of challenges due to sustainability agenda. The reason for these challenges is as a result of the need to address the needs of the many stakeholders within its operations. The sheer numbers of stakeholders sometimes makes it difficult for these firms to address all the needs appropriately especially in a bid to secure a 'social license' to operate. Therefore, responding to these sustainability challenges is very critical to this industry and the very reasons why long-term maintenance of sustainability is imperative. The mining community is seen as sustainable if it follows the principles of ecological sustainability, economic vitality and social equity and, these are taken into consideration in the long-term when the mine is both operational and un-operational. Further, it is sustainable when the mining company adds value to the community in relation in to the above principles during and after its operations (Veiga et al., 2001). It must be noted however, that though adhering to these principles are ideal for sustainability and plausible, sustainable development in the mining industry means an increase in the environmental and social costs. Past records show costs has been more compared to the productivity in the industry and that the upsurge of information technology will extend this to the future but the more sustainable practices employed by the mining industry the more likely it is to increase or improve returns on capital (Humphreys, 2001).

Examining the impact of cost the key issue is the timeframe; the long-term focus of the definition makes it difficult for most firms to integrate sustainability into their projects which are mostly temporary in nature, and additional significance to be made to sustainability indicators into project timelines (Hart & Milston, 2003; Talbot & Venkataraman, 2011). Hence, to improve this, Talbot & Venkataraman (2011) proposed a framework for integrating the two for consultations for the industrial, mining and engineering fields. It must be noted that although the three principles for sustainable mining are economic, social and environmental, most firms take it as a single problem which involves regulations, cost and liability hence their inability to strategically plan effectively for the sustainability agenda (Hart & Milston, 2003). Modern mining is above the simple idea of a single mine to the overall overview of the industry and its role in society when it comes to sustainable mining. It is important therefore for firms to accept that sustainability involves all the three principles of economic, social and environment (Mudd, 2007). Further, sustainable development and organisational culture should be aligned to ensure that corporate sustainable activities succeed (Baumgartner, 2009).

Ghana's mining industry seem to appreciate the concept of sustainability but since there is no one single accepted formula to measure sustainability and the lack of research it is difficult confirm its efficacy. The Ghana Chamber of mines in collaborations with the inspectorate division of minerals commission have laid down regulations in order to improve health and safety amongst member mining firms which offers employees the platform to examine their knowledge and competence on health and safety issues

related to their operations. Also, it has in place various committees which provide advisory services, analyse policy positions, research, strategic recommendations to member companies in relation to issues that affect the mining industry, one of such is the environment and social committee (ENSOC).

From the literature above it is clear how most of the issues raised relate to the western or developed economies. Also, the literature identified the ambiguity and complexity of definition for sustainability or sustainable development especially when the resource and mining industry comes into play and related to the triple bottom line. All three perspectives (environmental, social and economic) fall short one way or the other since the demands by society and firms objectives may not be the same and keeps changing as the mine operates and fold up. Ghana is a developing country where mining contributes significantly to socio economic development of the country. However little has been written about the sustainability of its mining industry hence; the main research question for this paper is, what are the sustainability agenda of Ghana's mining industry and the types sustainability agenda used?

## **METHODS**

This research adopts a qualitative research approach using a case study strategy of three mining firms in Ghana's mining industry. A qualitative research method usually explains real life situations in business and management (Myers, 2009). Qualitative research follows an inductive process in a systematic data collection, interpretation and communication and self-conscious research design, and also has much to offer (Hyde, 2000; Mays & Pope, 2000). According to (Knauff, et al., 2001) inductive reasoning uses a "*cognitive process that concludes from given premises and happens when human beings make implicit information explicit, also states that for inductive reasoning the truth of the premises do not warrant the truth of the conclusion*". This research involved the investigation of sustainability agenda in Ghana's mining industry through observations of the concept of sustainability and how it is applied in Ghanaian mining firms (Myers, 2009). The case study research strategy was chosen for the research because the literature review revealed limited research on this particular phenomenon in Ghana and therefore this will aid in exploration to explanation of a contemporary real life situations on the types of sustainability agenda implemented (Yin, 1994; Meyers, 2009).

### **Case Studies Selection**

A multiple case study approach was used. Using a multiple case studies of three aided in pattern matching and comparison which enriched the data and subsequently findings of the research (Yin, 1994). The three mining firms operating in Ghana's mining industry; Ghana Bauxite Company Limited, Gold Fields Ghana Limited and Ghana Manganese Company Limited were selected based on their scale of mining operations and are the most predominant mining companies in Ghana.

### **Gold fields Ghana Limited**

Tarkwa Gold Mine (2010) a member of the Gold Fields family of South Africa, which is one of the largest gold producers in the world, owns, and operates eight, mines globally. Gold Fields Ghana is currently the leading gold producing company in the country. Incorporated in Ghana in 1993 as the legal entity for its Tarkwa and Damang mines concessions in the western region of Ghana West Africa. 71.1% is owned by Goldfields Ghana Holdings Limited as the majority shareholder, IAM Gold holds 18.95% and the remaining 10% is owned by the Government of Ghana. The Goldfields Group attributable equivalent gold production increased by 10 per cent from 2.02 million ounces in 2013 to 2.22 million ounces in 2014 (Tarkwa Gold Mine, 2015).

### **Ghana Bauxite Company Limited**

GBC is the only Bauxite mine in Ghana and has been in existence since 1940. The mine is located at Awaso a town in the western region of Ghana West Africa where the bauxite is mined in commercial quantities. Currently Bosai Minerals Group Incorporated in China owns 80%, the majority shareholding while the Government of Ghana owns the remaining 20%. Due to the rich nature of Ghana's Bauxite ore over 200 products such as toothpaste, porcelain, spectacle lenses, abrasive components, automotive spark-plug tops etc. could be derived from it through the alumina produced from it (The Ghana Chamber of Mines, 2010). In 2010 shipment for Bauxite increased to 512,208 tons compared to 490,367 tons in 2009 and revenue increased by 36% in the same period. It currently employs 330 workforce and owns and operates its own port infrastructure at the Takoradi Port of Ghana.

### **Ghana Manganese Company Limited**

90% is owned by Consolidated Minerals Limited making it the majority shareholder while Ghana Government owns the remaining 10%. It operates its Nsuta mine in the Western Region of Ghana, West Africa. The concession is over 175 square kilometers and till date only 3% has been mined. Ghana's manganese ore is amongst the highest manganese-ore ratio ores on the market, due to its quality nature (low heavy metals impurities) makes it suitable for alloy and metals production. According to The Ghana Chamber of Mines (2010) Export sales for manganese increased by 20% from \$648860940 in 2009 to \$77809077 in 2010 due to a rise in shipment by 18% from 1012941 tons in 2009 to 1194074 tons in 2010. It owns and operates its own ship-loading infrastructure at the Takoradi Port of Ghana where shipment takes place.

### **Data Collection**

The primary data was collected using semi-structured interviews from management members involved with sustainability agenda in their various firms. This assisted the researchers to elicit participant's views of their lives, as portrayed in their stories and to have access to their experiences, feelings and social worlds in relation to the sustainability in these mining firms (Saunders et al, 2009; Fossey, et al., 2002). An in-depth interview was conducted with the three main firms selected for the study. Data



was collected using theoretical sampling of going to participants with knowledge, experience and information on sustainability agenda in the three organisation. Data was collected through face to face, email and telephone interviews. A total of ten in-depth interviews were conducted. Secondary data in the form of published documents such as minutes from meetings, newspapers, company reports, files, historical documents, government documents and insider written accounts from the mining industry which relates to sustainability were also used to supplement and validated the data. Further to ensure validity of data, participant's confirmation form were filled and signed by respondents. The documentary evidence was used in conjunction with the primary data to ensure the validity of documentary evidence (Creswell, 2003). .

## **DATA ANALYSIS**

Data was transcribed and analysed using thematic and narrative analysis approach which takes the form of how stories are told or how people give a description of an incident (Smith-Easterby, et al., 2008). The data was analysed in the following ways; First data collected was examined and evaluated in stages to assess the types of sustainability agenda in Ghana's mining industry. The second stage of the analysis was the preparation of the data collected and arranging and keeping records of them. The data was coded into themes generated; these were the compared to the other data for pattern matching similarities and differences to ensure dependability. Paragraphs of the interview data that reflects the themes were selected and the themes were then grouped to show a relationship of the types of sustainability agenda and its implementation in the Ghanaian mining firms (Dawson, 2009). Using the information from the analysis, the findings were presented in a narrative approach.

## **FINDINGS**

The findings from the data analysed shows that all the three mining firms interviewed engage in some form of sustainability programmes with sufficient sustainability agenda statements. On the impact of sustainability agenda on the operations of the mining firms, all of the participating firms confirmed that being sustainable and a good corporate citizen puts the firm in a better position globally and locally. According to the firms, this can increase its chances of getting other mining contract anywhere in the world and within the country they are already operating in. There are others benefits such as goodwill and a good relationship between the communities, government, regulators and the mining firms. Out of the three mining firms, Ghana Goldfields limited has the most comprehensive sustainability statement.

### **Sustainability Agenda Statements of the Mining Companies**

Ghana Bauxite Company's (GBC) sustainability agenda statement comes from an agreement signed between its major stakeholders; the communities in its catchment area, four villages and the district assembly to fund all projects. This statement is focused on the social aspects of the sustainability agenda. 85% of all project cost is to be funded by the firm and the remaining 15% will be borne by the district assembly and

the beneficiary communities, 10% and 5% respectively. The beneficiary communities contribute their (5%) in the form of communal labour. The GBC sustainability statement focuses more on the social aspect of sustainability. To implement the sustainability agenda the firm engages in different processes depending on the sustainability agenda statements or policies. The GBC's three stakeholders who signed the sustainability agenda agreement (firm, district assembly and the beneficiary community) have a committee in place which scrutinizes annual budget for all projects. The same group appoint contractors for the execution of the agreed projects.

The sustainability agenda statement for Ghana Manganese Company (GMC) is an agreement signed between the mining firm and the environmental protection agency. This statement is also more concerned with the environmental aspect of sustainability as suggested by the triple bottom line. Below is an evidence of the statement. *"GMC is bound by Environmental Protection Agency (EPA) regulations to reclaim areas disturbed by our mining activities to ensure that the land can be used for other activities after the end of the mine"*. The GMC's sustainability agenda process takes the form of a reclamation plan agreed with the Environmental Protection Agency of Ghana (EPA). GMC reclaim lands disturbed as it mines along and have also posted a reclamation bond with the EPA to ensure funds shall be available to reclaim the land at the end of the mines life.

Gold fields Ghana limited has the most comprehensive sustainable development policy statement. The first part of the sustainability statement is captured here; *"Gold Fields Limited seeks to operate in a manner that represents a platform for responsible investment. This will be achieved by integrating sustainable development considerations into the decision-making process. The result will be an appropriate balance of the company's requirements to perform financially to strive toward world class standards in environmental management and to ensure broad social benefit"*. This statement encapsulates the three aspects of sustainability in relation to the TBL; social, environment and economic. In addition to that the role to be played by employees in achieving these commitments is also stated. Gold fields Ghana's sustainability agenda process takes many forms depending on the issues involved. Amongst these issues are social, economic, environment, ethics as well as the role played by its employees in the process to ensure its realisation. Table 1 below identifies the processes used by Gold fields in the implementation of their sustainability agenda.

Table 1 Sustainability agenda process for Goldfields

| Social                                                                                                        | Economic                                                                                                        | Environment                                                                                                                                                                                                                                                                                                 | Ethics                                                                                                              | employees                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Development and safeguarding of its social capital and to uphold human rights as it applies to its operations | Investment in and supporting the socio-economic development of communities that are affected by its activities. | Continually improve its environmental, health and safety performance through formalized management systems and cycles of review<br><br>Contribute to the conservation of biodiversity and to design and develop appropriate post mining land uses in the consultation with host communities and governments | Undertakes its business activities in a manner that is ethical and adheres to sound systems of corporate governance | Employees play a part in these ways by integrating sustainable development into everyday practice and reacting proactively and adhering to the Group's sustainable development policy |

### Sustainability Agenda Programmes-Triple Bottom Line

The results of the data analysed indicated that the three firms engaged in the sustainability agenda in line with the TBL proposed by (Elkington, 1998). All the three mining firms engage in some form of economic programs to achieve this agenda. GMC creates jobs that enables the communities achieve livelihood and the following except from GMC confirms this *“Alternative livelihood programs are organized for the communities to enable them earn a living”*. Economically, the GBC pays corporate and property taxes and, firm royalties to governments which are used in the development of the country. It has established banking facilities for the communities; created employment and a local market for local farm produce for the communities it operates within; *“The Nation benefits from taxes in the form of company royalties, property tax,*

*corporation tax etc. paid to the government by mining firms. Establishment of banking facilities for the area, and Employment creation has brought money in people's pockets and Market for local farm produce". Goldfields limited has developed economic interventions using corporate strategies, developing effective cost control measures using state of the art technology in operations to reduce cost. The most effective aspect of its operation is the preservation and the maintenance of the human resources of the firm through on-going training, payment of corporate taxes and creation of jobs in communities it operates in; "To stay in business and remain sustainable strategies used are, cost control measures. Use of modern technology in our operations and finally great attention is given training of employees". Goldfields*

On social intervention programmes, the GBC firm engages in the provision of social amenities ranging from health, education, sanitation, water, improvement of road networks in the towns and villages, employment creation and assistance to farmers. The Ghana Gold fields limited on the other hand have set up a foundation to carry out corporate social responsibility programs and projects in the host communities. These projects take the form of education, health, infrastructure, agriculture and micro enterprise developments. With the GMC all the seventeen communities in its catchment areas are provided with social amenities in the form of education and health facilities and means of economic empowerment. Table 2 below shows the various social programmes these three companies engage in implementing the sustainability agenda.

Table 2 Social Sustainability projects undertaken by the three firms

| <b>Awaso (GBC)</b>                                                         | <b>Nsuta (GMC)</b>      | <b>Tarkwa (Gold fields)</b>     |
|----------------------------------------------------------------------------|-------------------------|---------------------------------|
| Provision of pipe borne water                                              | Bursary scheme          | School-educational scholarships |
| Provision of boreholes                                                     | Infrastructure projects | Community centre                |
| Electricity supply                                                         | Livelihood projects     | Electricity provision           |
| School buildings from kindergarten, primary up to junior high school level | Donations               | Provision of community clinic   |
|                                                                            | Employment              | Portable drinking water         |

The last intervention is the environment and from the findings all the firms have in place similar programmes. Table 3 below shows the various environmental programmes the three firms engage in.

Table 3 Environmental sustainability agenda programs for the three firms

| GBC                                                                                                      | GMC                                                                                                                 | Gold fields                                                                                                                              |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Ensuring that the tailings dam is well secured to avoid spillage                                         | Agreed reclamation plan with the Environmental Protection Agency (EPA).                                             | Environmental management ISO 140001 certified                                                                                            |
| To ensure that rivers around are not polluted, monthly water samples are analysed to ensure water safety | A reclamation bond with the EPA to ensure funds shall be available to reclaim the land at the end of the mines life | Efficient management of activities to minimize negative impact and maximize positive impact of an environmental or socio-economic nature |
| Proper monitoring of blasting to avoid property damage                                                   |                                                                                                                     | Strict adherence to industry standards with respect to environmental management practices                                                |
|                                                                                                          |                                                                                                                     | Maintenance and implementation of internationally recognized environmental management systems                                            |
|                                                                                                          |                                                                                                                     | Compliance with legal and other requirements related to its environmental aspects                                                        |
|                                                                                                          |                                                                                                                     | Efficient use of resources and responsible management of all waste streams                                                               |
|                                                                                                          |                                                                                                                     | Contribution to conservation of biodiversity                                                                                             |
|                                                                                                          |                                                                                                                     | Establishment of appropriate awareness and training of employees in environmental responsibilities as required                           |

The GBC have processes and procedures to ensure secured dam areas to avoid spillage, avoid pollution of rivers through regular monthly analysis of water sample, monitoring of blasting to avoid damages to the areas operated. The GBC uses a different approach to ensuring environmental sustainability through land reclamation. GMC have a reclamation plan agreed with the Environmental Protection Agency (EPA) to reclaim lands disturbed during mining along. In addition to that, GBC has a reclamation bond with the EPA to ensure funds shall be available to reclaim the land at the end of the mines along. Gold Fields has the most comprehensive and proactive environmental sustainability activities. Gold Fields environmental management is ISO 140001 certified and certified by the international cyanide management institute. All activities are undertaken in a manner that strives to minimise or rectify adverse impact and maximize positive impact of an environmental or socio-economic nature. All requirements of the industry standards with respect to environmental management practices are assessed and met. Gold Fields implement, maintain and integrate internationally recognised environmental management systems that ensure continual improvement of environmental performance and the prevention of pollution through recognised practice. It complies with the application of the legal requirements and with other requirements to which the organisation subscribes to that relate to its

environmental management. Efficient use of its resources and engages in responsible management of all waste streams. Further, it contributes to conservation of biodiversity applying integrated approaches towards closure and post mining land use planning. To ensure these are effective, it establishes appropriate level of awareness and training of employees with environmental responsibilities required for their operations.

To ensure the effective implementation of sustainability, decisions and approaches for sustainability programmes differs in the three companies. With the GBC, the sustainability agenda is embedded at all levels of the organisational structure from the board of directors, management to all employees; *“From the board of directors through management to all other employees know about what is done for communities annually. These projects are published in the company’s monthly, quarterly and annual reports including our newsletter”*. Similarly at GMC, all employees from heads of department to subordinates are involved in the formulation and implementation of the sustainability agenda. *“Although we have separate sections responsible for environments and community issues, all departmental heads and their subordinates are involved in their implementation”*. Finally, at Goldfields limited sustainability is handled at the highest level and embedded in all the day to day operations in the firm. It also have dedicated regional and national sustainable development managers for West Africa and Ghana. The sustainable development manager West Africa reports solely to the Vice President West Africa. *“We have a Sustainable Development Manager for West Africa who reports to the Vice President West Africa. The Vice President only reports to the Chief Executive Officer. Below the Sustainable Development Manager West Africa is the Sustainable Development Manager Ghana. Sustainability is ensured at the highest level as well as in the day to day running of the company”*.

The evidence from the analysed data shows clearly that all three companies engage in the development and implementation of the sustainability agenda in Ghana’s mining industry, and all the players have a role to ensure their operations impacts positively in the society

## **DISCUSSION**

From the findings, the sustainability agenda is an important aspect of Ghana’s mining industry and all the stakeholders play their part to ensure its success. The evidence demonstrates that all the participating firms have sustainability agenda statements which identify their focus, process and types. However, the sustainability agenda statement developed by these firms apart from one firm, fails to capture all the three aspects of sustainability for sustainable development. According to Elkington (1998), TBL must comprise the entire three interventions, social, environment and economic, however, the findings revealed that the sustainability agenda statement from GMC focuses heavily on the environmental perspective whilst GBC’s leans more towards the social perspective. These two therefore fall short of the economic, and either social or environment aspects of TBL (Hart & Milston, 2003). The statement from Gold fields however, is very comprehensive and included all three perspective of TBL. The findings

also showed that Goldfields goes a step further to include a policy outlining the role employee's play to ensure the realisation of their programs (Veiga, et al., 2001; Richards, 2009). The sustainability agenda statements involve various stakeholders; government (regulators and policy makers), communities, mining firms, and owners of the mining firms in Ghana's mining industry for its implementation as suggested by Murray (1997) that stakeholder involvement is crucial to the success of sustainability. GBC's statement for example involves the firm, district assembly and local communities in the catchment area of four villages to fund all projects and GMCs signed agreement between the mining firm and the environmental protection agency.

The findings further have shown that the three mining firms performs sustainable activities and programmes that reflects the TBL although, GBC and GMC sustainability agenda statements fall short on two of the TBLs factors. This is in line with Veiga, et al., (2001) statement that mining community is seen as sustainable if it follows the principles of ecological sustainability, economic vitality and social equity in the long-term when the mine is both operational and un-operational. The findings shows that the three firms have some strategies in place for the implementation of sustainability projects suggested by Elkington's (1998) TBL framework, hence are deemed sustainable. The three firms uses similar social activities in all the surrounding communities which they have termed "catchment areas" in the form of the provision of school buildings, community clinics, bore holes, electricity, sanitation, community gathering halls and others. Hence, catering for the needs of the mining communities the participating firms have laid down comprehensive processes and activities to achieve this. Various consultations take place before the projects begin. Dialogues between the elders of the community and the district assemblies reveal what is important and needed at particular periods. Agreements are reached on the particular project after which letters are sent to the company through the Personal Relations Officer who then forwards it to management for action to be taken. This leaves a trail of evidence of correspondence on the part of the firm and stakeholders for later retrieval and discussions.

Although Ghana has made good attempt in ensuring community sustainability in the mining industry as a developing country (The Ghana Chamber of Mines, 2010) however, the findings show that its progress over the last ten years compared to the developed countries is minimal especially in the area of the labour issues and the capacity of government to ensure that the mining industry contributes it fair share to the sustainable development of the country (Jasmine, 2012). The findings demonstrates that labour aspects of the social sustainability, fair working conditions and wages falls short in the sustainability agenda of two of the three mining firms and the only company which engages in this is carried out partially through training of its workforce. Further, what we see in most developing countries and Ghana not being an exception is that the mining firms play the role of governments contributing towards sustainable development (IIED, 2012). Governments in developing countries need to reclaim part of its role in the communities and economic development through partnership with the mining companies to ensure appropriate oversight and value adding services to the

communities and socio economic development of the country (Bebbington & Bury, 2009).

Since the 1990s onwards Ghana has implemented regulation and established administrative structure to ensure the compliance of legal and administrative environmental rights and legal protection of society (Aryee, 2011). Environment perspective of the triple bottom line is the most adhered to sustainable development in Ghana due to the following; nature of the mining industry and the regulations laid out in the 2006 Minerals and Mining Act, the national environmental policy of Ghana and further guidelines for monitoring developed by the EPA, in conjunction with the forestry and water resource commission. Satisfactory environmental programmes and funding are a prerequisite to provision of a mining license. The findings showed that the three firms in compliance to these have laid down procedures to avoid pollution during operation of the water bodies, air, noise as well as land. Further, proper monitoring system for blasting has been put in place to avoid damaging of properties, efficient securing of tailings dam to avoid spillage, and monthly analysis of water samples to ensure water safety (Crane and Matten, 2010). Other ways through which environmental perspective is undertaken Ghana is through a reclamation plan agreed between the EPA and the mining firms to ensure that lands are reclaimed as mining activities move along especially the disturbed ones. There is also a post reclamation bond also signed between some of the mining firms the EPA to ensure funds are made available to reclaim the lands at the end of the mines life (Crane and Matten, 2012). It must be noted that though there are laid down procedures and policies for environmental protection, the firms in Ghana face challenges in meeting them as they have to address the needs of many stakeholders within its operations. This often times makes it difficult for the firms to address all the needs appropriately hence, some negative effects of mining in Ghana still exist. Even though the negatives effects in mining is known several decades, the mining firms in the study have made good in roads toward environmental protection not due to improvement in the regulatory framework or legal reform in 2006 but, rather these have been achieved based on the introduction of better production techniques and the advancement in international best practices in sustainable developments (Aryee et al. 2011), however, the environmental programmes does not fully meet the standards and principles of the sustainability agenda.

Finally, the three firms have undertaken economic interventions in the form of paying corporate and property taxes and, royalties to the government. The literature in section two illustrates that an economic sustainability is often viewed as profits that adds real economic value to the society as a whole and not only in financial terms (Elkington, 1998). The participating firms have developed and implemented strategies to compete to provide products and services which help to raise their market share and revenue for the firm's survival (Crane and Matten, 2010). The mining sector plays an important role in the socio-economic development of the West African state through its contribution of over 12% to the government's revenue, 41% of total export earnings annually, GDP of 6.8% and a minimum of 3% royalties from the mining company's gross output every



quarterly (Ghana Chamber of Mines (2010)). The economic aspect is also linked to the social sustainability agendas in their provision of social amenities for their communities which includes building schools, hospitals, and banking facilities, creation of employment and market for local farm produce.

The three firms also have put in place processes to ensure the effective implementation of their sustainability agendas. The findings indicated a considerable effort to ensure sustainability reporting through instituting responsibility across board at all levels of the organisational structure, this runs from the board of directors through management to all other employees. In particular instances departmental heads and their subordinates are involved in the implementation of sustainability agenda. Some of the firms ensure effective communication through the publication of sustainability projects in the firm's monthly, quarterly and annual reports. However, only one firm, Gold fields uses the global reporting standards which advocates for sustainability reporting through laid down standards in the collection and communication of data. It also has dedicated sustainable development teams (regional and national managers reporting directly to the vice president in West Africa) to conduct these reporting (Global Reporting Initiative, 2012). Even though the firms indicated that they report their sustainability agenda, only one of them uses a global professional procedure (GRI) to record its sustainability agenda in a more systematic and standardised reporting procedures. This system is used globally for the reporting of sustainability and firms can improve on their sustainability agenda if they constantly report on their economic, social and environmental programs through data collection, communication and responses from stakeholders.

## CONCLUSION

The aim of this research is to investigate the sustainability agenda in Ghana's mining industry evaluating the sustainability agenda and types used by mining firms in Ghana. The main research question for the paper is *what is the sustainability agenda of Ghana's mining industry?* From the findings of this study, the mining industry in Ghana is aware of the consequences of their operations on society at large and as a result all the players have put in place sustainability agenda as a way of giving back to society what has been taken away in the form of social, environmental, and economic interventions. The mining firms have sustainability agenda statements which are in the form of agreements signed with various stakeholders to ensure that the right things are done socially, economically and environmentally.

Socially, the interventions take the form of provision of social amenities in the form of health and educational facilities, sanitation, utilities, road improvements, employment creation as well as assistance to farmers in their various communities. Environmentally the sustainability interventions take the form of reclamation of lands as they mine, treatment of water bodies, proper mining procedures followed to avoid property damage and chemical spillage. Economically, interventions include payment of royalties and taxes to government. It also involves the establishment of banking facilities in these communities which supports economic activities. Creation of employment through and

patronising of farm produce from the local farmers and traders which creates market for the local produce. Further, it is concluded that sustainability agenda in the mining industry goes through proper processes and procedures depending on the type of agreements signed between stakeholders with most of the economic interventions backed by the mining laws and laid down procedures for example, payment of corporate and royalty taxes. Environmental laws of the land are monitored by the Environmental protection Agency of Ghana. The mining firms therefore have environmental, health and safety departments that ensure that all their activities follow a sustainable process. The social interventions also proceed based on agreements between the mining firms and the various communities as well as district assemblies. Consultations are made and a consensus is made on particular projects and how it should be undertaken. The mining firms provide funding for the projects and in some cases the communities contribute in the form of labour and districts also contribute a 10% of the total cost and the rest borne by the mining firms. The projects are commissioned by all the parties involved. From the findings in this study, it is concluded that although the three participating mining firms have made great strides in sustainable developments, the findings shows that they focus mostly on the social perspective of sustainability on community initiatives in the areas of education, health, banking facilities, job creation and income generating activities (Anaman, 2008). However, to achieve the TBL, mining firms must operate equal balanced approach of social, economic and environmental perspectives. In conclusion based on the findings of this study, Ghana operates partial sustainability focused mostly on the social community level of their operations.

Although, this study makes great strides in the sustainability literature and concept in a developing country, it has some limitations. First, the sustainability agenda is a complex and very sensitive area of the mining sector hence; this study is an exploratory study and cannot be generalised to all other mining firms in developing countries apart from the focus of study. Since most information is kept confidential by these firms collecting confidential information from the firms was quiet difficult and gaining access to the mining companies to engage in the research was very difficult hence, only three mining companies agreed to participate in the study and the limited time of participants due to their busy schedule made collection of data difficult hence; some of the interviews were conducted via email or telephone.

This study has just scratched the surface of a big concept as such further research is required to confirm, support and improve these findings. A further research should be to capture the perspectives of the other stakeholders such as local communities, district assemblies, and environmental agencies to ascertain the impact of sustainability agenda on these stakeholders. Another novel research area is the development of measurement strategies for measuring and quantification of the impact of the sustainability agenda. Finally, identify the barriers to effective implementation of sustainability agenda in Ghana. Finally, using quantitative research methods to examine the sustainability agenda in other industrial sectors in Ghana and compared to the mining industry's programmes is also important.

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