Abstract

The purpose of this paper is to analyse sustainability reporting information reported by two plant sites of a multinational mining firm operating in Ghana. It draws on institutional theory and firm characteristics to compare and contrast the sustainability reporting contents on the websites of two plants of a multinational mining company in the same country. The study uses case study approach with qualitative content analysis to benchmark the sustainability information found on the websites of the two plants of Newmont Mining Corporation, Newmont Ghana Gold Ltd at Ahafo and Newmont Golden Ridge Ltd at Akyem based on the Global Reporting Initiative and the United Nations Division for Sustainability Development models. It was discovered that even though both plants reported on all aspects of sustainability - economic, environmental and social, the plant sites vary in the contents and details of reports even though the websites had the same headings. These variations are arguably due to the institutional pressures and variations in the characteristics of the two plants. This paper contributes to an understanding of how on site-specific institutional pressures from stakeholders such as community and regulatory bodies and the size and age of subsidiaries may impact on sustainability reporting.

Keywords: Sustainability Reporting, Mining firms, Content analysis, Web sites, Africa.

Paper type Research paper

Comparing sustainability disclosures on corporate websites: A case study of Newmont Mining Corporation's plant sites in Ghana

1. Introduction

Multinational enterprises' sourcing from developing countries provide potential benefits to host country suppliers, on the other hand, concerns have been raised on the over emphasis of multinationals on cost reductions in the host nation's supplier, outsourcing of production activities to low-income countries undermines corporate social responsibility tenets (e.g., Gorg and Seric, 2016). In response to this, some multinational corporations have resorted to sustainability reporting which has drawn the attention of many researchers (Amoako, Marfo, Gyabaah and Ghorman, 2017). Hence, there are now many studies evaluating the contents of sustainability reporting of multinational corporations and most of them are comparing sectors and regions (such as Amoako et al., 2017; Morhardt, 2010; KPMG, 2014; Stanny and Ely, 2008; Adelopo et al., 2012; Branco, et al., 2014; Fifka and Drabble, 2012). Such studies conclude that there are variations in reporting among industries and regions. However, only a few, if any have focussed on sustainability reporting among subsidiaries of a multinational corporations operating in the same country. This study uses institutional theory and qualitative content analysis to systematically examine subsidiaries of a multinational corporation in the same country.

Sustainability reporting is particularly important to multinationals operating in the mining sector. The mining industry involves critical social and environmental issues making stakeholder pressures paramount (Jenkins and Yakovleva, 2006). Lodhia and Hess (2014) claim that "the mining industry requires effective sustainability accounting and reporting in order to transition to sustainability" (p. 43). Consequently, companies in the industry need to provide evidence of their social and environmental responsibility to their stakeholders, and sustainability accounting and reporting is an approach that has been increasingly utilised by them (Jenkins and Yakovleva, 2006). Hence, recently, there has been an increase in sustainability research into natural resource exploration. Nevertheless, sustainability reporting studies on the mining sector primarily focus on the contents of sustainability reports among

different mining companies at different locations (such as de Villiers and Alexander, 2014; Dong et al, 2014; Fonseca et al, 2014; Jenkins and Yakovleva, 2006). Most of these studies suggest that there are country and industry-specific differences in the extent of CSR reports (e.g. Khlif et al., 2015b; Kolk, 2005) and that, using a range of definitions and indicators, firms disclose different kinds of information and present differently (KPMG, 2014). Interestingly, few studies, if any, have examined differences in sustainability reports published by subsidiaries within a large organisation in the same country. This study seeks to fill this gap.

The KPMG (2014) survey of corporate sustainability reporting indicates that increasingly more companies are using the internet as a tool to disseminate their environmental performance due to the ever-increasing number of internet users and the internets perceived benefits. Corporations have switched from more traditional mass media communication channels to the use of websites (Jose and Lee, 2007; Lodhia, 2018). Websites provide the opportunity for organizations to disseminate annual reports produced by companies as well as supplementary information on specific locations at a cheaper, faster, and easier manner (Duff, 2016; Jose and Lee, 2007; Morhardt, 2010). Managers use websites to manage perceptions at any time whereas the annual report is produced only at a set time (Lodhia, 2014). Nevertheless, sustainability studies have mainly focussed on annual reports and studies based solely on website information is rare and this study aims to bridge this gap.

The Cable News Network (CNN, 2014) ranking of the top ten countries at risk for climate change shows that developing countries particularly in Africa are at more risk than developed countries. The list shows that Bangladesh, Guinea-Bissau, Sierra Leone, Haiti, South Sudan, Nigeria, Democratic Republic of Congo, Cambodia, Philippines, and Ethiopia are more vulnerable to sustainability challenges. Yet sustainability studies have mainly compared western countries in their sample, by analysing only European countries (Adelopo et al., 2012; Branco, et al., 2014; Fifka and Drabble, 2012) or making comparisons also with countries from other continents (Chen and Bouvain, 2009; Hartman et al., 2007; Legendre and Coderre, 2013; Orij, 2010; Saida, 2009). The emerging economies that can quickly become corporate social responsibility (CSR) flashpoints have not received much attention from researchers (see Dawkins and Ngunjiri, 2008). Clearly, there is a need to intensify sustainability reporting research in these nations.

Given the dearth of literature and the relatively late pick-up of interest in online reporting in developing countries (Ahmed, et al., 2013), the purpose of this paper is to provide a detailed descriptive account of the sustainability disclosure contents on the websites of two plants' of a multinational mining corporation operating in a developing economy: Ghana. Based on qualitative content analysis, the paper addresses the key question: how do multinational mining corporations embark on sustainability reporting of subsidiaries on their websites and what are the drivers of sustainability reporting?

This paper contributes to the literature by showing striking variations in sustainability reporting contents across subsidiaries of a multinational mining corporation operating in the same country.

The rest of the paper is structured as follows: section 2 elaborates on drivers of sustainability reporting from institutional theory and firm characteristics related perspectives. Section 3 presents what motivates sustainability reporting in emerging economies with reference to Africa. Section 4 presents the research context. Section 5 describes the methods of data collection and analysis. Section 6 presents the findings of this study. Section 7 discusses the findings. Section 8 draws conclusions from the study and makes recommendations for policy and practice and finally, section 9 outlines the limitations of the study and suggestions for further research.

2. The drivers of sustainability reporting

Many studies (such as de Villiers et al., 2014; Hahn and Lülfs, 2014; KMPG, 2016) have recorded an upward trend in environmental disclosure both in annual and stand-alone environmental reports. Consequently, another focus of debate on sustainability reporting is over whether sustainability reporting should be a voluntary process or be regulated. However it can be argued that such voluntary reporting may allow companies to choose what to report and what to omit from the reports so that they appear to be sustainability conscious (see Gjølberg, 2011; Ioannou and Serafeim, 2017; Kaur & Lodhia, 2018; Laufer, 2003). Thus, drivers for sustainability reporting performance of companies vary (Deegan, 2002; Milne and Gray, 2013). Notably, institutional pressures, location and country of origin factors and firm characteristics. Nonetheless, reports often reflect the elements of the triple bottom line: economic, environmental and social.

Figure 1 about here

2.1 Institutional theory and sustainability reporting

Several studies (e.g. Adams and Larrinaga-González, 2007; Amoako., Lord and Dixon, 2017; Bebbington, et al., 2014; Buhr, et al., 2014; de Villiers et al., 2014; Hahn and Lülfs, 2014; Larrinaga, 2007; Neu et al.,1998; O'Dwyer, 2002) draw on institutional theory to indicate that using sustainability disclosures, firms tend to respond to environmental pressure and that they omit the interests of less powerful publics in order to meet the demands of more powerful publics such as shareholders (Neu et al.,1998; O'Dwyer, 2002).

Institutional Theory can be used to understand how groups and organizations secure their positions and legitimacy by conforming to the rules (such as regulatory structures, governmental agencies, laws, courts, professions, societal and cultural practices) and norms of the institutional environment (DiMaggio and Powell, 1983; Meyer and Rowan, 1997). Institutional Theory posits that external social, political, and economic pressures influence firms' strategies and decision-making as firms seek to legitimize their operations in the view of other stakeholders (Burh et al., 2013). Legitimacy here refers to the adoption of sustainable practices perceived by stakeholders as being proper and acceptable (DiMaggio and Powell, 1983).

Institutional theorists claim that early adoption of organisational practices are driven by efficiency considerations, but later adoption of such practices is driven by legitimate forces (DiMaggio and Powell, 1983). Thus, as organisational practices become widely diffused, this practice becomes normal and moreover, organizations come to resemble one another (i.e., isomorphic). DiMaggio and Powell (1983) outline three types of isomorphic forces; mimetic, coercive and normative. Mimetic refers to companies benchmarking practices with each other (Larrinaga-González and Bebbington, 2001). Thus, when enterprises emulate the practices of successful competitors in the industry, in an attempt to replicate the path to success and hence legitimacy (Aerts et al., 2006; Sarkis et al., 2011).

Sustainability disclosure in a particular sector may be driven by mimetic tendencies, which would explain the presence of reporting activities despite the absence of legitimacy threats or stakeholder pressure (e.g., Aerts et al., 2006; Brown, et al., 2009). Coercive forces refer to companies being strong-armed into a course of action (DiMaggio and Powell, 1983). Coercive pressures are crucial to driving sustainability (Kilbourne et al., 2002), hence sustainability reporting. Normative forces refer to the professionalization of norms through professional bodies (Bebbington, et al., 2014) such as the GRI and the UNDSD. Normative forces, therefore,

exert influence because of a social obligation to comply, rooted in the social necessity for an organization or individual should be doing (March and Olsen, 2006).

Thus, each of these isomorphic forces can be used to explain how changes in sustainability disclosure among mining companies can occur (de Villiers et al., 2014). Consequently, corporate practices such as sustainability disclosures are to gain legitimacy (Milne and Gray, 2013). On the contrary, Higgins, Stubbs & Milne (2018) claims otherwise in their study which was based on analysis of interaction trends between non-reporting corporations and other sustainability stakeholders concludes that there are "patterns of discursive and material isomorphism that suggest sustainability reporting is confined to an issues-based field, rather than spreading as an institutionalised practice across the business community" (309).

Nevertheless, most of the studies on sustainability reporting that applies institutional isomorphism mentioned earlier in this section examine the contents of annual reports of corporations in advance economies. Thus, there is inadequate evidence upon which to determine whether these theories of disclosure and CSR also apply to corporate subsidiary websites disclosures and to multinationals subsidiaries in emerging economies such as Ghana. This study fills this gap by exploring what is reported on corporate websites by two plants of Newmont Mining Corporation, operating in Ghana. The paper investigates the institutional factors that account for the contents of these disclosures and its implications.

Institutionalisation and sustainability reporting indexes in the mining sector

In order to survive, it is expected that organisations conform to social norms of acceptable behaviour (Amoako, et al., 2015; Vigneau, Humphreys & Moon, 2015). However, some industries are claimed to be more sensitive to external demands and have high political costs, and as such members would emulate industry norms as a legitimation strategy (Amran and Haniffa, 2011). Some prior studies provide evidence of the influence of industry membership on sustainability reporting (Amoako, et al., 2015; Patten, 1991; Hackston and Milne, 1996). These industry associations usually propose reporting frameworks such as the GRI and the UNDSD which then become institutionalised over time (Amoako, et al., 2017; Brown, de Jong & Levy, 2009; Vigneau, Humphreys & Moon, 2015). The mining sector being environmental sensitive is driven by institutional forces from the International Council on Mining and Metals (ICMM), country specific regulatory bodies and global corporate trends, mining corporations are increasingly publishing GRI-based sustainability reports (Fonseca et al, 2014; KPMG,

2014). According to the GRI (2015), over 100 mining companies publish sustainability reports, 95% of which are based on the GRI framework.

The proliferation of sustainability reports in the mining sector has called for the attention of growing numbers of analysts and academics, whose analytical approach to this phenomenon has been predominately descriptive (Jenkins and Yakovleva, 2006; Lodhia and Hess, 2014; Perez and Sanchez, 2009). Such studies are primarily confined to characterizing reported data, assessing quality, and identifying trends. Extant research findings indicate that GRI-based sustainability reporting is on the rise and is likely to continue to gain salience in the mining sector.

There are several environmental reporting indexes and two of them are used in this study- The GRI (G3) and the UNSDS. This is because, firstly, the GRI has been used extensively in 95% of all mining and minerals industry sustainability reports (GRI, 2015), an indication of its appropriateness for the current study. Secondly, even though the UNDSD covers just the environmental aspect of sustainability, it is more detailed than what is provided on the environmental aspects in the GRI (see Appendixes 1 and 2). Hence, we decided to fuse these two indexes together for this study. A brief overview of the indexes follows.

The United Nations Division for Sustainability Development (UNDSD)

In 2001 the United Nations developed a framework focusing on techniques for quantifying environmental expenditures or costs as a basis for the development of national sustainability accounting guidelines and frameworks. The UNDSD framework, which covers only the environmental aspect of sustainability, recommends that two main types of sustainability information be reported: physical and monetary (see appendix 1). Physical information covers the use, flows, and destinations of energy, water, and materials (including wastes). Monetary sustainability accounting information is information on environment-related costs, earnings, and savings (UNDSD, 2001).

Global Reporting Initiative (GRI) – Mining and metals sector

GRI is an international independent standards organisation that empowers businesses, governments, and other organisations to appreciate and communicate their impacts on issues such as climate change, human rights, and corruption. The Global Reporting Initiative has pioneered and developed a comprehensive Sustainability Reporting Framework that is widely used around the world (GRI, 2015; KPMG, 2014) (see appendix 2). The GRI has categorised

their reporting guidelines into ten sectors: airport operations, food and processing, construction and real estate, electric utilities, media, mining and metals, oil and gas, event organisers, financial services, and NGOs.

2.2 Location and firm related drivers of sustainability reporting

Apart from institutional factors, studies have investigated other determinants of sustainability and financial performance and conclude that the location, country of origin, age and size of a firm influence sustainability reporting.

Several studies use quantitative approaches (e.g. Maignan and Ralston, 2002; Gill et al., 2008) to show that the location, country of origin of a corporation are associated with sustainability reporting due to different cultural and social norms (Gallego-Álvarez & Ortas, 2017), or governmental regulations (Sotorrío and Sánchez, 2010; Ioannou and Serafeim, 2017; Kaur & Lodhia, 2018; Wanderley, et al., 2008; Cormier and Magnan, 2004; Hahn and Kühnen, 2013).

The relationship between firm characteristics and sustainability reporting has also been studied. The age of a company's assets has also been established to relate to the extent of sustainability reporting. Stanny and Ely (2008) argue a negative relationship between asset age and the decision to disclose environmental information. On the contrary, Cormier and Magnan (2004) indicate a positive relationship between the extent of sustainability reporting and age of business assets. Nevertheless, others posit that there is no relationship between sustainability reporting and age of business assets (e.g., Clarkson et al., 2011).

Corporate size (measured by total assets, turnover, sales, number of employees, or market capitalization) has been found to have a positive effect on the adoption and extent of sustainability reporting; assuming that larger companies cause greater impacts, become more visible, and therefore face greater stakeholder scrutiny and pressure (e.g., Fortanier et al., 2011). Arvidsson (2010) found that sustainability reporting among large multinationals is often viewed as a way to communicate social and environmental initiatives to stakeholders. On the contrary, other studies perceive that sustainability reports are being used to demonstrate to stakeholders and to society that a company's activities and behaviours are within accepted norms (Aras and Crowther, 2009; Deegan, 2002; Hörisch *et al.*, 2015; Lodhia and Milne and Gray, 2013). Similarly, there might be pressure from various external interest groups for management to report on sustainability (Frost and Wilmshurst, 1998).

Analyses of the phenomenon confirm that such reporting is principally restricted to the very largest companies and is, to an extent country and industry variant (see Morhardt, 2010; KPMG, 2014; Stanny and Ely, 2008). However, these studies mainly focus on firms operating in Western countries (Adelopo et al., 2012; Branco, et al., 2014; Fifka and Drabble, 2012) or making comparisons also with countries from other developed continents (Chen and Bouvain, 2009; Hartman et al., 2007; Legendre and Coderre, 2013; Orij, 2010; Saida, 2009), other than emerging countries including those in Africa.

2.3 Sustainability reporting in emerging economies

Historically, multinational corporations operating in developed countries have been the drivers of the adoption of sustainability reporting around the world because of the importance of this practice in their home countries (Li, Fetscherin, Alon, Lattemann, & Yeh, 2010; Marano, Tashman & Kostova, 2017). On the other hand, since the turn of the millennium, evidence indicate that corporations in emerging economies have been struggling to catch up in the use of sustainability reporting (UNCTAD, 2011). Thus, multinational corporations operating in emerging economies are claimed to take advantage of their host-countries' institutional environments characterized by weak corporate governance and therefore do not provide host country stakeholders with adequate sustainability reporting for evaluating these firms (Cuervo-Cazurra and Ramamurti, 2014; Marano, et al., 2017).

In the context of Africa, Gorg, Hanley, Hoffmann and Seric (2017) claims that "while African countries are becoming more and more relevant as host countries for suppliers of multinational companies, little is known about corporate social responsibility (CSR) in this region" (p. 191). Unlike advanced economies where a number of extant studies have explored sustainability reporting, sustainability practices and reporting in Africa is lagging behind. The few studies available provide evidence that sustainability reporting is at the infant stage in Africa and to a large extent, influenced by institutional factors. Some of these studies are: Ahmed, et al., (2017)-Egypt; Dong, Burritt, Atkins and Maroun (2012) - South Africa; Isa (2014)-Nigeria; Ahmed, et al., (2017), Rahaman et al. (2004), and Hinson, Gyabea and Ibrahim (2015)-Ghana.

Ahmed, et al., (2017), aimed to provide exploratory evidence about the use of the internet for disclosure purposes by non-financial companies listed on the Egyptian Exchange. The study found that 40.7 and 42.7 percent of the sample companies provided some form of financial information via their websites in 2010 and 2011 respectively. Similarly, Isa (2014) assessed

sustainable reporting among food and beverage firms in Nigeria and documents that the firms exhibited some level of sustainability reporting though not significant; it only comprised of about two percent of the annual reports total disclosures. In South Africa, Atkins and Maroun (2012) conclude that there is more emphasis on nonfinancial measures and evidence of an attempt to integrate financial and environmental, social and governance metrics to provide a better understanding of organisational sustainability. In a similar study, Rahaman et al. (2004) studied perceptions of social and environmental reporting by senior managers of Ghanaian companies and report that organizational structure and accounting systems are influenced by socio-political and cultural factors and that coercive force from the World Bank influences sustainability disclosures. Hinson, et al., (2015) also discovered that none of the six Ghanaian universities used in their study had stand-alone sustainability reports; they all reported on their university sustainability performance through websites and annual reports, despite not explicitly claiming to be addressing sustainability.

Regarding the mining sector, even though the activities of some companies are causing environmental and sustainability in Ghana and other African countries (KPMG, 2014; Mbendi, 2016), very little is known about sustainability reporting in the sector in Ghana and other African countries and this study seeks to investigate sustainability reporting of a multinational Mining Corporation, operating two sites in Ghana. In order to answer the main research question, the following three sub research questions will be addressed.

1. What are the drivers of sustainability reporting on the websites of two different plants' operated by Newmont Mining Corporation in Ghana?
2. What aspects of sustainability are externally reported on the websites of two different plants' operated by Newmont Mining Corporation in Ghana?
3. How do the contents of sustainability external reporting by these two plant sites compare and contrast with each other?

2.3 The Context

Ghana, an emerging economy was chosen for this study as the second largest producer of Gold in Africa after South Africa. As a heavy mining country, Ghana faces numerous environmental challenges from over 300 registered small-scale mining and large-scale mining firms, excluding hundreds of illegal miners (KPMG, 2014; Mbendi, 2016). In addition, among its

peers in Africa, Ghana was hailed as a model for African growth (BBC, 2017) and high reputation for sustainable democracy (Kamstra and Knippenberg, 2014). Ghana is part of the Extractive Industry Transparency Initiative (EITI); extractive firms public disclosure platform on their payments to governments, in encouraging citizens to hold governments accountable as a measure of improving management of natural resources, reduce corruption, and mitigate conflict (Haufler, 2010).

2.3.1 Sustainablity reporting regulatory framework in Ghana

Similar to the global mining sector, mining companies in Ghana report their activities to the local and international stakeholders using international reporting standards like the GRI (Amoako et al, 2015). This reporting mechanism is to ensure that mining firms present to their stakeholders and the general public evidence of their social and environmental responsibilities such as infrastructure development and measures to take care of air and water pollution (Fonseca et al., 2014; Pellegrino & Lodhia, 2012). Similar to the global mining sector, sustainability reporting by mining firms in Ghana is mostly in accordance with the GRI framework (Amoako, et al., 2015; Fonseca et al., 2014). A key regulator in Ghana's mining sector is The Ministry of Minerals, Lands and Natural Reserves and its agencies. The ministry publishes historical information on production volumes, prices, the value of mineral exports, estimates of investment in the mining sector, production stream values, and royalties (Revenue Watch Institute, 2013). The Ministry of Minerals, Lands and Natural Reserves' agencies such as the Environmental Protection Agency and the Water Commission also report on the environmental and social performance of the mining sector covering mining firms' ability to minimise toxic release and other pollution control measures (Essah & Andrews, 2016). Furthermore, the Central Bank of Ghana provides data on exports, production volumes and prices but the most comprehensive information on mining revenues is published in Extractive Industry Transparency Initiative reports, which include production volumes, mineral export

values, the names of companies operating in the country, production data by company, production stream values, royalties, special taxes, dividends, license fees, and acreage fees (Revenue Watch Institute, 2013).

2.3.2 An Overview of Newmont Mining Corporation (Ghana) and Sustainability

Newmont Mining Corporation parent company is a member of the International Council on Mining and Metals (ICMM) and to maintain inclusion on the Dow Jones sustainability index, reports on sustainability in accordance with a number of voluntary initiatives, including the GRI (Newmont Mining Corporation, 2015). Newmont Mining Corporation has ten plant sites on five continents and seven countries, with two sites in Africa: Newmont Ghana Gold Ltd and Newmont Golden Ridge Ltd, both in Ghana. Each site has a separate website on the parent's website. Located in the Brong Ahafo region of Ghana, Newmont Ghana Gold Ltd began operating in 2006. The Newmont Golden Ridge Ltd plant is located in the Eastern region and started operating in the last quarter of 2013. Annual approximate outputs as of 2014 were 442,000 and 472,000 ounces of gold respectively, with 4400 and 2000 employees and contractors (Newmont Mining Corporation, 2015).

Newmont was chosen as a case study out of the several mining firms in Ghana because they are a multinational mining firm, listed on the New York Stock exchange since 1940, and has a lot of mining experience and a reputation for sustainability (Business Day, 2015; Newmont Mining Corporation, 2015). For example, Newmont was the first gold mining company selected to join the Dow Jones Sustainability World Index which is based on a rigorous analysis of corporate economic, environmental and social performance and it has been included in the index every year since 2007 (The Herald Team, 2013; Newmont Mining Corporation, 2015). In Ghana, the Newmont Ghana Gold Ltd Mine emerged the best performer in innovation and placed second in two other categories: Local Content and Environmental Management whilst the Newmont Golden Ridge Ltd Mine, won the best performer in the environmental management category and placed second in the best performer in the innovation category (Business Day, 2015).

In spite of these commendable sustainability achievements by Newmont, there has been a number social and environmental incidents reported in the media on its operations. For example, on April 04 2015, it was reported that aggrieved residents at Damso and its environs, mining communities within the catchment area of the Newmont Ghana Gold Limited, threatened the lives of the expatriate workers, if the multi-national mining company failed to

re-locate them. More than 500 residents at Botokrom, Agyamankrom, Hohorase, Asumikrom, Amadukrom and Krobeakrom, gave the mine a two-week ultimatum to do the re-settlement or face their anger. (Source: https://congaconflict.wordpress.com/2015/04/30/communities-rise-up-at-newmonts-ghana-mine/). In another reportage in the media on November 28 2016, an environmental advocacy organisation, known as The Wassa Association of Communities Affected by Mining (WACAM), petitioned the Ghana Government to suspend all mining activities in forest reserves and withdraw the leases of mining companies who conduct their activities in the reserves. The environmental advocacy group alleged that the Government had granted mining leases to multinational mining companies to undertake open cast mining in forest reserves. It claimed that the Newmont Golden Ridge Ltd Mine, for instance, was approved to undertake surface mining operations in the Ajenua Bepo Forest Reserve. (Source: http://citifmonline.com/2016/11/28/stop-mining-in-forest-reserves-wacam-to-govt/#sthash.R7G5figq.dpuf). However, it is not clear whether these concerns reflect sustainability reporting on the websites.

Insert Table 1 about here

3 Methods

This section discusses the method used by the researchers in conducting the study. It covers the research strategy, the data sources and the method of data analysis. Sustainability reporting studies (e.g., Bebbington, et al., 2014; Buhr, et al., 2014; de Villiers et al., 2014; Hahn and Lülfs, 2014; Larrinaga, 2007; Neu et al.,1998; O'Dwyer, 2002) have mainly used quantitative and mixed methods techniques to examine the contents of reporting. To the best of our knowledge, this study is among the few to adopt a pure qualitative content analysis research approach to sustainability reporting.

3.1 Research Strategy

A case study strategy was adopted since case studies allow an in-depth understanding of a specific context (Ryan et al., 2002). A large multinational mining company was chosen, and two sites of the mining company in Ghana were examined in depth, to compare and contrast the environmental accounting practices in terms of the triple bottom line elements reported and the form in which they are reported. The comparison may enable the researchers to ascertain whether institutional pressures and subsidiary characteristics influence sustainability reporting.

3.3 Data collection

Data collected from the websites comprise headings with drop-down menus, web pages, and downloaded reports. On the websites of each plant site, headings are arranged in the following order: overview, operations facts, health and safety, environment, community, career, reports, news, and contact. Under each menu are narratives and drop-down menus or documents reporting on sustainability. The information on these web pages and the documents were used for this study. Overall, 82 web pages and documents were examined. Furthermore, we searched for evidence of the isomorphic forces in the disclosures on the two plants' websites and external evidence of these forces in the media and other documents. This was done to support the disclosures found on the plants' websites with external evidence in the media and policy documents of regulatory bodies such as the Environmental Protection Agency Act, 1994 Act 490 (see table 4). We followed this method because sustainability reporting contents are legitimisation mechanisms used by mining firms in response to the societal and institutional pressures experienced by companies (Bebbington et al., 2014; de Villiers and Unerman, 2014; Lodhia, 2014).

Yet, researchers have argued disclosures made on corporations' websites have the inherent challenge of websites changing frequently and necessitating speedy collection of data (Purushothaman et al., 2000). In this regard, the researchers accessed sustainability data and information on the websites of the two African plant sites- Newmont Ghana Gold Ltd and Newmont Golden Ridge Ltd, from 2nd August to 28th October 2015 using sustainability reporting indexes explained in the next section.

3.4 Data presentation and analysis

As a way of evaluating the reporting of a mining company, this study groups the elements of both the UNDSD and the GRI indexes under the three bottom-line categories and notes if and how the case company sites report on each element. The disclosure used for this study were all information found on the plant's websites ranging from economic, social and environmental disclosures. This information was in the form of reports and web pages found on the plant sites (See appendix 4 for details). In this study, the researchers looked for elements of the UNDSD and the GRI indexes in the content of data on the websites of the two plant sites used for the study. We used the GRI model because extant research indicate sustainability reporting based on the GRI is on the rise and is likely to continue to gain salience in the mining sector (Fonseca, et al, 2014) and combined it with the UNDSD elements because it covers only environmental aspect of sustainability and not all the elements found in the UNDSD is in the GRI.

Our findings are presented in both narrative and tabular format for ease of comparison and benchmarking. Each table presents one category of sustainability data (economic, environmental or social) and has five main columns with details in this order: aspects that fall under that category; whether information on sustainability was found in the narrative, or in physical or monetary measures; and the source documents for the sustainability information (see tables below). The "aspects" columns comprise elements of sustainability recommended by GRI and UNSDS combined. If an aspect of sustainability was found on any page of the website or in the documents accessed, be it in narrative, physical or monetary form, the appropriate cell was shaded solid or hatched for Newmont Ghana Gold Ltd and Newmont Golden Ridge Ltd sites respectively. The "documents" columns of the tables contain abbreviated titles of documents (see Appendix 3 for full names of each document). Furthermore, evidence of the isomorphic forces in the disclosures on the two plants' websites and external evidence of these forces in the media and other documents are also presented. The next section details the methodological approach taken for the empirical work.

4 Results

The following results and analysis are grouped into the triple bottom line elements: economic, environmental and social.

4.1Economic aspects

In regard to economic aspects of sustainability (see Table 3), both sites reported on the first three aspects covered by the GRI, namely, economic performance, market presence, and indirect impacts, and the reports cover narrative, physical and monetary aspects. However, Newmont Ghana Gold Ltd site had more detailed reports on all of those aspects. On procurement practices, only Newmont Ghana Gold Ltd site uploaded the Procurement Act of Ghana and mentioned that is what they use.

[Insert Table 3 about here]

4.3 Environmental aspects

The environmental results are divided into material inputs and outputs. Material inputs in this study refer to resources that the organisation uses in its manufacturing process and how the mining firm tries to prevent any environmental repercussions that could occur due to the consumption of such resources (UNDSD, 2001; GRI, 2015). Material output also refers to the

physical outcomes, that is the finished and by products and the wastes that the mining firms generate during the extraction process and how the organisations endeavour to reduce externalities that could be created by these outputs (UNDSD, 2001; GRI, 2015). The Newmont Ghana Gold Ltd site reported on inputs of raw materials, auxiliary materials, packaging materials, and water and energy consumption in both narrative and physical forms (see Table 3a). However, the Newmont Golden Ridge Ltd site only reported on inputs of water, with both narrative and physical information briefly given. There was no report on operating materials and the monetary value of the environmental inputs on either plant site.

[insert Table 3a about here]

As shown in Table 3b, information on material outputs was found on the websites of both plant sites in narratives, physical quantities, and the current world market price of gold. Reports on non-product outputs (wastes and emissions) were also found on both plant sites with narratives on wastewater, hazardous waste, air emission, biodiversity, compliance and environmental grievances mechanisms. Even though both sites reported on the monetary aspects of biodiversity, there were no physical sustainability data on solid waste, water waste, and biodiversity. Only Newmont Ghana Gold Ltd site reported on transport issues, in narrative format. There was no report on supplier environmental assessment.

[insert Table 3b about here]

4.4 Social Aspects

The social part of the triple bottom line comprises four main aspects of sustainability that should be reported by mining firms: labour practices in terms of employee capacity building, human rights issues such as child labour policies and practices, societal impacts of the organisation in terms of development, and product responsibility. Both sites reported, in the narrative sections, on employment, labour/management relations, occupational health, and safety training and education, diversity and equal opportunity, equal remuneration for men and women and labour practices grievances mechanisms (see Table 4a). Physical sustainability data on employment were also reported by both sites but not reported in monetary terms. Only Newmont Ghana Gold Ltd site reported on physical and monetary aspects of health and safety as well as education and training.

[insert Table 4a about here]

As shown in Table 4b, both plant sites had narratives on human rights issues concerning investment, non-discrimination, freedom of association and collective bargaining, child labour, forced or compulsory labour, security practices, indigenous rights, and human rights grievance mechanisms. Newmont Ghana Gold Ltd site reported the number of military men at a mini-barracks on site. There was nothing on supplier human rights assessment on either site.

[insert Table 4b about here]

Regarding societal reporting, both sites narrated on local communities, public policy, compliance, grievance mechanisms for impacts on society, emergency preparedness, resettlement and plant closure (see Table 4c). In addition, both sites reported in physical and monetary forms on local community investments. Newmont Ghana Gold Ltd site reported both physical and monetary data on resettlement, but Newmont Golden Ridge Ltd site did not report monetary data on resettlement.

[insert Table 4c about here]

Apart from Newmont Golden Ridge Ltd site that narrated briefly on product and service labelling, there was no report on product responsibility by either of the sites in either narrative, physical or monetary terms (see table 4d). There was no report on anti-competitive behaviour, supplier assessment impacts on society and artisanal and small-scale mining.

[insert Table 4d about here]

4.5 Institutional Pressures from Stakeholders

The sustainability reporting also showed evidence of coercive isomorphism. Coercive isomorphism involves pressures from other dependent organizations and cultural expectations from society where the mines are located ranging from governmental mandates, contract law and financial reporting requirements (DiMaggio and Powell, 1983; Ioannou and Serafeim, 2017; Kilbourne et al., 2002). Table 4 provides evidence of institutional pressures from powerful stakeholders including local communities, investors, government agencies and regulators. For example, it was found that community protestations may have influence the depth of reporting. The higher the protestation and community unrest, the higher the information published to explain the grey areas to the community (see Table 4c).

Table 5 about here

4.6 Subsidiary Characteristics

Apart from the institutional pressures, it was found that plant characteristics related to sustainability reporting. A closer look at Tables 1-3 shows that the plant at Newmont Ghana Gold Ltd also known as Newmont Ghana Gold Ltd with 4,400 employees and contractors reported more than the plant at Newmont Golden Ridge Ltd also called Newmont Golden Ridge Ltd with 2,000 employees and contractors) on most of the sustainability aspects. Furthermore, our findings show that even though both sites belong to Newmont Mining Corporation and are operating in Ghana, the Newmont Golden Ridge Ltd site which started operating in the fourth quarter of 2013, reported lesser on sustainability than the Newmont Ghana Gold Ltd subsidiary which started in 2006 (see Table 1).

5 Discussions

This study investigates how a multinational mining corporation embarks on sustainability reporting of subsidiaries on their websites and the drivers shaping sustainability reporting. To answer the main question sustainability disclosures are examined from the websites of the Newmont Ghana Gold Ltd and Newmont Golden Ridge Ltd sites of the Newmont Mining Corporation operating in Ghana using the GRI and the UNSDS reporting elements as benchmarks.

There is evidence of both Newmont Ghana Gold Ltd and the Newmont Golden Ridge Ltd subsidiaries of Newmont have similar sustainability information on their websites. The similarity may be due to normative isomorphism as the two companies (Newmont Ghana Gold Ltd and Newmont Golden Ridge Ltd) are subsidiaries of the same company and therefore provide sustainability information as required by the mother company. Nonetheless, the evidence from the disclosures on the websites also show that there were variations in the contents of disclosures. The analysis suggests that institutional pressures from stakeholders and firm characteristics are the main drivers of sustainability reporting on the websites of the Newmont Ghana Gold Ltd and Newmont Golden Ridge Ltd subsidiaries of Newmont Mining Corporation in Ghana.

Regarding institutional pressures, the sustainability reporting on the websites of both subsidiaries can be related to the need for Newmont's need for legitimacy as corporations are expected to voluntarily disclose sustainability information in a more convenient way in corporate websites. Websites enhance sustainability reporting at any time and as a result enable firms to manage perceptions when faced with a crisis situation (Adelopo et al., 2012; Lodhia, 2014). In this study, sustainability disclosures found on the websites of Newmont Ghana Gold Ltd and Newmont Golden Ridge Ltd responded to public allegations that Newmont's operations have effects on forest reserves and community settlements in their areas of operations Thus, sustainability reporting on the websites showed what the company was doing to address these concerns (see table 5-Parts A, B, E). However, most of the reports were in narrative format with some physical measures of the GRI and UNDSD elements (see tables 1-3), yet, there was little monetary information on sustainability aspects in the reports available (Jenkins and Yakovleva, 2006). The comprehensive narrative disclosures found on the plant's websites could indicate the intention of managers of Newmont Ghana Gold Ltd and Newmont Golden Ridge Ltd plants sites in meeting the diverse needs of different stakeholders (Kaur & Lodhia, 2018), showing evidence of legitimacy intentions. However, given the limited financial information available on the websites, it can be argued that more disclosure and integration of financial and non-financial reporting on the websites could strengthen corporate accountability in responding to the different stakeholder groups' expectations on their legitimacy concerns (Perrini and Tencati, 2006; Amoako, et al., 2017).

Differences in sustainability reports regarding information provided on the two websites seemed to also reflect the differences in the level of community protestations (which varies from one community to another) could account for differences. The higher the protestation and community unrest, the higher the information published to explain the grey areas to the community. Again, coercive isomorphic pressure may also reflect in mandatory requirements for specific economic disclosures to be available for investors especially if the parent company is listed (Khlif et al., 2015b). On the websites of the two subsidiaries, there was particularly an-depth reporting on economic aspects showing evidence of coercive isomorphism. This may be attributed to the fact that Newmont Mining Corporation is listed on the New York Stock Exchange. This will require the firm to measure and disclose on economic performance for investors who will be most interested in that information (Milne and Gray, 2013). Regulatory bodies also serve as another source of coercive isomorphism in sustainability reporting (Ioannou and Serafeim, 2017). In table 5, part A, both the Newmont Ghana Gold Ltd and

Akyim plants reports on collaborating with governments agencies in their operations in a way that seems voluntary.

This study compared sustainability reporting contents between two subsidiaries of the same corporation. Hence, there was no evidence of mimetic isomorphism as it was evident that the two websites reflected similar structure and did not seem to emulate another organization's structure (DiMaggio and Powell, 1983).

This study also shows that plant characteristics may influence sustainability reporting (see Table 1). The larger plant at Newmont Ghana Gold Ltd reported more than the smaller plant at Newmont Golden Ridge Ltd on most of the sustainability aspects. Similarly, the age of the plants seemed to influence sustainability reporting with the older plant at Newmont Ghana Gold Ltd which started in 2006 reporting more that the Newmont Golden Ridge Ltd site which started operating in the fourth quarter of 2013. Interestingly, the current literature suggests that the level of and the use of websites for sustainability disclosures may be positively related to firm size (Gallo and Christensen, 2011; Isa, 2014; Fortanier et al., 2011), and firm age (Cormier and Magnan, 2004). Yet, these studies are concerned with how the size and age of different firms may influence reporting sustainability. Hence, currently, there is little evidence on how the size and the age of subsidiaries of the same company may influence the level of sustainability reporting. This study shows that the size and age of a firm's subsidiary operating even in the same country may be associated with sustainability reporting. However, this requires further studies involving larger samples of subsidiaries from different firms in different countries.

6 Conclusion

Using the triple bottom line elements of economic, social and economic elements together with the GRI and UNDSD indexes, this study compares and contrasts the sustainability reporting contents of the websites of two plants of a multinational mining corporation in Ghana with each other and the contents are analysed using institutional theory and firm characteristics. This study reveals that the subsidiaries of Newmont mining company report on all aspects of sustainability on their websites with similarities in headings but variations in the contents even though both sites operate in the same country-Ghana. The study shows evidence that the contents of the sustainability disclosures on the websites of these subsidiaries were influenced by institutional pressures as well as plant age and size.

This article contributes to the literature by showing striking variations in sustainability reporting contents across subsidiaries of a multinational mining corporation operating in the same country. It suggests that due to institutional pressures, the sustainability reporting on the websites of subsidiaries of a multinational corporation may differ due to the need for legitimacy. This study suggests further that the size and age of a firm's subsidiary operating even in the same country may be associated with sustainability reporting. Current literature focuses on how the characteristics of different firms may influence sustainability reporting while paying little or no attention to how the characteristics of subsidiaries may influence such reporting. Furthermore, it uses a qualitative case study approach and content analysis to condense sustainability reporting in a tabular form to compare the contents of reporting of two subsidiaries of a multinational operating in Ghana with each other. Such a technique is rarely used if any, (except, Amoako, et al., 2017) even though it provides a clear graphic overview of differences and relationships across subsidiaries.

Findings from this study can benefit practice, especially in emerging economies by providing an understanding of the drivers of corporate subsidiaries' websites for sustainability disclosures in a socially and environmentally sensitive industry such as mining. This study will enhance stakeholders understanding of the drivers of sustainability disclosures on corporate websites and inform them of possible obstructions to effective practice. This can provide practitioners with an appreciation of the factors that motivate web-based sustainability disclosures as well as benefit companies, which are practicing or intending to undertake such sustainability disclosures. Policy-wise, an implication of this study is that professional bodies, industry associations, as well as regulators, can monitor corporate websites of subsidiaries of mining companies to enhance effective sustainability disclosures.

7 Limitations of study and future research

The analysis given in this study are assumptions based on literature, theories and media evidence. Such theories and assumptions are vulnerable to misinterpretation as the real situation could be different. Consequently, there is the need for researchers to engage stakeholders empirically on the reasons why there are disparities in sustainability reporting between plant sites belonging to one mining firm. In addition, researchers should conduct further studies to find out why mining firms in emerging economies especially in Africa, practice and report on sustainability, for whom they compile the reports, how the reports are used and by whom, and how sustainability reporting could be enhanced.

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[Insert appendix]

Figure 1: The triple bottom line reporting elements

(Source: CIMA, 2013, p. 2)

Table 1 Subsidiary Characteristics

Newmont Subsidiary	**Age based on Date of Commencing Operation**	**Size based on Number of employees and contractors**
Newmont Ghana Gold Ltd	2006	4,400
Newmont Golden Ridge Ltd	2013	2,000

Table 2: Economic aspects reported

Aspects	**Narrative**		**Physical**		**Monetary**		**Document**
	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	
Economic performance							AHOPF, AKOPF, AHRE1a, AHRE1b, AKRE1
Market presence							AHOV, AKOV
Indirect economic impacts							AHRE1a, AKRE1, AHNADeF, AKNAKDef, AHRE1b, AHOV
Procurement practices							AHOV1

Table 3a: Environmental aspects reported: Inputs

Aspects	Narrative		Physical		Monetary		Document
	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	
Material Inputs							
Raw materials							AHRE1a,
Auxiliary materials							AHRE1a,
Packaging materials							AHRE1a,
Operating materials							
Water							AHEN5, AHRE1a, AHRE2, AHRE5, AKRE1
Energy							AHRE1a, AHRE5,

Table 3b: Environmental aspects reported: Outputs

Aspects	Narrative		Physical		Monetary		Document
	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	
Material Outputs (Product)							
Products (including packaging)							AHOV, AHRE1a, AKRE2, AKOV
By-products (including packaging)							AHRE1a, AKRE2
Non-product Outputs (Waste & Emissions)							
Solid waste							AHRE6k, AHRE1a, AKRE1, AKCOM
Hazardous waste							AHEN5, AHRE2, AHEN2, AHEN7, AKRE2, AKCOM
Wastewater							AHEN2, AHEN3, AHEN6, AKRE1
Air emissions							AHRE1a, AKEN7 AKRE1,
Biodiversity							AHRE6d, AHEN3, AHRE3, AHCOM5, EN1-EN7
Compliance							AHRE5, AHEN1, AHEN2, AHEN4, AKEN7, AKSRE3

Transport							AHRE1a, AHRE5,
Overall							
Supplier environmental assessment							
Environmental grievance mechanisms							AHRE1a, AKRE2, AHCOM1, AHRE5.

Table 4a: Social aspects reported: Labour practices

Aspects	Narrative		Physical		Monetary		Document
	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	
Employment							AHCO, AHRE1a, AKOV
Labour/management relations							AHCOM, AHCOM1,
Occupational health and safety							AHHAH-AHHS7, AHRE1a, AHRE2, AHRE6i, AKHS
Training and education							NADef, AHRE6j, AHRE6b, AHRE1a, AHRE1b, AKCOM1,
Diversity and equal opportunity							NADef, AHRE6j, AHRE1a, AH RE6b
Equal remuneration for women and men							AHCOM3, AKRE2
Supplier assessment for labour practices							
Labour practices grievance mechanisms							AHRE2, AKRE12

Table 4b: Social aspects reported: Human rights

Aspects	Narrative		Physical		Monetary		Document
	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	
Investment							AHNADeF, AHRE6b, AHRE6f, AKCOM1 ,
Non-discrimination							AHCOM3, AHRE2, AKRE2
Freedom of association and collective bargaining							AHRE2, AKRE2
Child labour							AHRE1a, AKRE2
Forced or compulsory labour							AHRE1a, AKRE2
Security practices							AHRE1a, AKRE2
Indigenous rights							AHRE2, AKRE2
Assessment							
Supplier human rights assessment							

Human rights grievance mechanisms							AHRE2, AHCOM1, AHRE5, AKRE2

Table 4c: Social aspects reported: Societal impacts

Aspects	Narrative		Physical		Monetary		Document
	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	
Local communities							AHCO, NADef, AHRE6j, AHRE6b, AKRE1, AHRE1a, AHRE1b, AKCOM1
Anti-corruption							
Public policy							AHRE2, AHCOM1, AKCOM
Anti-competitive behaviour							
Compliance							AHRE2, AHRE5, AKEN7
Supplier assessment for impacts on society							
Grievance mechanisms for impacts on society							AHRE6f, AHRE2, AHCO, AHCOM1, AHRE6j, AHRE6b, AHRE1a, AKRE1
Emergency preparedness							AHHS8, AKRE2

Artisanal and small-scale mining							
Resettlement							AHRE4, AHCOM4, AHRE6j, AHRE6b., AHRE1a, AHRE1b, AKCOM4
Closure planning							AHRE6i, AHRE1a, AKRE1

Table 4d: Social aspects reported: Product responsibility

Aspects	Narrative		Physical		Monetary		Document
	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	Newmont Ghana Gold Ltd	Newmont Golden Ridge Ltd	
Customer health and safety							
Product and service labelling							AHRE1a,
Marketing communications							
Customer privacy							
Compliance							
Materials stewardship							

Table 5: Evidence of institutional pressures from media and environmental laws

Part A: Coercive / Legitimacy

Adherence to national laws and site specific issues

Newmont Ghana Gold Ltd website: "The Newmont Ghana Gold Ltd Mine adheres to all legal requirements, environmental standards, policies and procedures. We work closely with government agencies, including the Environmental Protection Agency (EPA) and WRC to develop, implement and audit environmental programmes."

Newmont Golden Ridge Ltd website: "Several environmental and social monitoring programmes would be continued or initiated as Project operations commence to ensure mitigations.... These programmes would be implemented in accordance with various plans that would receive reviews and approvals from the appropriate Ghanaian government entities" (AKRE7).

External evidence: Functions of EPA Ghana according to ACT 420 (sic) include:

"(h) to prescribe standards and guidelines relating to the pollution of air, water, land and any other forms of environmental pollution including the discharge of waste and the control of toxic substances;

"(i) to ensure compliance with the laid down environmental impact assessment procedures in the planning and execution of development projects, including compliance in respect of existing projects"

Part B: Coercive and legitimacy

Newmont Ghana Gold Ltd website: "Newmont works closely with communities, government agencies and non-profit organizations to restore the livelihoods of those impacted by our operations, while improving the quality of life of impacted community members who have been resettled and relocated due to the Newmont Ghana Gold Ltd Mine's expansion."

Newmont Golden Ridge Ltd website: "As part of our efforts to develop Newmont Golden Ridge Ltd, we identified a number of households and individuals within some communities that would lose both residential and cropped land in the Mine Area. In order to mitigate these effects Newmont constructed the Newmont Golden Ridge Ltd resettlement community."

External evidence: "Aggrieved residents at Damso and its environs, mining communities within the Newmont Ghana Gold Ltd catchment area of the Newmont Ghana Gold Limited, have threatened the lives of the expatriate workers, if the multi-national mining company failed to re-locate them. The more than 500 residents at Botokrom, Agyamankrom, Hohorase, Asumikrom, Amadukrom and Krobeakrom, had therefore, given the mine a two-week ultimatum to do the re-settlement or face their anger." (Source: https://congaconflict.wordpress.com/2015/04/30/communities-rise-up-at-newmonts-ghana-mine/)

Part C: Legitimacy

Disclosures to justify mining operations

Newmont Ghana Gold Ltd website: "Reclamation is an essential part of our operations. We conduct reclamation concurrently during operations and also after closure of the mine. Our aim is to rehabilitate the environment to the benefit of local communities long after mining ends."

Newmont Golden Ridge Ltd website: "A small portion of Newmont Golden Ridge Ltd's operations reside in an area of the Ajenjua Bepo Forest reserve. This portion – 74 hectares out of more than 18,000 hectares of forest reserves – has been classified by the Ghanaian Government as a productive forest, which means exploration and mining for mineral deposits is permitted in that portion of the forest.

"As part of measures to reduce the impact of mining on wildlife, the Forest Institute of Ghana and Wildlife Services Division conducted a study of wildlife including reptiles, amphibians and mammals in the area as well as the Adjenua Bepo Forest Reserve. No endangered wildlife species were found in the studies."

External evidence: "The Wassa Association of Communities Affected by Mining (WACAM), an environmental advocacy organisation, has asked the Government to suspend all mining activities in forest reserves and withdraw the leases of mining companies who conduct their activities in the reserves... The Conference alleged that the Government had granted mining leases to multinational mining companies to undertake open cast mining in forest reserves. It claimed that the Newmont Newmont Golden Ridge Ltd Mine, for instance, had been approved to undertake surface mining operations in the Ajenua Bepo Forest Reserve while AngloGold Ashanti had a lease to mine in Kubi Forest." (Source: http://citifmonline.com/2016/11/28/stop-mining-in-forest-reserves-wacam-to-govt/#sthash.R7G5figq.dpuf)

Part D: Normative

Both sites have community information offices and centres located in the communities

Newmont Ghana Gold Ltd : "Our community information offices, located in our 10 host communities, provide day-to-day information about operations, as well as business and employment opportunities. Community members can register complaints and grievances, which are addressed through our formalized reporting mechanism."

Newmont Golden Ridge Ltd: "Our community information centers provide the local community with information on business and job opportunities, updates on project news and serve as a place for ongoing dialogue."

External source: " Newmont has also established a robust and accessible complaints and grievances mechanism at all sites as a non-judicial means for addressing real and perceived harm to stakeholders including local communities and employees' Paul Apenu, head of NAKDeF indicated." (https://www.modernghana.com/news/625281/1/newmont-Newmont Golden Ridge Ltd-most-responsible-environmentally-fri.html).

Both Newmont Ghana Gold Ltd and Akyim websites have headings similar to international reporting standards (such as GRI and UNDSD)

Newmont Ghana Gold Ltd website: overview, operation facts, health and safety, environment, community, careers, reports, news and contact

Newmont Golden Ridge Ltd website: overview, operation facts, health and safety, environment, community, careers, reports, news and contact

External evidence: "Newmont's 2015 sustainability report was compiled in accordance with the GRI's G4 Core option guidelines and independently assured." (Source: https://www.newsoracle.com/2016/04/14/notable-stocks-alibaba-group-holding-ltd-baba-newmont-mining-corp-nem/)

Appendix 1: United Nations Division for Sustainable Development Index

	Environmental media									
Environmental cost/expenditure categories	Air / Climate	Waste water	Waste	Soil / Groundwater	Noise / Vibration	Biodiversity / Landscape	Radiation	Other	Total	Source document
1. Waste and emission treatment										

1.1. Depreciation for related equipment										
1.2. Maintenance and operating materials and services										
1.3. Related personnel										
1.4. Fees, taxes, charges										
1.5. Fines and penalties										
1.6. Insurance for environmental liabilities										
1.7. Provisions for clean-up costs, remediation										
2. Prevention and environmental management										
2.1. External services for environmental management										
2.2. Personnel for general environmental management activities										
2.3. Research and development										
2.4. Extra expenditure for cleaner technologies										
2.5. Other environmental management costs										
3. Material purchase value of non-product output										
3.1. Raw materials										
3.2. Packaging										
3.3. Auxiliary materials										
3.4. Operating materials										
3.5. Energy										
3.6. Water										
4. Processing costs of non-product output										
Total Environmental expenditure										
5. Environmental revenues										
5.1. Subsidies, awards										
5.2. Other earnings										
Total Environmental revenues										

(Source: UNDSD, 2001)

Appendix 2: Global Reporting Initiative (GRI) Index – Mining and Metals Sector

Category	**Economic**		**Environmental**	
Aspects	Economic Performance Market Presence Indirect Economic Impacts Procurement Practices		Materials Energy Water Biodiversity Emissions Effluents and Waste Products and Services Compliance Transport Overall Supplier Environmental Assessment Environmental Grievance Mechanisms	
Category	**Social**			
Sub-Categories	Labor Practices and Decent Work	Human Rights	Society	Product Responsibility
Aspects	Employment Labor/Management Relations Occupational Health and Safety Training and Education Diversity and Equal Opportunity Equal Remuneration for Women and Men Supplier Assessment for Labor Practices Labor Practices Grievance Mechanisms	Investment Non-discrimination Freedom of Association and Collective Bargaining Child Labor Forced or Compulsory Labor Security Practices Indigenous Rights Assessment Supplier Human Rights Assessment Human Rights Grievance Mechanisms	Local Communities Anti-corruption Public Policy Anti-competitive Behavior Compliance Supplier Assessment for Impacts on Society Grievance Mechanisms for Impacts on Society Emergency Preparedness Artisanal and Small-scale mining Resettlement Closure Planning	Customer Health and Safety Product and Service Labeling Marketing Communications Customer Privacy Compliance Materials Stewardship

(Source: GRI 2013)

Appendix 3a: Website Documents

Newmont Ghana Gold Ltd Plant Site			
Document	**Code**	**Document**	**Code**
Overview	AHOV	Reports	AHRE
Local procurement policy	AHOV1	Environmental and social impact assessment	AHRE1a
Newmont Newmont Ghana Gold Ltd Development foundation	AHNADeF	Socio-economic impact of Newmont Ghana Gold ltd	AHRE1b
Operations fact	AHOPF	Public consultation and disclosure plan	AHRE2
		Newmont Ghana Gold Ltd linkages program	AHRE3
Health and safety	AHHS	Resettlement action plan	AHRE4
Certification OHSAS 18001	AHHAH	Independent reviews	AHRE5
Leadership safety Team Meetings	AHHAK	Supplemental documents	AHRE6
Safety interactions	AHHS3	Guide to land acquisition	AHRE6a
Talking safety	AHHS4	Social and community development	AHRE6b
Vital behaviour	AHHS5	Independent assessment of resettlement implementation No.2	AHRE6c
Community safety competition	AHHS6	Agricultural improvement program	AHRE6d
Community road safety	AHHS7	Validation draft agricultural improvement and land access program	AHRE6e
Malaria programs	AHHS8	Independent external compliance monitoring: General terms of ref	AHRE6f
Emergency response team	AHHS9	Summary: Newmont Ghana Gold Ltd south project	AHRE6h
		Independent external environmental health and safety completion audit	AHRE6i
Environment	AHEN	Environmental and social action plans	AHRE6j
Certification ISO 14001	AHEN1	Waste rock tailing geochemical	AHRE6k
Cyanide code	AHEN2	Draft reclamation plan	AHRE6l
Reclamation plan	AHEN3		
Monitoring and compliance	AHEN4	Community	AHCOM
Water storage facility	AHEN5	Stakeholder engagements and consultations	AHCOM1
Environmental control dams	AHEN6	Social Responsibility Forum	AHCOM2
Counter current decantation circuit	AHEN7	Women's consultative committee	AHCOM3
		Resettlement negotiation committee	AHCOM4

Careers	AHCA	Agricultural improvement and land access program	AHCOM5
News	AHNE	Vulnerable peoples program	AHCOM6
		Skill development for income improvement program	AHCOM7
		Newmont Ghana Gold Ltd linkage program	AHCOM8

Appendix 3b: Website Documents

Newmont Golden Ridge Ltd Plant Site			
Document	**Code**	**Document**	**Code**
Overview	AKVO	Reports	AKRE
Operations Facts	AKOPF	Environmental and social impact assessment	AKRE1
Health and Safety	AKHS	Public consultation and disclosure plan	AKRE2
		Annex A: Legal and Administration	AKRE3
Environment	AKEN	Annex B: Supporting information	AKRE4
Flora Management	AKEN1	Annex C: Supplemental	AKRE5
Vetiver Plantation	AKEN2	Annex D: Environmental	AKRE6
Wildlife	AKEN3	Annex E: Environmental monitoring	AKRE7
Community Tree Planting And Medicinal Plant Farm	AKEN4	Annex F: Guide to land	AKRE8
Biodiversity Offset Programme	AKEN5	Annex G: Land rehabilitation	AKRE9
The Environmental Science Programme	AKEN5	Annex H: Part 1-3 Supplementary	AKRE10
Environmental Monitoring	AKEN6	Annex H: 2 Stakeholder consultation	AKRE11
Reclamation	AKEN7	Annex H: 3 Newmont Golden Ridge Ltd Amanie	AKRE12
Community	AKCOM	Careers	AKCA
Resettlement	AKCOM1	News	AKNE
Community development	AKCOM2	Contacts	AKCA

(Source: Newmont, 2015)