The social and ethical responsiveness of a South African Platinum mine towards women in mining.

Academic Programme:
Master of Business Leadership – SBL

Research Report
submitted by
Vaughan Townsend
3440-911-4

Supervisor: Professor AE Booysen
Graduate School of Business Leadership - UNISA
November 2006

Contact details:
Tel (w): 014 569 6714
Cell: 082 572 0612

ABSTRACT

Mining companies throughout the world have been attempting to introduce a sustainable development and empowerment program for women for more than a century with very little success. Numerous countries, including South Africa (SA), had legislation prohibiting the employment of women underground until as recently as 1995.

South Africa has subsequently used the Beijing Platform of Action as a reference to the compilation of a number of enabling legislation such as the Mining Charter and other policies in an effort to create positive intervention in the empowerment of women. Barriers to the introduction of women in the mining industry are numerous and need to be managed if a sustainable diverse workforce is the future objective.

This purpose of this research was to attempt to identify barriers and potential solutions which can be applied as best practice and in so doing, improve the chances of sustainable success for this industry initiative. A typical SA hard rock mine has been chosen for the research. A random sample of 46 women employed at Impala was selected to participate in a semi structured interview with the researcher. The findings were them scrutinised and categorised to expose any obvious themes or patterns.

The research findings did not disclose any unusual or unexpected SA issues but actually confirmed the international experiences to a large degree. The researcher has made a number of recommendations regarding the challenges that were raised during the research and interview process. Essentially it was confirmed that SA women have a desire to be independent, a yearning for self development and the drive to want to make it happen to prove to themselves and everyone else that they too can add value and make a difference. If anything, they are prepared to work in hazardous environments and carry out arduous physical work if that is what it is going to take to get to the top.

In conclusion it is noted that companies should learn from others mistakes and not re invent the wheel every time a new challenge is put on the table. Further research is recommended as this research was conducted during the infancy stages of implementation and the views of the participants could vary as time passes.

ACKNOWLEDGEMENTS AND DECLERATION

I declare that this research report is a product of my own work and has not been submitted or published elsewhere.

This work is dedicated to my wife and daughter who have stood by me for the past three years through thick and thin to accomplish this final goal.

I would like to extend my thanks to Professor Lize Booysen who guided me through this research process with patience and professionalism. Further more I need to thank my employer for sponsoring this research by allowing me access to the participants as well as my own time to conduct the work that was necessary to compile the end result.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

AA	Affirmative Action
BPA	Beijing Platform of Action
CEDAW	Convention of the Elimination of All Forms of Discrimination against Women
CSIR	Centre for Scientific and Industrial Research
DME	Department of Minerals and Energy
EEA	Employment Equity Act
HDSA	Historically Disadvantaged South African
ILO	International Labour Organisation
INCO	International Nickel Company of Canada
LRA	Labour Relations Act
MHSA	Mines Health and Safety Act
MMSD	Mining Minerals Sustainable Development
NPGF	National Gender Policy Framework
NUM	National Union of Mine Workers
PMS	Personal Management System
PPE	Personal Protective Equipment
SA	South Africa
SADC	South African Development community
SET	Science, Engineering and Technology
SSM	Small scale miners
UK	United Kingdom
WIM	Women In Mining
WISE	Women in Science and Engineering

CHAPTER ONE

ORIENTATION

1.1 INTRODUCTION

After the first democratic election in South Africa in 1994, Nelson Mandela addressed the nation saying "Today we are entering a new era for our country and its people" (Mandela, 1994) and then continued to tell the nation of the change that could be expected. Logically the change and transformation arising from this event could not take place over night. According to Van Tonder (2004: 5), Ford and Ford (1994) argued that "change is a phenomenon of time, where something over time turns into something else". Van Tonder (2004: 5) also refers to the classical view that "change is a sequence of activities emanating from disturbances in the stable force field surrounding the system" according to Lewin (1951). Change of this nature, political change, tends to be associated with negative emotions due to the threat of personal security, loss of control, fear for the unknown and results in resistance to the change (Van Tonder, 2004: 182). The SA community could be viewed as a system requiring realignment with international ethical practices, hence the first step of the democratic elections. However, rational change initiatives are not always adequate and occasionally "corrective" actions are required to ensure that change is brought about and sustainable (Van Tonder, 2004: 160). To this end, policies, procedures and legislation have been systematically introduced in order to urge organisations, companies and individuals to accept change and work towards making it reality. One of the change activities identified was the eradication of discrimination within the workplace.

One of the first issues to be addressed was discrimination and the promotion of equal opportunity for Historically Disadvantaged South Africans (HDSA), women also being classified as historically disadvantaged. South Africa's National framework for Women's Empowerment and Gender Equality, better known as The National Gender Policy Framework (NGPF) was created in an effort to reduce and eliminate all forms of discrimination against women. The NGPF encourages empowerment of women,

advancement and general social upliftment of women within all communities in SA. (Office on the Status of Women, South Africa 2000: 2)

The economy of SA is divided into various sectors and each sector has approached gender equality in a different way. The mining sector, through a tripartite forum, drafted the Mining Charter. The Charter is a reflection of the commitments between Government, Labour and Employers. To encourage gender equality, it was agreed that the workforce should consist of at least 10% women across all levels within five years. This target is however is regarded as a first milestone. It is clear from the EE Act chapter 5 section 42 that SA should ultimately be striving for a diverse workforce that reflects the demographics of the country. The National Gender Policy Framework calls for corrective measures to be implemented to strive towards a minimum of 30% of gainful employment in all sectors to be held by women (Office on the Status of Women, South Africa 2000: 22). Women constitute 52% of the SA population, 78% black and 11% white. While only 41% of the current employed workforce constitutes women, Black women comprise 62% of employed women while 20% are white and the balance of 18% are made up by Coloured, Asian and Indian women. Clearly white women are over-represented among employed women (Republic of South Africa, Statistics South Africa. 2001: 53). The mining sector, although a relatively small sector with only 4% of the total employed workforce in SA, currently employs women in less than 5% of the total workforce of the sector (Republic of South Africa, Statistics South Africa. 2001: 69).

The mining industry, due to many years of male dominance, has not been designed to be women–friendly or sensitive to female characteristics. This creates a number of barriers or challenges for the industry to overcome in order for it to create a sustainable diverse workforce. In the mining industry, legislation had to be changed to enable mining companies to employ women in underground occupations requiring manual labour. The constraints are multi faceted and include both physical and psychological issues. Physical barriers do not only refer to individual strength characteristics but include a whole host of ergonomic issues. Psychological issues include the protection of the male macho ego as well as cultural and other social issues.

In SA, limited research has been done to determine what the barriers are, why they exist and what should be done to eliminate or manage the challenges. This has resulted in a lack of knowledge and documented best practices for referral and future reference. Companies embarking on an implementation strategy for women have developed their strategies around perceptions.
It could be suggested that this is a typical 3rd order change management process. Van Tonder (2004: 86) explains that 3rd order change relates to empowering and capacitating. Democracy, the empowering of the people, the empowering of the workforce and not forgetting the empowering of women including capacity building in all aspects of empowerment, typically falls within the definition of 3rd order change. There are many handbooks and theories on change management which could be applied to this situation. Change management is even a recognised profession these days with numerous consulting companies offering professional services to deal with change management and transformation. However, even with all the advice and expertise available, the task is a daunting one as there are many variables which need to be taken into consideration. Social, cultural and political issues are typical issues which tend the make the process far more complicated.

In the three years since the inception of the Mining Charter, the mining industry in SA has made very little progress. The employment of women is characterised by high turnover resulting in no improvement on the 5% industry average. Hence the question "What should management be doing to improve the transformation process with specific reference to the empowerment of women?" In answering this question management should be viewing the issue from a woman's perspective and determining whether or not they are interested in working on a mine. Further more, do women actually want to work underground and what do woman view as retention factors to keep them employed in the mining sector. Management does not yet have the answer to these questions and very little known research is currently being done to understand these issues.

International case studies have predominantly shown that in the initial stages of introducing women into mining occupations there is a marked increase in the number of women employees. This phenomenon is short lived and could be described as the "white coat" syndrome. While an issue has the attention of many employees, it

works. As soon as the attention is turned away, it collapses. What will make the introduction of women sustainable in the mining industry in SA? What corrective actions are in place to drive the empowerment of women in the mining sector?

The empowering of women is being driven by legislation via various vehicles, all of which have their own requirements and subsequently challenges for the various economic sectors. The mining sector which has virtually been an all male environment for most of its existence is under the spotlight and one of the sectors which is affected by numerous legislative vehicles. The Department of Minerals and Energy (DME) is driving the implementation of a tri-partite agreement, namely the Mining Charter, and in so doing is ensuring the introduction of women in the South African mining industry based upon targets to be achieved within certain time frames. Needless to mention, these time frames are proving to be extremely challenging. The Broad Based Black Economic Empowerment Act creates an even bigger challenge for industry by differentiating between black and white women, essentially reducing the size of the pool of women from which to choose. While the mining sector is trying to achieve the 10% female target called for by Mining Charter (South Africa, Department of Minerals and Energy, 2003), the Broad Based Black Economic Empowerment Act advocates preference to be given to companies who employ black women (South Africa, 2003). Internationally, women in mining (WIM) is not a new phenomenon and even in this arena difficulties have been experienced.

From the literature it is evident that for more than a century, the international mining industry has been trying to empower women with very few success stories. During the past century many attempts have been made to introduce women into the mining sector and specifically underground, without much success. Many barriers, legislation being the predominant one, have prevented any substantial progress. During the past decade renewed attempts to introduce women into the mines have been initiated, this time being driven by legislation and the desire of women to become educated, skilled and develop careers for themselves. According to Miranda (2004) the number of women linked to mining operations globally comprises only 30% of the total number of people linked to mining operations. Southern Africa, Japan and Latin America have the highest percentages of women employed in mining respectively; however, a large percentage of this is in the informal sector

commonly known as artisinal mining. Artisinal mining is viewed as unsafe due to the lack of appropriate equipment. According to the International Labour Organisation (ILO), approximately 80% of artisinal mining takes place outside a legal framework (Hinton, Veiga & Beinhoff, 2003). Empowerment and formal recognition is therefore seen as the potential growth area to source funds in order to improve both the productivity and safety and encourage women to continue in sustainable mining ventures.

The success or failure of the empowerment process has a direct affect on both the social and economic performances of the individual and the company involved. In the majority of instances the failure to empower and introduce women into the sector will have a negative impact. In the South African context this impact will be brought about through the prevention or prolonging of mines from renewing mining rights or obtaining new mining rights in order to create a sustainable future for their business. It is therefore in the best interest of management to ensure success.

1.2 Purpose of this Research

The current body of knowledge regarding the introduction and empowering of women in the South African mining sector is limited. Very little research has been published with the majority of published works being articles in trade and news-orientated publications. This study is therefore a positive contribution to the current limited body of knowledge giving insight to current practices and the success or failure of such practices in the mining sector.

The purpose of this research is to provide answers to the research questions. Firstly, what should management be doing to improve the transformation process with specific reference to the empowering of women and secondly which aspects of the current process being followed are enabling and which aspects are not? The objective is to determine the level of satisfaction experienced by female employees currently employed at Impala Platinum, Rustenburg. By determining what encourages women to seek employment in the mining industry, management can be proactive in developing successful attraction and retention strategies. The same is applicable for the issues which frustrate the women employees currently employed in

mining occupations. Once these are known to management then they can try to eliminate the inhibiting issues in order to encourage employment, career opportunities and at the same time retain the female employees.

Although the process is driven by legislation it is the sociably correct thing for any company to do in this country of transformation. Failing to comply with the legislative requirements could result in the loss of mining licences or the delay in new and / or renewal of mining licences. Mining companies are continuously prospecting on new ground seeking new areas for expansion or sustained production. Failing to meeting legislative requirements regarding the targets set for the introduction of women into mining occupations could result in the refusal of prospecting licences. This will have an impact on long term business plans and could potentially have a huge impact on the company's existence and return to shareholders.

Women might also be the breath of fresh air that mining companies need. Although mining has always been regarded as a male dominated sector, who is to say woman will not bring new initiatives and ideas to the sector with potential efficiency or methodical improvements. The mining sector needs to look out for any potential skill that is available and make use of it order to ensure sustainability. Eveline and Booth (2002) agree that the emphasis of encouraging women to participate in the mining industry should be on how companies can gain competitive advantage by increasing the human resource pool. The management of mining companies therefore need to find effective mechanisms of attraction and retention to ensure they employ and empower women in the mining sector.

This research will attempt to determine what a specific mine is doing which is perceived by the women employees to be promoting the transformation process and secondly, what is perceived to be lacking in the process.

1.3 PROBLEM STATEMENT AND RESEARCH QUESTIONS

There are many barriers, predominantly social, ethical and male dominance to be overcome. This research is designed to determine what some of these current barriers are and how a typical mining organisation is approaching these challenges

as well as the effectiveness of the approach. A typical South African hard rock mine has been chosen for the research to determine whether or not there are any best practices which can be used elsewhere in the industry.

The research questions that needed to be answered were:

a. What should management be doing to improve the transformation process with specific reference to the empowering of women?
b. Which aspects of the current process being followed are enabling and which aspects are not?

1.4 IMPORTANCE OF THE STUDY

The introduction of women into the mining sector is relatively new to South Africa (SA) and therefore much can be learned from experiences in the United States of America (USA), Australia, Japan and India. The SA economy is sensitive to changes in the performance of the mining industry and vice versa. Fluctuations normally lead to a spiralling trend, either down or up, and thus have to be managed correctly. The reality is that the mining industry is a job-shedding one and the successful implementation of empowering programmes needs to be well planned and executed (Ranchod, 2001:16). Ranchod (2001) explains that according to Anglo Gold sources there are very few new jobs and occupations arising in the mining industry. This is compounded by the fact that certain sectors of the mining industry are cutting back on production and labour to enable them to survive in the current economy. It is also stated that there are potential areas of growth, such as platinum, where the potential for increased employment could facilitate the process of including women in the production aspects of mining.

The potential influence of the Mining Charter requirements for Women in Mining (WIM) therefore needs to be well planned and managed in order to prevent any negative influences or at least minimise the negative impact on the economy.
Research on the responsiveness towards WIM in the SA mining industry and the potential socio economic impact could therefore be used by management to be proactive in their approach and the implementation of WIM.

1.5 OUTLINE OF THE RESEARCH REPORT

This research report is structured as follows:

Chapter one includes a brief introduction to the subject of the research as well as the purpose and importance of the research.

Chapter two consists of a literature review taking the reader through the historical disabling legislation followed by the enabling legislative requirements imposed on organisations today. The international context is reviewed with the assistance of two case studies. The first case study is of Canadian origin in a hard rock underground mine and the second of Australian origin where technology has been used to replace manual labour in an open-cut mine. The chapter also reviews the current status of women in the South African mining sector and some of the barriers reported to have been experienced to date.

Chapter three describes the research design and methodology including sample size, method of data collection, limitations and methods employed to analyse the data.

Chapter four is essentially the detailed report on the outcome of the responses received from the participants. The data from the responses has been analysed and where necessary the data was coded and further analysed. The format of the report includes tables, graphs and discussion of each question put to the participants.

Chapter five focuses on a discussion of the results obtained from the analysis of the responses received and the researcher has attempted to draw some conclusions and where possible made recommendations which any mining company in the same situation can consider for possible implementation going forward.

CHAPTER TWO

LITERATURE REVIEW

INTRODUCTION

The researcher has approached the literature review under five main sub headings as follows; Background to WIM, SADC legislation and policies, Gender and gender ratios, Global statistics, International experiences at the hand of two case studies and the current status inclusive of progress since the inception of key policies and some of the barriers experienced.

The background to women in mining is necessary to sketch the background and lay the foundation of the paper. A brief history of how women have tried to enter the male dominated mining sector since the 1800's across the world. The second point will zoom in closer to home and address the legislative issues in SA which firstly restricted and secondly enabled the employment of women in the SA mining sector.

Gender needs to be defined and the social impact of gender on the functioning of a company and individuals is discussed briefly to set the scene.

To benchmark the SA context, some global statistics will be reviewed and discussed in relation to successes and failures. International experience will be investigated at the hand of two case studies with similar working environments.

Finally, the current SA status and statistics will be reviewed and some of the known barriers and challenges discussed based on the limited SA research that has been done.

2.1 BACKGROUND TO WOMEN IN MINING (WIM)

The information regarding the historical development of Women In Mining within the South African Development Community (SADC) is very limited. In order to create a historical foundation for the literature review, international literature, although also very sparse, has been consulted.

Although there is evidence of mining activities in the seventeenth century, there is very little evidence of women being directly involved in the underground workings. There is evidence that women have been employed in underground mines in the United Kingdom (UK) since the mid 1800 up until 1972. The Scottish government passed a Mine Act in 1842 prohibiting women from working in the underground mines as it deemed the working conditions to be too hazardous for women and children (Lewis, 1971:59).

Mine Regulations and Acts prevented the employment of women in underground mining operations in Australia between 1964 and the mid 1970's after which restrictions were lifted by the authorities as a result of pressure from the authorities (Baily, 1988:5).

Some of the earliest recollections of women in mining date back to 1909 in Japan where records reflect that 10% of the workers in Japanese mines were women. Japanese regulations prevented women from working underground between 1916 and 1937 for reasons which are not given (Mathias, 1993:116-117). Due to male labour shortages after the first and second world wars, the number of women working in Japanese mines increased to 27% by 1947. The majority of these women were employed in surface operations.

The USA appears to have been the most proactive nation regarding WIM since the 1970s. In 1972 an organisation was established called "Women In Mining". By 1996 thirteen percent of employees in the USA mining industry were already women, granted not all in underground operations (Ralushai, 2003). The numbers of women working underground in the USA have declined from 4% to 1% and this is said to be as a result of the lack of women decision makers in the industry (ICEM, 2004).

Closer to home, literature indicates that women have been working underground since the mid 1980's in Zimbabwe.

In South Africa (SA), women have been prohibited from working underground since the passing of the Mines and Works Act of 1911. The amendments of 1991 removed

most of the restrictions, however, women were still restricted in terms of the class of work that they were permitted to carry out underground as well as the duration of time permitted underground. Typically these classes were:

- Women holding positions of management and who did not perform manual work,
- Women employed in health and welfare services,
- Women in the course of their studies.

It was only with the Mine Health and Safety Act 29 of 1996 that all remaining restrictions on women employed in underground mines was lifted allowing for manual work to be done.

2.2 SADC LEGISLATION AND POLICIES

Before embarking on the detail of the SA legislation and policies it is perhaps relevant to first discuss a key international policy which forms the basis of the modern day empowerment drive for women in general. At the Fourth World Conference held for Women in Beijing in 1995, a declaration was signed by the participating countries whereby, simply put, all agreed to the empowerment and upliftment of women. Following from the conference a document termed the **Beijing Platform of Action** (BPA) was established. The BPA identified twelve critical areas perceived to be barriers to the empowerment of women and gender equality. The majority of these critical issues had not been adequately addressed since the Nairobi Forward–looking Strategies for Advancement of Women Conference held in 1985. The BPA details the shortcomings of all twelve critical areas and spells out the detailed actions for national governments, government organisations, non-government organisations, employers, worker organisations, community organisations, educational institutions and health institutions (Beijing, 1995).

Critical areas of concern as listed in the BPA (Beijing, 1995: 15).

- The persistent and increasing burden of poverty on women
- Inequalities and inadequacies in and unequal access to education and training
- Inequalities and inadequacies in and unequal access to health care and related services
- Violence against women

- The effects of armed or other kinds of conflict on women, including those living under foreign occupation
- Inequality in economic structures and policies, in all forms of productive activities and in access to resources
- Inequality between men and women in the sharing of power and decision-making at all levels
- Insufficient mechanisms at all levels to promote the advancement of women
- Lack of respect for and inadequate promotion and protection of the human rights of women
- Stereotyping of women and inequality in women's access to and participation in all communication systems, especially in the media
- Gender inequalities in the management of natural resources and in the safeguarding of the environment
- Persistent discrimination against and violation of the rights of the girl child

Virtually all twelve critical areas identified are applicable to the SA mining sector; however the most enabling or empowering aspect is probably the "Women in the Economy". Actions arising from this critical area influence almost all the other critical areas. Participation in economic structures and policies creates power which influences the level of poverty, access to education and training, access to health care, power sharing and decision making, management of natural resources and not least of all violence against and conflict on women.

The BPA which has been adopted and endorsed by the SA Government has had a marked influence on some of the key legislation and policies post 1995. The Employment Equity Act 55 of 1998, The Mining Charter and the National Policy Framework for Women Empowerment and Gender Equality are prime examples. The National Policy Framework for Women Empowerment and Gender Equality, known in short as the National Gender Policy Framework (NGPF) makes specific reference to the BPA extensively throughout the document (Office on the Status of Women, South Africa 2000: 11&26).

2.2.1 National Policy Framework for Women Empowerment and Gender Equality

Consequent to the democratic elections of 1994 in South Africa, equal opportunity has been promoted through a variety of legislative instruments. According to Mathur-Helm (2003) the International Convention of the Elimination of All Forms of Discrimination Against Women (CEDAW) was accepted in 1996 by the new government and the National Gender Policy Framework (NGPF) was approved and introduced as a legislative tool (Mathur-Helm, 2003: 57).

The NGPF was aimed at integrating gender policies with the overall intention to ensure equal opportunities and rights for all South African women. Mathur-Helm (2003:57) lists the following seven major areas to be addressed by the gender policies in SA;

- women's rights are perceived as human rights
- they have equality as active citizens
- their economic empowerment is promoted
- their social upliftment is given priority
- they are included in decision making
- they are beneficiaries in political, economic, social, and cultural areas
- affirmative action programs targeting women are implemented

Since the introduction of the NGPF, slow but steady progress has been made within the governmental offices. Commitment towards corrective actions is needed from top management in order for progress to be made. In the SA private sector most top positions are still held by white males and as long as there is no commitment from them, the white male value system will prevail (Mathur-Helm, 2003). This can be expected, for as long as the male dominated patriarchal work place environment exists, the decisions, procedures and policies are being developed and approved by males. Needless to say many of these documents are biased to the male thinking. Women have to participate in the drafting and approval of these policies and procedures before there is going to be any radical changes to the workplace environment, making it more women friendly.

Many initiatives are being lobbied by government and other institutions to promote and coerce organisations to become more sensitive to the employment of women. The following are a few of the corrective vehicles according to (Mathur-Helm, 2003: 58):

- National Women's Empowerment Policy
- UN Convention on Women
- Commission on Gender Equality
- Women's Charter of Effective Equality (1993)
- Interim Constitution of the Republic of South Africa (1993)
- Reconstruction and Development Programme (1994)
- National Report on the Status of Women in South Africa (1994)
- World Conference on Women held in Beijing (1995)
- South African Women on the Road to Development, Equality and Peace

To illustrate the point of too few women making decisions and being involved in high level policy making, SA statistics indicate that only 7.1% of directors in SA organisations are women. Further more only 26% of senior management positions in SA organisations are occupied by women (Catalyst, 2004). It has also been reported that only 75% of organisations in SA have women in senior management positions (Grant Thornton International, 2003).

Unless SA organisations start transforming their top management structures to reflect a greater proportion of women, policies and procedures will continue to reflect the male bias. The introduction of female workers at the working face will subsequently continue to be challenging. Organisations might be successful in employing women however the turnover will continue to be high due to the women unfriendly conditions of employment, a phenomenon that is being experienced currently. In the next paragraph we will look at specific corrective legislation commencing with the Employment Equity Act.

2.2.2 The South African Employment Equity Act

The South African Employment Equity Act No. 55 of 1998 (South Africa, 1998) not only addresses gender discrimination but includes all previously disadvantaged

South Africans, people of colour, disabled people and women. This Act drives the strategic implementation of institutional mechanisms by requiring employers to publish equity plans and report on progress made annually. This is one of the few institutional mechanisms where monitoring is enforced and appears to be enhancing the process.

Many South African organisations have incorporated equal opportunity policies into their internal policy framework. However the reality is that they are not being successful in transforming the work place to represent the policies and plans they have in place (Mathur-Helm, 2003). One explanation given is that the formal policies have been drawn up hastily due to legislative pressure however, there are insufficient internal drivers within the organisation to effectively implement these formal policies (Booysen, 2005:20). Another explanation for this phenomenon is the male dominated society and management stereo-typed roles that are working against the transformation process. The organisational environment continues to be a barrier as the macho male management style has yet to develop into a women sensitive, women friendly working environment. This macho male environment still defines women to be inferior to men, creating inequalities of power and resource sharing (Mathur-Helm, 2003). The Labour Relations Act, although quiet on gender and racial issues regarding empowerment, has indirect regulating affects.

2.2.3 The Labour Relations Act (LRA)

The **Labour Relations Act of 1995** (South Africa, 1995) regulates the relationship with organised labour and is impartial to gender and race. Organised labour on the other hand is creating a burning platform in terms of subcommittees for discussing and negotiating gender issues thus forcing the subject to be indirectly regulated.

The **International Labour Organisation (ILO)** (Indonesia, 1937) still prevents women from working underground as clearly stated in Article 2 of the Convention No. 45 of 1937. National governments however, are permitted to introduce legislation which supersedes this convention should they deem it necessary. In the next paragraph we will look at specific mining legislation commencing with the Mine Health and safety Act.

2.2.4 Mine Health and Safety Act (MHSA)

The Mines and Works Act 27 of 1956 (South Africa, Department of Minerals and Energy, 1956) prohibited women from working underground in mines. A later amendment to this act, The Mines and Works Act 27 of 1956 as amended in 1971 (South Africa, Department of Minerals and Energy, 1971) prohibited females from working underground in *any* mine. Although females were allowed to work on surface at a mine there were certain restrictions as stipulated in the sections of the act. Section 11(4)a prohibited females from working at any mine at night. Section 11(4) c of the Act specified three provisions allowing certain females to continue with work at a mine at night, these included:

- Females holding responsible positions of managerial or technical character
- Females employed in medical, health, welfare or social services
- Females performing any work at a mine or works in accordance with the provisions of any exemption granted under the Act.

The predecessor to the MHSA was the **Mines and Works Amendment Act 13 of 1991** (South Africa, Department of Minerals and Energy, 1991). This act was liberating to an extent where it allowed certain classes of females to work underground for restricted periods of time. Typically these classes were:

- Women holding positions of management and who do not perform manual work,
- Women employed in health and welfare services,
- Women in the course of their studies.

Only after the **Mine Health and Safety Act 29 of 1996** (South Africa, Department of Minerals and Energy, 1996) was passed were all remaining restrictions on women employed in underground mines in SA lifted, allowing for manual work to be done by women. Although this amendment was enabling, it does not provide for any positive intervention for the employment of women in mines, it simply no longer restricts women from working in hazardous mining environments. The MHSA is essentially quiet on any form of discrimination, however, corrective policies such as the Broad Based Socio Economic Empowerment Charter for the South African Mining Industry are prescriptive when it comes to discrimination.

2.2.5 Mining Charter

The **Broad Based Socio Economic Empowerment Charter for the South African Mining Industry** (South Africa, Department of Minerals and Energy, 2003), commonly known as the Mining Charter, stipulates specific objectives to be achieved within the mining sector. It should be pointed out that these targets are a joint tri-partite agreement between Government, Employers and Organised labour made in 2002.

In the case of women, the target to which all parties agreed to aspire is 10% across all levels of employees within five years (South Africa, Department of Minerals and Energy, 2003). In 2002 the published statistics for women in mining were just above 2.6%. The unofficial figures currently being published for 2004 are still less than 3% which indicates less than one percent improvement after two years (Hermanus, 2005). It is thus evident that the tri-partite members, through their corrective policies, have been unsuccessful in their endeavours to date. Possible reasons in the form of barriers expressed by all parties, although not necessarily tested through research, will be discussed later in detail. At this point it is necessary to clarify two methods of measurement and reporting. In SA there is an informal differentiation between the number of women working underground and the total number of women employed at a mine including all surface occupations. The figures stated above which were reported by Hermanus (2005) are typically for women working in underground occupations. Statistics SA reported a total of 5% for all occupations, surface and underground, in the mining sector. The Mining Charter is however more forgiving than the Broad Based Black Economic Empowerment Act of 2003 (South Africa, 2003) when it refers to the empowerment of women.

2.2.6 The Broad Based Black Economic Empowerment Act of 2003

This Act, referred to as the Broad Based Black Economic Empowerment Act No. 52 of 2003 (South Africa, 2003), is a legal mechanism to drive black economic empowerment and thus discriminates along racial grounds. By definition, a black person is a generic term which refers to Africans, Coloured and Indian persons of South African origin (South Africa, 1998). The Broad Based Black Economic Empowerment Act (BBBEE) is viewed as a growth strategy rather than an affirmative

action strategy and aimed at including all levels of society, hence the broad-based reference (Alexander 2005:1).

None the less, this strategy specifically excludes white women. It also not only excludes white women but regulates the progress of black women through a scorecard system which has set targets for performance. These performance targets are specified in the Codes of Good Practice associated with the BBBEE Act No. 52 section 9 (South Africa, 2003). Therefore, while there is legislation encouraging the empowerment of women there is additional legislation encouraging the employment of women based on colour and race. "Discrimination is at its most severe when race coincides with gender and or disability" as stated by Mary Alexander (Alexander, 2005:2).

The mining sector led the way with the first BEE charter and is today not the only industry sector with a charter imposing specific goals and targets regarding empowerment of women. In recent years advertising, agriculture, healthcare maritime transport, finances, property and tourism industries have all developed BEE charters with specific targets relating to female empowerment. Each and every one of these charters has set different goals and objectives. For example, advertising calls for 50% female (all races) representation by 2012, whereas agriculture has based the percentage representation on specific management levels within the sector. While some charters specify women in general others are very specific of the race composition (Business Map Foundation, 2006).

To assist the private sector, best practice guidelines have been developed by organisations such as the Commission on Gender Equality. The guidelines are not viewed as definitive nor prescriptive but rather as a tool for companies to apply in the process of becoming more gender competent (Commission on Gender Equality, 2005).

It is not only industry that is finding the employment of women challenging. Trade unions have their own challenges regarding this issue as well.

2.2.7 Trade Unions

Kirton and Greene (2002) researched the barriers for the employment of women within trade unions. They alluded to the fact that diverse groups or teams are essential for the future development of British trade unions explaining that a women friendly public face must be projected in order to convince labour that they support gender equality.

In South Africa the National Union of Mine Workers (NUM) has established a forum for women, however at the grass roots level they are finding it very challenging to create any interest. This could be due to the scarcity of women employed in the mining sector as well as the fact that the majority of the women currently employed in the mining sector are in supervisory or technical occupations which normally do not participate in union activities (Kirton & Greene, 2002).

A diversified workforce is said to encourage efficient and effective teams. The composition of these teams needs to be well balanced and that brings us to the point of critical mass. What portion of the team ideally needs to be women or what percentage of the total workforce in any organisation ideally needs to be women to make it the most effective? Should the composition of the organisations workforce reflect the demographics of the region where it is located to make it most effective or not? In the following section we will explore the gender ratio issue as experienced and reported by researchers internationally.

2.3 Gender and Gender Ratios

It is perhaps pertinent at this point to define the term gender and differentiate it from terminology such as sex. According to the Concise Oxford dictionary, the definition of Gender is "grammatical classification of objects roughly corresponding to the two sexes and sexlessness" (Concise Oxford dictionary of current English, 1995). From the same source the definition of sex is "being male or female or hermaphrodite". The words **gender and sex** are often used as if they have the same meaning. In the context of the legislation, gender has been used to define roles and identities depending on whether the person is male or female (COSATU, 2000). Sex on the other hand refers to the physical difference between male and female and under

normal conditions cannot be changed without surgical intervention. Gender refers to the different roles and identities men and women are given. Gender is not fixed at birth and subsequently we are what we learn from what we are taught and accept. Gender relations are socially constructed and are influenced by culture, religion, legislation, education and can be changed. Gender creates expectations and influences relationships between male and female (COSATU, 2000). Therefore, in a nutshell, sex makes reference to biological categories, gender refers to social or cultural categories.

Male and female proportional representation within teams and organisations has been researched in various fields other than mining. Power relationships, work versus non-work relationships, work satisfaction, social acceptance and many more gender dynamics have also been the subject of research. Potential group dynamics and characteristics based on gender ratios have been identified, however the generalisation and extrapolation of these findings should be treated with care. Organisational and international cultures and values vary, therefore one should be mindful of these differences when considering the application of the findings within groups outside of the research group (Burke, 2003: 273). The same argument is also applicable to occupations. Most studies of gender ratios and work relationships have involved professional occupations with highly skilled and motivated people. Experiences between male and female who are professionally qualified will undoubtedly differ from the experiences of the employees at the work face.

According to Burke, Kanter (1977) for example, suggested four categories of organisations based on the gender ratio and that group culture changes relative to the gender ratio. She hypothesised that by increasing the number of women at all levels in an organisation, the dynamics of power, reward and status would be rebalanced, neutralising the previously inherent advantages to male employees. Kanter also introduced the theory of critical mass referred to previously (Burke, 2003: 273-274).

Research by Eveline & Booth (2002) regarding gender and sexuality in an Australian gem mine referred to Drade Dahlerup (1988) as suggesting that critical mass had to be complemented by "critical acts" in order for tokenism of women to be eradicated.

By "critical acts" she referred to the support and collective action by women at all levels in the organisation in order to bring about organisational change (Eveline & Booth, 2002: 559). This again implies that women in senior management positions are essential in order to ensure the necessary support for women in the lower levels. It has been suggested that where women are employed in senior positions of management, policies and practices could be influenced by them. This ultimately filters down through the hierarchical structure of the organisation and influences the aspirations of the women in the lower levels (Burke, 2003: 268).

Burke (2003) researched the gender relationships of psychologists and came to the conclusion that gender ratios appeared to have very little influence on neither work nor non-work experiences. Having found no direct correlation, Burke speculated that there is a need for women in the higher management positions of an organisation in order for policies and practices to be influenced toward female acceptance. She also speculates that women in the senior management positions provide a supportive function to other women in the organisation with career aspirations.

The importance of women in senior positions is a reoccurring theory and should therefore be taken seriously when trying to create a gender free organisation. The mining industry should be no exception. The traditional macho male domination will be biased and therefore needs high level input and influence of policies and practices. A general belief is that gender ratios do influence group dynamics and therefore depending on the required output of the group or team, a critical mass (ratio) is most likely to be unique to the circumstances.

This brings the discussion back to the question raised earlier regarding the end result. Should organisations be forced by legislation to change and implement gender ratios within the organisation to reflect the regional demographics?

Now that some of the known driving forces behind the empowerment of women in South Africa have been defined, the current situation globally as well as locally in terms of numbers that have been achieved will be discussed.

2.4 GLOBAL STATISTICS

Statistics can occasionally be misleading depending on the definitions used to determine the various classes of employees. Figures can be expressed as a ratio of the total population, the employable population or the employed population. The employable population in most cases is considered to be people between the ages of 16 and 65 and includes employed and unemployed persons. The employed population refers strictly to persons in employment at the point in time of the census. To make things even more difficult, the term employed is often defined differently by the specific researcher. When figures are taken from various academic documents it is not always clear what the reference is in terms of the data given. The following figures were not taken from an individual document and therefore the compatibility is questionable, however, compared to other countries it is found that employed women as a percentage of the employed population to be; China 47 %, Australia 44%, USA 46%, Canada 46% and South Africa 41%.

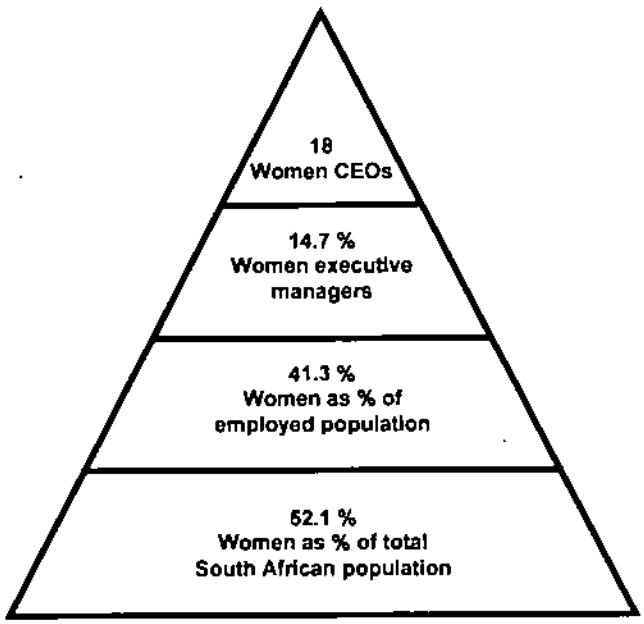

Figure 2.1: Census Pyramid
Source: Catalyst, 2004

The census pyramid shown in figure 2.1, reflects the number of women employed within all industries in South Africa including the mining sector (Mathur-Helm, 2003). The eighteen Chief Executive Officers relates to 2.45% of the total number of CEO

positions while the 14.7% of women executives is an indication of the ratio of women to men in this specific category.

The statistics regarding mining employees, women in mining and the population dependent on mining are quoted by many researchers and statistical institutions again requiring caution when interpreted. Mining is considered to be one of the cornerstones of the global economy. The International Labour Organisation (ILO) has estimated that approximately 100 million people are dependant on products produced by 13 million miners in 55 countries. The number of women globally involved in activities directly linked to mining operations is estimated to be 30% (Miranda, 2004).

Statistics offered by the various sources need to be used with care as they are based on different methods of data collection. The number of women "in" mining is typically used to refer to women involved in the direct mining or underground occupations. Women "at" mining refers to all women employed in occupations related to the mining sector including all surface, administration and processing occupations. A second important variation is that some statistics are quoted including both the formal and informal sectors of mining. The informal sector is commonly referred to as artisinal mining. Artisinal mining is generally considered to be the traditional pick and shovel and panning operations.

Women employed in mining as a percentage of total mining employees in various continents is estimated to be: (note that these figures include all forms of artisinal mining as well surface and underground occupations)

- Asia – les than 10 %
- Latin America – approximately 20 %
- Southern Africa – between 40 and 50 %
- Japan – 27 %
- USA – 13 %
- South Africa – less than 5 %

Southern Africa stands out here and perhaps needs some clarification as to the reasons why. Mining in Africa is predominantly small scale mining (SSM) which consists of artisinal mining and survivalist activities. It is estimated that there are over 4 million people involved in SSM in Africa and approximately 50% are women (Mutemeri, 2005: 7).

According to Dr Nellie Mutemeri, figures quoted in 2001 indicated the number of SSM in existence and the percentage of women within the SSM, depicted in Table 3.1 (Mutemeri, 2005: 8)

Table 3.1: Numbers of SSM in Southern Africa

	Malawi	Mozambique	Tanzania	South Africa	Zambia	Zimbabwe
Number of SSM miners	40 000	60 000	550 000	10 000	30 000	350 000
Percentage of women in SSM (%)	10	30	30	5	30	>50

Source: (Mutemeri, 2005)

While it is reported that the South African population consists of 52% women the 2001 census indicates that only 41% of the labour force was women. This is an increase of 8% in 5 years since the 1996 census, assuming the population split between male and female remained relatively constant (South Africa, Statistics South Africa, 2001).

There are some interesting case studies and experiences from the global arena which can be used to indicate the status and successfulness of the empowerment of women in the international mining sector.

2.5 INTERNATIONAL EXPERIENCES

Looking abroad at the USA and documented case studies, the statistics reflect a decrease of female miners (underground employees only) from 4% to 1%. The

predominant reason given for this decline is the absence of female decision makers (ICEM, 2004).

In Spain, women were forced to revert to taking the issue to the Spanish Constitutional Court to get permission to work underground as recently as 1992.

Bolivia has shown tremendous growth in the number of women in the mining sector. Available figures estimate the growth to be from 1000 in 1986 to 6000 in 1994 (ICEM, 2004). This however needs to be qualified as the majority of these women are employed in informal, small scale mining ventures. Being informal, they are not recognised when it comes to pay structures and conditions of work. Women have also been driven to work in order to support family needs to avoid or alleviate total poverty.

In India, women are used to sort waste rock. Working conditions are atrocious as many of them work barefoot, have no Personal Protective Equipment (PPE) and inevitably contract illnesses with fatal consequences (ICEM, 2004).

Canada is no exception to the struggle when it comes to the upliftment of women and creating a gender-free mining industry. As far back as 1930 legislation prevented women from working in mines as it was "too dangerous" for women and the work "too strenuous" (Espley, Francis & Castonguay, 2002: 2).

The World Wars depleted the available male resources resulting in legislative changes in many countries, allowing women to be employed in order for mining organisations to continue with production. In 1945, after World War II, Canadian legislation was again changed to prevent women from working underground. It was only in 1974, due to labour shortages, that the legislation was again changed to permit women to be employed in traditional male occupations, both professional and on the work face. Canada also implemented an Employment Equity Act to force the issue of gender equality, however even though there are no visible signs of discrimination, women are not advancing at an acceptable rate. It is cited that the actual advancement of women in Canada is due to their own drive for higher salaries,

opportunities to develop skills not normally acquired by women and strangely enough, just to get out of the house to take on new challenges (Espley et al, 2002: 3)

The male attitude towards the acceptance of women in the workplace is changing very slowly. There are indications however that in individual organisations and certain industrial sectors, male employees are accepting the introduction of women into the workplace more readily than others. The acceptance not only revolves around physical presence but also the ability to perform physical work and make decisions. No detail could be found, however, it is stated that information and education programs have been used to facilitate the acceptance of women in the work place, implying training for the women and their male co-workers (Eveline & Booth, 2002:573).
A case study of Canadian origin is worthwhile reviewing in more detail because of the similarities with the research being undertaken for this paper.

2.5.1 Case study - International Nickel Company of Canada. (INCO)

The case study of the International Nickel Company of Canada (Espley, Francis Castonguay, 2002) is one of a hard rock underground mine, producing nickel in conditions very similar to the platinum mines in South Africa. As a point of interest, South African platinum mines produce nickel as a by-product which constitutes approximately 60 % by mass of the total production.

INCO originally used a body weight parameter as the main criteria for employment in certain labour intensive occupations underground such as a rock drill operator. This was abolished and replaced with isometric strength tests for all new miners. The test requirement was derived from a Physical Demands Analysis which was undertaken by a private qualified practitioner in the early 1990's. Ten years down the line the relevancy of this test has also become questionable. Many underground occupations don't require a stringent strength test of this nature due to the introduction of new technology.

The president of INCO took it upon himself in the 1990's to consciously employ women in traditional male occupations. This proved relatively successful and is reflected in the 2001 figures which indicate that 165 women were employed in

occupations ranging from miners to general managers. This might at first appear trivial, however between 1945 and 2001, more than 700 women had been employed at INCO, the majority of which were in the 1990's. Due to high turnover, only 165 positions were maintained.

It is encouraging to note that within the INCO employee structures a number of the current senior management positions are held by women. One would hope that this has an impact on the creation of women-friendly policies and procedures.

INCO also embarked on a drive to introduce gender neutral language. This entails changing all forms of male biased terminology such as job titles from the traditional "foreman" to more gender neutral titles such as supervisor. Even the performance management system known as "Personal Management System" (PMS) was renamed due to female connotations with the abbreviation.

INCO's progress regarding the employment of women in underground mining occupations is impressive when compared to typical South African hard rock mines. Figures quoted by Espley et al 2002 for the percentage of women employees in all occupations relative to the total workforce are as follows:

- 1960: 0.3%
- 2001: 4.9%
- 2004: 5.6%

One needs to put this number into perspective and mention that only 2.8% of the front line employees (underground occupations) are women.

Senior management at INCO believe that the best person for the job should be selected regardless of gender, and subsequently do not impose quotas. This is a good practice if you are not under pressure to attain certain goals. Companies who are working towards legislated goals would find that a quota system is necessary in assisting to speed up the process.

An issue that is debated at length is the end result. According to Espley et al (2002), the Canadian government through the Energy Mines & Resources department and

the Mineral Policy is striving to achieve gender representation within organisations similar to the site or regional statistics where the organisation is located. The most dominant question that comes to mind is whether such large numbers of women really want to work in the mines, mining environments and especially underground. On a typical hard rock mine only 8% of the workforce is on surface.

One of the successes reported in the INCO case study is the establishment of a voluntary support group in 1998. Women in Science and Engineering (WISE) was established by the women, for the women, as a support and communication mechanism. The members interact with each other as well as prospective new employees creating a learning culture emphasising their (women's) interests, issues and challenges within the work place. This could be construed as counter productive to the typical male when organisations are trying to break down the barriers and create gender equality. However, it could also be advantageous to the development of women employees sharing common experiences which they normally would not like to discuss with the typical macho male.

The same opinion was expressed when the South African Association of Black Engineers was established in 1994. White engineers questioned the reason for forming a discriminatory group when the rest of South Africa is taking down barriers. Unbeknown to them the reasons were probably totally innocent and more for creating a support group for people with a mutual interest where they can express their feelings and share solutions to common problems and experiences during a time of uncertainty.

Certain areas were highlighted in the INCO case study for further development in order to reach a gender balance (Espley et al, 2002: 7).

- Determining the potential positive impact that women could have on the mining industry due to their unique "female" values. Their impact on soft issues such as health, safety, environment and family obligations can result in a more socially acceptable industry.
- Development of gender sensitive policies within the industry to ensure a women-friendly working environment.

- Development of valid occupational restrictions if necessary, as strength can be replaced by technology.
- Improvement of the overall education of women regarding the industry and the education of other employees to sensitise them towards employing women.
- Determine the benefits that can be achieved due to the differences between male and female attributes and exploit them to the benefit of the employee and employer.

A second international case study of Australian origin is also worthwhile reviewing in more detail because of the similarities with the research being undertaken for this paper.

2.5.2 Case study - Emerald Site (Emsite).

Emerald Site is an open-cut Gemstone mine in the remote Australian outback. Eveline and Booth (2002) researched the gender dynamics over a period of ten years at the Emsite location. They made use of focus group interviews, individual interviews, observations and numerous company review documents during their research. Their research focused on the influence of external factors influencing the gender relationships such as changing technology, human resource control and organisational design. Emsite was one of twenty eight Australian mining companies to participate in a voluntary affirmative action programme for women, introduced in 1985, making it an ideal case study.

Emsite is not the traditional underground hard rock mining environment but the outcome of the case study has revealed some interesting results. Emsite was in the process of expansion and subsequently recruiting large numbers of employees. Management decided to make use of the opportunity to employ a gender neutral workforce and subsequently the Human Resources Department (HRD) developed a selection and training process for the so called "fit for purpose" miners. The people were selected to fit a carefully designed mining culture. Team orientation, the ability to adjust to change, open mindedness and flexibility were a few of the criteria used.

Training, while under the control and supervision of the training centre was gender neutral. On the job training proved to be somewhat different in that the male supervisors tended to be dominating, emphasising their masculine identities and subsequently undermining the gender neutral environment.

The research revealed many operational benefits. Male behaviour improved, less fighting and bullish behaviour was observed. Male workers tended to dress better and stay cleaner. The presence of the women had a positive effect on the general good house keeping and the safety records subsequently improved. The researchers suggested that this was brought about by the changed attitudes of the male workers, influenced by the women.

The competitive advantage increased due to the availability of a larger pool of human resources ultimately enhancing the financial and organisational viability of the business.

Not everything at Emsite was plain sailing. Eveline and Booth (2002) refer to the "Belt shop blues" where instances of male resistance and the masculine need to control were displayed. Typically this was achieved by displaying offensive pictures, pornography and pin-ups in areas that the male workers felt was their domain. Their attitude was if the women don't like it then they must stay out. Playing practical jokes, use of hard "abusive" language and the telling of sexually explicit stories were also practices employed by the males to demonstrate dominance and power. Eveline reports that it took less than three years for all but a handful of women to leave the heavily male dominated trades. Those that remained worked in the processing plants, stores and administrative departments. Over the ten year period, the number of women employees decreased from 14% to 4%.

Similar to the INCO case study, the women of Emsite also created an alliance. This alliance initially had a very specific objective which was achieved but at a cost. The leader fell victim to the boys and was exposed to extreme sexual harassment resulting in her request to be transferred to the training centre. Although she won the sexual harassment case, the damage had been done.

The establishment of the women-only meetings is a typical "critical act" as described by Daphlerup (1988). The women's mobilisation introduced a new dynamic into the workplace almost introducing sexual politics. Women were able to make demands and submit complaints. They even approached the state departments for assistance in educating the workforce in an attempt to sensitise them regarding women in the workplace. Lectures concerning sexual harassment and discrimination were given to all workers which at first appeared to be successful, however the affect was short lived.

The research by Eveline further revealed that there was a tendency for women to remain at Emsite when there was a "male protector". The male protector was either the husband or other family member or good friend that worked in close proximity and could effectively keep an eye out for any uncalled for behaviour from the male colleagues.

To summarise, the majority of the women employed by Emsite during the ten year period had great aspirations and believed in equal opportunity. Most of them have been disappointed by ensuing barriers which have left them demoralised.

Eveline and Booth (2002) concluded their research by suggesting that the women at Emsite were only adjuncts of managerial control and instruments of men's comfort. They further reinforce the belief that women remain subordinate to men in a typical male dominated society even in isolated managed workplaces. The so called failure of women to adjust to the environment is also a typical male biased viewpoint. The male response or action is taken as the norm and any unsuccessful deviation is considered to be failure. Is it not the male employees who failed to change and adapt to a more desirable environment? Who was ultimately lacking the necessary drive, commitment and skill; the men or the women?

The status of the international mining arena has been discussed at the hand of two case studies. We may well ask ourselves what we have learnt from these case studies.

2.5.3 Lessons learned from the international case studies

A very clear message from both case studies is that the women are interested and want to participate in the mining sector. The women are in need of higher wages and the opportunity to develop themselves and see the mining industry as a potential door to the future (Espley et al, 2002: 3). The desire to participate and succeed in mining professional jobs is critical because without it, woman will continuously be channelled into the stereotype clerical positions.

The relevancy of physical strength requirements needs to be questioned (Espley et al, 2002: 4). New technology and mechanisation is taking over rapidly, nullifying the need for physical power. It is also a fact that not all men are physically strong yet the mere fact that they are male allows them to automaticly qualify to work in a mine. Where does the SA mining sector fit into the international arena when it comes to mechanisation?

Gender neutral work practices are only beneficial and successful if they are incorporated throughout the company at all levels and categories of employees as well as all areas of work. Beware of gender neutral environments in training centres and then the stark reality of the real world when it comes to on the job experience. Sensitisation of the male dominated workforce is essential for success. Gender neutral language is essential to overcome the stereotype thinking of the male dominated workforce.

Male resistance is a reality and inevitable as pointed out by Eveline et al (2002) and the dynamics of the "belt shop blues" should not be overlooked. Avoid isolation of females in work places. They should either be strategically placed in small groups or possibly be placed with "female protectors" who can watch out for them.

How is performance measured? Should we be rating the performance of the women against the historical norms set by the men in past practice? Should we not be setting new gender neutral standards? These and many other unintentional

discriminatory practices need to be addressed in the form of policies, providing guidelines on how issues of this nature should be addressed (Espley et al, 2002: 6).

Quota systems and employment equity targets and their relevance is questioned. Targets were initially found to assist in getting commitment from senior management to drive the transformation but later created a burden as management were chasing targets irrespective of success or failure. High turnover was experienced until targets were not viewed as the prime objective and people "fit for the job" were employed. In the past when legal and moral drivers were the basis of the transformation, some benefit was achieved, however, the new approach of recognising the potential business benefits of a more balanced workforce has been accepted as the way forward (Espley et al, 2002: 6).

Support groups for women only, were found to be useful and in one case viewed as a "critical act" for success (Eveline et al, 2002). The sharing of experiences and the probing for advice can only take place in a relaxed and comfortable atmosphere. This usually is the case where like people get together. Care should however be taken to avoid the exploitation of a leader of such an alliance as it could result in her own downfall as was the experience of the shop steward referred to in the Emsite case study.

Last, but probably the most important is the presence of female decision makers. "Men and women are different, and yet want to be equals" (Espley et al, 2002: 7). Without female decision makers, policies and procedures will be biased. It is crucial to the sustainability of the transformation process that women are taking decisions for women.

Having discussed the global statistics and reviewed the events of two international case studies it is now appropriate that the events in South Africa and specifically the past ten years be reviewed.

2.6 CURRENT STATUS AND PROGRESS MADE DURING THE PAST DECADE IN SOUTH AFRICA INCLUDING BARRIERS TO IMPLEMENTATION.

The emphasis of this section will be on the mining sector as this research concentrates on the empowerment of women within the mining industry and specifically the employment of women in underground occupations.

As previously stated, progress with the introduction of women in the mining sector, since the inception of the Mining Charter in 2002, appears to be negligible. Numerous issues are cited as barriers to the sustainable development of careers for women in the mining sector, some of which will be discussed in more detail in the following section.

2.6.1 Current statistics

To begin this part of the discussion one needs to consider the gender profile currently prevailing within all sectors of the SA economy. Table 2.6.1a and Table 2.6.1b have been included to indicate the split between male and female in both the major economic sectors as well as the predominant occupations in SA respectively. The numbers have also been included to give the reader an indication of the variation in group size of the various categories (South Africa, Statistics South Africa, 2001).

Table 2.6.1a Economic sector of the employed aged 16 to 65 years, South Africa, 2001 (Numbers & Percentages)

Economic Sector	Male	Female	Total	Male %	Female %	Total %
Agriculture, hunting, forestry and fishing	664,537	295,953	960,490	69	31	100
Mining and quarrying	363,567	19,928	383,495	95	5	100
Manufacturing	808,797	398,047	1,206,844	67	33	100
Electricity, gas and water supply	59,473	12,154	71,627	83	17	100
Construction	473,909	46,577	520,486	91	9	100
Wholesale and retail trade	834,425	620,021	1,454,446	57	43	100
Transport, storage and communication	355,393	87,337	442,730	80	20	100
Financial, insurance, real estate and business services	525,570	378,999	904,569	58	42	100
Community, social and personal services	832,391	1,009,460	1,841,851	45	55	100
Other and not adequately defined	1,361	1,163	2,524	54	46	100
Private households	175,588	764,735	940,323	19	81	100
Undetermined	491,290	363,088	854,378	58	42	100
TOTAL	5,586,301	3,997,462	9,583,763	58	42	100

When comparing economic sectors, mining and quarrying has the lowest percentage of female employees at 5%. The construction sector is the only other sector with less than 10% female employees. The highest concentration of female employees is in the private households, domestic workers, as well as community, social and personal

services. These sectors are also the only sectors which match or better the demographics of the country at 55% and 81% female employees. One should actually question what will be done to reverse the high figure in the private household sector to reflect more males.

Table 2.6.1b Occupations of the employed aged 16 to 65 years, South Africa, 2001 (Numbers & Percentages)

Economic Sector	Male %	Female %	Total %	Male %	Female %	Total %
Legislators, senoir officials and managers	363,068	152,322	515,390	70	30	100
Professionals	383,590	284,873	668,463	57	43	100
Technicians and associate professionals	408,714	511,060	919,774	44	56	100
Clerks	378,212	669,486	1,047,698	36	64	100
Service, shop and market sales workers	632,446	345,141	977,587	65	35	100
Skilled agriculture and fishery workers	200,170	67,940	268,110	75	25	100
Craft and related trades workers	992,954	172,018	1,164,972	85	15	100
Plant and machine operators and assemblers	734,487	109,745	844,232	87	13	100
Elementry occupations	1,137,604	1,402,338	2,539,942	45	55	100
Undetermined	355,055	282,538	637,593	56	44	100
TOTAL	5,586,300	3,997,461	9,583,761	58	42	100

Comparing occupations, it is clear that women have been channelled into typical clerical and elementary occupations. Refer to Table 2.6.1b. Professional occupations are relatively well represented by women at 43% but only represent 7% of all occupations. Occupations lagging the most are plant machine operators as well as craft and trade workers (Artisans).

It is interesting to note that while 52% of the employable population is female, only 14% of the women are employed. Considering only the women in each of the economic sectors. Fig 2.6.1 and Table 2.6.2 represents the percentages of employed women in the various major economic sectors (South Africa, Statistics South Africa, 2001).

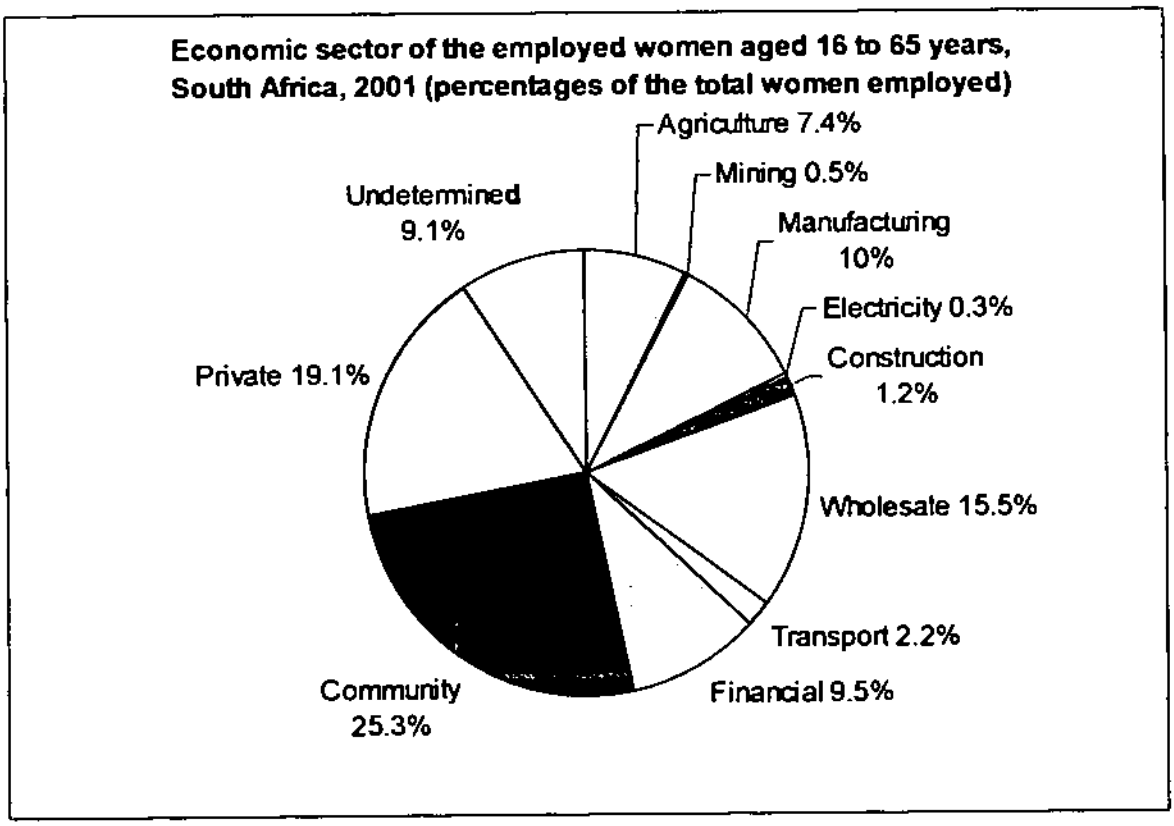

Fig 2.6.1

Table 2.6.2 Economic sector of the employed aged 16 to 65 years, South Africa, 2001 (percentages of the total employed)

Economic Sector	Male	Female	Total
Agriculture, hunting, forestry and fishing	11.9	7.4	10.0
Mining and quarrying	6.5	0.5	4.0
Manufacturing	15.5	10.0	12.6
Electricity, gas and water supply	1.1	0.3	0.7
Construction	8.5	1.2	5.4
Wholesale and retail trade	14.9	15.5	15.2
Transport, storage and communication	6.4	2.2	4.6
Financial, insurance, real estate and business services	9.4	9.5	9.4
Community, social and personal services	14.9	25.3	19.2
Private households	3.1	19.1	9.8
Undetermined	8.8	9.1	8.9
	100.0	100.0	100.0

Table 2.6.2 also reflects the male component of these economic sectors. From this it can be seen that in terms of employment, mining and quarrying are virtually the smallest employers of all the major economic sectors in SA at only 4% of the total employed. This statistic is the same for women at only 0.5% of all women employed as well as for men at only 6.5% of all employed men. Statistically there is a huge opportunity to introduce women into mining if the current numbers reflect a mere

0.5% of all women employed are employed in mining. There is only one sector worse than the mining sector and that is electricity, gas and water supply industry at less than 1%. The largest employment sectors are private households, community and social services as well as wholesale and trade comprising almost 60% of the employed women.

Fig 2.6.2 and Table 2.6.3 represents the percentages of women employed in various occupations relative to the total number of women employed (South Africa, Statistics South Africa, 2001). Similarly in the percentages of employed men are reflected in Table 2.6.3.

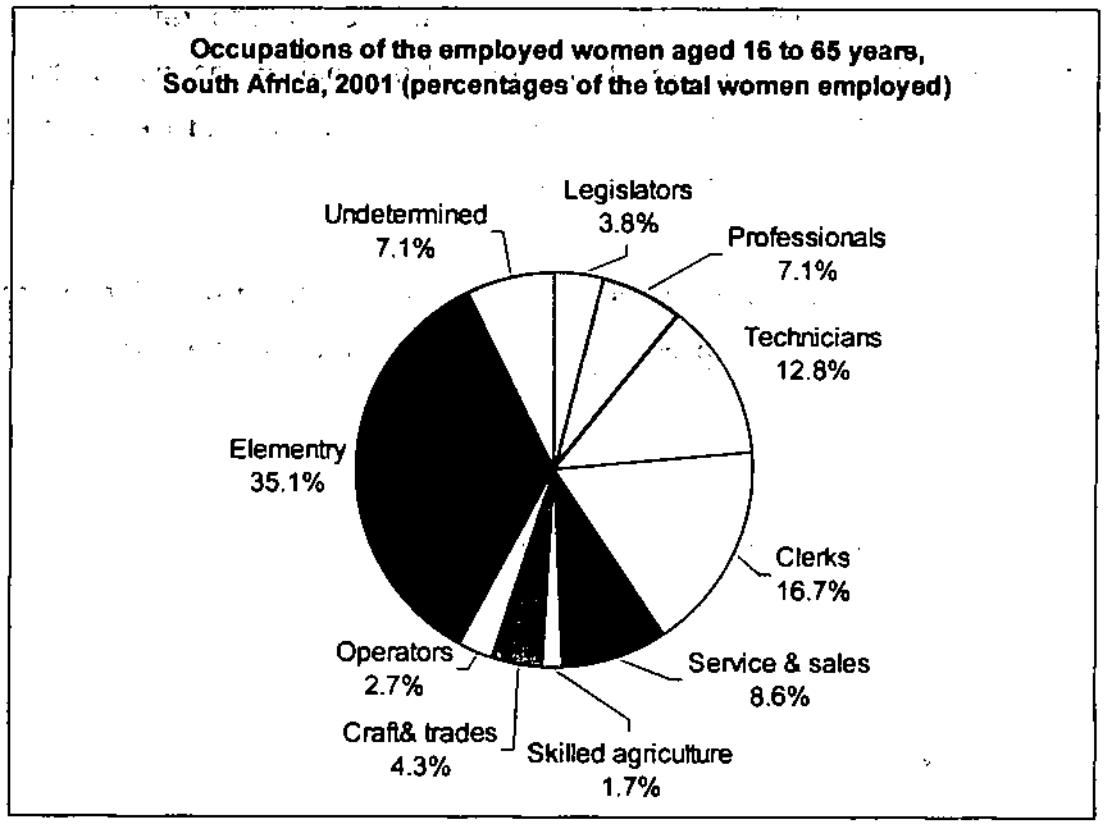

Fig 2.6.2

Table 2.6.3 Occupations of the employed aged 16 to 65 years, South Africa, 2001 (percentages of the total employed)

Economic Sector	Male	Female	Total
Legislators, senior officials and managers	6.5	3.8	5.4
Professionals	6.9	7.1	7.0
Technicians and associate professionals	7.3	12.8	9.6
Clerks	6.8	16.7	10.9
Service, shop and market sales workers	11.3	8.6	10.2
Skilled agriculture and fishery workers	3.6	1.7	2.8
Craft and related trades workers	17.8	4.3	12.2
Plant and machine operators and assemblers	13.1	2.7	8.8
Elementry occupations	20.4	35.1	26.5
Undetermined	6.4	7.1	6.7
	100.0	100.0	100.0

Table 2.6.1b indicated that the occupations with the largest female to male ratio are the elementary occupations. The numbers in Table 2.6.3 also reflect that the elementary occupations are the largest group of all occupations as well as that of females alone at 26.5% and 35.1% respectively. Technicians and clerks are the second most popular occupations amongst women.

When considering only the women in the mining sector the distribution by race relative to women as well as all mining employees is important for the purpose of this research.

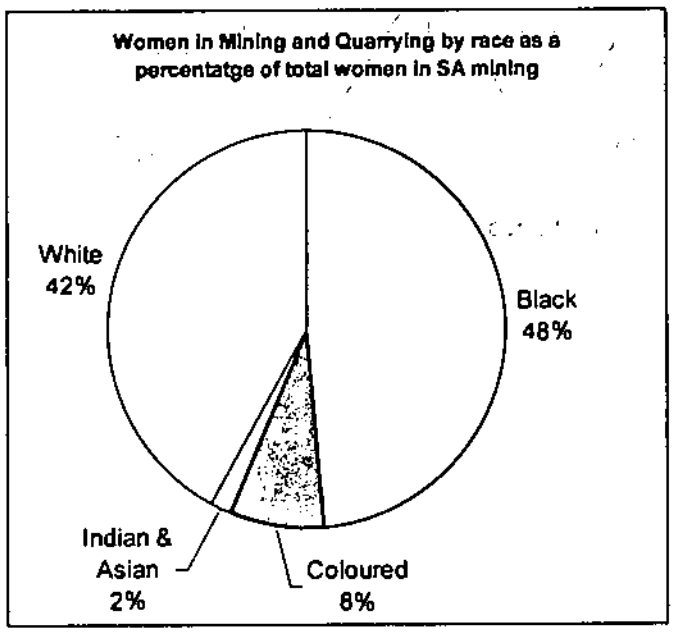

Fig 2.6.3

Fig 2.6.3 represents the percentages of women by race employed in the mining industry. It is clear that the split between white women and black women is not demographically representative given that 78% of women in SA are black and 11% are white. Another way of expressing these ratios is as a percentage of the total number of people employed in the mining sector. Fig 2.6.4 therefore represents the percentages of women by race relative to the total number of people employed in the mining industry (South Africa, Statistics South Africa, 2001).

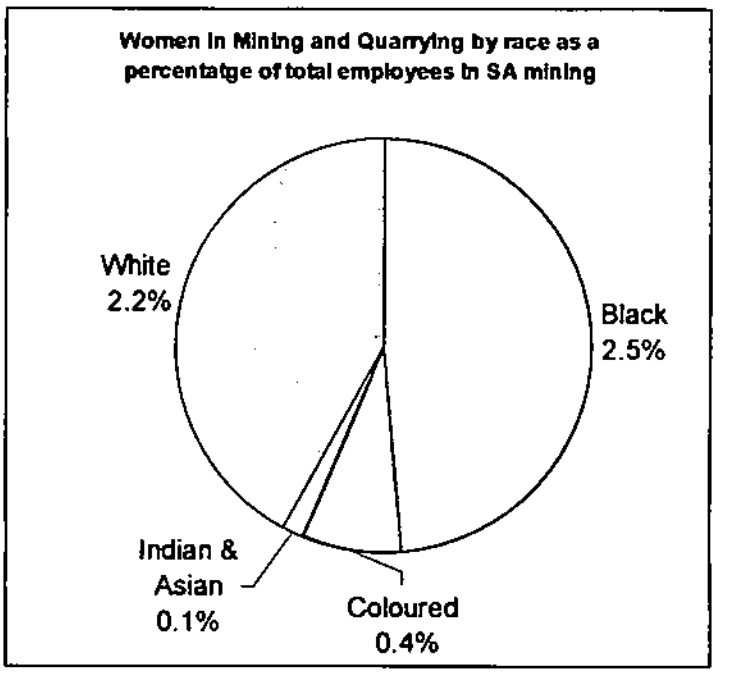

Fig 2.6.4

It is also worthwhile reviewing the gender profile currently prevailing within the mining sector as reported by the Department of Minerals and Energy. Table 2.6.4 represents figures published by the Department of Minerals and Energy as at February 2005. In terms of the overall mining industry, only 5% of the workforce is represented by women. The 5% woman in mining concurs with the figure depicted in Fig 2.6.4. although the figures have been stated from different sources in different time frames.

It is evident that the involvement of women in mining is lacking and that there is opportunity in many of the occupations to incorporate women with minimal change to infrastructure or additional costs. It should be noted that the general legislative requirements are for the broad based inclusion of women in mining which means they need to be representative in all occupations.

Table 2.6.4 DEMOGRAPHIC AND ECONOMIC PROFILE BY RACE AND GENDER
Occupational distributions by population group and gender in the South African Mining Sector (2005)

Occupation Group	Male		Female		Total	
	No.	%	No.	%	No.	%
Senior Officials, Managers, Owners	10 492	94	622	6	11 114	100
Professionals	9 427	84	1 847	16	11 274	100
Technicians and Associated professions.	19 009	90	2 205	10	21 214	100
Clerks	11 233	60	7 452	40	18 685	100
Service workers, shop and market sales workers	8 159	82	1 854	18	10 013	100
Agricultural and fisheries workers	105	94	7	6	112	100
Craft related workers	49 985	96	1 842	4	51 827	100
Plant and manufacture operations	166 576	98	2 644	2	169 220	100
Labour and related workers	189 493	98	3 380	2	193 675	100
Learners and apprentices	2 832	90	304	10	3 136	100
Total	**467 368**	**95**	**22 318**	**5**	**489 686**	**100**

Source: Department of Minerals and Energy, 2005

The feedstock to the skilled levels and supervisory levels should be from the learners and apprentices. From the above Table 2.6.4 only 10% of the learners in 2005 were female which is not going to assist in accelerating the introduction of women at higher levels. The distribution of male to female at the learner level has to change drastically to have any impact in the years that lie ahead. At face value the numbers of female clerks appears to be excellent, however, this is only one occupation comprising a mere 5% of the total workforce. The aim of the Mining Charter is to get

women into all occupations within the mining sector and specifically underground. Some serious work will be required to meet the set targets.

A recent investigation into the participation of women in Science, Engineering and Technology (SET) provided some interesting results which have been published in a report called "Facing the Facts – Women's Participation in Science, Engineering and Technology" (NACI, 2004).

- Female students constituted 53% of all higher education enrolments while 58% of all graduates were female.
- Only 9% of instruction staff and 14% of research staff in engineering were women.
- 50% of all professionals leaving SA are female.

The male/female balance of students is quite close to the SA demographics with the females tipping the scales slightly at the post. In the SET fields the number of women remaining as academics is low at a mere 9%. Also astounding is that 50% of the professionals leaving are women. If they are not continuing within the SET fields then they are leaving the country. Is this a lose – lose situation?

2.6.2 Barriers to implementation

The introduction of the Beijing Declaration of 1995 discusses the numerous barriers at length. Essentially these barriers can be subdivided into two main categories. Firstly the **Macro issues** such as political, economic, ecological and environmental crises as well as wars and terrorism which are hardly controllable by any individual or company (Beijing, 1995). Secondly the **micro issues** which individuals and companies do have control over, such as recruitment policies, gender discrimination issues, physical conditions and constraints which will form the main topic of this research. It is not the intention of this literature review to discuss the twelve critical areas identified in the **Beijing Platform of Action** (BPA) in great detail, however, most of the issues are addressed in the discussion that follows.

2.6.2.1 Selection

Selection methods and selection criteria should be properly designed to attract and ensure the correct person for the job to avoid becoming a barrier. Too often this

aspect is overlooked due to either window dressing actions or ignorance by human resource personnel. Personal success is a different experience for everyone. How often is any attention given to what the individual wants? Alleviation and prevention of poverty stimulates the desire of many Historically Disadvantaged South Africans (HDSA) to work. Self actualisation and success at whatever they are doing also tends to be a motivator as it is seen to be one of three basic needs which are relevant in the workplace according to David McClelland (Swanepoel et al, 2003:330). All human beings want to feel they have a purpose in life and eventually be recognised for what they are achieving. Success and motivation tend to increase productivity, increasing the profit margins and contributing to a sustainable employment environment.

Maslow's hierarchy of needs and the self actualisation model supports the above statement in that it implies that people have inherent needs and are thus self-motivated (Swanepoel et al, 2003:326). When the basic needs for survival, safety and security are satisfied sufficiently, the person tends to move on to the next level striving to achieve his or her full potential and subsequently contributing to both personal and company success. Therefore, poorly selected employees, and in this case women, will inevitably not remain in employment resulting in high turnover and subsequently slow down the empowerment initiative.

2.6.2.2 Education and Training

A second barrier that goes hand in hand with selection is education and training. Education is one of the cornerstones for empowering women to enable them to participate in decision making activities in society (Beijing, 1995). The problem encountered with education is the access to primary and secondary schools in rural areas. In SA education remains a sought after commodity which is still not easily accessible to the majority of young black girls or boys for that matter. When it is accessible, the duration of schooling is drawn out due to a lack of facilities. Learner ship programs take from 36 to 42 months to complete. Programs incorporating young women only took off with enthusiasm after the implementation of the Mining Charter and progress monitoring intervention from the authorities. Most programs have only been in existence for 24 months thus it cannot be expected to see qualified women in the industry yet.

It is also essential that the correct training is given to suit the circumstances. When training is inadequate the employee will not experience personal growth and tend to become frustrated if success is not achieved, again resulting in short term employment (Swanepoel et al, 2003:451).

2.6.2.3 Strategic plans

Company strategic plans, or the lack there off, have also created barriers for the successful implementation of non-discriminatory employment practices. Organisations should know what there workforce profile looks like, have an idea or target of what it should look like and a plan to bridge the gap (Grundlingh, 2005). When assessing the workforce profile relative to the company profile, important issues to consider are the organisational culture, required skills and experience, life of mine and the economic factors. After the profiling, short and long term objectives should be determined which should in turn result in empowering policies and procedures. It is important to include the stakeholders at all levels, women in this case, when drafting these policies especially when it concerns them (Beijing, 1995). Failing to have a strategic plan is planning to fail. Having a plan in place and not monitoring it or measuring progress is also not conducive to progress (Grundlingh, 2005).

2.6.2.4 Physical conditions

Physical conditions in the workplace could influence the success or failure of such an empowerment program. The negative impact that inappropriate workplace conditions have on women in mining appears in almost every published article. Available facilities, appropriate safety clothing, ergonomics of the equipment, shift work and work in hazardous environments are a few of the conditions which need to be given some attention when introducing women into the workplace. Women are susceptible to the various hazards, substances and contaminants in a different way to men and subsequently suffer different consequences from exposure to them (Beijing: 1995). Women relative to men also tend to take fewer risks implying that working in hazardous environments could be handled differently by women and possibly require different equipment.

The interface between women and machinery needs to be redesigned in terms of the ergonomics to accommodate women. An analogy of this is the redesign of mining layouts to implement trackless machinery in hard rock mines. Women cannot be redesigned to suit the mine, therefore, as with the trackless machinery, the mine design will have to be adapted to suit the attributes of women (Schutte, 2005).
The majority of mines have been in operation for the past 20 years and are now reaching depths where heat stress becomes problematic. Heat stress conditions influence the ability of persons to carry out physical work. This workplace condition results in a personal physical constraint for women and will be discussed in the next section.

2.6.2.5 Physical Constraints

The physical constraints of the average woman have proved to be challenging in the manual work environment. In controlled tests conducted by the CSIR under the auspices of Mining Technology, the aerobic capacity was used to compare male and female physical work capacities. The average female was found to be less heat tolerant than the average male. Coupled with the aerobic capacities of the two genders, it was deduced that females would be likely to become fatigued more readily than males. Functional strength and the capacity to lift and carry were also tested indicating that the average female was only capable of 60 to 70% of the male equivalent. Various other capacity factors were also investigated with a similar outcome (Schutte, 2005).

These results should not be interpreted to mean that women are the weaker sex, as a lot of this has to with the anthropometrics of the human body. This analysis does however indicate that for the mining sector to be successful in implementing a sustainable empowering program for women, it will have to become innovative and "women–friendly" (Schutte, 2005). Women cannot be employed for surface work only, nor can professional occupations or management positions be reserved for them to avoid the underground work conditions, as this will not fulfil the empowerment requirements.

The success or failure of any strategic plan is dependant on the monitoring and evaluation of the systems or mechanisms put in place. During the pre-Beijing

Declaration decade very little monitoring was carried out hence the lack of progress to empower women. Between 1995 and 2002 South Africans initiated a number of policies and enabling legislation to empower women however the monitoring and evaluation mechanisms have not been active and visible resulting in very little progress (Ranchod, 2001:25). The Mining Charter of 2002 brought with it various monitoring mechanisms and although progress is slow there appears to be a hive of activity to rectify the situation. Ranchod (2001:26) also alludes to the fact that the benefit of introducing women into the mining industry outweighs the integration costs. When one puts this into perspective it is probably true for the macro economics, however, the effect of the integration costs on the bottom line of a marginal mining operation could be a point of debate. Additional costs to integrate women into the mining sector are typically training, infrastructure such as ablution facilities, redesign of the workplace to accommodate women ergonomically and extensive maternity leave not previously required in a male dominated workplace.

Published articles concerning the plight of women in mining are plentiful and numerous policies and enabling legislation are available, however, very little academic research has been published on gender issues within the SA mining industry. Ranchod (2001) reports that the mining industry is a job-shedding one and cognisance of this reality needs to be considered when introducing and empowering women in this sector. Job- shedding does not only affect women as it encompasses a number of practices accompanied with organisational change. Down sizing of the operation and organisational restructuring to meet economic trends traditionally results in a reduction of employees. Mechanisation is also a form of job-shedding in that it tends to reduce the number of workers required to complete a given task. This is typical of the mineral mining industry which tends to be cyclic, following the major economic trends. Last-in first-out (LIFO) principles are normally applied where jobs are cut. Women have only just started entering the employment market and subsequently are the first on the list of employees to be cut unless company policies dictate otherwise. The Platinum sector however is viewed as a growth sector, far more stable and ideal for researching the development and sustainability of gender related issues and the introduction of WIM (Ranchod, 2001: 27).

2.7 CONCLUSIONS

Women In Mining can be traced back to the mid eighteenth century. Almost all the countries with mining activities have at some point in time had legislation prohibiting women from working underground. Changes to legislation were initially brought about due to the lack of labour. It was only in the early 1970's that the empowerment of women became mobilised and subsequently almost all countries with mining activities have lifted the legislated restrictions on women working underground.

The Nairobi Forward–looking Strategies for Advancement of Women Conference held in 1985 was an effort to give the empowering of women some momentum, unfortunately with little success. The Beijing Platform of Action launched at the Fourth World Conference for Women in 1995 has been more successful in creating momentum. South Africa has subsequently used the BPA as a reference to the compilation of a number of enabling legislation and policies in an effort to create positive intervention in the empowering of women. The Mining Charter launched in 2002 is one such intervention agreed to by the tri-partite members and has brought with it the monitoring mechanisms to ensure progress is made. Progress to achieve the targets in the allotted time frame has been very slow and many barriers or challenges have been identified requiring innovative solutions to be found. The age old question comes to mind, "Is history repeating itself?" After a century of virtually no success, why is the mining industry still not succeeding in changing the gender profile of its operations?

Barriers to the introduction of women in the mining industry are numerous and need to be managed if a sustainable diverse workforce is the future objective. From the case studies and literature reviewed it is evident that outdated methods are commonly used as a recruitment and selection criteria resulting in a bias favouring males. Very little thought is given to the workplace environment where machinery and equipment are predominantly designed to suit the male ergonomics. The workplace environment needs to be women-friendly and that does not imply soft and cuddly. Due to male dominance, workplaces have always been designed by males and are subsequently ergonomically inappropriate for females. It is essential that companies also pay attention to detail such as personal protective equipment and the

female physique. Protection of the male macho ego will always be an issue and can only be countered through good communication and education of the workforce. Training of both male and female employees to sensitise them regarding certain issues is essential.

There is an up side to bringing women into the workplace according to international researchers and reporters. The general cleanliness of the workplace has improved and safety statistics have also shown improvement as a result of a culture of caring for one another. Equipment is better maintained and looked after. The male colleagues tend to calm down, be less aggressive and use less abusive language. Teamwork tends to improve in an environment where male and female co-exist according to the theorists however there is very little research to confirm this. A diversified workforce is desirable as the advantages are said to outweigh the disadvantages, however it does not come easy or over night.

Diversified workforces, if understood and managed correctly can assist companies to gain the competitive advantage in the market. Mining companies are dependant on the market and the sale of their products but the efficiency with which they do it is ultimately what they are evaluated and rewarded for. Although mining has always been regarded as a male dominated sector, who is to say woman will not bring new initiatives and ideas to the sector with potential efficiency or methodical improvements.

The transformation of companies and the inclusion of women has been recognised as a fundamental business requirement. The benefits of a greater pool of human resources within the company allow flexibility and potential for well balanced (diversified) team efforts.
The mining sector needs to understand and exploit the positive benefits of any potential skill that is available, woman included, to ensure a sustainable business venture in the future.

The relative lack of published research regarding gender issues in the SA mining sector is apparent and should therefore be encouraged. Research in SA has concentrated on the empowering of women and the so called "glass ceiling" effect.

Advice on how to get around this barrier is in abundance and regularly addressed. We must however remember, mining in SA has a culture of its own and probably requires a different approach. The second issue is that mining is labour intensive with more than 80% of the workforce underground in physical labour intensive occupations. By filling all the surface related occupations or clerical positions with women is not going to suffice. The SA mining industry has to attract and convince women that there is also a place for them in underground occupations. Women have to be introduced at the lowest levels and be given the opportunity to develop skills and be promoted through the ranks to eventually fill top positions. Mining is an experiential related career. By introducing women into supervisory and senior positions without sufficient exposure to the processes is a recipe for failure.

The preceding chapters have reflected on what has been written to date on the empowering of women in the mining industry. In order to determine how women were experiencing the latest attempts at introducing them into the SA mining industry a research proposal was tabled. The following chapter provides the reader with an outline of the research methodology followed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

This research has been designed as a formalized descriptive study assessing the phenomena associated with women in the mining sector in SA. Using a descriptive study one can discover associations among different variables as opposed to a causal study where one looks for an element of causation that one variable produces another (Cooper & Schindler, 2003: 161).

The ultimate question being asked is "What should management be doing to improve the transformation process with specific reference to the empowerment of women?" Further questions requiring clarification are:

- Are women really interested in working underground?
- Are women really interested in working on a mine?
- What do the women see as the current challenges of sustainable employment?

The data for the research has been collected through an interviewing process utilising a structured interview schedule. Although the interpretation of the data is subjective, it has been collected ex post facto and not experimentally.

The purpose of this research is to provide answers to the following research questions.

a. What should management be doing to improve the transformation process with specific reference to the empowering of women?
b. Which aspects of the current process being followed are enabling and which aspects are not?

The objective is to determine the level of satisfaction experienced by female employees currently employed at Impala Platinum, Rustenburg. If it can determined what encourages them to seek employment in the mining industry then management can use this information in future to develop successful retention strategies. The same is applicable for the issues which frustrate the women employees currently

employed in mining occupations. Once these factors are known then management can try to eliminate them in order to encourage employment, career opportunities and at the same time retain the female employees. Although the process is driven by legislation it is the sociably correct thing for any company to do in our land of transformation. Besides being legally and morally required, there is ultimately a business case to be exploited by implementing an effective transformation strategy involving women. The main benefit is an enlarged human resource pool which can be utilised in many ways to the benefit of the company. This research will attempt to determine what the mine is doing which is perceived by the women employees to be promoting the transformation process and secondly, what is perceived to be lacking in the process.

Due to the time constraints of the study and the nature of transformational change, this study has been based on a cross sectional time line and subsequently represents a snapshot of one point in time.

Although certain data has been forthcoming from the study the research outcome has tended towards the characteristics of a case study. This has been emphasized by the fact that the environment of the study was contained within a specific mining company. The data was collected from women in employment of the company who at the time were exposed to the harsh mining environment on a daily basis.

Participants' perceptions could have influenced the research outcome since they were drawn from a cross section of the employees where experience, occupation and year's service vary. This would undoubtedly influence the loyalty of the incumbents as well as the understanding of the transformation process.

The following section will reflect on the detail of the data collection method employed for the research conducted.

3.2 MEASUREMENT INSTRUMENTS

3.2.1 The interview schedule and questionnaire:

During the exploration of the primary and secondary data sources, existing questionnaires were found which were used to source valid questions suitable for this research. Based on best practice for questionnaire design all three basic types of questions were included (Cooper & Schindler, 2003:364).

- **Administrative questions** which identify the participant; i.e. name and location.
- **Classification questions** which identify the participant's characteristics allowing for answers to be grouped for analysis purposes to allow for potential associations to be discovered; i.e. age, nationality, class of employee etc.
- **Target questions** or investigative questions to determine the participant's knowledge and perceptions of specific issues.

The target questions were drawn up to test and measure the personal views and opinions of the participants regarding the following issues:

- The work environment - underground conditions, hazards associated with the work, reasons for women to want to work in the risk environment etc.
- The female opinion of how they are treated by male colleagues and the general attitude of male colleagues.
- Suitability and adequacy of facilities for women
- General knowledge of legislation and internal policies governing the practices regarding women in mining.

The questionnaire used during the interview process consisted of both structured and unstructured responses.

The structured responses were acquired from dichotomous (Yes/No) questions as well as multiple choice questions. Two thirds of the questions were structured while the balance of the questions were unstructured, probing for perceptions, experiences and possible suggestions to improve the current process.

In order to determine the validity of the questions a panel of middle and senior management employees at Impala were asked to review the questions for content and subject matter coverage. Impala has a transformation department with staff who are sensitive to the requirements of the issue being researched and were subsequently best suited to review the questions. Initially the participants were informed of the nature and purpose of the study and asked for comment on the content of the interview questionnaire. After considering all comments a final interview questionnaire was compiled and subsequently used to interview the four women who had participated in the evaluation of the content. After the interview further comments were encouraged as to the questionnaire design. No further changes were made.

The reliability of the data collected was maximised by minimising external sources of subjectivity. All interviews were conducted by the researcher which ensured a high level of consistency regarding the way the questions are asked and the interpretation of the answers. Probing questions were therefore also similar in all interviews.

The interview questions are included in Annexure A

3.2.2 The Sample:

The sampling frame for this research was women employees at Impala Platinum. At the time of the research women constituted 2.2% of the total workforce of 26 000 employees, equating to 582 women. For the purpose of this study, all women employees were included irrespective of nationality, race or colour as defined by the Mining Charter.

A generally accepted minimum sample size is 5% (Cooper & Schindler, 2003: 190). 5% of 582 equates to 30 participants. Participants were selected from three generic categories based on the Patterson grading structure used at Impala. There was a constraint on the number of senior and middle management female employees selected for the sample as there are very few women employed in these categories. For example, 5% of three E level employees would require no more than one participant which would not be representative of the group. Therefore the researcher elected to allow all three to participate. By doing this, the number of participants in

the lower levels would have to be adjusted to keep to the sample of 30. Since the majority of the women currently employed at Impala fall within the category 3 to 8 employees, the researcher reasoned that the 5% representation should be maintained for the lower categories and subsequently decided to increase the number of participants in this area to 30. The total sample therefore increased to 46 participants which represented the three categories as follows:

- E level Senior management 3
- C and D level Middle management and supervisors 13
- Category 3 to 8 Workers 30

The sample was randomly selected. All employees have company numbers and a random number generator was used to select the respective participants from the nominated categories.

3.2.3 The in-depth personal Interview:

As discussed above a qualitative interview questionnaire was used to guide the in-depth interview collecting both structured and unstructured data. Personal in-depth interviews are characterised by a one on one, two way communication between interviewer and participant. Due to the sensitivity of the topic and to avoid misunderstanding of the questions, the interviewer was able to ask probing questions and to clarify the participants answer. The researcher did consider possible literacy challenges in terms of language, however since the pre employment requirement for all employees at Impala Platinum is ABET level 3, all participants were able to converse in either English or Afrikaans. The use of an interpreter was therefore not required. The "hit rate" or other wise referred to as the success rate of unspoiled participant responses was maximised through this process.

Limitations to individual interviewing taken into consideration were:

- The individual interview process was time consuming.
- The geographical location of the participants on the property was challenging in terms of co-ordination as they are spread over fourteen business units within the Rustenburg area and interviews had to be scheduled in a systematic sequence to best utilise available time.

- Availability of participants, especially the underground workers had to be co-ordinated timeously with line supervisors and HR officers.
- Willingness of participants to talk to a stranger was initially thought to be a challenge, however, once the purpose of the interview was explained, all participants were eager to assist.

The interview time schedule was hectic as the participants had to be scheduled through the various Human Resource Officers on the business units. The interviews had to be scheduled for either the beginning of the shift or at the end of the shift to accommodate the work patterns of the individuals. Each interview lasted approximately 40 minutes depending on the level of education and understanding of the participant.

Recording the interview was relatively easy as mentioned earlier, all the participants were English literate. Participants were allowed to complete their own questionnaire where possible and the interviewer recorded responses to open and clarifying questions.

Advantages of the personal interview that were experienced

- Good co-operation from participants
- Probing questions could be asked
- Personal contact was well accepted
- Purpose of research could be clarified with participants
- Completeness of questionnaires and responses
- Quiet, comfortable environment for interview
- Only one interviewer, no coaching or training required

Disadvantages of the personal interview that were experienced

- Time taken for each interview
- Geographical area that had to be covered by interviewer
- Interviewer had to beware of leading the participant
- If cost of interviewer's time was calculated it could be a very costly exercise.
- Anxiety of participants when dealing with a stranger
- Interviewer bias

3.3 LIMITATIONS

The exploratory nature of the research had inherent limitations. This form of research was selected due to the lack of information currently available in the changing climate of the South African mining industry. Limitations were generally linked to biases such as subjectiveness and non representativeness.

The sample frame was limited to a single organisation which ultimately provided data representative of the particular organisations' internal culture. The purpose of the research was not to extrapolate the data or results in order to make deductions but rather to learn about the dilemma facing the management of the mining industry.

The researcher and interviewer is a white male from senior management and could have introduced male biased subjectivity in the interpretation of the data. As mentioned previously, to avoid external subjectivity and ensure continuity it was decided not to employ an alternative (female) interviewer.

Women in the senior positions have been in employment of Impala for many years whereas the younger or junior employees have only recently been employed by Impala. This could result in biased answers due to loyalty toward the company.

Limitations of the interviewing process mentioned earlier should not affect the validity or reliability of the data collected. These limitations did however affect the overall time taken to collect the data. Due to the length of the interview which averaged 40 minutes, the interviewer could not complete more than two interviews in a session. The collection of the data took almost 4 weeks to complete given the constraints of the interviewer's personal schedule and the time constraints of the interview duration.

3.4 DATA ANALYSIS METHODS

As the data was collected the various questions were coded depending on the specific type of question, open or closed (Cooper & Schindler, 2003:462). Data entry for closed questions was relatively straight forward as there are limited options to be coded.

Open questions with unstructured responses had to be analysed for content. Lists of the most common underlying responses were then derived and the frequency with which each response was given was determined. These frequencies were then contrasted against either a select portion of the sample or the whole sample in order to determine a percentage compliance or non compliance. In some cases the base is very small and the actual numbers were equated in order to be more representative. Percentages tend to be misleading and not illustrative of the facts when small samples are used as a reference.

Data entry was manually done with the aid of an Excel spreadsheet. The participants were listed in the first column and the 46 variables along the top row creating a two dimensional table. The table was manipulated by sorting the data corresponding to criteria required for the specific question. The sorted data was then utilised to create graphic representations, predominantly in a pie chart format. Tabulation of data to determine associations has also been used extensively in the analysis and presentation format of the results.

3.5 NATURE AND FORM OF RESULTS

The results have been compiled providing a summary of the salient features of the data analysis with descriptive discussion emphasising the possible associations, challenges and solutions to the research problem and enhanced with graphs and tables.

The data presentation commences with a short introduction and description of the three categories of questions used in the interviewing questionnaire. The report then addresses the first category being the administrative questions followed by the classification questions. A fair amount of discussion and explanation is given to clarify certain aspects and anomalies with regards to the classification of the employees in the sample. The responses to the target or investigative questions are then discussed in detail in numerical order as they appeared in the interviewing questionnaire.

Each question is introduced by explaining what it was intended to measure and then if necessary the response is represented by a graphical picture and / or a table. The researcher has also made various comments regarding the issues pertaining to each question.

Chapter five concludes the report with a summary of the results reflecting on the literature findings and finally recommendations for the management of the company.

CHAPTER FOUR

RESEARCH RESULTS

4.1 INTRODUCTION

In the research design it was pointed out that the interview questions put to the participants are grouped into three main categories with a total of 45 questions analysed per participant. Notes were made by the researcher of all responses to the questions as well as the additional probing questions to clarify certain responses. The researcher diligently worked through all the notes in order to determine themes and patterns of interest. The responses to the questions are discussed in numerical order as they appeared in the questionnaire. Responses from certain questions have been contrasted against responses from various other questions in order to determine whether or not there are any noticeable or interesting trends or associations.

The first five questions are administrative questions, which enable the researcher to identify the participants. It was discussed with and agreed to by all participants that even though they agreed to give details such as their names, they would enjoy anonymity in the final report. Where necessary the researcher would use reference numbers allocated to each participant.

The second group of questions comprises twelve questions which enable the writer to classify the participants into categories such as nationality, age, academic qualifications and so on.

The third group of questions, twenty nine in total, are investigative questions which are further subdivided into categories targeting specific areas of interest, i.e. the work environment, opinion of female versus male, facilities available for females etc.

4.2 ADMINISTRATIVE QUESTIONS

Questions one to three are for the researcher's reference only. These questions were optional for all participants as all participants were informed of their right to anonymity. It should be noted that all participants agreed to provide this information, trusting that the researcher would abide by the agreement.

Impala Platinum Rustenburg has in excess of 20 business units (BU) and employees at each of the business units can be subdivided into production, administrative or support service employees. A question 4 and 5 allowed the writer to identify in which BU sector and department the participant is employed. This is important for analysing potential areas of non compliance. As can be seen in Fig 4.4, the random sample distribution delivered a fair spread of participants across the various business units. Roughly 43% (20) of the participants are from the shafts, 43% (20) from the support services such as transport and training centres (Other) and 14% (6) from the mineral processing plants (Minpro). Although a number of the services employees are from training centres, these employees are regularly placed in underground work areas for experiential training. The number of learners is also relatively high due to recent engagement practices to ensure future women in mining targets are met.

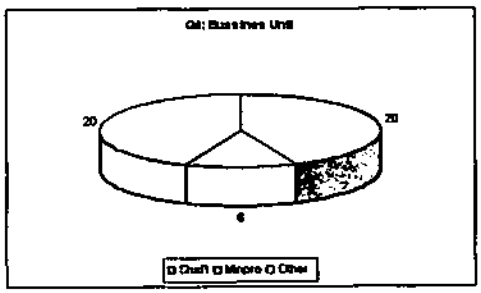

Fig 4.4

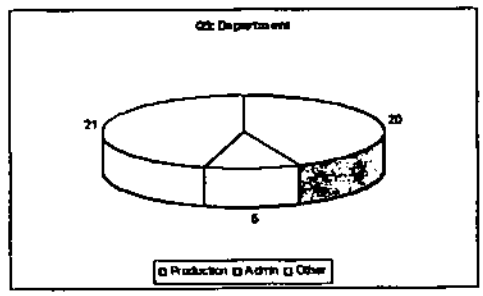

Fig 4.5

In Fig 4.5, production employees relates to people directly involved in the core business of the company. The sample of participants consisted of 43% (20) production employees, 11% (5) administrative employees and 46% (21) other or support services employees. The five administrative employees are predominantly women in middle and senior management positions, who although managers, were classed as employees carrying out most of their duties in an office environment.

At the time the sample was taken the company had only just commenced its campaign to increase women in mining (WIM) in production related occupations, hence the high number of support service employees in the sample. Support services occupations were viewed as the quick hit occupations as they required the least training and were viewed by management to be occupations where women would be successful.

4.3 CLASSIFICATION QUESTIONS

The questions in this section were used to collect demographic data of the respondents such as age, service with the company, academic qualifications etc. This is important when analysing the responses of the participants in order to group like minded thinking and identify potential trends and associations.

Question 6: Age of the participant

The sample distribution spanned a wide spectrum between 20 and 60 years of age. The largest portion of the sample, 65%, is between 20 and 30 years with 15% between 31 and 40 years and 20% between 41 and 50 years. This is an indication of the number of new recruits and reflects the recruitment strategy being implemented. Fig 4.6 is a graphic representation of the age distribution. New female recruits are required to have a minimum of grade twelve and since there are many young unemployed women with grade twelve, the age group of the new recruits is between 20 and 30 years of age.

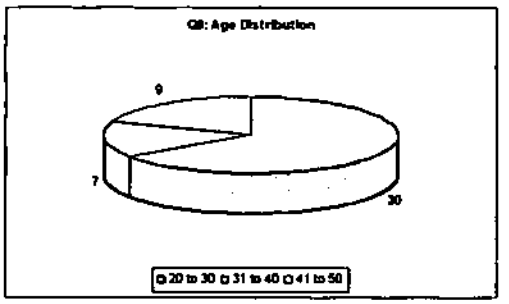

Fig 4.6

The older group between 31 and 40 are predominantly middle and senior management employees with tertiary education and 5 to 8 years working experience at Impala. The age group 41 to 50 is a mixed group in that four of the women are

middle and senior management while the rest are long serving non-production employees in manual labour positions.

Question 7: Nationality of the participant

The distribution of nationalities of the female employees is wide and diverse and although the male nationalities were not tested in this research, it is known to vary considerably to that of the female employees. This is as a result of the past practices of employing migrant males from homelands and countries such as Mozambique, Zimbabwe and Lesotho.

The large proportion of Setswana women in the sample and at Impala most likely reflects the company's current drive to recruit women from the local and surrounding areas. This has many positive spin-offs in that it promotes family life, home ownership, and local community enrichment as opposed to the past practices. Past practices required migrant males to reside in all male hostels and remote from their families for up to twelve months at a time. The category "other" includes one Muslim and one Coloured women. The rest of the sample distribution is reflected in Fig 4.7.

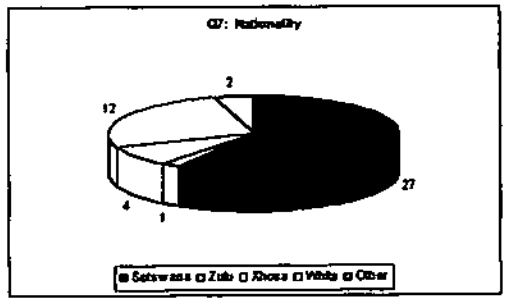

Fig 4.7

At this point it is important to point out that in terms of the BBBEE Act the category of Historically Disadvantaged South Africans (HDSA) does not include white females (South Africa, 2003). Therefore, any future reference in this paper to HDSA women excludes white women and as per the EE Act definition will be referred to as black women. The sample of participants therefore comprises 75% black women and 25% white women.

It is also interesting to note that 85% of the white women are in either middle or senior management positions while only 9% of the black women are in management

positions. This statistic tends to highlight the disparities potentially caused by past practices which resulted in the classification of historically disadvantaged individuals.

Question 8: Participants place of residence

The relevance of this question is to determine to what extent the strategy of home ownership and family life is developing among the employees at Impala. The sample is by no means representative of the Impala Rustenburg employee base, however, the question is testing the trend of the women employees.

Company accommodation is defined as company owned flats, houses and hostels. There should be no women residing in hostels, firstly because they are all male hostels and secondly the company would not like to see any women taking up residence in the hostels. The option was given during questioning as the hostels are privately run and anomalies could be prevalent. It is also part of the company's housing strategy to phase out the hostels completely.

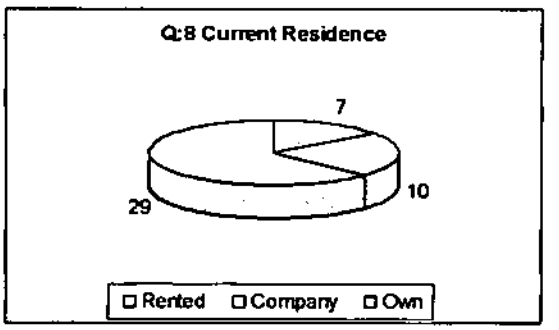

Fig 4.8

From Fig 4.8 we can see that there are in fact no women reported to be residing in the hostels. 15% (7) rent accommodation, 22% (10) reside in company accommodation and the balance of 63% (29) reside in own accommodation. Own accommodation was not specified to test for ownership but informal discussion gave the impression that a large majority of the young new recruits were residing with either the parents or family and do not necessarily own the residence where they are residing.

Question 9: Distance of participant's place of residence from work place.

The relevance of this question is to determine how close or remote the women being employed reside from the work place. The current recruitment strategy requires that women are recruited from local communities and surrounding areas. An unwritten rule being applied by the company at this point in time is that the place of residence should be within a 60km radius for reasons mentioned earlier regarding family life.

The response reflected in Fig 4.9, possibly reflects the drive of the company to recruit people from the local community as 78% (36) of the participants indicated that they reside less that 30km from their place of work. Seven of the eight residing between 30km and 60km are new recruits with less than two years service however they have chosen to stay with family in neighbouring towns. The two employees who indicated that they reside further than 60km from the place of work are white female managers, who by own choice, stay in towns remote to Rustenburg and commute each day.

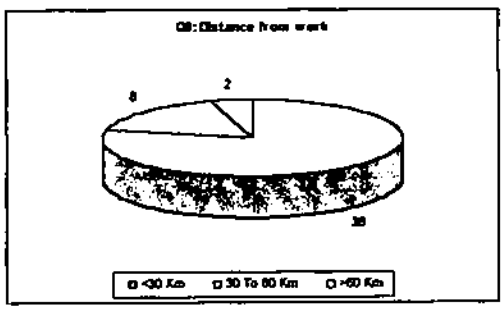

Fig 4.9

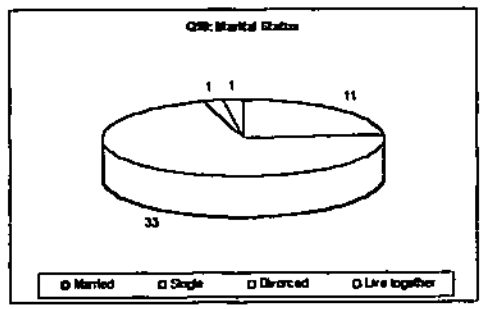

Fig 4.10

Question 10: Marital status of the participants

The marital status of the women employed was included to give an indication as to whether or not married women make themselves available for employment. From the sample taken and represented in Fig 4.10, it can be seen that the majority are single. Married women make up only 25% (11) of the participants. Of these six are from middle and senior management and all over the age of 30 years while the other five are from various other levels and age groups. The single women representing 72% (33) of the sample is once again a potential result of the recruitment strategy. The recruitment strategy aims to target young women from local communities with a grade twelve academic qualification.

Question 11: Are the participants mothers?

The purpose of determining which of the participants has children was to establish the number of working mothers and to what extent they make themselves available for employment. It is interesting to note that the distribution is almost 50/50. See Fig 4.11. Even more interesting is that 60% (13) of the mothers are single and never married. With the exception of one, all the single mothers are category A, B and L employees and eleven are under the age of 30. See Table 4.11.

Table 4.11 Women who responded that they do have children

Total YES responses	22
Underground workers	12
Black Women	18
Women between 20 and 30 years of age	11
Women between 30 and 40 years of age	3
Women between 40 and 50 years of age	8
Women with more than 2 years service	9
Marital Status = Married	9
Marital Status = Single	13

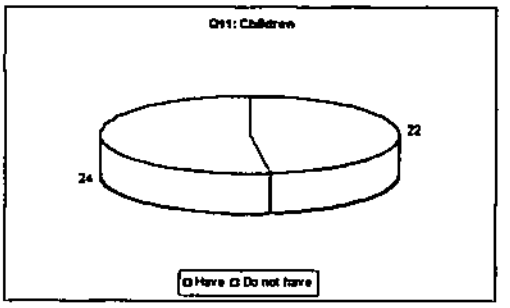

Fig 4.11

Question 12: Place of work – Surface / Underground

One of the challenges for the SA mining industry is to employ women in underground occupations. The researcher therefore needed to ensure that a representative proportion of the sample were women employed underground. The sample delivered a 60 : 40 split, underground versus surface employees respectively. Table 4.12 show the outcome of the responses. Closer analysis indicates with the exception of E level employees, all other categories are represented on surface and in underground occupations.

Table 4.12 Comparing the responses of the women employed on surface and underground

		Actual Numbers		Percentages	
Question	Description	Surface	Underground	Surface	Underground
12	Place of work	19	27	41	59
13	Patterson grade: A,B,C,L,D,E	All	No E levels		
17	More than 2 years service	10	4	53	15
22	Responded that certain work is viewed as too dangerous for women	2	2	11	7
23	Responded that certain work is viewed as too difficult for women	2	10	11	37
25	Individuals who do not have other women working with them	1	6	5	22
30	Agreed that women should be treated differently	3	6	16	22
31	Reported that women are being treated differently	5	8	26	30
32	Reported that the attitude of men towards women is unacceptable	1	4	5	15
33	Are aware of men behaving unacceptably	1	6	5	22
35	Believe men and women do not earn the same amount of money	3	4	16	15
36	Reported that there are not adequate facilities for women	6	11	32	41
37	Reported that the PPE is not adequate and suitable	4	3	21	11
38	Individual has no knowledge of EE ACT	8	21	42	78
40	Individual has no knowledge of the Mining Charter	10	24	53	89
42	Individual has no knowledge of Sexual harassment policy	5	9	26	33
44	Individual has no knowledge of the Pregnancy policy	2	7	11	26

Note: The percentages expressed above are relative to the number of women in either the surface or underground group (19 and 27 respectively) and not the total sample of 46.

The writer has chosen to highlight some of the extremes from the above table and one of them relates to question 23. In response to the work being viewed as too difficult for women 37% of the underground women participants agreed as opposed to only 11% of the women employed on surface. Questions 32 and 33 revealed that there are far more women underground who firstly regard the attitude of men towards woman as unacceptable and secondly, are actually aware of or experiencing men behaving unacceptably in the work place. The detail of the behaviour will be discussed later when these two questions are analysed.

It is clear from the responses to questions 38, 40, 42 and 44 that the general knowledge of applicable legal Acts and internal policies of the underground female employees is substantially less than that of the surface employees. Although information sessions and road-shows were conducted, it appears as though a number of women did not get the opportunity to attend them for reasons unknown.

It is known that since June 2006 an engagement centre has been erected and all women are fully informed prior to being signed on and sent to the workplace. This has hopefully reduced the possibility of poor communication of all new recruits. The existing employees who have still not been informed will have to be addressed.

The response to question 36 further revealed that the women employed underground feel that the facilities such as toilets and change houses are inadequate. This is understandable as the company has only recently initiated a project to build permanent change houses for the females at the shafts. The underground toilet facilities have been addressed, however, concern was raised that the available units are very sparse and not ideally located.

Question 13: Patterson grading status of the participants

The sample of participants was manipulated based on the Patterson grading of the female employees to ensure a wide spread sample but at the same time representative of the size of the group within each Patterson grading level.

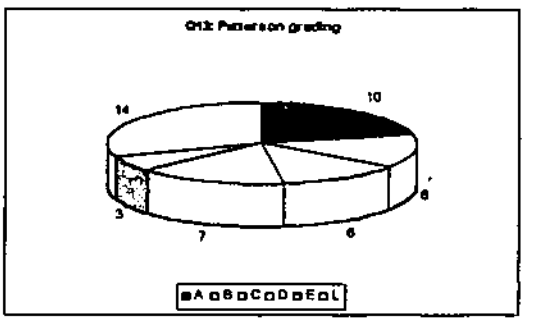

Fig 4.13

The Patterson system is used by Impala to grade the employees. Learners are not graded and hence the letter "L" has been used to differentiate them from the rest, however, for all practical purposes they can be included in the lower categories A and B. As mentioned previously the number of learners is relatively high due to recent engagement practices to ensure future women in mining targets are met. Levels A and B are unskilled and semi skilled workers which make up 80% of the workforce. Level C is the front line supervisors and skilled workers such as artisans. Level D is middle management and level E the senior management levels in the organisation.

If we therefore add the A, B and L levels together we get 65% of the sample.
Level C equates to 12% while D and E equate to 15% and 7% respectively.
The researcher reasoned that answers from less than five persons in a level would not necessarily be representative of the group and therefore skewed the sample by increasing the ratio of management representatives relative to the rest. At the time of the survey, only three E level appointments had been made hence only three were included in the sample.

Question 14: Employee category of the participants

The three main categories of employees at Impala are officials, union men and daily paid employees. These categories are driven by the pay structure and Patterson grading therefore the distribution is very similar to the distribution listed above in question 13. There are anomalies in both systems and therefore it was used as an additional check to monitor the distribution of the sample. There is no significant difference from the points mentioned in the previous paragraph.

Question 15: Academic qualification of the participants

As mentioned previously, the employment strategy of the company is to employ young women with at least grade twelve. Although the same strategy does not apply to the male employees, it was implemented for a specific reason. Currently there are no women with adequate mining experience who can be employed in either supervisory or management positions. The company's intention is to asses the ability of all new recruits and fast track certain individual's development. Firstly, by employing females with less than the basic grade twelve would delay the

development process. Secondly there is a large pool of unemployed female matriculants available within the surrounding areas.

As can be seen in Fig 4.15, female participants with more than a grade twelve qualification make up 54% (14) of the sample while 25% (11) have either a diploma or degree. The sample is further made up of 35% (16) matriculants and only 10% (5) with less than grade twelve.

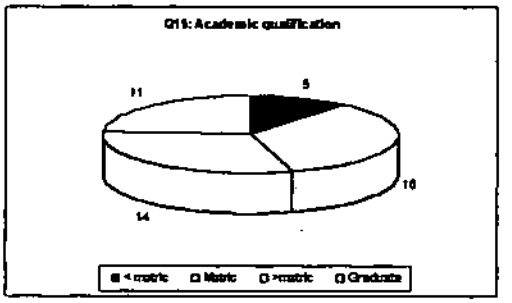

Fig 4.15

The five women without grade twelve or equivalent comprise two learners who have a N2 qualification, the minimum required for a learnership. The other three are women with 25 years service who where employed as cleaners, originally requiring no academic qualifications. These three women have since worked their way up into semi skilled occupations in the lamp house as lamp repairers.

The 14 who have post grade twelve qualifications do not necessarily have job related qualifications. They are currently employed in the position they were offered as a last resort to get work but intend to develop themselves to pursue their own career plans at a later stage. Typical examples are participants who are currently undergoing engineering related learnerships but are studying human resources and finance part time.

Question 16: Job title of the participants

This question was included for referencing certain analysis throughout the paper and will not be discussed in any detail at this point in time as the titles or job descriptions are meaningless in isolation.

Question 17: Company service of the participants

The distribution of the sample based on the individual employee's length of service with the company is not surprising given what has already been said regarding the current employment strategy. Fig 4.17 indicates that 70% of the participants in the sample have less than two years service. The other 30% are evenly distributed between 5 and 30 years service.

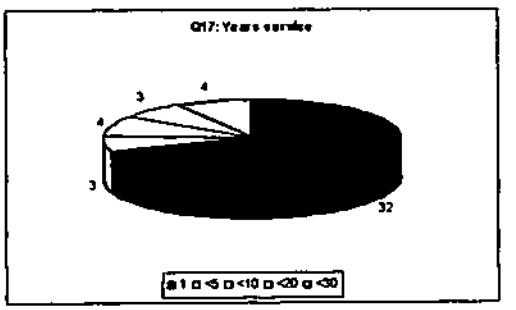

Fig 4.17

4.4 TARGET QUESTIONS

Question 18: Method of recruitment of the participants

There are numerous methods of recruitment and the researcher was interested to determine the most popular and potentially successful method currently applied.

It is obvious from the graphical representation in Fig 4.18 that media advertisements have proved to be the most successful in attracting interested parties. Recruitment via the traditional route being TEBA is the second most popular source and then the use of recruitment agencies.

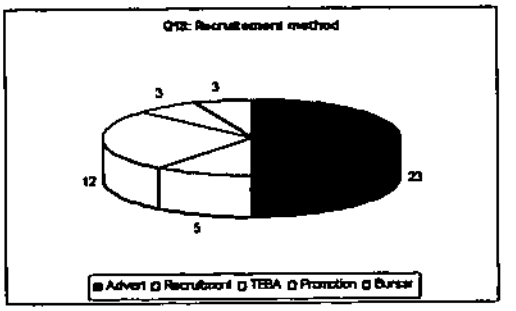

Fig 4.18

Question 19: What was your main reason for applying for the work?

This was an open question however it required extensive prompting from the researcher to determine the basic reasons. Numerous reasons were given for applying for work in the mining industry and these have been categorised into seven main reasons as listed below with the corresponding number of participants who raised the specific reason. An underlying issue which was raised by a number of the participants is the fact they have used the opportunity to get work and be developed, however, they have other career aspirations which deviates drastically from the line of work they are currently doing. This also came out in the previous analysis of the academic qualifications. The future retention of these employees is questionable. When these women finally obtain the qualification which they are pursuing in their own time, they will become marketable and the specific skill may not necessarily be required by Impala which means that they will leave.

➢ Personal skills development	22
➢ Needed to be employed to earn a living to support family	10
➢ Previous bursar who has been developed within the company	6
➢ Previous position was not challenging	3
➢ Promotion through the years at Impala	2
➢ Needed to be employed - only mining companies were hiring people	2
➢ Really enjoys the subject matter of the work	1

Question 20: Were you correctly informed of the job content during the engagement process?

The question tested for whether or not the employee felt that she was correctly informed of what she would be doing. It is encouraging to see that 93% of the participants believe that they were correctly briefed during the engagement process of what they were being employed to do.

Question 20.1: Are you doing what you thought you would be doing?

This question tested for whether or not the participant felt she was actually doing the work that she intended to or thought she would be doing. Again this was testing the effectiveness of the communication process. The positive response was slightly lower than in the previous question at only 87%.

Three of the six participants replied negatively to this question as they had made major career path changes since starting with the company. All three voluntarily accepted the career change and are content with what they are currently doing. The other three have diverse reasons for responding negatively. One of the women is a tracklayer helper and did not expect the work to be so labour intensive. The second has been promoted from a lamp house cleaner to a lamp repairer through the years and is happy with the position. The third and final woman who responded negatively did not expect that being a learner would involve having to do theoretical studying as well; however, she does not view this as being a bad thing.

With the exception of one negative response to the question the conclusion could be drawn that the general information being given to the women prior to employment regarding the job content is essentially correct and effective.

Question 21: If you work underground, do you find the underground conditions acceptable?

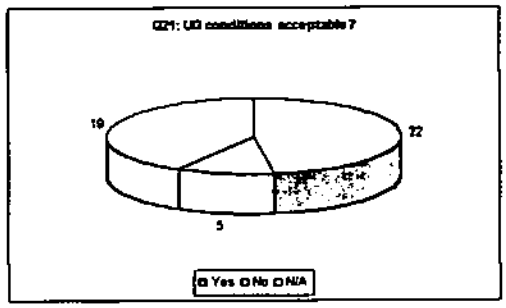

Fig 4.21

The question was aimed at women who have or are working underground therefore 19 surface workers did not respond to the answer leaving the total respondents to this question at 27. Fig 4.21 represents the distribution of responses to this question. It can therefore be seen that of the 27 women, 20% (5) believe that the current

underground conditions are not acceptable to them implying that the dark, humid, rough and rugged conditions did not intimidate the other 80% (22).

The five who responded negatively to the conditions all have personal dislikes to the conditions and could not pin point any particular reason for their dislike to working under these conditions. It just does not appeal to them at all.

Question 22: Do you consider the work you are doing as too dangerous for women?

To try and establish what the current female employees opinion is regarding the hazards associated with the job the participants were asked if they perceived the work that they currently do as too dangerous for women. Less that 10% (4) indicated that some of the work required of them was in their opinion too dangerous for women in general.

Reasons for work being too dangerous were given as:

- The issue of working shifts and having to travel home at night is indirectly unsafe for women.
- Whilst carrying out certain work and suddenly needing physical strength or power to support an item when you do not have the physical ability. These women regard men as generally being more physically adept to the situation than women.
- When a woman does not realise she is pregnant which can sometimes be as long as 10 to 12 weeks in their opinion.

Question 23: Do you consider the work you are doing as too difficult for women? (In terms of physical strength)

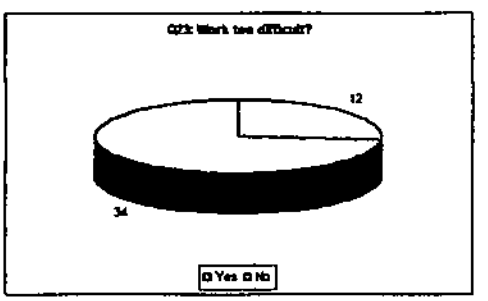

Fig 4.23

Table 4.23 Women who consider the work they are doing as too difficult

Total YES responses	12
Underground workers	10
Black women	12
Women between 20 and 30 years of age	11
Women with more than 2 years service	3
Women who also responded that certain work is too dangerous	2
Women employed in shaft operations	6

From the above Fig 4.23 and Table 4.23 it is evident that 26% (12) of the participants viewed some of the work they are required to do as too difficult in terms of physical ability. Ten of these women are underground workers and eleven of them still young women below the age of 30 years.

Reasons for work being too difficult were given as:

- Physical strength - not all women are strong
- Lifting and moving heavy objects – generally men can do it on their own
- Pulling in heavy electrical cables
- Carrying 25litre water containers
- Steel plates which a boilermaker needs to work with are too heavy to move on their own.

"We can't be expected to lift heavy steel plates on our own, we need assistants" (Participant No.37, 2005). Numerous of the engineering learners commented on the pulling of electrical cables into the workings. "Cables are heavy and need many people to pull them but we are expected to do it with only two people" (Participant No.39, 2005). And the other extreme "No I have been able to do everything expected of me to date..." (Participant No.38, 2005).

A comment they regularly receive from male colleagues is that they are holding up the job, they are weaklings!

Question 24: What occupations do you feel are best suited for women on the mine?

This was an open question and the outcome is listed below.

- All occupations 17
- Any occupation provided they are physically capable 8
- Occupations which do not involve hard physical labour i.e. Rock drill operators (RDO) 6
- Clerical and Administrative type 2
- Drivers 2
- Lamp repairers and pump station attendants 2
- Battery bay attendants 2
- Survey, rock mechanics, ventilation and geology occupations 4
- Engineers, accountants and human resources 2
- Winding engine drivers 1
- Instrumentation technicians 2

The 37% (17) participants who responded by saying any occupation were confident that issues such as a lack of physical attributes could be resolved, after all, as one or two stated, "There are also weak men, how do they cope?"
These women believe in team work if one cannot do the job alone due to physical constraints.

The second highest grouping also agreed to any occupation provided that they are physically capable to do the work. These women suggested testing their ability for a short period of time before placing them in the position permanently. They were in effect proposing a probation period.

A third group of six participants were in favour of occupations other than those requiring harsh physical work such as rock drill operators and panel team members.

Participant No.14 stated "...women should be given the opportunity to work in any occupation, the more experience they can get the better for their development". This statement was echoed by a number of the participants who also included "...

provided they have been properly trained in the safe way of doing the work" (Participant No. 8). It is encouraging to note that they are concerned about safety as well.

The occupations listed above, with the exception of the first two all exclude intensive physical work. From this we can see that physical capacity to do work is recognised by the women as a challenge and the majority agree that they are generally not as physically strong as their male colleagues. However, many are prepared to take on the challenge and find ways around the situation.

Question 25: How many other women are there in your department?

The intention of this question is to determine how many women are working in isolation and how many work in close proximity to other female colleagues. The literature study indicated that the women working in isolation tend to move on as they do not get the moral support that they need.

From the sample seven women indicated that they work in isolation while nineteen work in an environment with less than five other female colleagues. The remaining 50% (21) of the participants work in an environment with more than 10 female colleagues in close proximity. The majority of these being women employed on surface and specifically in the training centres.

The concern here would be the seven who are working in total isolation, six of whom are underground workers. The researcher unfortunately did not test to determine whether or not the women working in isolation are negatively influenced by this arrangement.

Question 26: Do you know any senior management who are women?

Knowledge of women in senior positions has two potential spin-offs. Firstly, a message that the company sends out to demonstrate that it is serious about transformation and the promotion of women. The second is that it creates a role model of the same gender for the young female employees to associate with. The intention of this question was to determine how many of the female employees know of a senior woman within the organisation. They were further tested by having to

provide a name of the person they know. In numerous cases the researcher had to subtly prompt the individual to get a name.

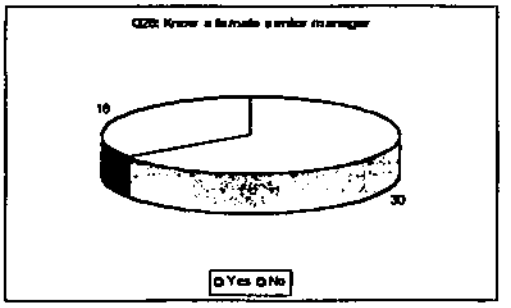

Fig 4.26

Table 4.26 Female employees who do not know a senior manager

Total NO responses	16
Underground workers	11
Black women	13
Paterson Grading A,B,C & L	16
Women with more than 2 years service	2
Learners in training centres	6
Women employed in shaft operations	6

The response from the participants was not that good in that 35% (16) of them did not even have an idea of any women in senior positions. See Fig 4.26. This could be influenced by the length of service as the majority of the women who responded negatively have less than two years service. Table 4.26.

Currently women in senior positions are located at mineral processes and in strategic human relations occupations. A reasonable person would expect female employees, especially new recruits to remember the person that welcomed them to Impala at the introductory lecture when they were being signed on. During the past two years there have also been profiles of the women in senior positions in the company newsletter as well as road shows introducing strategic policies and procedures pertaining to the female employees.

Question 27: Why do you think women want to work underground?

The participants were given the opportunity to express their own opinion on why women would want to be employed in underground occupations. The researcher has categorised the responses into nine main reasons as follows:

	Responses
➢ Will do anything to earn a living to support the family	9
➢ Very few other jobs available and the mines are the only companies signing on new employees	4
➢ It provides work which provides money, which in turn allows women to be independent.	2
➢ It is a good opportunity for women to prove they too can be successful in mining	9
➢ Because they feel they can add value to the company and the economy	6
➢ To gain experience and be in line for promotion	6
➢ They have attained the skills and now want to apply them	3
➢ Because it is the only way to gain experience in fields such as geology	2
➢ It is a good opportunity for women to prove they are as good as men	4

The two prominent reasons are the need for money and the desire to develop themselves. There is a need to be independent which requires income to be sustainable and the only companies recruiting unskilled, young women in large numbers at the moment is the mining industry. Therefore 33% (15) of the women believe it is the only option they currently have to earn a living.

There were also those who admire the women who do want to work underground such as Participant No.2 (2005) "Personally I would not want to work underground however, I do admire those who want to demonstrate their courage".
Others view it as a challenge, "... an opportunity to learn and challenge ones self" (Participant No.40, 2005)

Between gaining experience for potential promotion, adding value to the company and having the opportunity to prove they can be successful in underground mining occupations, 40% (19) of the women believe they are doing it for something more than just the money.

Question 28: What do you like most about your current work?

The participants were given the opportunity to express their own opinion on what they like most about the work they are currently doing. The researcher has categorised the responses into nine main reasons as follows:

	Responses
➢ Having the opportunity to learn something new every day	13
➢ Enjoys doing work with her hands and being creative	8
➢ Challenging and the variation makes it interesting	8
➢ Being able to work closely with other people	4
➢ Satisfies financial needs	2
➢ Being part of a team making strategic decisions	2
➢ Enjoys driving big machinery	1
➢ Achieving targets set by supervisor	1
➢ Nothing specific, just generally happy with what she is doing	4

The hunger for self development is again prominent in the responses to this question. It is also interesting to see that there are women who like to work with their hands and be creative in a production environment. The individuals who find it challenging and interesting were predominantly from the middle and senior management levels.

Although the participants were asked what they like most about their current work, two of them had negative remarks concerning having to continuously work outdoors in the sun and the rain.

Question 29: If you could change one thing about your work, what would it be?

The participants were given the opportunity to express their own opinion on what they dislike most about the work they are currently doing and if they could change something, what would they change. The responses were extremely diverse and could only be reduced to seventeen items. Since it is important to understand even

the smallest of frustrations the women have, the researcher has compiled a list of the seventeen items.

	Responses
➢ Change nothing	11
➢ Change the hours of work	6
➢ Get more machines to do the work and reduce physical labour	5
➢ Fair treatment when it comes to promotion	2
➢ Would like to be promoted	2
➢ Would like more training to improve skills	2
➢ Get more assistance to do physical work	2
➢ Would like to see men doing the more physical work and the lighter jobs left for the women	2
➢ Would prefer to do office work	1
➢ Less company politics	1
➢ Have personal computers available to reduce paper work	1
➢ Day care for children	1
➢ To be able to wear feminine clothing as opposed to current PPE	1
➢ Improve change house facilities	1
➢ Upgrade equipment to latest and better technology	1
➢ Get a lighter cap lamp for underground	1
➢ Would like to do something else	3

Interesting to note that 25% indicated that they would change nothing at all. The issue regarding hours of work was predominantly from the mothers who felt that the starting time on the shafts in the mornings was far too early and created challenges for them.

The physical work issue is raised again here. Firstly the women know and understand mechanisation and the use of tools and machinery to assist with manual work and would like to see the company make more use of this type of equipment. Secondly, they agree to the small team concept of working however, they believe the stronger people in the team should be allocated the more physical related work while the others should be allocated the less strenuous work. They differentiate between men and women simply because they accept that the woman is generally the weaker when it comes to physical strength.

Participant No.7 reacted very emotionally to the question stating; "... fair treatment for women in the workplace ..." and qualified herself by explaining that in her opinion "women are treated as emotionally immature and inexperienced ..." when compared to male colleagues with the same qualifications and experience.

The rest of the issues raised are self explanatory and need to be borne in mind when allocating work to a woman or alternatively when identifying a woman for a specific occupation.

The following six questions were included to test the opinion of the women employees regarding how they are accepted and treated in the workplace by men.

Question 30: Do you think women should be treated differently to men in the work situation?

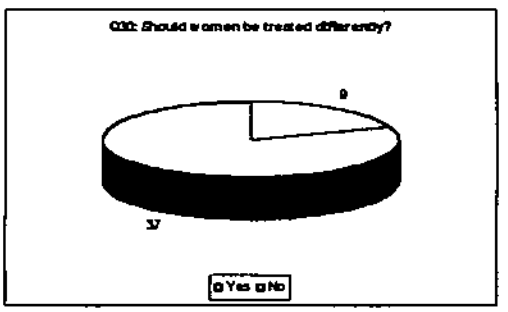

Fig. 4.30

The above Fig 4.30 and Table 4.30 below reflect the responses received.

Table 4.30 The participants who agreed that women should be treated differently

Total YES responses	9
Underground workers	6
Black women	9
Paterson Grading A,B,C,D & L	9
Women with more than 2 years service	2
Also agree that women are being treated differently	4

The nine positive responses are all from women of colour and the majority underground employees. Four of them also acknowledged that they are aware of women who are treated differently. The reasons given are:

- Men should understand that women still have the need to feel feminine
- Women are more emotional and sensitive than men
- It is a fact (in their opinion) that the majority of women are not as physically strong and powerful as men.
- Although woman cannot always do the physical work that male colleagues can, it should not be held against them. There are also weak men.

One or two participants answered yes and no to this question. "... even males have different needs from one another, so each person should be treated as an individual irrespective of sex or race" (Participant No.8, 2005). "... in terms of the job – no, in terms of personality – yes" (Participant No.16, 2005). This participant felt that generally speaking, women are more sensitive and react emotionally different to certain issues such as reprimanding.

Question 31: Are women being treated differently to men in your work situation?

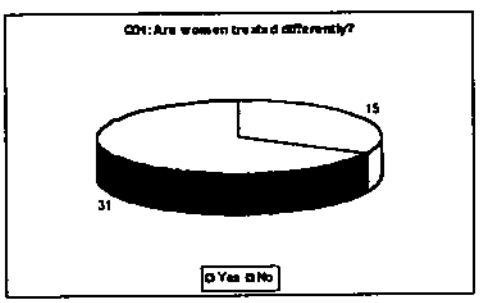

Fig 4.31

Table 4.31 Participants who acknowledged that women are treated differently

Total YES responses	15
Underground workers	8
Black women	8
Paterson Grading A,B,C,D & L	13
Women with more than 2 years service	5
Also agree that women should be treated differently	4

The above Fig 4.30 and Table 4.30 reflect the distribution of the responses received.

A third of the participants (15) agree that they are aware of women being treated differently in the workplace. In this case 50% of the women who responded positively are black women and underground workers. This implies that these occurrences of differentiated treatment are just as prevalent on surface as they are underground. These women believe that:

- Preference is given to men when promotion is being dealt out
- Men are telling the women to stand one side while they do the heavy physical work
- Men are watching the women closely to catch them out when they make mistakes and then criticise them.
- Men are of the opinion they should treat women differently
- Men assume you can't do the work and look for another male colleague to delegate the work to
- Men are still unsure of how to handle the new situation with women in the historically male dominated workplace

Women are thus aware of the differentiated treatment they get and although they agree that in certain cases it is justified, the majority of the time the male colleagues misinterpret the situation and almost embarrass the women by certain of their actions.

Question 32: Is the general attitude of men towards women in your section acceptable?

Only five of the sample of participants responded negatively to this question. Four of them underground workers and all five women of colour. Their response is based on personal experiences such as:

- Cursing and swearing when they are struggling to get something right
- The men think the women are stupid and tell them that when they cannot get something right.
- Some male colleagues are bossy and generally have no respect for women. This is a verbal form of bossiness and generally does not include any form of physical contact.

On the positive side, the majority of the women participants reported that the attitude of men towards women was very good and in their opinion quite acceptable. The researcher also prompted feedback on unacceptable literature and pictures displayed on tearoom and workshop walls. The general response and opinion was that the women were not aware of any obscene or unacceptable literature being displayed or left lying around.

Question 33: Are you aware of any men behaving unacceptably towards women in your work situation?

Table 4.33 Participants who responded that they are aware of men behaving unacceptably

Total YES responses	7
Underground workers	6
Black women	5
Paterson Grading A,B, C & L	7
Women with more than 2 years service	3
Women who acknowledged they know of the Sexual harassment policy	6
Women who also agreed that the attitude of men towards women is unacceptable	5

The positive responses to this question were also in the minority with a total of seven as can be seen in Table 4.33 above. The majority of the responses were from underground employees in the lower Patterson levels. Six of the seven also acknowledged that they are aware of the sexual harassment policy and know how to handle the issue if they do not approve of the behaviour.

In response to what type of behaviour they found unacceptable the following issues were raised; "... not being allowed to leave the workplace when you are not feeling well" (Participant No.8, 2005). Some of them are told to get on and do the job and

stop complaining "... you wanted to work in the mine, so get on with it" (Participant No.21, 2005).

Question 34: What would you do if men were behaving unacceptably in your section?

The response to this question can be grouped into five main actions and are listed below.

	Responses
➢ Warn the offender that if he does not stop, they will take the necessary action against him	18
➢ Would report it to the direct supervisor without making contact with the offending person	19
➢ Challenge the offender and report him	4
➢ Ignore the offender to avoid conflict	2
➢ Not afraid to give the offender the same treatment.	1

Two distinct actions were given which comply to a large extent with the sexual harassment policy actions which are communicated. The one group reported that they would approach the offending person and inform him that what he is doing is unacceptable and request him to cease the action. If this failed they would report it to their direct supervisor. The second group felt that they would report it immediately to their direct supervisor and let him or her take action.

Interestingly, there was one woman who was adamant that she would take them on and give them just as much back; "... treat them as they treat me" (Participant No.7, 2005). There are also those who prefer to avoid conflict and will do nothing. Not the best way out as this is typically what upsets a good employee and leads to her wanting to leave.

Question 35: Do you think women earn the same money as men for the same work at Impala?

Equal pay for equal work has historically been an issue in all industries. At Impala the policy is equal pay for equal work as it applied uncompromisingly. It is perhaps not surprising to note that only seven of the participants believe that women are not

remunerated the same as their male colleagues at Impala. See Table 4.35. None of them could provide proof or evidence but strongly believe this is the case.

Table 4.35 Participants who do not believe women are paid the same as men at Impala

Total NO responses	7
Underground workers	4
Black women	4
Women with more than 2 years service	2
Paterson Grading A	3
Paterson Grading C	3
Paterson Grading D	1

The majority of the negative responses came from the lower level employees with a 50/50 split between surface and underground employees. This implies that 85% (39) of the participants are convinced that women are not discriminated against at Impala when it comes to remuneration.

The following two questions were included to test the opinion of the women employees regarding how they viewed the current facilities and personal protective equipment provided by the company.

Question 36: Are there adequate facilities for women in your work area? (Toilet & Change house)

Table 4.36 Participants who responded that the facilities are not adequate

Total NO responses	17
Underground workers	11
Black women	15
Women with more than 2 years service	0
Learners	12

In the previously male dominated workplace single gender facilities in terms of change houses are provided which meant that huge capital expenditure was needed to expand these facilities to accommodate the females as well. This expansion was late, leading to many make shift arrangements initially. As far as the underground toilet facilities are concerned, the facilities were very rudimentary and not private. This has also had to change requiring capital layout to equip the areas with adequate facilities. Again it is a case of putting the cart before the horse as the facilities were

only initiated after the first females were recruited. Table 4.36 reflects that 37% (17) of the participants are not satisfied with the facilities provided.

Complaints ranged from no change houses to too few toilets underground. This situation is quite understandable for the reasons explained above. The change house facility is an issue for the learners as there is no such facility in close proximity to the training centres. The past strategy of the company was to provide only toilet facilities for the training centres and not change houses.

Question 37: Do you find the Personal Protective Equipment adequate and suitable for women?

Personal Protective Equipment (PPE) has traditionally been designed to suit the male physique. To date very little has been done in SA to develop safety gear and clothing for the female physique. This question was used to test the opinion of the participants regarding the suitability of the available PPE.

Table 4.37 Participants who do not believe the PPE is suitable for women.

Total NO responses	7
Underground workers	3
Black women	5
Women with more than 2 years service	2
Paterson Grading A,B, C, D, E	7

Surprisingly, only 15% (7) of the participants responded negatively. See Fig 4.37 and Table 4.37 for the distribution of the responses.

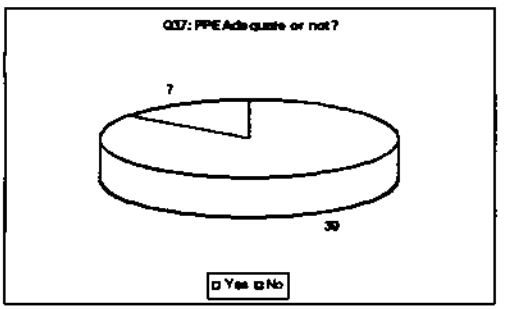

Fig 4.37

During the interview sessions a number of the issues which the women found problematic were raised and the following is a summarised list.

- Safety shoes are not available in small sizes to fit women.
- The clothing sizes are not suitable for African women. These women felt that they always had to make serious alterations to the clothing to get it to fit comfortably.
- Certain one-piece overalls do not have pockets but only open slits on the sides. Women would prefer if pockets were provided.
- The underground lamp is very uncomfortable to wear around the waist.

"Safety shoes are always a problem, I have to buy my own ..." (Participant No.1, 2005). "Overalls are not suitable for African women, African women are built larger than men ..." (Participant No.6, 2005). The participant continued to explain to what extent they had to go to adjust the clothing to fit.

Surface workers are required to wear certain PPE under certain conditions, however relative to the underground workers, far less PPE is required to be worn. It is therefore interesting to note that four of the complaints came from surface workers and that the complaints were from all levels A through to E.

4.5 GENERAL KNOWLEDGE

The following eight questions were prompted by the company when the questionnaire was designed. The purpose of these questions is to test whether or not the company's communication with regard to these issues is successful. There are four basic questions and four probing questions to test the depth of the knowledge regarding each of the topics.

Where the participant responded positively to the basic question but could not demonstrate any knowledge of the subject, the initial response was changed to reflect a negative response with agreement of the participant.

Question 38 / 39: Knowledge of the Employment Equity Act?

Knowledge of the Employment Equity Act (EEA) proved to be low. Only 37% (17) of the participants responded positively and could show evidence of their knowledge of

the EEA. Table 4.38 provides the detail of who the 29 participants are who could not demonstrate knowledge of the EEA. The majority, 46% (21) are underground employees and all of them are from the A, B and C levels. The four with the long service are typically the women who have been employed for 25 years and have never been exposed to any form of legal publication. All 29 also responded negatively regarding knowledge of the Mining Charter.

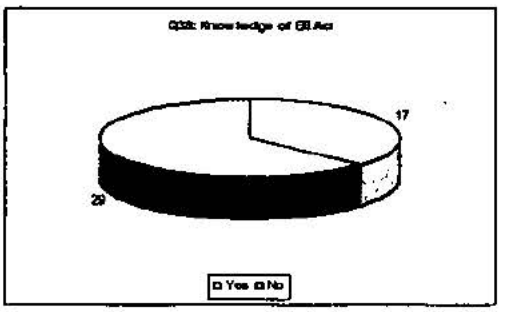

Fig 4.38

Table 4.38 Participants who could not demonstrate knowledge of the EEA

Total NO responses	29
Underground workers	21
Black women	29
Women with more than 2 years service	4
Paterson Grading A,B, L	29
Also acknowledged no knowledge of Mining Charter	29

Question 40 / 41: Knowledge of the Mining Charter?

Knowledge of the Mining Charter proved to be even less than that of the EEA. Only 26% (12) of the participants responded positively and could show evidence of their knowledge of the Mining Charter.

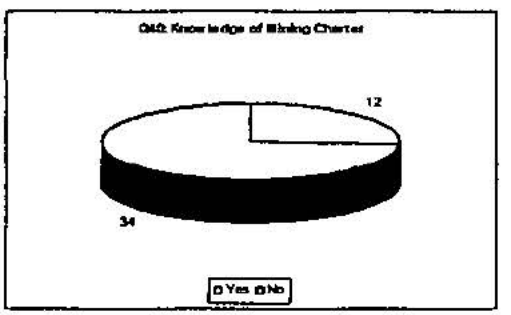

Fig 4.40

Fig 4.40 and Table 4.40 provides the detail of the 34 participants who responded negatively. The majority, 52% (24) are underground employees and include people from levels A, B and C. As mentioned previously, 29 of the participants also responded negatively regarding knowledge of the EEA.

Table 4.40 Participants who could not demonstrate knowledge of the Mining Charter

Total NO responses	34
Underground workers	24
Black women	29
Women with more than 2 years service	5
Paterson Grading A,B,C & L	29
Also acknowledged no knowledge of the EEA	29

Question 42 / 43: Knowledge of the Sexual Harassment Policy?

Knowledge of the internal sexual harassment policy proved to be fair with 70% of the participants responding positively and being capable to of demonstrating their knowledge by explaining what they understood about the policy.

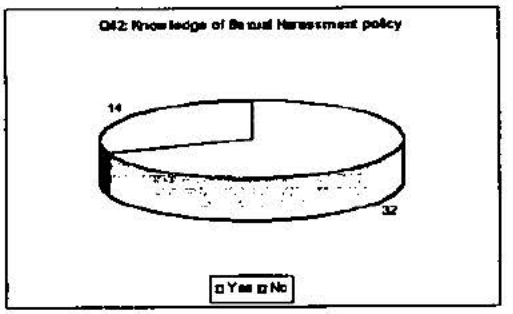

Fig 4.42

Table 4.42 Participants who could not demonstrate knowledge of the Sexual Harassment policy

Total NO responses	14
Underground workers	9
Black women	14
Women with more than 2 years service	2
Paterson Grading A,B & L	14
Also acknowledged no knowledge of pregnancy policy	5
Also acknowledged no knowledge of Mining Charter	14
Also acknowledged no knowledge of EE Act	14

Fig 4.42 and Table 4.42 reflect the detail distribution of the responses to the question. The 30% (14) of participants who responded negatively are predominantly

underground employees from the A and B levels. These same fourteen participants also responded negatively to the question relating to the EEA and the Mining Charter. Five also responded negatively to the pregnancy policy. The underground employees are predominantly learners but from different business units. It is possible that at the time of the road-shows the learners were undergoing training at the central training centre. By the time the road-show arrived at the central training centre, they had been relocated to a business unit elsewhere on the property.

Question 44 / 45: Knowledge of the Pregnancy Policy?

Knowledge of the internal pregnancy policy is better than the sexual harassment policy with an 80% positive response from participants. Fig 4.44 and Table 4.44 reflect the detail distribution of the responses to the question.

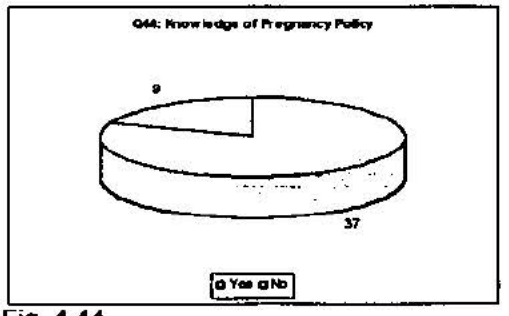

Fig. 4.44

The 20% (9) of participants who responded negatively are predominantly underground employees and from the A and B levels. All nine participants also responded negatively to the EEA and the Mining Charter questions while five responded negatively to the sexual harassment policy.

Table 4.44 Participants who could not demonstrate knowledge of the Pregnancy policy

Total NO responses	9
Underground workers	7
Black women	9
Women with more than 2 years service	2
Paterson Grading A & B	9
Also acknowledged no knowledge of sexual harassment policy	5
Also acknowledged no knowledge of Mining Charter	9
Also acknowledged no knowledge of EE Act	9

It is interesting to note that five of the nine employees are employed in positions where they would most likely not have been able to leave the work station to attend the road-show presentation. These women are all cage and shaft helpers who are required to be at their work station for the full duration of the shift. They also work shifts which could have influenced their availability to attend the road-show.

This concludes the analysis of the results and opinions obtained from the interviews held with the 46 female participants. The fifth and final chapter will discuss the results, reflecting on the literature and attempt to draw some conclusions with recommendations for management of the company involved.

CHAPTER FIVE

DISCUSSION, RECOMMENDATIONS AND CONCLUSION

INTRODUCTION

The purpose of this work is to provide answers to the research questions;

a. What should management be doing to improve the transformation process with specific reference to the empowering of women?
b. Which aspects of the current process being followed are enabling and which aspects are not?

An interview questionnaire was designed to gather opinions relating to certain issues from a sample of participants representative of the female employees at Impala Platinum Rustenburg. The company's transformation department were consulted during the design phase of the interview questions to ensure completeness and validity.

The sample chosen to participate was representative of all levels of employees and covered a large variation of occupations and places of work.

The interview process proved to be very time consuming while the success rate and completeness of the answers to the interview questions can be rated very high. The co-operation of the participants was excellent and although the interviewer was a white male from senior management, there was no feeling of mistrust amongst the participants during the interviews. The participants were very open in their responses and volunteered information.

DISCUSSION OF RESULTS

The sample of participants, although randomly selected from the various employee categories, did include a few demographic anomalies which need to be highlighted.

Due to the current recruitment strategy and practices of the company, young females with a minimum academic qualification of grade twelve are targeted for employment. This has resulted in a sample which is not representative of the average employee on a mine for the following reasons.

- The age distribution tends toward a very young group (less than 30 years of age)
- The academic qualifications are all higher than the average male employee employed underground.
- A large number of the women recently recruited are being put through various skills development programmes. This resulted in 28% of the sample consisting of learners. Currently 40% of the learners at Impala are female.
- Nationality is biased to the local Setswana women.
- The average length of service is relatively short at less than two years.

These demographic characteristics of the participants need to be noted as they differ from the general worker profile at Impala. This ultimately has an effect on their values and would influence the general opinion and responses of the participants. In other words, if the demographic characteristics of the sample in terms of age distribution, academic qualifications and nationality were identical to the typical underground mine worker of Impala, the results would not necessarily be the same. The typical underground employee is around 40 years of age, has less than a standard eight qualification and in 70% of the cases not even English literate.

When discussing women in mining it is almost a contradiction in terms. Mining has always been a male dominated environment with women limited to clerical and secretarial occupations. Why then would women be interested in working on a mine? Indications are that this sample of participants views any occupation on the mine as interesting and challenging and the majority consider any of the available occupations as suitable for women. The young women of today are ambitious and view the mining industry as an opportunity to get work, develop themselves and follow career paths which they either set for themselves or naturally occur as they improve their skills.

The response to numerous questions put to the participants presented an underlying message of ambition to develop and educate themselves. One of the main driving

factors to be employed is money because in many cases the woman is also a breadwinner of a family; however, a very strong message was the yearning for self development.

Many of the participants claim they pursued a career at Impala because of the challenging and interesting work which is being offered to them. Others prefer to be hands on and creative and find they are able to live out these aspirations in their current occupations.

This need for personal development and success came out very strongly in the international case studies as well. When the awareness of the transformation process has faded away, it becomes the driving factor which keeps the women in the mining game (Espley et al, 2002: 3). It is questionable whether or not this single driver has enough sustainability built into it.

The enabling factors

The participants viewed the following factors as enabling when considering employment of women at Impala in underground and surface occupations.

- The company is seen as an employer of women, providing opportunities at all levels in the organisation.
- Skills development is high on the agenda of the young females and thus regards Impala's skills development programs as outstanding opportunities.
- Equality of employment and salary is recognised as a practiced policy at Impala Platinum

The disabling factors

Factors which need to be addressed as they are counter productive or viewed as disabling factors when considering employment of women at Impala in underground and surface occupations are;

- Women working in isolation. Being isolated from other females is not conducive to a long employer / employee relationship. Anxiety and poor performance are inevitable.

- The working hours are an issue for some because of personal family commitments. Most women at some point in time have children at home and not all can afford day care.
- Shift work is frowned upon by the females as they feel very vulnerable at night when they have to travel home to the rural areas.
- Career matching appears to be non existent but could be detrimental to the sustainability of the working relationship. Women are employed in occupations for the sake of having work. The actual career aspirations are totally different.
- Male prejudice, male dominance and other issues relating to the male employees who do not accept the women in the workplace.
- Facilities or the absence of adequate facilities
- Poor fitting and non availability of personal protective equipment
- Poor knowledge of internal policies and legal issues as a result of not reaching all the targeted employees effectively.
- Lack of knowledge of the female decision makers.

The working environment

In terms of the working environment, the participants did not appear to be intimidated by the arduous physical work or the hazardous working conditions. Although they recognise that physical strength plays a role in certain occupations and that their male colleagues are generally more powerful than them, the women participants do not see it as an obstacle. In fact they have already found ways to get around the need for physical strength and therefore do not let it get the better of them. When the topic of physical strength is raised they are quick to enquire as to how the weaker males get the job done. The participants are more concerned with the dangers off the job than those in the underground work environment. The woman raised their concerns regarding the dangers of having to travel home late at night when they are required to work overtime or shifts.

Some of the women also raised their concerns regarding pregnancy and the potential dangers associated with underground conditions especially if they only detect the pregnancy at a relatively advanced stage.

The general feeling of the participants was that there is no need to treat women differently to their male colleagues in the mining environment. However, there were a few cases where the women had experienced being treated differently and were disturbed by the actions. The male colleagues still treat them as physically inferior and tell them to stand one side while they, the males, do the work. One opinion is that the men are reacting this way as they are still unsure of how to handle the situation where women are now working along side them.

Working in Isolation

Women working in isolation relative to other women has been highlighted in the international case studies as an occurrence that should be avoided. This does not appear to have been taken into account at Impala since there are a number of females claiming to be working in isolation and specifically in underground workings. This is compounded by the fact that the training centres tend to be sheltered areas where women are working in close proximity to many other females. In the literature training centres of this nature are referred to as gender neutral areas (Eveline, 2002). When the women are transferred to operational areas for experiential training on the job, they are suddenly isolated from the other women, while at the same time they are exposed to the harsh underground environment which is totally different to the training centre conditions.

Support mechanisms

People tend to trust and confide in other people with whom they can identify. A female employee will thus tend to confide in another female employee as opposed to an unknown male employee. Therefore if a female employee is isolated from the other women, who is she going to approach for help? There needs to be a support mechanism whether it be another female colleague close by or a larger group of women in the close vicinity. Support can also be provided by a "male protector", typically a male colleague with whom the female is familiar, often a relative or family member.

Support mechanisms and groups whether formal or informal were found to be extremely important and almost essential for the success and sustainability of the integration of women into the mining workplace. The literature emphasised the

relevance and importance that female support groups played in the lives of women entering the male dominated workplace (Daphlerup, 1988).

Transformation pitfalls

Transformation is a state that emerges from change, and change is a sequential process (van Tonder, 2004: 6). For a process to be successful certain sequential steps need to be followed. When steps are omitted then more often than not the change process fails to achieve the desired outcome. Companies are often too hasty to implement change due to external pressures and subsequently try and fast track the process with disastrous results.

In the case at hand, change houses and ablution facilities where on the agenda to be build. Unfortunately, the fast tracking of the transformation in order to chase and meet numbers imposed by legislation, resulted in a large number of females being employed long before the facilities were available. This has lead to unhappiness and frustrations and temporary arrangements to accommodate the women.

A second issue, which is more an industry wide issue, is the availability of suitable PPE for the females. Mining companies are all introducing women into the sector at a fast and furious pace but the basic safety gear has not yet been adapted to suit the female physique. A question which very few companies would venture to ask is how effective is the safety gear and PPE that the women are trying their best to use.

Women decision makers

One of the crucial factors highlighted in the literature is that there must be women decision makers for a number of reasons. Firstly, senior women need to be visible as a role model. Secondly, women also need to know that there is someone looking out for them. They need to know that there is a woman participating in the making of decisions which affect the women (Grant Thornton International, 2003). Knowledge of women in senior positions at Impala is low according to the research results. No knowledge of these senior women means no role models to look up to. Very little really inspires female employees to aim for the top if they are not convinced that it is possible to get there. Women in senior positions do tend to provide a supportive function to the other female employees (Burke, 2003). Impala does have a number

of women in senior positions however it is evident from the research that they are not visible enough to the employees.

Male behaviour and resistance to change

The literature went to great lengths to discuss the unacceptable behaviour and attitude of male colleagues in the workplace (Eveline, 2002). The participants in the Impala sample were surprisingly positive regarding their opinion of the male attitude and behaviour in the work place. There were one or two complaints of minor occurrences. The international case studies highlighted extreme cases of unacceptable behaviour including "Belt shop blues", none of which has been reported to have been experienced by any of the participants. It could be attributed to the cultural upbringing of the various groups that were exposed to these studies. The cultural background influences the individual's values which ultimately influences the way in which change is accepted and / or dealt with.

Unacceptable male behaviour is typically a sign of resistance which focuses on the negative emotions (van Tonder, 2004: 182). The male employees perceive the introduction of females as a threat to their environment. Suddenly they are being replaced by women, a threat to job security. They are no longer free to engage in preferred behaviour, they now have to change their attitude and behaviour which is deemed acceptable to the women. The introduction of women impacts on their status, traditions and could potentially see a shift in control. Fear of the unknown also features high on the list. These factors causing resistance are predominantly as a result of perceptions which lead to macho male actions.

RECOMMENDATIONS TO THE COMPANY

Engagement of female employees

During the engagement process, women should be assessed according to their career aspirations. Failing to do this will result in a waste of training and eventual high turnover. The women are not being given training to compliment their careers

which ultimately means that once they complete their part time studies they will seek employment to compliment their career aspirations.

The placing of women in the workplace needs to be given more attention. There are cases of women being placed in isolation, relative to other female employees. Women need to feel secure and one of the surest ways of creating a safe haven is to keep them together, especially when the working areas underground are so remote from one another.

Support groups and mechanisms for females

Support groups are necessary and it would be to the company's benefit if management encouraged and perhaps even facilitated the establishment of an all women support group. This could create a lot of credibility for the company as it would be demonstrating management's commitment to empowering women. This could be either a company initiative with an in-house association being developed or an industry initiative similar to all the associations that currently exist for the male colleagues. The association can be totally informal or formal. It is acknowledged that associations might not exist which entertain the lower categories of male mine worker, however, in the interest of creating a successful transition and to facilitate the empowerment of women it is viewed as a critical act and strongly recommended.

Visibility of senior women in the company

Impala has women in senior management positions; however, they do not appear to be visible to the general workforce. Visibility of these senior women, both in person or through any other media should be encouraged and increased in order for the new female employees to be aware of their existence. The new female employee will then know that there are women participating in decision making and secondly she will be able to identify with the senior person as a role model. Profiles of the senior women could be published more often or articles written by these women which are of interest to the female employees could be published in the company newsletters. These senior women could also participate more frequently in functions which are held, for example safety functions or attend an all women briefing session on the business unit. The briefing session could serve two purposes, first to convey a message and second to explore how the women feel about their participation in the

mining environment. Feedback is needed to close the loop and since implementing this transformation process the company has not really gone back to the female employees and enquired as to their views on their progress or careers.

Gender neutral issues

Gender neutral issues, although not too prevalent within the company at this point in time, need to be addressed. Job titles in the company are still male biased and need to be revised to reflect a gender neutral title. Awareness of the general language used needs to be created so that a more gender neutral language is used by all employees and especially senior management. A list of gender biased terms could be published in the company newsletter from time to time, together with the preferred gender neutral terms.

Impala should take cognisance and where necessary avoid the creation of single gender training environments unless it is done for a specific reason. Training environments should be gender neutral and as far as possible reflect the actual working environment.

Another gender related issue which to the researcher's knowledge has not been addressed is the issue of gender and cultural beliefs. This topic has not surfaced to date but needs some investigation to determine the relevancy and potential impact if any.

Male resistance and behaviour

During the research minor incidents were noted which in the normal run of the mill would not be reported. Management should not rest on their laurels and believe that male resistance is not prevalent purely because they are not aware of actions or incidents of this nature. International case studies have informed us that male resistance is almost always prevalent and is expressed in many ways.

Practical jokes and hurtful language aimed at the female employees should not be tolerated. Line supervisors and management should be made aware of this and encouraged to take action when it is brought to their attention. Line management needs to consciously inspect work areas and especially waiting places, tearooms and

workshops for evidence of obscene literature, posters or any other form of media which is uncalled for and can be viewed as degrading to the female employees. Segregation in these facilities should also be observed and questioned whether it is by own choice or are the females socially compelled to relocate. All the above are commonly referred to as the "belt shop blues" and should be eradicated by line management.

Personal protective clothing (PPE)

Impala needs to be proactive regarding the issue of PPE for female workers. Suppliers need to be put under pressure to either source or manufacture women friendly PPE. The challenge is not unique to Impala and therefore possibly requires an industry driven initiative to get PPE suppliers to take action. A typical example is the recent breakthrough made in the police force where after decades they have finally found a supplier to manufacture bullet proof vests which suit the female physique.

Knowledge of policies and procedures

It is evident from the research that communication of strategic issues such as policies and procedures is not effective. Management needs to review this process and determine why the message is not getting to the employees it is intended for.

Knowledge of the legalistic requirements is currently very poor. It is apparent that only the employee representatives have any knowledge of documents such as the Employment Equity Act and the Mining Charter. Management should perhaps review the situation and consider familiarising the workforce with pertinent sections of these documents albeit a very slow and drawn out process. If the work force does not have the knowledge of the issues in these documents, how can management be sure that what the employee representatives are putting on the table reflects the opinion of the workforce? Communication through the company newsletter is possibly all it requires.

Sensitive issues

Challenges that management have chosen to ignore to date, with good reason, are issues such as flexible working hours for mothers, day care facilities, safe transportation of shift workers and unpaid leave for pregnant women should not be forgotten. These issues are going to remain for as long as there are no amicable solutions found. Management needs to perhaps delegate a task team to address the requirements arising from these issues and table potential solutions.

Proficiency rating systems and the bias to male historical data has been raised as a potentially unfair form of measurement for women and the gender neutral team. Management should initiate an investigation and determine to what extent the efficiency targets currently in place should be applicable to the female employees. This is not to say the targets should be lowered for female workers, it merely raises the question of whether or not the same targets or method of measurement should continue to be applied since the engagement of women in traditionally male occupations.

Physical strength testing and in the case of underground mines, heat tolerance testing needs to be revised. The researcher is aware of industry initiatives currently being undertaken to review these practices and can only encourage management to participate where possible.

Conclusion

In concluding it could be said that Impala Platinum is not too far off the track. They appear to be doing something right to encourage young women into the mining environment. The management should however take cognisance of the frustrations experienced by the sample of women and where possible address these issues.

The research confirmed the experiences discussed in the literature and international case studies, however, the same mistakes are being made by Impala. Why do companies tend to re invent the wheel every time they embark on a new venture? Are they too proud to seek advice or take a little time to investigate and learn from what has already been done?

Mount Kilimanjaro remains a difficult climb but due to past experiences, people find it easier to accomplish if they avoid the pot holes of previous adventurers. Companies should approach change management or transformational management in the same way. Learn by the mistakes of others.

Recommended future research

This research has been conducted during the infancy stages of introducing women into the mining work place. It is highly recommended that further research be carried out with more mature and experienced groups of females in the mining industry to test their opinions of the process. Future research will hopefully move beyond the employee's basic needs for survival, safety and security and concentrate more on the social and self actualisation needs as depicted by Maslow's hierarchy of needs.

REFERENCES

Alexander M. 2005: Black Economic Empowerment. South African Info.
http://www.southafrica.info/
Accessed on 2006/04/15

Baily S. 1988: Women in underground Mining in Australia. *Mining Review*, 1 August: 5-7 & 9

Beijing Declaration and Platform for Action, in *Fourth World Conference for Women: Action for Equality, Development and Peace*, Beijing, September 15, 1995.

Booysen AE. 2005: Social Identity Changes in South Africa: Challenges Facing Leadership. Unpublished Inaugural Lecture. Pretoria: University of South Africa.

Burke RF. 2003: Do gender proportions matter? Emerald: *Women in Management Review, volume 18, No. 5*: 267-275.
http://www.emerald.com/
Accessed on 2005/04/12

Business Map Foundation. 2006: *BEE Charters Comparison of Elements*, Johannesburg: Business Map Foundation.

Catalyst. 2000: 2000 Catalyst census of women corporate officers and top earners.
http://www.catalystwomen.org/
Accessed on 2005/05/14

Catalyst. 2004: 2004 Catalyst census of South African women in corporate leadership.
http://www.catalystwomen.org/
Accessed on 2005/05/14

Commission on Gender Equality. 2005: *Best Practice Guidelines for Creating a Culture of Gender Equality in the Private sector*, Johannesburg: Commission on Gender Equality.

Concise Oxford dictionary of current English. 1995: Edited by D Thompson, 9th ed. Oxford: Clarendon Press.

Cooper DR. & Schindler PS. 2003: *Business Research Methods*. 8th ed. McGraw-Hill.

COSATU. 2000: *Understanding Gender. A struggle within the struggle*. South Africa: COSATU.

Espley S, Francis H & Castonguay MJ. 2002: Hardrock Mining and the evolution of the roles for women. Unpublished research report. Canada: Mines Research Department.

Eveline J & Booth M. 2002: Gender and Sexuality in Discourse of Managerial Control: The case of women miners. *Gender, Work and Organisation, volume 9,* No.5, November 2002: 556- 578.

Grant Thornton International. 2003: International Business Owner Survey, annual report.

Grundlingh GE. 2005: Indicators for success in creating an enabling environment for the employment of women in the mining industry, in *Women in the workplace: Towards gender equity in the Minerals Sector*, Johannesburg, February 10, 2005.

Hermanus MA. 2005: The Mining Sector, HRD, Transitional arrangements and image, in *Women in the workplace: Towards gender equity in the Minerals Sector*, Johannesburg, February 10, 2005.

Hinton J, Veiga M & Beinhoff C. 2003: Women and Artisinal Mining: Gender Roles and the Road Ahead, in *The Socio-Economic Impacts of Artisinal and Small-Scale Mining in Developing Countries*, edited by G Hilson. The Netherlands: Swet publishers: Chapter 11.

ICEM. 2004: *Women in the International Federation of Chemical, Energy, Mine and General workers Union.*
http://www.icem.org/
Accessed on 2005/05/14

Indonesia, 1937: *Convention No. 45 of 1937. Indonesia*: Government Printer.
http://www.ILO.com/
Accessed on 2006/04/12

Kanter RM. 1977: Men and Women of the corporation, Basic Books, New York, NY.

Kirton G & Greene A. 2002: New direction in managing women's trade union careers: online learning. Emerald: *Women in Management Review, volume 17, No. 3*: 171-179.
http://www.emerald.com/
Accessed on 2005/04/12

Lewis B. 1971: Coal mining in the eighteenth and nineteenth century. London: Longman.

Mandela N. 1994: Nelson Mandela's address to the people of Cape Town, Grand Parade, on the occasion of his inauguration as State President.
http://www.anc.org.za
Accessed on 2006/09/12

Mashaba HJ. 2004: Proceedings of the National Union of Mine Workers Women's rally to celebrate 10 years of Women in Mining, Energy and Construction, Pretoria, Month day, 2004, Unpublished record of proceedings.

Mathias R. 1993: Female labour in the Japanese coal mining industry, in *Japanese women working*, edited by J Hunter. London & New York.

Mathur-Helm B. 2004: Equal opportunity and affirmative action for South African women: a benefit or a barrier? Emerald: *Women in Management Review, volume 20, No. 1*: 56-71.
http://www.emerald.com/
Accessed on 2005/04/12

Miranda LM. 2004: Mining with a Gender perspective, *proceedings of the 3rd International Women and Mining Conference: Visakhapatnam, India*: October 1-9, 2004.

Mutemeri N. 2005: Women in Small Scale Mining, in *Women in the workplace: Towards gender equity in the Minerals Sector*, Johannesburg, February 10, 2005, CSIR Mining Technology.

Office on the Status of Women, South Africa 2000. South Africa's National framework for Women's Empowerment and Gender Equality. (unpublished).

Ralushai M. 2003: Experiences of woman working on the mines: A case study from Rustenburg Platinum Mines. Unpublished BA dissertation. Rand Afrikaans University, Johannesburg.

Ranchod S. 2001: Mining, Minerals and society and the transition to sustainable Development in Southern Africa: Gender and the workplace. Unpublished research report. Pretoria: African Institute of Corporate Citizenship.

South Africa. 1995: *Labour Relations Act No. 66 of 1995.* Pretoria: Government Printer.

South Africa. 1998: *Employment Equity Act No. 55 of 1998.* Pretoria: Government Printer.

South Africa. 2003: Department of Trade and Industry. 2003: *The Broad Based Black Economic Empowerment Act of 2003.* Pretoria: Government Printer.

South Africa, Department of Minerals and Energy. 1956: *Mines and Works Act of 1956.* Pretoria: Government Printer.

South Africa, Department of Minerals and Energy. 1971: *Mines and Works Act of 1956 as amended in 1971.* Pretoria: Government Printer.

South Africa, Department of Minerals and Energy. 1991: *Mines and Works Act 13 of 1956.* Pretoria: Government Printer.

South Africa, Department of Minerals and Energy. 1996: *Mines Health and Safety Act 29 of 1996.* Pretoria: Government Printer.

South Africa, Department of Minerals and Energy. 2003: *Broad-Based Socio-Economic Empowerment Charter for the South African Mining Industry.*

South Africa, Statistics South Africa. 2001: *Census 2001: Primary tables South Africa Census'96 and 2001 compared.* Report No. 30-02-04 (2001). Pretoria: Statistics South Africa.

Schutte S. 2005: Women in the workplace: Physical constraints, in *Women in the workplace: Towards gender equity in the Minerals Sector*, Johannesburg, February 10, 2005, CSIR Mining Technology.

Swanepoel B, Erasmus B, Van Wyk M & Shenk H. 2003: *South African Human Resources Management – Theory and Practice.* 3rd edition. South Africa: JUTA.

Van Tonder CL. 2004: *Organisational change. Theory and practice.* 1st edition. Pretoria: Van Schaik.

The social and ethical responsiveness of a South African Platinum mine towards women in mining.

Academic Programme:
Master of Business Leadership – SBL

Questionnaire for participants

Vaughan Townsend
3440-911-4

Supervisor: Professor AE Booysen
Graduate School of Business Leadership - UNISA
2005

Contact details:
Tel (w): 014 569 6714
Cell: 082 572 0612

Annexure A

Questionnaire for participants

Administrative questions:

1	Name			
2	Surname			
3	Company Number			
4	Business Unit (Shaft / Minpro / Services)	Shaft	Minpro	Services
5	Department (Production / Admin)	Production	Admin	Other

Classification questions:

6	Age (years)	20 to 30	31 to 40	41 to 50	51 to 60	61 +
7	Birth Nationality	Setswana	Zulu	Xhosa	White	Other
8	Where do you live?	Hostel	Rented Accommodation	Company Accommodation	Own Accommodation	
9	How far is your daily residence from the work place?	Less than 30 Km	30 to 60 Km	Further than 60 Km		
10	Marital status	Single	Married	Divorced	Widowed	Live Together
11	Do you have children?	Yes	Age of children		No	
12	Place of work	Surface		Underground		
13	Patterson Grading	A	B	C	D	E
14	Status	Daily paid	"Union-men" (Monthly paid)		Official	
15	Highest academic Qualification					
16	Job Title					
17	How long have you been working for Impala? (Years)					

Target questions or investigative questions:

Recruitment

18	How were you recruited for the job?	By Advertisement	Impala Recruitment Department	TEBA	By Promotion
19	What was your main reason for applying for the work?				
20	Were you correctly informed of the job content during the engagement process.	Yes		No	
20.1	Are you doing what you thought you would be doing?	Yes		No	

Work environment

21	If you work underground, do you find the underground conditions acceptable?	Yes (Why?)	No (Why?)	Not applicable
22	Do you consider the work you are doing as too dangerous for women?	Yes - why?	No – why?	
23	Do you consider the work you are doing as too difficult for women? (In terms of physical strength)	Yes -why?	No - why?	
24	What occupations do you feel are best suited for women on the mine?			
25	How many other women are there in your department?			
26	Do you know any senior management who are women? (Give an example)			
27	Why do you think women want to work underground?			
28	What do you like most about your current work?			
29	If you could change one thing about your work, what would it be?			

Female versus Male opinions

30	Do you think women should be treated differently to men in the work situation?	Yes - why?	No - why?
31	Are women being treated differently to men in your work situation?	Yes - why?	No
32	Is the general attitude of men towards women in your section acceptable?	Yes	No - why?
33	Are you aware of any men behaving unacceptably towards women in your work situation?	Yes - why?	No
34	What would you do if men were behaving unacceptably in your section?	Swearing - Sexual harassment - physical abuse	
35	Do you think women earn the same money as men for the same work at Impala?	Yes	No

Facilities

36	Are there adequate facilities for women in your work area? (Toilet & Change house)	Yes	No
37	Do you find the Personal Protective Equipment adequate and suitable for women?	Yes	No

General Knowledge

38	Do you know about the Employment Equity act?	Yes	No
39	What do you know about the Employment Equity act?		
40	Do you know about the Mining Charter?	Yes	No
41	What do you know about the Mining Charter?		

General Knowledge (cont)

42	Are you aware of the sexual harassment policy?	
43	What do you know about it?	
44	Are you aware of the pregnancy policy?	
45	What do you know about it?	