SOCIAL IMPACT OF CEMENT MANUFACTURING IN THE SURROUNDING COMMUNITIES: A CASE FOR SEPHAKU CEMENT FACTORY

TP KGOSIEMANG

orcid.org/0000-0002-0978-5516

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Supervisor: Dr. G.N MOLEFE

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DECLARATION

I, Tlotleng Peter Kgosiemang, solemnly declare that the research study was carried out and completed by myself. Furthermore, I declare that all the ethical behaviour was observed throughout the process of this research study.

T.P Kgosiemang Mr

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I would like to express the greatest appreciation to my God, who carried me through this study during difficult times.

Gratitude also goes to my late Parents, my father NtokoKgosiemang and my mother ManteleKgosiemang, who both left this world whilst I was still studying towards my MBA.

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ABSTRACT

Manufacturing and mining are major economic activities in many developing countries. Operations, whether smaller or large-scale, are inherently disruptive to the environment, producing enormous quantities of waste that can have deleterious impacts for decades. The environmental deterioration caused by manufacturing companies occurs mainly as a result of inappropriate and wasteful working practices and rehabilitation measures.

It is very important to consider the social impacts of manufacturing and mining activities on the surrounding socio-economic environment, and to incorporate Social Impact Assessment (SIA) into the operational activities of a mine as a management tool. However, the practice of SIA by mining companies is often largely lacking, especially in the developing nations of the world. To avoid such socio-economic marginalisation by mining companies, the government of South Africa requires mining companies to develop and implement Social and Labour Plans (SLPs), which focus on promoting the long-term development of their workforces, employee households, communities and regions.

In this regard, a quantitative study was conducted in communities of villages within a radius of 6 km from the cement manufacturing plant, to determine the social impact of cement manufacturing on the surrounding communities: A case for the Sephaku cement factory (Aganang plant).This method attempts precise measurement of something. It usually measure consumer behaviour, knowledge, opinions or attitudes. Quantitative data often consist of participant responses that coded, categorized, and reduced to numbers so that this data may be manipulated for statistical analysis.

The objectives of the study were to 1) identify and assess socio-economic activities which are significantly influenced by the Sephaku cement manufacturing plant; 2) examine local communities' perceptions on how the cement manufacturing plant activities impacted on the environment; and 3) explore and suggest the possible interventions that can assist in mitigating the negative impacts of the cement plant on the surrounding communities.

The study shall be conducted using questionnaires. The questionnaire will prominently be theory orientated and base on relevant issues affecting the community relating to the study.

The questionnaires will be specific and in relation to the study. Participation in this study of all participants will strictly be on voluntary basis. Confidentiality will be assured and no one shall be given an opportunity to browse other individual information

The questionnaires shall be distributed through school children to their parents at the local schools in the affected areas and be collected from school after collection by teachers on pre-defined dates from each respondent

The random sampling technique shall be used; this will be determined by the number of leaners at schools. All leaners shall be given questionnaires, irrespective of their background.The research data was sourced from the surrounding community members and statistically analysed.All data collected will be treated confidentially and data will be captured electronically. All questionnaires collected will be kept until the study is complete.Furthermore, all statistical analyses will be conducted using the Software Package (SPSS) from the university.

In quantitative research, one common way of computing reliability is by using Cronbach Alpha Coefficients.Alpha was developed to provide a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1 (Tavakol, 2011). The cut-off point of Cronbach alpha is 0.7, meaning that the alpha value less than 0.7 is not acceptable.

The study recommendations were developed to address the social impact of cement manufacturing in the surrounding communities.

The Social Labour Plan is developed to outline all the plans the company wants to achieve to improve the socio-economy and livelihood of the communities affected. However, it is noted that most people in the area are not aware of such an important document and thus recommended that the plan be accessible to the surrounding communities. Furthermore, it evidently shown that little work has been done in terms of compliance and ensuring improvement of socio-economy of the surrounding communities. Issues such as educational plans, poverty eradication programmes, environmental monitoring plans, health care etc. need to be addressed for the benefit of the surrounding communities.

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1.1 Introduction

South Africa as one of the developing countriesof the globe is experiencing sustainable development challenges. Most communities surrounding mining areas commonly have similar social challenges such as poverty, environmental impacts, infectious diseases, high unemployment rates, poor education, poor housing and high rates of migration in the area Chenga, Cronje & Theron,(2006). In South Africa, the promulgated Mineral and Petroleum Resources Act, 2002 (Act No 28 of 2002), indicates what is expected of mining companies doing business in the area in terms of infrastructure development and social transformation. Mining companies together with municipalities must ensure that Integrated Development Plans (IDPs) of the area in which the mine operates and its Social Labour Plans are incorporated to serve the interests of the communities.

The economy of most developing countries is generated from mining and manufacturing. However, mining and manufacturing operations are significant impactors on the environment and biodiversity Cronje, Reyneke,& Van Wyk, (2013). They generate enormous quantities of waste and air pollutants that impact the environment and human wellbeing negatively. This can be due to poor preventative plans and mitigation efforts aimed at protecting the environment.

The social challenges of mining and manufacturing activities are very critical in the affected areas. The top management of companies must always consider including the Social Impact Assessment (SIA) into the day-to-day activities of their companies. However, due to a lack of commitment, companies often fail to implement the SIA practices. This eventually triggered the emergence of the Social Labour Plan (SLP), of which the main objective is to promote social justice and economic emancipation of the surrounding communitiesand also to promote the long-term development of their workforces, employee households, communities and regionsKilian, (2008).

The Broad Based Socio-Economic Empowerment Charter (BBSEEC) for the Mining Industry and the Mineral and Petroleum ResourcesDevelopment Act (MPRDA) hasendorsed the process for mining and manufacturing companies to review the social impacts of their

activities from commissioning to rehabilitation, and beyond.TheDepartment of Minerals Resource (DMR) will only consider issue the mining rights certificate to the applicant provided the applicant had considered and fully developed the Social Labour Plan (SLP) of which the process must include public participation (MPRDA Regulations, 2002). The Social and Labour Plan (SLP) developed should not only serve to acquire the mining right, but to be implemented to promote socio-economic development in their affected communitiesKilian, (2008).

Moreover, funding institutions, such as the retail banks, must also ensure that a detailed SLP is developed before considering a funding model. However, most of mines develop their SLP only to ensure that they are awarded the mining rights and not considering their surrounding communities. This became apparent due to several communities protesting against their neighbouring mines recently, where some of their concerns should have been addressed by the Social Labour Plans and others which are of an environmental nature. Manufacturing industries are often challenged about using high volumes of water whereas the surrounding communities are experiencing shortages of water and this at times causes more community protests as industries do not assist in coming up with contingency plans.

Moreover, industries such as cement manufacturing are likely known as the highest air pollution contributors as there is more dust generation during the production process. This might cause detrimental effects to the wellbeing and receiving environment. However, it is required by law that before the evolution of an industry that there must be studies done for the area such as Environmental Impact Assessment which amongst others includes an Air Quality Impact Study. The development or emergence of the cement manufacturing industry in the area of the Lichtenburg District has invaded the grazing and farming land of communities of Verdwaal and Springbokpan respectively. In this case, it is apparent that the company must adhere to the relevant legislation and ensure that agreement is reached and agreed to by all relevant stakeholders. They must also ensure that measures are taken to compensate the community with alternative grazing and farming land.

The expectations of the surrounding communities were high, considering the fact that their economic activities would improve drastically following the construction of the new cement manufacturing company in their area and there would be more job opportunities thereafter; however, it is difficult for them to get into the job market as most of the community members

are illiterate and do not have necessary skills required. This tends to create a conflict between them and other people from different areas. Due to a shortage of skills in the surrounding communities, the plant outsources most of their skills-requiring jobs to other companies outside the province, and is thus not empowering emerging companies in the surrounding communities.

1.2 Background

In line with the foregoing, the primary objective of Sephaku Cement, Aganang plant is to commission the new technology clinker and cement production plant extracting limestone from the surrounding quarries in Springbokpan and Verdwaalvillages respectively. The production phase will consist of the surface mining of limestone; the material transformation through the kiln to produce clinker; and the grinding of clinkerto produce the end product in both bag and bulk form. Limestone which is sourced at the quarry within the grazing and farming area of the affected communities is the main material for cement production. Other additives may be included to determine types and quality of the cement product. The chemical process and reactions of raw materials with additives in a rotary kiln produceclinker,a small amount of gypsum is added and ground to produce the fine material which is known as cement. Crushing limestone which emits fugitive dust into smaller rocks in a crusher and then grinding it takes place before preheating the raw material to about 800^0C. The mix is then heated to about 1 450^0C to form clinker. The heating process also has probabilities of emitting toxic pollutants into the atmosphere which pose a danger to the surrounding environment including nearby communities.

The projected lifespan of the limestone quarry and the cement project is up to 30 years, and is potentially up to 48 years based on the delineated mineral resources and new guaranteed kiln production figures. Due to cement manufacturing activities, it is required that most of the resources such as raw materials or other additives be transported onsite. This has increased the volume of transportation in the area including trucks.

1.3 Problem statement

The social impact assessment (SIA) is a guiding tool implemented to promote the livelihood and sustainability of affected communities around mining facilities and the company itself and should not be regarded as a moral responsibilityKilian, (2008). After all, both the mining companies and affected communities are part of an integrated community that has definite inter-relationships which should be used for regional socio-economic development. Monitoring and evaluating the social impacts of mining facilities will ensure strong relationships with interested and/or affected parties and also improve the Gross Domestic Product (GDP) of those countries involved, which will equate to a growth in economic benefits for all stakeholders and a more global outlookFallon,(2014). For a good return in terms of sustainable development in affected communities, proper implementation mechanisms of SIA methodologies need to be developed and thoroughly explained.

In this study, the affected cement manufacturing company has committed itself to contributing towards improving the lives of the surrounding communities in which it operates, and to implement a Social and Labour Plan (SLP) for its Aganangplant which directly affects the communities of Verdwaal and Springbokpan. The SLP was approved by the Department of Minerals Resources (DMR) in January 2009. The company conducted public participation processes during the development of its Social and Labour Plan by engaging with all local stakeholders including the affected communities to address:

- Skills development plans.
- Provision of infrastructure development.
- Poverty eradication mechanisms and reduction of unemployment rate.
- Investment opportunities and strategies to improve the economy in the area.

Furthermore, the company is committed to the principles of Corporate Social Investment which amongst others include education, environment, enterprise development and sport and recreation.

In addition to the foregoing, the organization has developed the SLP which can result in eradicating most of community concerns if implemented appropriately. This should serve as a tool to ensure that there is communication between communities and the organisation. It is important for the organisation to update the affected communities with the development and what to expect going forward, this will develop trust between two parties and will significantly reduce community protest and ensure more productive working relationships.

The internal and external communication between the company and the communitiesis the cornerstone of a good working relationship and should be emphasized. Companies should be more transparent and trustworthyand provide lots of information to their stakeholders Basu, Hicks, Krivokapic-Skoko & Sherly(2015). They should make use of the media that are available to them to ensure that they reach every affected individual within the area and use the language which is widely used in the affected area. The most effective and most cost-effective method of communication channel includes local radio advertising using understandable languages of the area and also local newspapers(Anon, 2009). This is the least discriminatory methods because theyinclude people who cannot read and also who cannot hear. It is also very important and effective to frequently usekey areas such as clinics, shops and village centres to distribute information through posters and notice-boards. FurthermoreBasu,*et al*, (2015), stated that it is importantto communicate with tribal authorities and follow the proper communication channels before publicly distributing messages to their constituencies to prevent offending leaders of the communities.

However, the implementation phase of the SLP seems to be a challenge. Since the operation of resume with production, there is little done for the community and the surroundings. There are no infrastructures developmets, level of literacy persist; roads are dilapidated due to heavy traffic caused by the trucks which delivers material to the plant and changes in environment. This is a matter of concern to the surrounding communities as they start to experience more immigrants looking for jobs and other environmentally related diseases.

1.4 General aim of the study

The study aims to measure the progress towards realising the intentions and implementation of the SLP.

1.5 Specific objectives

The study has been conducted within communities directly affected by the cement manufacturing plant and aimed to realise the following objectives:

- To identify and assess socio-economic activities which are significantly influenced by the SEPHAKU cement manufacturing plant.

- To examine the level of unemployment rate in the surrounding communities since the commissioning of the new cement plant.
- To determine the level of company's commitment in improving the lives of the people in the surrounding community.
- To examine the contribution of the company in educational and infrastructural development

1.6 Significance of the study

The purpose of the Mineral and Petroleum Resources Development Act, 2002 (Act No 28 of 2002) (MPRDA) is amongst others to transform the mining and manufacturing industries. In order to ensure effective transformation in this regard, the Act requires the development of the Social and Labour Plan as a pre-requisite for the granting of mining or production rights(Kilian, 2008). The Social and Labour Plan requires applicants for mining and manufacturing rights to develop and implement comprehensive Human Resources Development Programmes including Employment Equity Plans, Local Economic Development Programmes and processes to save jobs and manage downscaling and/or closure. These programmes are aimed at promoting employment and advancement of the social and economic welfare of all South Africans whilst ensuring economic growth and socio-economic development(Steiner & Steiner, 2006).

After completion of this study, the research document shall be made available to the company to scrutinize and implement it recommendation. This will assist the company to review their Social Labour Plan and ensure that it improves the lives of their surrounding communities in terms of what they have committed themselves to do. Furthermore, management will have a guiding tool for their strategic planning session with regard to the company's role in executing their commitments.

1.7 Research question

This study will be guided by the following research questions:

- What are the socio-economic activities which are significantly influenced by the SEPHAKU cement manufacturing plant?

- What are the local communities' perceptions on how the cement manufacturing plant's activities impact on the environment?
- What are the possible interventions that can assist in mitigating the negative impacts of the cement plant to the surrounding communities?

1.8 Delineation/Delimitation of the study

1.8.1 Delimitations

Delimitations are unmeasurable circumstances that may negatively impact on the research outcomes. They are usually not foreseen prior the research is conducted. However, while the research is in progress, we may encounter these unforeseen factors that are beyond our control. The delimitations shall be recorded and reported in the research, however, they will not be personal to the extent of naming individuals or identities(Creswell, 2003).

1.8.2 Possible limitations of the study

Limitations are factors that have a potential of affecting the research outcomes if they are not controlled or minimized from the beginning of the research(Creswell, 2003). Those factors amongst others include the size and type of the samples or respondents, the time limit in successfully completing the research, budget allocation for the study if available, the background of the respondents, the honesty of all responses which can all affect the findings of the study. The community protest during the time of study might also affect the research outcomes as the researcher must ensure that the area of study is safe and security and emergency services are accessible. Considering that the study was conducted at two affected villages, participants might also have been victimized for taking part in such a project; however, the researcher did not force any individual to take part in the study.

Furthermore, ethical dilemmas that were not projected for this study might have been experienced once access to the field had been granted and the first steps of data collection were taken.

1.9 Chapter outline

Quantitative dissertation outline

The study consists of five chapters. **Chapter 1** consists of Introduction; Background of the problem; Statement of the problem; Purpose of the study; Research questions; Importance of the study; Scope of the study; Definition of terms; Delimitations and limitations. This chapter explains why this study needs to be conducted and how it will be conducted

Chapter 2: Review of the literature, this involves use of different forms of literature for the study. It is a process of gathering information from other sources and documenting it

Chapter 3: Research methods; The quantitative paradigm; Quantitative methods; The researcher's role; Data sources; Data collection; Data analysis; Verification; Ethical considerations.This chapter is mainly to understand the use of statistics andexperimental design. It should outline how your research was conducted, the method used and the types and numbers of people that were involved

Chapter 4: Research findings, this is the main section of the report where data and findings are presented. It is often split into sub-sections based on the research question and data.

Chapter 5: This chapter coversconclusions, discussion and suggestions for future research. It also provides discussions and conclusion.

1.10 Summary

After completion of this study, we would be able to determine whether the cement manufacturing company in the area of Springbokpan and Verdwaal can contribute positively or negatively towards the development of human and environmental welfare. This includes:

- What the company is doing to promote employment and advance the social and economic welfare of the surrounding communities?
- What is their initiative towards transformation of the cement industry?
- Determine whether the holders of mining or manufacturing rights contribute towards the socio-economic development of the areas in which they are operating as well as the areas from which the majority of the workforce is sourced.
- And also determine how the cement company will affect the surrounding environment.

This question would be able to determine the gaps and evaluate the progress made in terms of implementation of the SLP.

1.11 Definition of terms and acronyms

*Sephaku cement:*Is the name of the cement manufacturing company registered under the Companies' Act of South Africa.

*Employee:*Is an individual who works part or full-time under a contract of employment, whether oral or written, express or implied, and has recognized rights and duties.

Stakeholder: A person, group or organization that has an interest or concern in an organization.

GDP: Gross Domestic Product, GDP is the total value of everything produced by all the people and companies in the country.

CSR: Coperate Social Responsibility, it is defined as the way companies integrate social, environmental, and economic concerns into their values and operations in a transparent and accountable manner.

IDP: Integrated Development Plans, is a super plan for an area that gives an overall framework for development. It aims to co-ordinate the work of local and other spheres of government in a coherent plan to improve the quality of life for all the people living in an area.

DMR: Department of Mineral Resources

MPRDA: Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)

SIA: Social Impact Assessment, includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions.

SLP: Social Labour plan,set out how the company intends to share some of the benefits that flow from mining. These include, for example, initiatives for developing the skills of their employees; upgrading local schools and roads; as well as providing housing, water and sanitation in the area.

CHAPTER 2:LITERATURE REVIEW

2.1 Introduction

Current business models often emphasise particular strategies of community engagement and corporate social responsibility (CSR), which extend the ties between businesses and non-contractual stakeholders beyond what is considered normal business practice. Hence, Glavas and Kelly (2014) state that it is also necessary to take care ofhuman well-being and the surrounding environment with the purpose of creating value for the business. CSR is incorporated in the strategic plans and operational practices that a company develops, to effectively intensifying its relationships with affected communities and impacts on the well-being of all of its key stakeholders and the natural environment.

This chapter provides insights as to what the company needs to consider when integrating its strategic corporate social responsibility into its systems, organisational culture, strategy and day to day operations. The decision of when to implement CSR policy is compounded by why, where and how it should be implemented. The social responsibility plans are meaningless unless they are translated into actions. According to Chandle and Werther (2014), the Corporate Social Responsibility is a rational argument for business seeking to maximise their performance by minimizing restriction on operations. In our democratic dispensation, non-governmental organisations and activist organizations are empowered by the constitution to enact change and raise issues of concern in their communities; CSR remains a working tool of anticipating and reflecting societal concerns to minimize operational and financial constraints on business.

2.2 Environmental impacts

Infrastructural development and reconstruction development programmes across the world have increased the demand of cement Kusena, Shoko & Marambanyika(2012). For every construction project to start-up, it requires a volume of cement which is a basic construction ingredient.It has been noted across the world that the need of cement has increased and more facilities are constructed and it becomes more and more difficulty to meet the demand. El-Haggar (2007) states thatthe cement industry is one of the core industries in construction, it is important for sustainable development in any country and can be regarded as a backbone for

development. However, it thus generates pollution to the environment. The critical pollutant emitted from the cement facilities is the solid waste in the form of particulate matters or fine dust which consists of small particles that can easily penetrate and cause air pollution problems to the environment and humans in the surrounding communities when inhaled and if not properly monitored Kusena, Shoko& Marambanyika (2012). El-Haggar (2007)further stated that, during the manufacturing process, the stack emissions are dust, sulphur oxides, organic compounds, nitrogen oxides, carbon oxides, chlorine compounds and this is entirely determined by the type of fuel and quality of raw material used in the manufacturing process. However, these emissions can be controlled through different techniques such as combustion processes and use of air pollution control equipment such as bag filters and cyclone separators to reduce the amount of pollutants in the air and avoid air pollution Zimwara, Mugwagwa & Chikowore.(2012).

Air pollution occurs in different stages such as from raw material excavations, energy generation, transportation, production and manufacturing, etc. Emissions from those stages undergo physical and chemical transformation which in turn results in health and environmental impacts, including deterioration of air quality, stratosphere depletion and climate change. It is thus defined as any emissions with organic or inorganic substances that, at high enough concentration, may be harmful to life, the environment and/or property (Pepper, Gerba &Brusseau, 2006). The pollution from the cement manufacturing is of anthropogenic source and is notfrom natural causes. Air quality is a major public concern and is currently the object of extensive scientific research. Its effects on life, including human health, productivity and property are not yet fully understood, even though exposure to high levels of pollution is a daily experience to many people. According to Pepper *et al.* (2006), air pollution poses a health risk that can and does harm life. It harms the human respiratory and pulmonary systems, and thus emphysema, asthma and other respiratory illnesses may result from or be aggravated chronic exposure to certain pollutants such as O_3 or particulates.

Cement facilitiesgenerate dust in every stage of its process during manufacturing. This is mostly due to different activities taking place around and within the radius of its premises. Dust is emitted from either spillage of fine material, material handling, unpaved roads, leakages, quarrying, packing and dispatch, conveyor belts,etc Abdul-Wahab (2006). This type of dust emitted is called fugitive dust; it is a type of dust emitted from the non-point sources and it is not discharged to the atmosphere through a stack in a confined flow

streamand also has different properties from point-sources emission where more scientific measures can be taken. However, fugitive dust must also be measured and controlled to meet the ambient air quality and dust fallouts standards and also to reduce environmental and human health risks. Constituents and characteristics of fugitive dust vary from one area to another depending on the type of source and other factors such as temperature, wind speed and direction, topography and geographical conditions Abdul-Wahab,(2006).

Vegetation can also be harmed by uptake of pollutants through the leaf stomata or by deposition of pollutants on the leaf surface. Sufficiently high concentrations of sulphur dioxide or ozone may cause leaf lesions in susceptible plants (Strydom & King, 2009). Considering that the newly constructed cement manufacturing plant is within the farming area of the neighbouring communities, crop yield can be lowered by air pollution. The presence of certain air pollutants, such as ozone, enhances the earth natural greenhouse effects within the troposphere which warms the earth and changes the rainfall pattern. Furthermore, (Strydom & King, 2009) state that, in terms of property, air pollution can erode the exterior surface of buildings particularly those were materials can react with acids in precipitation. Significant amounts of organic and inorganic particles emanating from manufacturing plant have the potential of detrimentally affecting the health and properties of homeowners living adjacent to the plant negatively. There are concerns raised by nearby residents of the cements plants in the globe regarding smell, blasting, lung problems and irritated skin and dust on cars and houses.

Considering the type of fuel used by cement manufacturers, they are most likely to produce primary pollutants which have the potential of entering the atmosphere directly from the source, amongst others, carbon monoxide (CO) which is the product of incomplete combustion of fossil fuels. It is likely to be poisonous when inhaled and reduces the ability of blood haemoglobin to attach oxygenAbdul-Wahab, (2006).

Furthermore, one area of concern is the negative impact of mining activities on water resources, their quality and quantity. Mining companies are guided by rules and regulations, particularly those that have to do with the quality of water supply. Safe water supply is essential for improved health and quality of life for increased productivity. Yet most of mining communities still do not understand the critical importance of a safe and consistent water supply towards human health security. It is a fact that South Africa is not a water rich

country and most of the communities depend on municipalities to provide water. This has resulted in many mining and rural communities in the North West Province resorting to using groundwater supplies from boreholes

This has also impacted on farms and people living in informal settlements who also reportedly use groundwater and surface water for drinking purposes, and to feed livestock, and irrigate crops. In cases where water used for irrigation is contaminated by mine effluent, there is a potential for metal bio-accumulation in crops and consequently this would pose a human health risk and environmental degradation (van Eeden, Liefferink & Durand, 2009).

2.3 Social impact assessment and corporate responsibility

The developmental growth and urbanization in cities and its structural patterns have been associated with deterioration of ecosystem functioning, increased economic challenges of surrounding communities and effectively these pose risks to human health(Uttara, Bhuvandas & Aggarwal, 2012). However, urbanization and development have social effects which are not well understood by society. Most cities grow enormously due to industrialization and economic development, and this leads to most people from different behavioural and cultural groups migrating from their respective areas to cities looking for jobs and other means of improving their lives. This development brings along the burdens on health and environment around the area such as climate change, deforestation, and fresh water challenges (Uttara, Bhuvandas& Aggarwal, 2012).

Most of the people from different communities rely on salaries of contract and permanent jobs from mining companies in their area. Due to a lack of skills and competency, they are unable to integrate into other sectors of the economy for sustainability, especially during mine closures or liquidation. It is only those individuals who are employable with scarce skills and good educational backgrounds who are able to migrate to other sectors and be reabsorbed into the economic mainstream. This affects the majority of the people and only a few are privileged (Kilian, n.d.).

Kilian, (2008) stated that, previously, there were similarities noted concerning mining developmentfor categorically ignoring their social impacts on both environment and humans and affected communities at large. Often, mining and manufacturing companies reserve a surplus of capital in the industry development and clearly assure every one of their commitment to implementation of their social labour plan with the common goal of contributing towards socio-economic development to improve the lives of the affected communities and achieve a sustainable environment. However, this appears to be on paper and not implemented in practical terms. Communities in most areas of mining development continue to suffer and be marginalised, instead of beginning to experience other health risks which are a result of the mining operations.

The main Social Impact Assessment (SIA) objective is to highlight and mitigate the detrimental effect of social impacts that might have positive and adverseimpacts on the society emerging from the commissioning of the project (Kilian, 2, n.d.).

The main objectives of an SIA are:

- Understanding of the socio-economic dilemmaand challenges of the affected or likely to be affected area and its relationship to communities and economic outlook of the area given the nature of the project.
- To conduct Public Participation Processes (PPP) with the sole intention of sharing information
- To outline the socio-economic matters of concern that needs urgent attention for permanent long term solutions.
- To notify all the stakeholders, interested and affected persons, landowners, farm residents, spheres of government and tribal institutions, businesses, NGOs, etc.
- To describe and put plans in place for the likelihood of impacts that might be generated during the construction phase, operation phase and closure phase and development of ideal rehabilitation plan.
- To develop relevant policies and procedures for mitigation and management measures to be implemented.
- To identify and maximise opportunities for inclusive socio-economicsustainability and small and medium enterprise development within the community the mine serves.

- To exercise open and transparent compilation ofan understandable, realistic and logical Social and Labour Plan (SLP)

The fundamental idea is that corporate society should be held liable for sustainable social and economic output to their communities when carrying out their basic economic functions in a lawful manner. Companies have a duty to create a corporative social responsibility plan, to generate income without posing any danger to the ecosystem or enhance societal problems, according toSteiner and Steiner (2006). Corporate social responsibility (CSR) is the initiative or commitments taken by the company to improve social matters concerning the community in which they operate, however, this does not only benefit people or the ecosystem, but also contributes towards growth and maturity of the business. The idea behind this is that during its operations and production phases, the companies must develop a sense of incorporating social, societal, and environmental concerns into their activities and outlines their plans to all stakeholders. However, the concept of corporate social responsibility involves other functions of performance that are not simply economic and financial (Hirigoyen &Poulain-Rehm, 2015).

Importantly, companies in the extractive industries should strive to maintain openness and trustworthy relationships, particularly with their respective affected surrounding communities. The social and economic impacts of a mining operation are complex and can vary widely based on the regional and industrial context. Externally, various levels of government play a significant role in how mining impacts on a region or nation. Similarly, the level of media scrutiny of, and community interest in, a mine operation may also impact on the extent to which it affects a region. Internally, the strategic management, duration of operation and the number of local staff (especially those in senior management positions) in the company can dictate the size and nature of a mine's impacts. The impacts of regional mining operations, therefore, fluctuate in both quality and quantity, depending upon the pre-existing circumstances of the local area (Basu, Hicks, Krivokapic-Skoko&Sherly, 2015).

Accordingly, Steiner and Steiner (2006) further outline basicfundamentals of social responsibility which the corporation should fulfil, which amongst others include marketing tools, mandated laws and voluntary aspirations. Market tools are a competitive response to factors in the market, when a corporation reacts to markets, it achieves its primary and most important social responsibility; however, mandated laws are legislations required either by

the state regulation or are by agreement negotiated with other parties. They further alluded that voluntary aspirations are extraordinary actions that go beyond legislations and acts, taken by companies; this is mostly by exceeding the required mandate.

Figure 1 depicts the different types of corporate social responsibility which the company can adopt to sustain the organization.

Figure: 1. Types of corporate social responsibility

Source: Fallon, (2014)

The corporate social responsibilities in which the company can engage include the following:

- **Environment:**This is one important aspect of corporate social responsibility that companies should never neglect. Companies' activities, irrespective of their size or magnitude,have an immensecarbon footprint. Prevention and mitigation strategies undertaken by companies to reduce those footprints are beneficial to the company, environment and society as a whole.
- **Philanthropy:**This involves amongst others the ability of businesses to exercise social responsibility by contributing to NGOs, orphanages and local charities. It is also beneficial to both business and communities as it strengthens their relationships. Whether the contributions involve giving money, goods or time, there are lot of other importantoutreach programmes that can benefit society, charities and local communities.
- **Ethical labour practices**: Good ethical labour practices are cornerstones of demonstrating corporate social responsibility. It motivates and improves employees' morale which results in good production rates and fewer injuries(Fallon, 2014).

The self-regulating mechanism of a business depends on a model in which both ethical and social factors are integrated in its operating philosophy that informs, monitors, and evaluates its compliance statuswith the law, ethical behaviour and norms. This will ensure that business carries outactivities that serve to ensure the interest of all external and internal stakeholders. This means that, when expectations of all parties involved are met, the business has fulfilled its social responsibility mandates.

2.4 Model for evaluating an organization's social performance

Below is a model for evaluating an organization's social performance. The model as pointed out by Anon. (2009) indicates that total corporate social responsibility can be sub-divided into four criteria, viz. economic, legal, ethical and discretionary responsibilities as shown in Figure 2.

Figure: 2. Model for evaluating an organization's social performance

Source Anon. (2009)

What follows is a detailed explanation of the model:

- **Economic responsibilities**

The objective of every business establishment is to generate profit by maximising its production of goods and contributing to the economy of the identified area to benefit the entire society. It is the responsibility of a business to produce goods and products that will respond to the market positively for their own benefit. The business must ensure that they meet their customers' needs by providing quality goods which are reliable and delivered on time where it is needed. This will improve the company's profit-orientated basis and sustain the business in the market. However, treating economic gain as the only social responsibility can lead companies into trouble.

- **Legal responsibilities**

Every entity including businessis obliged to comply with the laws of the country in which they are operating and the by-laws of the specific area of operation regardless of the

positivity or negativity enshrined by the law (Carrol &Shabana, 2010). They further highlighted that compliance with the legal statutes of the state reflect business commitment towards societal development.

In recent years, most communities have developedmemoranda of understanding in which they outline their rules and tribal laws that business taking place in their area should follow, and this is regarded as a tool to improve and strengthen corporate behaviour. However, it is necessary to develop the legal framework which will force companies to fulfil their economic mandates. Notwithstanding that, the requirement of the law is monitored and imposed by the relevant authorities such as government and other regulating agencies. For the business to be recorded as the best performer, they should ensure that they respect the rule of law. Legal sanctions against the business reflect negatively on the brand and image of the business.

- **Ethical responsibilities**

This is a type of behaviour which is not mostly guided by any law and might not promote the interests of the organization. The ethics of the organisation rely upon values of the organisation which guides top management to practise fairness and impartiality, equity and respect the rights of individuals, to realise the organizational goals.Unethical behaviour mostly occurs when decisions enable an individual or organization to gain profit at the expense of society by marginalising other groups of the communities and using materials for the purpose of being biased.

- **Discretionary responsibilities**

It is the discretion of individual organization to voluntarilycontribute to the socio-economy of the society they serve; this is not mandated by any legislation or ethical behaviour. Amongst others, discretionary activities include generous contributions and donations to the society, orphanages, churches and other NGOs without any expectation of a return or revenue.

2.5 Focus and communication

According to Chenga, Cronjé and Theron (2006), poor project planning that eventually leads to incomplete projects can cause a breakdown in terms of the morale of community members who are already demotivated due to their economic status. Furthermore, it is important to

focus on one project and successfully complete it rather than introduce more failing projects. Ideal project management, identification of skilled personnel and resources will ensure that all projects are completed within the anticipated timeframes.

Furthermore, they stated that information sharing and good communication channels between the company and the affected communities are critical in projects. It is the responsibility of the business to open up communication streams that are efficient and effective to all stakeholders. Different means of communications such as local radios, local newspapers posters at all centres of attraction are crucial to information distribution. The type of language used to distribute information also plays a critical role to ensure that no one is disadvantaged and everyone understands. Accordingly, the affected communities will understand the long-term provision such as rehabilitation financial provision and consequences associated with the mining company in their areas.

According to Strydom and King (2009), it is required by law that all applicants for a prospecting and mining right must present their prescribed financial provision and due diligence for the management or rehabilitation of environmental impacts before the approval of the environmental management programme can be obtained.

Building a strong reputation of the organisation requires a defined corporate communication system. According to Cornelissen (2011), corporate communication is an organisational tool that enableseffective and efficient mobilisation of all internal and external communication that promotes the integrity of the organisation and its stakeholders. In serving a strategic management function, corporate communication may specifically rely on the value resources defining corporate identity to communicate social commitment.

A corporate identity distinguishes organisations from their competitors, developing trustworthy relationships with both internal and external stakeholders, and promotingvalues which result in organisation achieving its strategic goals. It plays an important role in ensuring that the organisation aligns its visions and missions to its strategic goals and corporate value to meet stakeholder expectations (Schmeltz, 2014).

Schmeltz (2014) further argues the responsibility of the organisational executive in aligning the strategic goals of the organisation to all stakeholders including employees, by developing

critical documents, conducting workshops and other information sessions with the aim of communicating organisational values and identity.The identified values of each organisation reflect the uniqueness amongst its competitors and are prioritized by management to interpret the intentions of the company in achieving its goals and also to protect the image of the organisation. The CEO and the executive management are individually held liable for implementation processes and lead by example in practising the organisational values and aligning them to the strategic goal of the organisation through the mission and vision for the company. They are also responsible to conduct regular dialogue with employees and other external stakeholders to ensure corporation collective consciousness. Furthermore, Schmeltz (2014) concluded that regular dialogue processes of communicating organisational values may ensure that the company executes its CSR and aligns its values with those of the company to achieve more of the items on the socio-economic agenda.

2.6 Lessons learned

It is critical for organisations to align their values with those of the CSR to achieve their mandated plans of contributing positively to the livelihoods of the communities they serve. Development of intensified CSR which involves all stakeholders shall ensure that the socio-economy of the area advances and previously disadvantaged groups benefit from the planned projects. Establishment of small and medium enterprises in the affected community will reduce high levels of unemployment and subsequently poverty and this will improve the economic outlook and local GDP.

One of the lessons is that companies should practise the philanthropic way of contributing to the communities. However, it seems as if most of the organisations have marginalised their communities and take actions only when they are pressurised bylaws and regulations. Organisations must conduct proper consultation processes and not only visit communities when they are faced with legal challenges. It is also true that by so doing, the organisation will be opening up channels of communication and develop more trust from the community.Presentations of plans and financial statements will reflect the openness and transparency of the mining houses and their commitment to socio-economic transformation. Amongstothers, the CSR should address the need for education development and infrastructure development in the area of concern. Most of the surrounding communities are vulnerable and are illiterate with poor educational background. Housing backlogs should not

be the responsibility of government only but business should also ensure that they contribute appropriately in their communities, and this includes dignified water and sanitation projects.

It is also learned that there has been a massive growth of surrounding communities due to industrial development in the area. This, however, challenges mining houses engaged in CSR processes to mitigate and minimize the gap between their CSR initiatives and ever-growing community needs. They can do so by addressing their organizational structure by ensuring that there are specific personnel who are directly involved in the issues of addressing the community needs and expectations. This could reduce and eventually eradicate problems experienced by the society.CSR officers and governments can provide assistance in influencing policies where the mining house is seeking to address its housing practices.

2.7 Summary

Considering the focus of this study, surrounding communities of Verdwaal and Springbokpan are likely to be affected negatively by the impact of the cement manufacturing plant in their area. The area is currently experiencing extreme shortages of water and this has the potential to escalate further due to the developments taking place in the area. It is thus important for the company to invest more in their Social Labour Plan with the aim of addressing possible impacts that might arise. Most of the surrounding communities depend on farming for their livelihoods and economic development, thus the impacts of emissions from the firm might cause detrimental effects to their grazing areas and reduce the crop yields significantly if not monitored properly. It is incumbent upon the mine to ensure that they reduce negative pollutants to the receiving environment. Other than that, considering the rate of unemployment and shortage of skills in the entire country, mines tend to excite communities by promising them jobs, infrastructure and skills developments; however, it becomes difficult during the implementation phase. Based on the literature, it is apparent that mining companies are reluctant to improve the lives of their surrounding communities and contribute more to the economy of the area. This study then focuses more on the implementation of the corporate social responsibility plans and the effects of cement manufacturing plant in the affected areas, and the study was conducted in the affected area. The next chapter outlines the methods used to conduct the study.

CHAPTER 3:RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This is a chapter that its aim is to understand the day to day life of different cultural groups of people and their interaction with organizations which are directly involved in their ecosystem. The difference between two methods of research called qualitative and quantitative research is the manner in which data is sourced, analysis and interpreted.Quantitative research data is mostly determined using numerical or mathematical information which is analysed and interpreted using statistical methods, whereas, qualitative research method tends to describe the identified situation in a narrative fashion in order to have a clear understanding of the phenomena (Sarantakos, n.d.).There are several methods of sourcing data which were considered such as distribution of questionnaires, group discussions and individual interviews. To conduct this study and to be able source data from variety of departments across the area of study, the relevant method to use will be questionnaires distribution.However, for the interviewer or inquirer to have a clear understanding or perceptions a qualitative method approach is much more relevant. Respondents give more of their perspectives about previous individual experiences and socially orientated matters that develop the theory pattern (Cooper & Schindler, 2014).

.. Furthermore, the interpretation principles of qualitative and quantitative research have different meaning of language which results in different understanding.The quantitative study is more depended on the scientific or positivist principles and use a mathematical and statistical language, however on the other hand, qualitative study, is more related to the principle of social activities which require more of contextual language to critically interpret the cultural meaning (Neuman, 2011).

Because of the controversy between methods of research, with the main objective of improving the quality of the study, qualitative principles and quantitative ones can be integratedtogether, this is mostly possible when a quantitative approach align to a qualitative study and validate the findings of qualitative outcomes (Cooper & Schindler, 2014).

3.2 Research design

A research design is a mechanism which outlines the context of the study and describes the criteria in which the study should follow. It is regarded as a strategic tool of a research and gives guidelines on the processes of conducting a study (Cooper & Schindler, 2014).It respond and address the research question by integrating and explaining the influence of other critical components of the research study, the samples size, source of data, treatments or programmes. A research design also provides guidelines for the data collection, analysis and interpretation. However, a technique used to source data in a research study is called a research method. For the researcher to use this type of method, some specific equipment such as questionnaires, interviews and observations need to be involved (Bryman, Bell, Hirschsohn, Dos Santos, Du Toit, Masenge, Van Aardt & Wagner, 2016).

Research design is similar to an architectural plan; it outlines a specific type of method, procedure including data collection and statistical method (Cooper & Schindler, 2014). The research design can be seen as actualisation of logic in a set of procedures that optimises the validity of data for a given research problem (Sarantakos, 1998). Accordingly, Kumar (2011) believe that it is necessary to uphold the total population study as one unit as its design may be defined as an individual, a group, a community, an event or a subgroup of a population. The design subsequently describes the structure that guides the use of a research method and the analysis of the acquired data (Bryman, *et al*, 2016).

Sephaku Cement Operational Performance Manager and Social Performance Manager was informed of the study to emphasise the importance and understanding and also its entire benefits.

The study wasbeing conducted using questionnaires. The questionnaire waspromineently theoryorientated and base on relevant issues affecting the community relating to the study. The questionnaires were specific and in relation to the study. Participation in this study of all participants was strictly been on voluntary basis. Confidentiality wasbeen assured and no one shall be given an opportunity to browse other individual information. This is to minimize the possible apprehension and bias of responses. The questionnaires were distributed through school children to their parents at the local schools in the affected areas and be collected from school after collection by teachers on pre-defined dates from each respondent. Prior arrangementswere be made with school principals and full details of the study shall be explained. The random sampling technique was used; this was determined by the number of

leaners at schools. All leaners were given questionnaires, irrespective of their background. All questionnaires were collected within a week from school. After collection, all data wasbeing captured and analysed.

3.3 Research methodology

3.3.1 Overview of possible methods

The research method is an advanced way of detailed enquiry, which deviates from the underlying assumptions to research design, and data collection Kumar (2011). Even though there are differences in the research methods, the most distinction experienced in research methods is in qualitative and quantitative methods. The distinctions is mainly due to the restriction imposed on flexibility, structure, sequential order, depth and freedom that a researcher has in their use during the research process.At times, the distinction between qualitative and quantitative escalates to the level in which it refers to the understanding capacity of the research purpose Kumar (2011).

Table 1: Difference between quantitative, qualitative and mixed methods

Qualitative	Quantitative	Mixed methods
Describe and understand human and social phenomena	Test hypotheses; provide descriptive information	Hypothesis development and testing.
Research question is normally, why and what	How many and who	Answering different research questions.
Natural setting	Experimental and/or laboratory setting	Ability to deal with complex phenomena and situations.
Research purpose: In depth understanding; theory building	Describe or predict; build and test theory	Complete and comprehensive picture of the topic.
Subjective interpretation	Objective reality	Explain findings
Sample size tends to be smaller; non-random	Tends to be larger; randomly selected.	Triangulation enhances the validity of findings
Group selection, purposeful	Random or stratified sampling	Concurrent sampling

sampling; snowball sampling; volunteers		
Study the whole rather than the whole variables	A few variables studied; some manipulated; some controlled	Mixed of variables, words and images
Data collection: Interview, observational; visual	Outcomes; scores	Multiple forms
Analysis are thematic or narrative	Statistical	Quantitative and qualitative
Feedback turnaround: smaller sample size make data collection faster for shorter possible turnaround	Larger sample size lengthen data collection; internet methodologies are shortening turnaround but inappropriate for many studies	
Research sponsor may participate by observing research in real time or via taped interviews	Rarely has either direct or indirect contact with participants.	Attracting funding for a project
Data security: more absolute given use of restricted access facilities and smaller sample sizes	Act of research in progress is often known by competitors; insights may be gleaned by competitors for some visible, field based studies	

Source: Cooper and Schindler (2014) and (Lichtman, 2014).

According to Gray (2009), qualitative research is not is constructed or developed in a standardised description of theory or methodological approach hence has the ability to adopt different theoretical meanings and methods, amongst others includes observations, interviews, questionnaires and other related documents. He further emphasised that qualitative studies does not always require the phenomenon to be known and can be used where little is known about the natural setting and it can also be used to identify the key context or variables that might later be tested quantitatively.

Furthermore, qualitative research relies around number of critical elements including communication, main subject and everyday life. It is however have open perceptions and approach which enable it to be pre-empted or pre-structured by methods and procedures that might confine its focus and structure (Cooper & Schindler, 2014).It is structured upon the facilitation process between researchers and respondent with the clear intention of outlining the manner in which respondents will be approached, the research process and rules thereof. They further stated that qualitative research exercises its flexibility by allowing the researcher a choice of research instruments and procedures they want to utilise for the study.

Contrary, quantitative research was described as distinguishable research method that depends on statistical and numerical data collection, it consider the relationship between theory and research as deductive,prefers a scientific and natural science approach, and realisation of social science concept (Bryman *et al.*, 2016). According (Cooper & Schindler, 2014), quantitative research objective is to measure the precision of something, and in most cases measure consumer behaviour, organisational behaviour, understanding of facts, opinions and perceptions, or attitudes.Quantitatively oriented social and behavioral researchers entirely concern with positive fact and excludes speculations and dominated by its interest in statistical or numerical data and analysis (Teddlie & Tashakkori, 2009).Furthermore Bryman *et al., (*2016)emphasise that quantitative research approaches tend to, adopt a deductive approach to the relationship between theory and research, in which the emphasis is placed on the testing theories; incorporate the practices and norms of the model of the natural sciences and posistivism in particular and embody a view of social reality as an external, objective reality.

Moreover, many researchers argue the qualitative and quantitative methods can be combined together to form a mixed method research. Mixed method approach is a research method that is alternatively applied to describe research that involves the characteristics of both quantitative and qualitative research methods within a single project (Bryman, *et al*, 2016). Because of its unique orientation, the mixed method research culture is little known than qualitative and quantitative traditions.It allows researchers to apply different variety of methodological tools to respond to the research question understudy by bringing along an alternative to the qualitative and quantitative approaches (Teddlie & Tashakkori, 2009). Mixed method research questions provides framework of dealing with a mixed method investigations in which their responses reflect both narrative and numerical structure. Furthermore, they argue that mixed method data analysis involves the integration of statistical and thematic data analytic techniques, plus other strategies unique to mixed method. Accordingly, (Cooper & Schindler, 2014),states that the term triangulation is the intergration of qualitative with quantitative methods. Furthermore, it is refers to the use of quantitative research to confirm qualitative research findings, or vice versa (Bryman, *et al.* 2016).

3.3.2 Justification of method chosen

Quantitativeresearch method is preferred for this study. This method attempts precise measurement of something. It usually measure consumer behaviour, knowledge, opinions or attitudes (Cooper & Schindler, 2014). They further stated that, in quantitative research, identical data are desired from all participants. According to (Cooper & Schindler, 2014), quantitative data often consist of participant responses that coded, categorized, and reduced to numbers so that this data may be manipulated for statistical analysis. The objective is the quantitative tally of events or opinions, called frequency of response rate.

According to (Aluko, n.d.), the strengths of quantitative methodology for Social Science research are as follows:

- Quantitative methodologies are appropriate to measure overt behaviour.
- They are also strong in measuring descriptive aspects, such as the composition of the population or an object of study.
- Quantitative methodology allows comparison and replication.
- Reliability and validity may be determined more objectively than qualitative techniques.

3.4 Population and sampling

This study requires an understanding of the population of the area for sampling purposes. The idea of sampling is that by selecting some of the individual participants in a population, we draw conclusion about the entire population. According to Cooper and Schindler (2014), any individual participant on which the measure is taken is called a population element. The population will be determined using census.

3.4.1 Total population

A population is the total collection of elements about which we wish to make some inferences (Cooper & Schindler, 2014). The total population of the two villages is in the region of 10,000 with 6866 residing in Verdwaal whilst 3134 reside in Springbokpan (Census, 2011). In this study, it will be noted that the participants had to be the lawful

residents of Verdwaal and Springbokpan villages respectively and had to be willing to participate in the study. This will be done through sampling process.

Sampling is the process of choosing the units of the target population which are to be included in the study (Sarantakos, n.d). The latter further alluded that sampling enables the researcher to study a relatively small number of units in place of the target population, and to obtain data that are representative of the whole target population.

The samples are selected using probability sampling. Probability sampling is based on the concept of random selection, a controlled procedure that assures that each population element is given a known nonzero chance of selection. This procedure is never haphazard and only probability samples provide estimate of precision (Cooper & Schindler, 2014). Furthermore, only the probability samples offer the opportunity to generalize the findings of the population of interest from the sample population. The unrestricted simple random sample is the purest form of probability sampling; it is therefore considered a special case in which each population element has a known and equal chance of selection. A random sampling gives a true cross section of the population. Random sampling also eliminates the source of bias, and the process does not depend on the people's availability (Bryman, *et al*, 2016). It is imparrative for this study to use the simple random sampling method.

3.4.2 Sampling and sample size

On the basis of the foregoing discussion, a stratified randomsample will be used in this study and the questionnaires will be distributed to certain number of people who reside in Verdwaal and Springbokpan villages through their school children who attend in those areas. The number chosen will be based on the Sekaran table as shown in Annexure B (Sekaran, 2003:253). The nature of the stratified table is shown in Table 2 below.

Table 2: Stratified random sampling

The sampling size will be structured as follows:

Village	Population	Proportion	Sample
Verdwaal	6866	0.69	255

Springbokpan	3134	0.31	115
Total...	10 000	1.00	370

3.5 Data-collection instrument and strategy

What follows is the discussion of the data-collection instrument.

3.5.1 Questionnaire

With questionnaires, respondents answer questions by completing the questionnaires themselves. The self-completion questionnaire also covers different forms of administration (Bryman *et al.,* 2016). A very basic and not methodologically pure form may involve researcher handing out questionnaires to participants and collecting them after they have been completed. Questionnaires must be simple and straight to the point and should not be too long for effective filling. A questionnaire is a means of eliciting the feelings, beliefs, experiences, perceptions, or attitudes of some sample of individuals. As a data collecting instrument, it could be structured or unstructured. Because there is no interviewer, the research instrument has to be especially easy to follow and its questions have to be particularly easy to answer.

Furthermore (Teddlie & Tashakkori, 2009), (Cooper & Schindler, 2014) supported by Kumar (2011) outlined the advantages and disadvantages of using questionnaires in the research as follows:

3.5.1.1 Advantages of using questionnaires

1. **Cheaper to administer:** The cheapness of the self-completion questionnaires is especially advantageous if the researcher that is geographically dispersed. The questionnaire also has the cost advantage in comparison with telephonic interview.
2. **Quicker to administer:** Questionnaire can be sent out by post or otherwise distributed in very large quantities at the same time.
3. **Absence of interviewer effect:** Since there is no interviewer present when a self-completion questionnaire is being completed, possible interviewer effects such as age, ethnicity and gender are eliminated.

4. **No interviewer variability:**Questionnaires do not suffer from the problem of interviewers asking questions in a different order or in different ways.
5. **Convenience of respondents:** Questionnaires are more convenient for respondents, because they can complete them when they want to and at speed that they want to go.

3.5.1.2 Disadvantages of using questionnaires

1. **Cannot prompt:** There is no one to help respondents if they are having difficulties answering questions.
2. **Cannot probe:** There is no opportunity to probe respondents to elaborate an answer. Probing can be important when open ended questions are asked.
3. **Greater risk of missing data:** Partially answered questionnaires are more likely because of lack of prompting or supervision. It is also easier for respondents to decide not to answer questions when on their own than when being asked by an interviewer.
4. **Low response rate:** The significance of a response rate is that, unless it can be proven that those who do not participate do not differ from those who do participate, there is a risk of bias. The problem of low response rates seems to apply particularly to postal questionnaires. This explains why some researchers who use postal questionnaires as a data collection method tend to employ a mixed method research design (Bryman, *et al*, 2016).
5. **Difficult to ask a lot of questions:** Long questionnaires are rarely feasible. They often results in greater tendency for questionnaires not being answered in the first place.

The study was conducted at the villages of Verdwaal and Springbokpan respectively. The villages form part of Ditsobotla Local Municipality in the North West Province and consist of mostly Setswana speaking people. It is located approximately 30 Km West of Lichtenburg town. The land use is exclusively agricultural land. See Annexure C in this regard.

3.6 The questionnaire and its components

Questionnaires and interview schedules can range from those that have a great deal of structure to those that are essentially unstructured (Cooper & Schindler, 2014). However, for the purpose of this study, questionnaires will be used for data collection in the quantitative phase of this study. A questionnaire is a written list of questions, the answers to which are recorded by the respondents. The difference between the interview schedule and questionnaire is that in the former it is the interviewer who ask questions and records the respondents replies on an interviews schedule and the latter replies are recorded by the respondent's themselves. It is however important for the questions to be clear and easy in the case of questionnaire as there is no one to explain the meaning of questions. (Kumar, 2011), emphasizes that questionnaires should be developed in an interactive style to make respondent to feel as if someone is talking to them.

The most appropriate method of collecting data for the purpose of this study is to send the questionnaires to prospective respondents through the school children.

Questionnaires are less expensive, as they save time and financial resources and offer greater anonymity as there is no face-to-face interaction between respondent and interviewer. However, one of the major problems with this method is the low response rate; people may fail to return them. Furthermore, the questionnaire can be self-selecting biased, because not everyone who receives a questionnaire may return it.

The study will utilise a structured questionnaire structured as shown in Table 3 below as well as in Annexure A of this study:

Table 3: Structure of questionnaire

Questionnaire	
Section A: Demographics	This section deals with General and personal particulars of the respondents
Section B: Survey questions	This section deals with the specific survey questions : Questions 2.1 to 2.7
Section C: Open ended questions	This section deals with specific questions

3.6.1 Statistical/Data analysis

All data collected will be treated confidentially and data will be captured electronically. All questionnaires collected will be kept until the study is complete.Furthermore, all statistical analyses will be conducted using the Software Package (SPSS) from the university.

3.7 Validity and reliability

The reliability and validity of the research data determine the value of the research study. If data are valid, they must be reliable. We often think of reliability and validity as separate ideas but, they are related to each other.Validity and reliability are two fundamental elements in the evaluation of a measurement instrument. Instruments can be conventional knowledge, skill or attitude tests, clinical simulations or survey questionnaires (Tavakol, 2011).

3.7.1 Validity

This is the property of a research instrument that measures its relevance, precision and accuracy (Sarantakos, 2005).Remler and Van Ryzin (2011) argue that the validity of a measure refers to how well the measure actually represents the true construct of interest. However, this methodological practice is not only for quantitative but also for qualitative research. According to (Sarantakos, 2005), qualitative researchers aim to achieve, which is considered to be a strength of the research, since it free data from interference and contamination, control or variable manipulation. Qualitative researchers apply number of measures to guarantee validity of their work. They use different types of validation such as cumulative validation, communicative validation, argumentative validation and ecological validation.

This study therefore will ensure validity by developing measures such as protocol for questionnaire design, administering a questionnaire, measure to ensure data integrity and measure to ensure validity and reliability.

3.7.2 Reliability

Estimates the consistency of your measurement, or more simply the degree to which an instrument measures the same way each time it is used in under the same conditions with the same subjects (Sarantakos, 2005).

In quantitative research, one common way of computing reliability is by using Cronbach Alpha Coefficients.Alpha was developed to provide a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1 (Tavakol, 2011). In short, Cronbach's alpha splits all the questions on your instrument every possible way and computes correlation values for them all (we use a computer program for this part) (Tavakol, 2011). In the end, your computer output generates one number for Cronbach alpha - and just like a correlation coefficient, the closer it is to one, the higher the reliability estimate of your instrument. Cronbach's alpha is a less conservative estimate of reliability than test/retest. The cut-off point of Cronbach alpha is 0.7, meaning that the alpha value less than 0.7 is not acceptable. According to Parson (2006), when using the Likert-type scales it is essential to calculate and report Cronbach's alpha coefficients for purposes of internal consistency and reliability for any scales or subscales you may be using.

3.8 Research ethical procedures

Research ethics refers to the moral principles guiding research or conducting research in a way that goes beyond merely adopting the most appropriate research methodology, but conducting research in a responsible and morally defensible way. Furthermore, ethics are sets of moral principles or norms that are used to guide moral choices of behaviour and relationship with others (Gray, 2009). According to (Silverman, 2010), research staff and subjects must be informed fully about the purpose, methods and intended possible uses of the research, what their participation in the research entails and what risk if any, are involved. He continued to emphasise that the confidentiality of information supplied by research subjects and the anonymity of respondents be respected. This requires that researchers take steps to ensure that research data and it sources remain confidential unless participants have consent to their disclosure.

Furthermore, reprimanded that research participants must participate in a voluntary way, free from any coercion, this inform participants to refuse to participate or withdraw from participation whenever and for whatever reason they wish (Silverman, 2010) .It is also

important to allude that harm to research participants must be avoided; participants' interest or wellbeing should not be damaged as a result of their participation in the research. The independence and impartiality of researchers must be clear and any conflicts of interest or partiality must be explicit.

The sentiment was also shared by Denzin and Lincoln (2011) by stating that codes of ethics for professional and academic associations are the conventional format for moral principles. They also emphasised the importance of informed consent, deception, privacy and confidentiality and accuracy.

The ethical considerations that pertain to the quantitative and qualitative methods designs also pertain to mixed methods research because it is a combination of the two designs. For example, quantitative studies require researchers to obtain permission, protect anonymity, avoid disruption of sites, and communicate the purposes of the study accurately while qualitative studies require researchers to communicate the purposes of the study accurately, avoid deceptive practices, respect the study population, respond to potential power concerns, and confidentiality. All of these ethical issues are also ethical issues for mixed methods research (Caruth, 2013:115).

Beyond these general guidelines that are applicable for most research projects, mixed methods research designs harbour some specific ethical dilemmas that are particularly pronounced when researchers begins to integrate these methods at various stages of their ongoing research. For example, a mixed methods sequential design that calls for using the personal data collected from a survey in order to obtain a sample for an in-depth qualitative study may result in inadvertently compromising a respondent original informed consent and prior confidentiality agreement in this regard (Hesse-Biber, 2010). Henceforth, additional ethical issues arise from indirectly linking data in the public domain in order to locate a target sample for further study, with the advent of internet technologies.

The research project was approved by the North West University Faculty of Commerce Ethics in Research Committee. The data will be collected by one MBA student who has been requested conduct the research. The research will be conducted at Springbokpan and Verdwaal villages near Sephaku Cement Aganang plant and questionnaires or paper-and-

pencil questionnaires will be distributed to various people within the areas. The questionnaires shall be sent to prospective respondents through the school children.

3.9 Summary

This chapter discussed the research methodology of the study and described the research design, population, sample, data-collection instrument and ethical considerations. The next Chapter shall deal with the research results.

CHAPTER 4:RESEARCH RESULTS AND INTERPRETATION

4.1 Introduction

This is the most important chapter that deals with interpretation and presentation of results of data collected using method outlined in chapter 3. The chapter provides preliminary insights into the nature of the responses obtained, as reflected in the distribution of values for each variable of interest and also provide a means for presenting the data in a digestible manner, through the use of tables and graphs.

4.1.1 Sample selection

In this study, data was collected from residents of Verdwaal and Springbokpan villages respectively. The selection of the sample was done because the villages are within aradius of 5 km away from the new cement plant and the inhabitants are also beneficiaries in terms of the company social labour plan, hence they are the most affected people.

As shown in Table 2, a stratified sampling method was used in this study and a total of 370 questionnaires were distributed in the two areas, 90 in Springbokpan and 280 in Verdwaal.

4.1.2 Response rate

Of the 370 questionnaires distributed, only 206 managed to return for capturing thus registering a response rate of 55.7%. The latter was determined by number of people who were willing to participate due to the voluntary nature of this study. Disadvantageously, most people refused to participate due to fear of victimization and a belief that they wouldnot stand a chance of being employed and others due to poor levels of literacy.

4.2 Demographic profiles

The focusof this study was to determine the level of social impact of cement manufacturing in the surrounding communities. In this regard, the respondent data collected wasthus analysed with the aim of achieving corresponding results to the problem. However, in dealing with this section, there are other concerning factors to be considered such as levels of literacy amongst respondents, economic output in the area, age and gender. The questionnaires

distributed were not discriminatory based on gender and age, only children under 18 years were not allowed to participate. Poor levels of education also contributed tothe response rate as most of the people in the area did not have theprivilege of going to school. This has also escalated the level of unemployment and an increased poverty rate.

Below there are tables and graph that outline participants responses.

Table 4: Demographics

DEMOGRAPHICS

	Frequency	Valid Percentage
PARTICIPANTS PER VILLAGE		
Springbokpan Village	86	41.7
Verdwaal Village	120	58.3
Total	206	100.0
GENDER OF PARTICIPANTS		
Male	120	58.3
Female	86	41.7
AGE GROUP OF PARTICIPANTS		
Under 25	81	39.3
25-35	45	21.8
36-45	62	30.1
46-55	12	5.8
56+	6	2.9
PERIOD OF RESIDENCE		
Below 5 years	1	.5
5 to 10 years	3	1.5
10 to 15 years	8	3.9
15 to 20 years	96	46.6
20 years and above	98	47.6
QUALIFICATION OF PARTICIPANTS		
Below grade 12	53	25.7
Grade 12	83	40.3
Certificate	14	6.8
Diploma	46	22.3
Degree	8	3.9
Honours Degree	2	1.0

Participants per Villages

The table above outlines the participation response per village. From the total number of participants, 41% are from Springbokpan and 58.3% are from Verdwaal. This means that a higher number of participants arefrom Verdwaal village. This is influenced by the total population of residents of Verdwaal which 8104 as outlined in chapter 3.

Gender of participants

Because the study was not sexist, both males and female participated, and the table and graph above indicatethat more males participated than females. 58.25 % of males took part and only 41.75% of females contributed. There are factors that can be used to argue this margin, which among others can be that there are more men than women in the area, and men are lessfearful to participate.

Age group of participants

Out of the total representation of samples in this study, most people who participated in the study are youth under 25 years of age at 39.32% of the overall sample, followed by adults aged between 36 and 45 with 30.10% and young adults aged between 25 and 35 with 21.84% respectively. However, fewerthan 10% of participants werefrom the age of 46 and older. This implies that more people who reside in these areas are youth and middle-aged adults.

Period of residence

The graph illustrates that 47.57% of people had resided in the area for more than 20 years, followed by 46.60% of those with 15 to 20 year of residence. Less than 10% have not been in the area for more than 15 years. Most of the people in the area started to migrate to this village's after the end of the apartheid regime, as some mentioned that they were working onthe surrounding farms. This has also impacted ontheir educational level as most of them did not have the privilege of attending school.

Qualifications of participants

As mentioned in tableabove, there are factors that contributed towards the education of the people residing in the area. The graph above shows that only 40.29% of the sampled

population in these respective villages have passed Grade12, this automatically means that the expectation of post-matric qualification islow as only fewerthan 40% have acquired certificates, diplomas or degrees.

Table 5: The Social Labour Plan

		Frequency	Valid Percent
Valid	Strongly Disagree	71	34.5
	Disagree	71	34.5
	Unsure	43	20.9
	Agree	18	8.7
	Strongly Agree	3	1.5
	Total	206	100.0

In terms of presenting and making sure that the community members understand and are aware of the company social labour plan developed to improve their livelihood, it is surprising to learn that about 34.5% of the people strongly disagree or disagree that the company has explained their social labour plan to the affected communities. About 20.9% were unsure of such processes and documents. However, some portions of community members, about 10.3%, agreed that they understood the company social labour plan. This can be interpreted that only a few individuals who are believed to be benefiting from the company, either by being employed or given some contracts are the ones who claim to understand the social labour plan.

Table 6: The level of unemployment rate has reduced drastically since the commissioning ofthe new cement plant

		Frequency	Valid Percent
Valid	Strongly Disagree	63	30.6
	Disagree	78	37.9
	Unsure	41	19.9
	Agree	22	10.7
	Strongly Agree	2	1.0
	Total	206	100.0

It is clear that the level of unemployment in the area has not been reduced. Considering Table 4above, the area has poor levels of education hence the unemployment rate could not go down. Most members of the community are not employable due to a lack of skills and competency. Acompany of that magnitude requires skilled individuals such as engineers for it to be sustainable. However, only 10.7% agreed and 1% strongly agreed that the level of unemployment had been reduced. Similarly to Table 6, this can be deducedfrom a few individuals who have been employed by the company, however, most of them are unskilled labour and do not occupy strategic positions that might transform the company and improve the lives of their fellow community members. About 19.9% are unsure of the developments. This might be people who are either not interested or are old and not think of any employment either.

Table 7: Company's commitment to improve lives of the people in the surrounding communities

		Frequency	Valid Percent
Valid	Strongly Disagree	83	40.3
	Disagree	98	47.6
	Unsure	13	6.3
	Agree	11	5.3
	Strongly Agree	1	.5
	Total	206	100.0

Considering Tables6 and 7 respectively, it is not expected that the company can commit itself to improve the lives of the people in the surrounding communities. Around 87.9% of the community disagree that their lives have improved due to the new cement plant, and this clearly shows that the bulk of the people still expect more from the company. Communities are not sure of what is due to them because they do not understand the social labour plan and its commitments.

Table 8: The Company is transparent to the communities and has good communication channels in place

		Frequency	Valid Percent
Valid	Strongly Disagree	102	50.0
	Disagree	83	40.7
	Unsure	16	7.8
	Strongly Agree	3	1.5
	Total	204	100.0
Missing	System	2	
Total		206	

Interpreting the table above, there is a lack of trust between the company and community members. The graph shows that 50% of community members strongly disagree that there are good communication channels between them and the company, further than that 40.3% share the same sentiments by disagreeing to good communication channel being in place. This results in the failure of implementation of projects such as social labour plan and failure to improve the lives of the surrounding communities.

Table 9: Since the commissioning of the new cement plant, the economy of the area has improved

		Frequency	Valid Percent
Valid	Strongly Disagree	105	52.2
	Disagree	79	39.3
	Unsure	10	5.0
	Agree	6	3.0
	Strongly Agree	1	.5
	Total	201	100.0
Missing	System	5	
Total		206	

The likelihood of the economy of the area to improve is very little. This is outlined by various factors as already presented in Tables above. High unemployment rates, lack of skills, poor communication and others factors, all result in poor GDP and a poor economic outlook for the area. The impact of pollutants on the environment emitted from the new cement plant also is a contributing factor in the economy of the area. Because of emissions, most people will begin to be vulnerable to diseases such as asthma which will affect the economy negatively as more health-care facilities will be required.

More than 50% of the people strongly disagree that the economy has improved due to the new plant and about 38% also disagree that there are improvements. This clearly shows that the majority of the people are still living in poverty.

Table 10: Is the company is responsible for maintaining their access routes and infrastructure development within their jurisdiction/ affected communities

		Frequency	Valid Percent
Valid	Strongly Disagree	137	66.5
	Disagree	32	15.5
	Unsure	22	10.7
	Agree	1	.5
	Strongly Agree	14	6.8
	Total	206	100.0

The state of the routes accessing the plant and communities is a disaster. These are the sentiments shared by people as shown in the graph above. Considering that the company uses road transport to transport their raw materials and finished product, the state of the access road should always be maintained. If 66.5% of people strongly disagree that the company does not maintain their routes within its jurisdiction, it clearly gives the picture to the state of the roads and infrastructure in the area of concern. 15.5 % also disagree that not much is done to improve the infrastructure in the area. However, 10.7% were unsure about maintenance of the access routes. This might be because they have never used or seen the access route and other infrastructure or are not sure as to who should maintain the routes. Contrary to that, only 6.8% strongly agree that the company is taking care of the access routes.

Table 11: Company's is contribution to education in the surrounding communities

		Frequency	Valid Percent
Valid	Strongly Disagree	133	65.5
	Disagree	49	24.1
	Unsure	8	3.9
	Agree	8	3.9
	Strongly Agree	5	2.5
	Total	203	100.0
Missing	System	3	
Total		206	

After thoroughly consideringdemographics table above, it is not expected that the company contributes immensely in the development of education in the surrounding communities. These sentiments are presented in the graph above, in which65.5% of participantsstrongly disagree that the company contributes towards their skills development. Coincidentally, 24.1% of their fellow members disagree that no educational assistance is provided by the company; hence their lives have not improved and do not contribute towards strengthening the economic outlook of the area.. Only a few individuals (about 6%) believe that the company is contributing toeducation in the area.

4.3 Additional descriptive analyses

Descriptive analyses are procedures used to summarize, organize and make sense of a set of scores or observations. It is typically presented graphically or in tabular form (Privitera, 2012). In this study, we have lots of measures and measured a large number of people based on their age, gender, qualification etc. Descriptive statistics help us to simplify large amounts of data in a sensible way. For instance, the amount of data collected from respondents is from Verdwaal and Springbokpan respectively, and the sets of observation reflect that people from both villages share the same sentiments.

4.3.1 Descriptive statistics on questionnaire items

The following reflects the additional descriptive statistics on the questionnaire

Table 12: Additional descriptive statistics on questionnaire items

Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Villages	206	1	2	1.58	.494
What is your gender?	206	1	2	1.42	.494
Which age group are you?	206	1	5	2.11	1.087
How long have you resided in this village?	206	1	5	4.39	.681
What is your qualification?	206	1	6	2.41	1.249
The company explained its social labour plan to the effected communities.	206	1	5	2.08	1.016
The level of unemployment rate has reduced drastically since commissioning of the new cement plant.	206	1	5	2.14	1.003
Is the company committed to improve lives of the people in the surrounding communities?	206	1	5	1.78	.824

The company is transparent to the communities and has good communication channels in place.	204	1	5	1.62	.756
Since the commissioning of the new cement plant, the economy of the area has improved.	201	1	5	1.60	.762
The company is responsible for maintaining their access routes and infrastructure development within their jurisdiction/ affected communities.	206	1	5	1.66	1.136
The company is contributing immensely in the development of education in the surrounding communities.	203	1	5	1.54	.929
Valid N (list wise)	196				

A standard deviation is an estimate for the average distance that scores deviate from the mean (Privitera, 2012). When scores are concentrated near the mean, the standard deviation is small; when scores are scattered far from the mean, the standard deviation is larger. Looking at the maximum and minimum of the villages on the table, it explains that if the mean is around the minimum or maximum it simply means that most of the responses are around that value e.g. 1.58 of mean is nearing 2, it means that most of the respondents are from Verdwaal village. Furthermore, due to less variation, the standard deviation becomes small at 0.494. Considering the above table, most of the means are lesser and closer to the scores hence their standard deviations are smaller. The mean is the score that balances the respective weights of numbers in the distribution, extremely large or extremely small scores will change the mean of a sample (Runyon, Coleman &Pittenger, 2000). The mean for the period of residence it is 4.39; it is pulled to the direction of upper end of the scale considering the minimum and maximum scale, and this means that most of the people have been residents of the area for a long time and some wereeven born in the area and the standard deviation also reflects that

there is no big variation. Furthermore,Privitera (2012) emphasised that to change the standard deviation, the distance of the score from the mean and from each other needs to change. Furthermore, with the mean of 1.54 with the contribution of the company in education, it clearly shows that average people are not impressed with the contribution made by the company towards improving the education levels in the area with most of them strongly disagreeing that there has beensome contribution made by the company in improving education in the area. It is also evident that most of the respondents share the same sentiments considering the standard deviation of 0.929, which is small and shows that there is less variation.

4.4 Reliability analysis

The reliability analysis is presented in the table 13 below.

Table 13: Reliability test

Reliability statistics

Cronbach's Alpha	Cronbach's Alpha based on standardized items	N of items
.778	.571	12

Alpha is an important concept in the evaluation of assessments and questionnaires. It is mandatory that assessors and researchers should estimate this quantity to add validity and accuracy to the interpretation of their data.Alpha is affected by the test length and dimensionality. According to Pearson (2006), the cut-off point of Cronbach alpha is 0.7, meaning that analpha value less than 0.7 is not acceptable.

Table 13 above shows the value above the 0.7, which indicates that the scales are consistent and reliable.

4.5 Summary

After data collection, he data was then analysed and interpreted in this chapter to determine whether the aim of the study had beenachieved. Data was collected by distributing questionnaires in two different villages within the radius of the newly build cement manufacturing company. Statistical analysis and interpretation of data collected wereused in this chapter to measure both socio and economic impacts brought to the areas of concern by the newly-established cement factory. Furthermore, the reliability of the results was also tested through Cronbach Alpha analyses. Based on the data tables and graphs presented in this chapter, conclusions and recommendations could be drawn for future references.

The following chapter deals with the conclusions and recommendations regarding the overall study taking into consideration the research objectives and the research questions outlined in chapter 1 of this study.

CHAPTER 5:CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The focus of the previous chapter was to analyse and interpret data acquired from participants from Verdwaal and Springbokpan villages respectively using questionnaires. However, in this chapter, the aim is to conclude and recommend on the way forward based on the findings of the study and literature thereof.

5.2 Study overview

The study was conducted to develop a monitoring tool that could be used to measure the progress towards realising the intentions of the Social Labour Plan (SLP). The study was conducted within communities directly affected by the cement manufacturing plant.

This research project was triggered by the company commitment to support the communities in which it operates and where it was supposed to be in the stage of implementing a Social and Labour Plan (SLP) for its Aganang operation, which SLP was approved by the Department for Minerals Resources (DMR) in January 2009. The company also highlighted that the Social Labour Plan was developed through engagement with local stakeholders and includes activities to:

- Address skills development needs.
- The providing of infrastructure.
- Eradicate poverty and projects to create jobs.
- Investigate and implement community investment opportunities

Furthermore, the company continued to commit to the principles of Corporate Social Investment which amongst others includes education, environment, enterprise development and sport and recreation. Findings in this study are only based on data collected from the affected villages in whichonly 206 people participated.

This research project contains several specific chapters which outline the importance and the relevance of the study.

The proposal of the research was presented in the first chapter, which entirely dealt with the purpose of the research, problem statements, research question and further highlighted the design and methodology of the study.

The chapter further linked with the literature review in the next chapter two (2), where different sources of literature were used in support of the study. This chapter provided the insight as to what a firm must do to integrate strategic corporate social responsibility into its culture, strategy and everyday operations.

Chapter 3 dealt extensively with the methodology and design of the research project. It further described the difference between types of research methods for empirical data collection. Data was then collected by distributing questionnaires in the affected communities. This led the study to chapter 4 of which the focus was to analyse data and interpret results.

5.3 Objectives of the study

The study was conducted within communities directly affected by the cement manufacturing plant and shall aim to realise the following objectives:

1. To identify and assess socio-economic activities which are significantly influenced by the Sephaku cement manufacturing plant.
2. To examine the level of unemployment rate in the surrounding communities since the commissioning of the new cement plant.
3. To determine the level of company's commitment in improving the lives of the people in the surrounding community.
4. To examine the contribution of the company in educational and infrastructural development

5.4 Extent of achievements of each objective

To identify and assess socio-economic activities which are significantly influenced by the Sephaku cement manufacturing plant.

The extentof cooperation received from respondents in this study made it possible to achieve the objective of the study. People expressed their satisfactions and dissatisfactions concerning the newly-built cement plant in their area. There has beenlittle improvement in the socio-economic challenges in the area. Challenges of socio-economy such as poverty and unemployment still persist in the area. Due to poor levels of education in the area, there is a lack of relevant skills required for the community to be employable to the company. The company needs to invest more in education and skills development programmes including apprenticeships to ensure that they have a pool of skilled people available within the area for recruitment purposes. The struggle for health-care facilities also emerged as a challenge which affects the socio-economic activities in the area. The communities still rely on government facilities to access medical attention.

- *To examine the level of unemployment rate in the surrounding communities since the commissioning of the new cement plant.*

The study has evidently showed that the level of unemployment in the surrounding communities is high. The rate of jobs created by the company is not sufficient enough to address the challenge of unemployment. This can mostly be due to types of jobs that need certain skills which is scarce in the area. The critical expectation from the community has beenthat there wouldbe more job opportunities since the commissioning of the new plant; however, they did not anticipate the skills required for jobs opportunities.

To determine the level of company's commitment in improving the lives of the people in the surrounding community.

The levels of environmental impacts which are directly caused by the cement plant are unlikely to be known or understood by residents; however the company is committed to improve the surrounding environment. This is evidently proven that there are dust monitoring stations which monitor the dust level within the area on daily basis. The study however

revealed that little has been done in improving the lives of the people. The socio economic challenges still persist. Expectations from the communities are that issues such as poverty eradication strategies, job creation, education, health care facilities and many more remains areas of concern which need special attention. The community however strongly emphasise the implementation of the SLP.

To examine the contribution of the company in educational and infrastructural development

The study revealed that more work needs to be done to promoted skill development and improve the level of education within the surrounding areas. Most of the residents do not have post matric qualifications which make it difficult for them to be employable. The company's contribution is not significant and nothing has been done yet to improve education in the area. Amongst others, the area experience poor level of infrastructure development. The conditions of the roads have deteriorated to disastrous state due to high volume of trucks transporting material to and from the plant. This has affected local motorists negatively and nothing has been done by the company to improve the state of the roads.

5.5 Conclusion

It is evident that companies develop their Social Labour Plans only for the purpose of acquiring mining rights. There is little work done in terms of compliance and ensuring that they improve the socio-economy of their surrounding communities. Issues such as educational plans, poverty eradication programmes, and environmental monitoring plans, health care and so forthneed to be addressed for the benefit of the surrounding communities. It is therefore the prerogative of the authorities to enforce the laws of the country such as environmental laws and other relevant acts to ensure that there is accountability in compliance to improve people's lives.

5.6 Limitations of the study

This study was conducted in two affected villages within aradius of 5 km from the Sephaku cement plant. Respondents of the questionnaires distributed are people residing in the affected villages of Verdwaal and Springbokpan respectively. The study was not compulsory and participants were free to respond to questions without any intimidation. A major

challenge was that some people did not want to participate for fear of being victimized, hence theaverage response rate.

5.7 Recommendations

The recommendations in this regard were developed to address the social impact of cement manufacturing in the surrounding communities: A case for Sephaku Cement factory. Furthermore, to ensure the Implementation of socio-economic transformation in the communities directly affected by the cement plant in their area.

Recommendation 1

Social Labour Plan: This is a plan developed to outline all the plans the company wants to achieve to improve the socio-economy and livelihood of the communities affected. It is noted that most people in the area are not aware of such an important document. By virtue of the power enshrined in the SLP, it is recommended that this document be accessible to all community members in the language they understand. It is also recommended that anoversight committee be instituted to ensure implementation of the SLP's objectives and report to the community members. This will ensure transparency from the company's side and develop trust amongthe community. It will also improve communication channels between the company and affected communities.

Recommendation 2

Education and skills development: the study outlined that most of the people in the affected communities are only studying until Grade 12; this means that the level of education is poor. It is therefore imperative that the company should start to invest more in development of young people in the communities through education. This can be done either by granting scholarships, bursaries, educational loans with the aim of funding higher education. Furthermore, other training can be done in-house by starting an accredited skills development centre in the area and apprenticeship programmes. This will also benefit the company during recruitment processes and will also eradicate poverty and reduce unemployment rates as more people will be skilled and become employable.

Recommendation 3

Company's Commitment: the company is required to ensure that the surrounding environment is conducive and does not cause detrimental effects to the wellbeing of the ecosystem. By so doing, it ensures that it improves the livelihoods of the communities and the surrounding areas. It is therefore recommended that they conduct environmental awareness campaigns to educate the community about the environment, including methods which can be used to ensure safe water amongst others. It is also recommended that the company conduct environmental impact assessments regularly to measure their performance. This will also benefit in forecasting the health effects that may be caused by the company emissions such as asthma, tuberculosis, infant mortality and climate change.

Recommendation 4

Infrastructure development: it is noted that since the plant became operational, theconditions of the surrounding access route havedeteriorated. This is caused by high volumes of trucks which are used transport raw materials and collect final product for distribution. The design of the roads wasnot meant for heavy duty transportation, it is therefore recommended that the company together with the relevant stakeholders conduct a proper traffic study and design a type of road which can accommodate heavy trucks. It is also recommended that the company must ensure that no truck should leave the factory overloaded and impose penalties to those whobring material in overloaded trucks. It is also recommended that aweighbridge be erected and law enforcement agencies conduct inspections.

5.8 Suggestions for further research

The following recommendations are suggested for further research:

- It is recommended that local and district municipalities conduct a detailed research on the economic outlook of the area since the emerging of the new plant.
- The research study must be conducted to determine the best possible method of implementing the Social Labour Plan in the affected mining areas.
- Furthermore, research on air quality modelling should be conducted to determine the level of emissions caused by the company in the receiving environment.

- It is also recommended that the research in the impact of mining/quarrying in biodiversity and archaeology be conducted to protect indigenous species.
- It is further recommended that future research should include management so that their side of the story could be captured and heard.

5.9 Final conclusion

In conclusion, the study has revealed challenges communities are facing with the implementation of the Social Labour Plan developed to improve the socio-economic factors affecting the area of concern. Most of the people were expected changes in their livelihoods when the cement plant concept was introduced. However,this remains a challenge realizing their expectations. Failure to fully implement the social labour plan resulted to amongst others to address thorny issues such as education plans, employment, health-care and infrastructure development. The level of unemployment continues to be high and remains a challenge which requires more efforts from affected stakeholders. It will remain to be difficult to address unemployment without developing skills within the area. The skills development and education level in the area need to be addressed and be invested upon.The study revealed that more youth in the area are unemployed and do not have post matric qualifications, this challenge the company to empower and skill youth in the area for them to be employable.

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ANNEXURE A: QUESTIONNAIRE

Section A: DEMOGRAPHICS: General Information.

NB: Please mark with X in the boxes

1. What is your gender?

Male		Female	

2. Which age group are you?

Under 25	
25 to 35	
36 to 45	
46 to 55	
56 and older	

3. How long have you resided in this village?

Below 5 years	
05 to 10 years	
10 to 15 years	
15 to 20 years	
20 years & above	

4. What is your highest qualification?

Below Grade 12	
Grade 12	
Certificate	
Diploma	
Degree	
Honours degree	
Master's and above	

Section B: SURVEY questions

The following section aims to measure the commitment and social responsibility level in which surrounding cement factory contribute towards the nearby areas. You are requested to read each statement and indicate the level to which you agree or disagree with the statement(s). The responses are categorized on a five-point scale as follows:

1 Strongly Disagree
2 Disagree
3 Unsure
4 Agree
5 Strongly Agree

Please tick (X) in the appropriate box, the statement which best describes the level to which you agree or disagree with the statement. Please note that you may only select one answer.

STATEMENTS AND THEMES	Strongly disagree	Disagree	Unsure	Agree	Strongly agree
2.1.The company explained its social labour plan to the affected communities.					
2.2.The level of unemployment rate has reduced drastically since commissioning of the new cement plant.					
2.3. The company committed to improve the lives of the people in the surrounding communities.					
2.4.The company is transparent to the communities and has good communication channels in place.					
2.5.Since the commissioning of the new cement plant, the economy of the area has improved.					
2.6.The company is responsible for maintaining their access routes and infrastructure development within their jurisdiction/ affected communities					
.7.The company is contributing immensely in the development of education in the surrounding communities.					

Thank you for your participation.

ANNEXURE B: DETERMINING SAMPLE SIZE

TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	50	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	275	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Source:Sekaran (2003:253).

Where, N = the population size and S = the sample size

ANNEXURE C: STUDY AREA

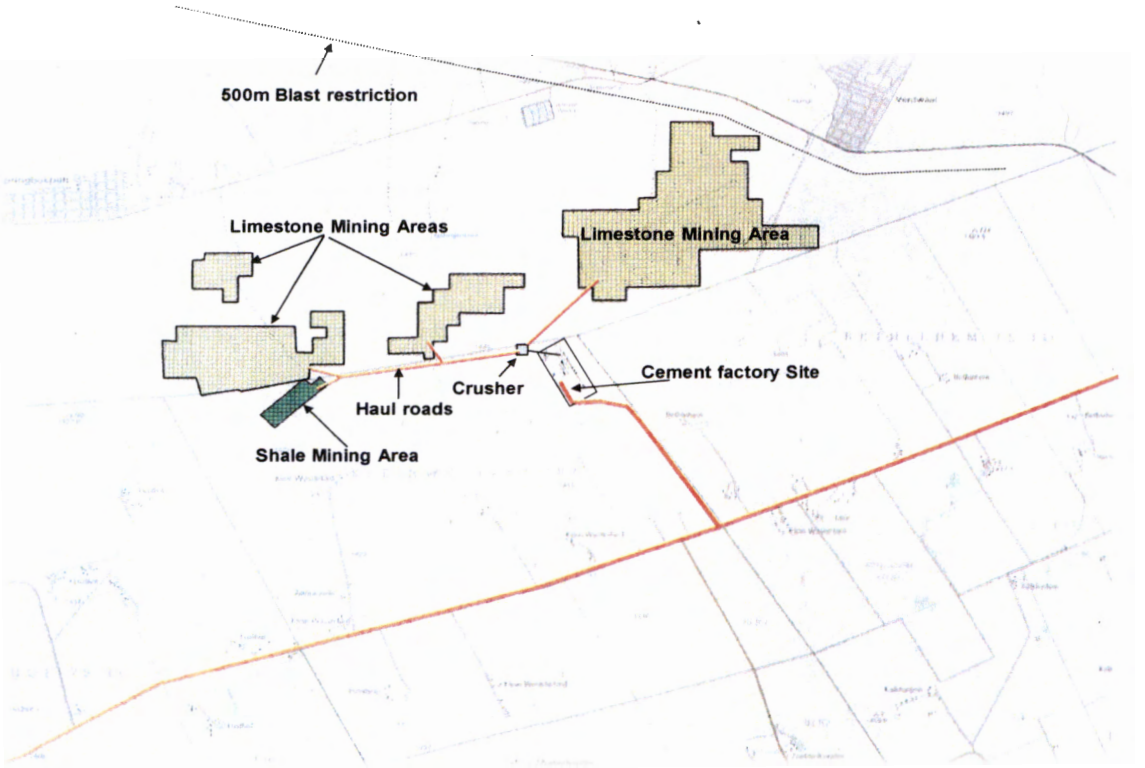

Figure 3: Location of Verdwaal and Springbokpan villages (Matlapeng, 2014)