Proposed Nooitgedacht Tailings Storage Facility

Social Impact Assessment

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Prepared for:
EIMS

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Executive Summary

The purpose of this document is to provide a baseline description of the receiving socio-economic environment and to identify social impacts associated with the Nooitgedacht TSF project.

The receiving environment is located in the Matjhabeng Local Municipality that is located in the Lejweleputswa District Municipality in the Free State Province. The closest towns are Welkom and Odendaalsrus. The economy of the district relies heavily on the gold mining sector. Agriculture is also one of the key drivers of the economy.

The project proponent owns and operates a number of Gold Mines and plants in the Welkom region in the Free State and currently deposits tailings onto the Free State South 2 Tailings Storage Facility (TSF), St. Helena 4 TSF, St. Helena 123 TSF, Dam 23 TSF, Brand D TSF and Target 1&2 TSF. The current planned Life of Mine (LOM) of the Free State operations exceed the available deposition capacity of these TSFs and the applicant is therefore proposing to construct the proposed Nooitgedacht TSF to cater for this additional capacity.

The following key stakeholder groups were identified:

- Internal stakeholders;
- Government;
- Business;
- Farmers;
- Environmental; and
- Residents/communities.

As the project proponent, Harmony Gold is also a key stakeholder.

The following social impacts specific to the construction of the TSF have been identified during the SIA process:

- Impact on livelihoods
- Impact of community expectations and social licence to operate
- Impacts on health and wellbeing
- Economic impacts from social perspective
- Increase in social pathologies

The mine is in a rural area known for agriculture and mining and close to urban settlements. It is not expected that the project will cause a significant influx of people into the area. The following recommendations are made:

- Any further impacts on the livelihoods of the farming community may cause permanent loss of livelihoods and should be carefully managed. The tipping point where the farmland can no longer provide the required ecosystem services is close, and it may result in displacement and legal struggles;
- The mine must continue to invest in their Stakeholder Relations Division and revisit its current efficiency;
- The mine must implement a community-friendly external grievance mechanism in conjunction with farmers and communities;
- The mine must develop a community relations strategy to plan for and guide its involvement with the community. The strategy should include feedback mechanisms about aspects of concern to the community;
- The mine should put measures in place to ensure the most effective local employment strategy, in conjunction with local leadership;
- The mine must ensure that social requirements as specified in the mitigation measures are included in their contracts with sub-contractors;
- The mine must investigate and where possible and feasible adopt and / or adapt the Global Industry Standard on Tailings Management for the new TSF;

- All agreements about water provision should be done in writing.

The list of recommendations should be included in the environmental authorisation. From a social perspective, there are no fatal flaws but there are a few matters requiring attention Therefore, the recommendation is that the construction of the TSF should be approved on the condition that the mine put certain social processes such as a grievance mechanism in place, and that the current issues between the mine, the farmers and the communities must be attended to.

Declaration of Independence

Equispectives Research and Consulting Services declare that:

- All work undertaken relating to the proposed project was done as independent consultants;
- They have the necessary required expertise to conduct social impact assessments, including the required knowledge and understanding of any guidelines or policies that are relevant to the proposed activity;
- They have undertaken all the work and associated studies in an objective manner, even if the findings of these studies were not favourable to the project proponent;
- They have no vested interest, financial or otherwise, in the proposed project or the outcome thereof, apart from remuneration for the work undertaken under the auspices of the above-mentioned regulations;
- They have no vested interest, including any conflicts of interest, in either the proposed project or the studies conducted in respect of the proposed project, other than complying with the relevant required regulations; and
- They have disclosed any material factors that may have the potential to influence the competent authority's decision and/or objectivity in terms of any reports, plans or documents related to the proposed project as required by the regulations.

Record of Experience

This report was compiled by Ilse Aucamp and San-Marié Aucamp.

Ilse Aucamp holds a D Phil degree in Social Work obtained from the University of Pretoria in 2015. She also has a master's degree in environmental management (Cum Laude) from the Potchefstroom University for Christian Higher Education, which she obtained in 2004. Prior to that she completed a BA degree in Social Work at the University of Pretoria. She is frequently a guest lecturer in pre- as well as post-graduate programmes at various tertiary institutions. Her expertise includes social impact assessments, social management plans, social and labour plans, social auditing, training as well as public participation. She is the international chairperson of the Social Impact Assessment section of the International Association of Impact Assessment (IAIA) as well as a past member of the National Executive Council of IAIA South Africa. She is also on the advisory panel of the SIAhub, an international website aimed at SIA practitioners. She is a co-author of the *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects* document published by the International Association for Impact Assessment.

San-Marié Aucamp is a registered Research Psychologist with extensive experience in both the practical and theoretical aspects of social research. She has more than 10 years' experience in social research, and she occasionally presents guest lectures on social impact assessment. Her experience includes social impact assessments, social and labour plans, training, group facilitation as well as social research. She is a past council member of the Southern African Marketing Research Association (SAMRA).

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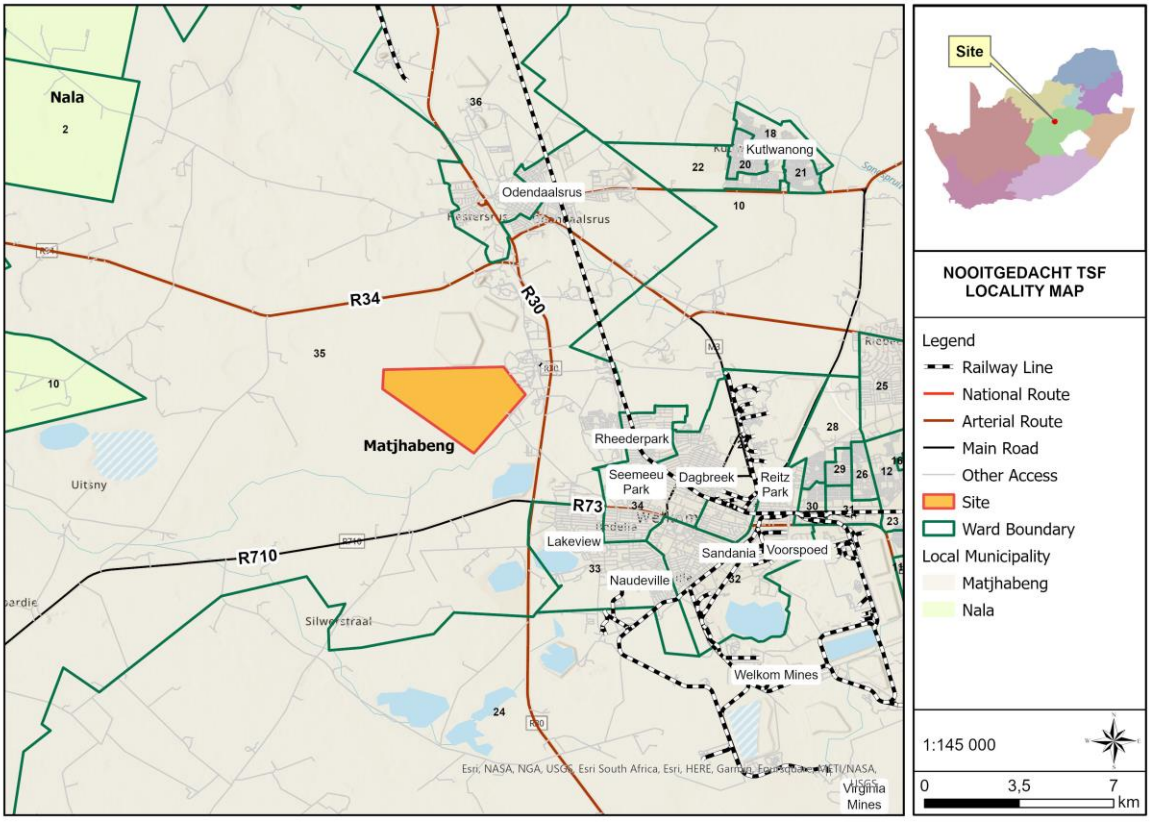
1 Introduction

The project proponent owns and operates a number of gold mines and plants in the Welkom region in the Free State Province and currently deposits tailings onto the Free State South 2 Tailings Storage Facility (TSF), St. Helena 4 TSF, St. Helena 123 TSF, Dam 23 TSF, Brand D TSF and Target 1&2 TSF. The current planned Life of Mine (LoM) of the Free State operations exceed the available deposition capacity of these TSFs and the applicant is therefore proposing to construct the proposed Nooitgedacht TSF to cater for this additional capacity. The TSF will cover an area of approximately 8.95 km^2. The proposed project falls within the Matjhabeng Local Municipality in the Lejweleputswa District Municipality, Free State Province. The proposed TSF will be located on Farm portions Mijannie 66 Ptn 0/RE, Goedgedacht 53 Ptn 0, Nooitgedacht 50 Ptn 0, Jacobsdal 37 Ptn 0 and Rheedersdam 31 Ptn 0.

Figure 1 shows the proposed location for the project within municipal context.

Figure 1: Locality of proposed Nooitgedacht TSF.



The purpose of this report is to identify possible social and economic impacts and to suggest ways in which these impacts can be mitigated. This will assist decision-makers on the project in making informed decisions by providing information on the potential or actual consequences of their proposed activities. The process entailed the following:

- A baseline socio-economic description of the affected environment;
- Identification of potential social and economic change processes that may occur as a result of the project; and
- Identification of potential social and economic impacts and mitigation measures.

One of the ways in which social risk can be managed is by conducting a social impact assessment (SIA). Such an assessment can assist with identifying possible social impacts and risks. Disregarding social impacts can alter the cost-benefit equation of development and in some cases even undermine the overall viability of a project. A proper social impact assessment can have many benefits for a proposed development (UNEP, 2002) such as:

- Reduced impacts on communities of individuals;
- Enhanced benefits to those affected;
- Avoiding delays and obstruction – helps to gain development approval (social license);
- Lowered costs;
- Better community and stakeholder relations; and
- Improved proposals.

EIMS was appointed to manage the Environmental Impact Assessment for the project, and they appointed Equispectives Research and Consulting Services to perform a social impact assessment for the proposed project. This report represents the findings and recommendations of the social impact assessment for the proposed project.

2 Scope of Work

The purpose of the SIA is to provide input in the Environmental Impact Assessment (EIA)/ Environmental Management Programme (EMPr) Report for the proposed tailings storage facility.

3 Methodology

Scientific social research methods were used for this assessment. To clarify the process to the reader, this section will start with a brief explanation of the processes that have been used in this study.

3.1 Information base

The information used in this report was based on the following:

- A literature review (see list provided in the References);
- Data from Statistics South Africa;
- The public participation records provided by EIMS;
- Professional judgement based on experience gained with similar projects; and
- Consultation with affected stakeholders in September 2023.

3.2 Assumptions and limitations

The following assumptions and limitations were relevant:

1. Not every individual in the community could be interviewed therefore only key people in the community were approached for discussion. These key people include the directly affected landowners and ward councillors. Additional information was obtained using existing data.
2. The social environment constantly changes and adapts to change, and external factors outside the scope of the project can offset social changes, for example changes in local political leadership, droughts or economic conditions. It is therefore difficult to predict all impacts to a high level of accuracy, although care has been taken to identify and address the most likely impacts in the most appropriate way for the current local context within the limitations. In addition, it is also important to manage social impacts for the life of the project, especially in the light of the changing social environment.

3. Social impacts can be felt on an actual or perceptual level, and therefore it is not always straightforward to measure the impacts in a quantitative manner.

4. Social impacts commence when the project enters the public domain. Some of these impacts will occur irrespective of whether the project continues or not, and other impacts have already started. These impacts are difficult to mitigate and some would require immediate action to minimise the risk.

5. There are different groups with different interests in the community, and what one group may experience as a positive social impact, another group may experience as a negative impact. This duality will be pointed out in the impact assessment phase of the report.

6. Social impacts are not site-specific, but take place in the communities surrounding the proposed development.

3.3 Social Impact Assessment Model

The theoretical model used for this impact assessment was developed by Slootweg, Vanclay and Van Schooten and presented in the *International Handbook of Social Impact Assessment* (Vanclay & Becker, 2003). This model identifies pathways by which social impacts may result from proposed projects. The model differentiates between social change processes and social impacts, where the social change process is the pathway leading to the social impact. Detail of how the model works is not relevant to this study, but it is important to understand the key concepts, which will be explained in the following paragraphs.

Social change processes are set in motion by project activities or policies. A social change process is a discreet, observable, and describable process that changes the characteristics of a society, taking place regardless of the societal context (that is, independent of specific groups, religions etc.) These processes may, in certain circumstances and depending on the context, lead to the experience of social impacts (Vanclay, 2003). If managed properly, however, these changes may not create impacts. Whether impacts are caused will depend on the characteristics and history of the host community, and the extent of mitigation measures that are put in place (Vanclay,

2003). Social change processes can be measured objectively, independent of the local context. Examples of social change processes are an increase in the population, relocation, or the presence of temporary workers.

For the purpose of this report, the following social change process categories were considered:

- Demographic processes;
- Economic processes;
- Geographic processes;
- Institutional and legal processes;
- Emancipatory and empowerment processes;
- Socio-cultural processes; and
- Other relevant processes.

The *International Association for Impact Assessment* (2003) states that Social Impact Assessment includes the processes of analysing, monitoring, and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by these interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.

A social impact is something that is experienced or felt by humans. It can be positive or negative. Social impacts can be experienced in a physical or perceptual sense. Therefore, two types of social impacts can be distinguished:

- **Objective social impacts** – i.e. impacts that can be quantified and verified by independent observers in the local context, such as changes in employment patterns, in standard of living or in health and safety.
- **Subjective social impacts** – i.e. impacts that occur "in the heads" or emotions of people, such as negative public attitudes, psychological stress or reduced quality of life.

It is important to include subjective social impacts, as these can have far-reaching consequences in the form of opposition to, and social mobilisation against the project (Du Preez & Perold, 2005).

For the purpose of this SIA, the following Social Impact Assessment categories were investigated:

- Health and social well-being;
- Quality of the living environment;
- Economic impacts and material well-being;
- Cultural impacts;
- Family and community impacts;
- Institutional, legal, political and equity impacts; and
- Gender impacts.

Relevant criteria for selecting significant social impacts included the following:

- Probability of the event occurring;
- Number of people that will be affected;
- Duration of the impact;
- Value of the benefits or costs to the impacted group;
- Extent to which identified social impacts are reversible or can be mitigated;
- Likelihood that an identified impact will lead to secondary or cumulative impacts;
- Relevance for present and future policy decisions;
- Uncertainty over possible effects; and
- Presence or absence of controversy over the issue.

For the purpose of this study, the model was adapted to suit the South African context, and where processes and impacts were not relevant to the study, it was omitted. Each

category has a number of sub-categories, which also have been investigated. The Equator Principles, International Finance Corporation Performance Standards and World Bank Environmental, Health and Safety guidelines were consulted in the writing of this report and the mitigation suggested adheres to these requirements.

3.4 Literature study

A literature search was undertaken to obtain secondary data for the baseline description of the socio-economic environment. The information in this report was acquired via statistical data obtained from Statistics South Africa, SIA literature (see References), previous SIA studies conducted in the area, EIMS's public consultation process and information from reputable sources on the World Wide Web.

3.5 Research approach

Traditionally there are two approaches to SIA, a technical approach, and a participatory approach. A technical approach entails that a scientist remains a neutral observer of social phenomena. The role of the scientist is to identify indicators, obtain objective measures relevant to the situation and provide an expert assessment on how the system will change (Becker, Harris, Nielsen & McLaughlin, 2004). A participatory approach uses the knowledge and experiences of individuals most affected by the proposed changes as the basis for projecting impacts. In this case the role of the scientist is facilitator of knowledge sharing, interpretation, and reporting of impacts (Becker et al, 2004). A combination of these approaches was used for this study.

The findings presented in this report are based on primary and secondary (desk) research. A qualitative approach was followed for the primary research, while qualitative and quantitative data were used for the secondary research.

The layperson sometimes criticises qualitative research as "subjective" or "not really that scientific". For this reason, it is vital to understand the distinction between qualitative and quantitative research and their respective areas of application.

Qualitative research as a research strategy is usually characterised by the inference of general laws from particular instances, forms theory from various conceptual elements, and explains meaning (David & Sutton, 2004). It emphasises words rather than quantification in the collection and analysis of data. Data collection takes place by using methods such as unstructured or semi-structured interviews, focus groups, observations, etc. Data is not recorded in any standardised coding format but is usually reported according to themes. Qualitative data express information about feelings, values, and attitudes. This approach is used where insight and understanding of a situation is required (Malhotra, 1996). Participants are selected based on their exposure to the experience or situation under review. The aim of qualitative research is to understand, not to quantify and as such it is extremely suitable for assessing social impacts. A potential impact must be understood before it can be assessed appropriately.

Quantitative research as a research strategy usually makes inferences of particular instances by reference to general laws and principles and tends to emphasize what is external to or independent of the mind (objective) and incorporates a natural science model of the research process (David & Sutton, 2004). This makes it easier for a person with a natural or physical sciences background to relate to. This approach emphasises quantification in the collection and analysis of data. Data collection take place by using methods such as structured questionnaires and data is recorded in a numeric or some other standardised coding format. Data is expressed in numerical format and statistical techniques are usually used to assist with data interpretation. This approach is used when information needs to be generalised to a specific population and participants are usually selected using probability sampling techniques (although non-probability methods can be used depending on the characteristics of the target population).

Although in theory the qualitative phase of this project could be followed by a quantitative phase, for a number of reasons it was not done. A quantitative phase would be more resource intensive in terms of labour, time and cost and the incremental precision obtained in terms of generalisability would not warrant the

additional investment. Due to the strong emotional component relating to the perceived impacts, respondents may intentionally magnify the intensity of the impacts or indicate all impacts are equally severe in an attempt to bias the results in their favour, which will reduce the utility of quantitative results as part of the primary research process.

3.6 Ethical issues

The most basic principle of research is that participants should not be harmed by participation in the research project. It is important that research not only does no harm, but also potentially contributes to the wellbeing of others. At times this might place a researcher in a difficult position – what is beneficial to one group may not be beneficial to another (Bless, Higson-Smith & Kagee, 2006). Furthermore, an individual has the autonomy to decide whether to participate in research or not. No person should be forced, either overtly or covertly, to participate in research. Other important principles include justice (based on the assumption that all people are equals), fidelity (keeping promises or agreements, specifically between the researcher and the participant) and respect for participants' rights and dignity. In addition to these overarching ethical principles, important ethical principles that should be met are informed consent, confidentiality, anonymity, and discontinuance. This is in line with international as well as national research practice such as the World Association for Market, Social and Opinion Researchers (ESOMAR) and Southern African Marketing Research Association (SAMRA) codes of conduct. The researcher has an ethical obligation to develop well-designed projects and execute them with care. Researchers are not allowed to change their data or observations and should report on technical shortcomings, failures, limits of the study, negative findings, and methodological constraints. The honest and accurate reporting of data is also an essential component of scientifically accurate and ethically legitimate research and conclusions should be supported by data.

4 Legislative and Policy Framework

Although there are no explicit acts referring directly to SIA, there are many acts and policies that require specific social outcomes that can be related to this project, and these are discussed in the section below.

4.1 The Constitution of the Republic of South Africa 1996

The current Constitution of the Republic of South Africa 1996 can be regarded as one of the most progressive constitutions in the world. Human rights are enshrined in the South African Constitution, which forms the basis of all the country's legislation. Chapter 2 consists of a Bill of Rights, which explicitly spells out the rights of every South African citizen. Human rights and dignity are fundamental to SIA, and it recognises fundamental human rights and the prerogative to protect those rights as core values (Vanclay, 2003). The human rights relevant to the environmental management field that are safeguarded by the Constitution of the Republic of South Africa 1996 in the Bill of Rights, include:

- Right to a healthy environment;
- Right of access to land and to security of tenure; and
- Right to adequate housing and protection against evictions and demolitions.

The right to a protected biophysical environment, the promotion of social development and trans-generational equity is explicitly included in the Constitution of the Republic of South Africa 1996, which states:

"Everyone has the right -

1. To an environment that is not harmful to their health and wellbeing, and
2. To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that*:*
    1. *Prevent pollution*
    2. *Promote conservation, and*

3. *Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."*

When considering an environment that is not harmful to peoples' health and wellbeing, it is important to reflect on the interconnectedness of biophysical, economic, and social aspects. The impact of development on people, and the true cost of development, as well as the consideration of "who pays the price?" versus "who reaps the benefits?" cannot be ignored in a discussion about human rights and the environment.

The right to a generally satisfactory environment is increasingly seen as a human right in Africa (Du Plessis, 2011), and South Africa's environmental legislation supports this.

4.2 The National Environmental Management Act 107 of 1998

The National Environmental Management Act (NEMA) 107 of 1998 states that the State must respect, protect, promote, and fulfil the **social**, economic, and environmental rights of everyone and strive to meet the needs of previously disadvantaged communities. It states further that sustainable development requires the integration of **social**, economic, and environmental factors in the planning, evaluation, and implementation of decisions to ensure that development serves present and future generations.

Chapter 1 of NEMA contains a list of principles and states clearly that environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural, and social interests (NEMA, 1998). It states further that negative impacts on the environment and on peoples' environmental rights must be anticipated and prevented, and if they cannot be prevented, they should be minimised and remedied. It elaborates further on the equity of impacts, and the fact that vulnerable communities should be protected from negative environmental impacts. It refers to the principle that everyone should have equal access to environmental resources, benefits, and services to meet their basic

human needs (NEMA, 1998). Therefore, there is a clear mandate for environmental and restorative justice in the act, something that must be considered in this project.

Another important aspect of NEMA is the principle of public participation. It states that people should be empowered to participate in the environmental governance processes, and that their capacity to do so should be developed if it does not exist. All decisions regarding the environment should take the needs, interest, and values of the public into account, including traditional and ordinary knowledge (NEMA, 1998). There are also specific environmental management acts that fall under NEMA, such as the National Environmental Management, Air Quality Act 39 of 2004 (NEM: AQA), and the National Environmental Management, Waste Act 59 of 2008 (NEM: WA). These acts require similar public participation processes to NEMA and the principles of NEMA also apply to them (Department of Environmental Affairs & Development Planning [DEA&DP], Provincial Government of the Western Cape, 2010).

Chapter 6 of NEMA elaborates on the public participation requirements. This is supplemented by the EIA regulations published in GN 982 of 4 December 2014, which contained requirements for public participation (GN 982 in GG 38282 of 4 December 2014). It provides requirements for the public participation, the minimum legal requirements for public participation processes, the generic steps of a public participation process, requirements for planning a public participation process and a description of the roles and responsibilities of the various role players. A compulsory Public Participation Guideline that was published in 2012 (GN 807 of 10 October 2012) in terms of section J of NEMA (NEMA, 1998) complements these requirements. According to the guidelines, public participation can be seen as one of the most important aspects of the environmental authorisation process. Public participation is the only requirement of the environmental impact assessment process for which exemption cannot be given unless no rights are affected by an application. This stems from the requirement in NEMA that people have a right to be informed about potential decisions that may affect them and that they must be given an opportunity to influence those decisions.

The principles of the National Environmental Management Act 107 of 1998 declare further that community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, sharing of environmental knowledge and experience and any other appropriate means. It states that the social, environmental, and economic impacts of activities, including disadvantages and benefits, must be considered, assessed, and evaluated, and decisions taken must be appropriate given the assessment and evaluation. NEMA 107 of 1998 recognises that the environment is held in public trust for the people, and therefore the beneficial use of environmental resources must serve the peoples' interest and protect the environment as the peoples' common heritage.

NEMA takes a holistic view of the environment, and promotes the consideration of social, economic, and biophysical factors to obtain sustainable development and achieve effective management of the biophysical environment.

4.3 The National Water Act 36 of 1998

Chapter 1 of the National Water Act (NWA) 36 of 1998 states that sustainability and equity are identified as central guiding principles in the protection, use, development, conservation, management, and control of water resources. It affirms that the guiding principles recognise the basic human needs of present and future generations and the need to promote social and economic development using water. Chapter 2 of the NWA states amongst others that the purpose of the act is to ensure that everyone has equitable access to water, and that the results of past racial and gender discrimination are redressed. It aims to promote the efficient, sustainable, and beneficial use of water in the public interest, and to facilitate social and economic development. The NWA recognises that the nations' water resources are held in public trust for the people, and therefore the sustainable, equitable and beneficial use of water resources must serve the peoples' interest.

4.4 The Mineral and Petroleum Resources Development Act 28 of 2002

The Mineral and Petroleum Resources Development Act (MPRDA) 28 of 2002 is the only environmental act that explicitly requires a social development output, in addition to a public participation process, in the form of a Social and Labour Plan (SLP).

In the preamble to the Act, it recognises the need to promote local and rural development and the social upliftment of communities affected by resource development. In Section 2 it states that some of the objectives of the act are:

- To substantially and meaningfully expand opportunities for historically disadvantaged persons, including women, to enter the mineral and petroleum industries and to benefit from the exploitation of the nations' mineral and petroleum resources;
- To promote economic growth and mineral and petroleum resources development in the Republic;
- To promote employment and advance the social and economic welfare of all South Africans, and
- To ensure that holders of mining and production rights contribute towards the socio-economic development of the areas in which they are operating.

The MPRDA acknowledges that mineral and petroleum resources are the common heritage of all the people of South Africa and that the State is the custodian thereof for the benefit of all. It states that the Minister of Mineral Resources must ensure the sustainable development of South Africa's mineral and petroleum resources within a framework of national environmental policy, norms and standards while promoting economic and social development (MPRDA, 2002).

In Section 37 of the Mineral and Petroleum Resources Development Act 28 of 2002 it endorses the principles set out in Chapter 1 of the National Environmental Management Act 107 of 1998. In Section 39 of the MPRDA the act explicitly requires a social impact assessment as well as an environmental impact assessment when it states that applicants must:

"…investigate, assess and evaluate the impact of his or her proposed prospecting or mining operations on:

(i) The environment;

(ii) The **socio-economic conditions of any person** who might be directly affected by the prospecting or mining operation…"

Section 3, Chapter 2, Part I, of the regulations (Government Notice 527, 23 April 2004) published under the MPRDA refers to the public participation process, which must be followed according to the Act. It includes advertising and an invitation to comment on the process.

Sections 40 to 46, Chapter 2, Part II, of the regulations published under the MPRDA deal with the Social and Labour Plan (SLP) requirements (Government Notice 527, 23 April 2004). The Department of Mineral Resources provided guidelines for the development of the SLP (Department of Mineral Resources, 2010). The guidelines specify the objectives of the SLP as:

- Promote economic growth and mineral and petroleum resources development in the Republic;
- Promoting employment and advancing the social and economic welfare of all South Africans;
- Ensuring that holders of mining or production rights contribute towards the socio-economic development of the areas in which they are operating as well as the areas from which the majority of the workforce is sourced, and
- To utilise and expand the existing skills base for the empowerment of Historically Disadvantaged South Africans and to serve the community (Department of Mineral Resources, 2010).

The crux of this section is that the SLP requires applicants for mining and production rights to develop and implement comprehensive Human Resources Development Programmes including Employment Equity Plans, Local Economic Development Programmes, and processes to save jobs and manage downscaling and/or closure (MPRDA 28 of 2002). According to the regulations, the above programmes are aimed at promoting employment and advancement of the social and economic welfare of all South Africans whilst ensuring economic growth and socio-economic development. The management of downscaling and/or closure is aimed at minimising the impact of commodity cyclical volatility, economic turbulence and physical depletion of the mineral or production resources on individuals, regions, or local economies. All mines

in South Africa are required to compile an SLP, and they must report compliance on a yearly basis (MPRDA, 2002). Compiling an SLP must be done in a participatory manner, and local economic development initiatives must be aligned with the municipal integrated development planning processes. An SLP is not a social impact management plan per se, although it does aim to manage some negative social impacts. The guideline is very clear about the fact that measures put in place for the mitigation of impacts cannot be seen as mine community development projects (Department of Mineral Resources, 2010).

4.5 The National Heritage Resources Act 25 of 1999

Although the National Heritage Resources Act (NHRA) 25 of 1999 is not an environmental act per se, it is relevant in the field of environmental management. The NHRA affirms that every generation has a moral responsibility to act as trustee of the national heritage for later generations and that the State is obliged to manage heritage resources in the interest of all South Africans. The general principles for heritage management in Chapter 5 of the Act state that in order to ensure that heritage resources are effectively managed, the skills and capacities of persons and communities involved in heritage resources management must be developed. The Act further elaborates on the fact that heritage resources form an important part of the history and beliefs of communities and must be managed in a way that acknowledges the right of affected communities to be consulted and to participate in their management.

The general principles (Chapter 5) state that the identification, assessment, and management of the heritage resources of South Africa must:

- Take account of all relevant cultural values and indigenous knowledge systems;
- Take account of material or cultural heritage value and involve the least possible alteration or loss of it;
- Promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs;
- Contribute to social and economic development, and
- Safeguard the options of present and future generations.

The National Heritage Resources Act 25 of 1999 therefore protects the cultural rights and heritage of the people of South Africa. It does not require explicit public participation or give any guidelines on how the public should participate. It does refer, like the National Environmental Management Act 107 of 1998 and the National Water Act 36 of 1998, to social and economic development. Public participation processes may be requested by the South African Heritage Resources Agency if it deems it necessary for a specific project.

4.6 Promotion of Administrative Justice Act 3 of 2000

The Bill of Rights in the Constitution of the Republic of South Africa 1996 states that everyone has the right to administrative action that is legally recognised, reasonable, and procedurally just. The Promotion of Administrative Justice Act (PAJA) 3 of 2000 gives effect to this right. The PAJA applies to all decisions of all State organisations exercising public power or performing a public function in terms of any legislation that negatively affects the rights of any person. The Act prescribes what procedures an organ of State must follow when it takes decisions. If an organ of State implements a decision that impacts on an individual or community without giving them an opportunity to comment, the final decision will be illegal and may be set aside. The Promotion of Administrative Justice Act 3 of 2000 also forces State organisations to explain and give reasons for the manner in which they have arrived at their decisions and, if social issues were involved, and how these issues were considered in the decision-making process.

The Promotion of Administrative Justice Act 3 of 2000 therefore protects the rights of communities and individuals to participate in decision-making processes, especially if these processes affect their daily lives.

4.7 Disaster Management Act 57 of 2002

The Disaster Management Act 57 of 2002 makes provision for national, provincial, and municipal disasters. It requires disaster management frameworks on all three spheres of government. Each district municipality must establish a disaster management centre in consultation and partnership with local municipalities. The act spells out the duties and powers of a municipal disaster management centre, specifying that it must

specialise in issues relevant to the municipal area and promote an integrated and coordinated approach to disaster management. It encourages a risk averse approach and the development of a municipal disaster management plan. The act identifies the responsibilities of the municipality in the event of a local disaster and requirements to declare a municipal state of disaster. It further sets out principles about funding of post-disaster recovery and rehabilitation.

4.8 National and international standards

National and international industry standards aimed at sustainable development and social justice specifically have become abundant in the last decade. Many industries use these standards as indicators for best practice. The discussion below highlights only a few of these standards.

4.8.1 ISO 26000:2010/SANS 26000:2010

Performance standards have long been a voluntary tool used by industry to achieve certain outcomes. The first standard on social responsibility, ISO 26000 was published on 1 November 2010 (ISO, 2010). It was developed using a multi-stakeholder approach involving experts from more than 90 countries and 40 international or broadly based regional organisations involved in different aspects of social responsibility (ISO, 2010).

The South African Bureau of Standards (SABS), a statutory body that is mandated to develop, promote, and maintain South African National Standards (SABS, [sa]) adopted the ISO 26000 Standard as a South African National Standard (SANS) 26000:2010.

Social responsibility is defined in the standard as the responsibility of an organisation for the impacts of its decisions and activities on society and the environment, through transparent and ethical behaviour that contributes to sustainable development, including health and welfare of society; takes into account the expectations of the stakeholders; complies with applicable law and is consistent with international behaviour norms, and is integrated throughout the organisation and practiced in its relationships (ISO, 2010).

The document identifies seven principles for social responsibility and seven core subjects that should be addressed by organisations. The seven principles for social responsibility are accountability, transparency, ethical behaviour, respect for stakeholder interests, respect for the rule of law, respect for international norms of behaviour and respect for human rights (ISO, 2010). The core subjects that should be addressed include organisational governance, human rights, labour practices, environment, fair operating practices, consumer issues and community involvement and development (ISO, 2010). Economic aspects, health and safety and the value chain are dealt with throughout the seven core subjects, and gender issues are considered.

4.8.2 International Social Performance Standards/Initiatives

There is a profusion of global initiatives aiming at assisting companies to make their operations more sustainable. Human rights, environmental protection and social justice are gaining support from industry. The social agenda forms an important part of this trend. Only a few relevant initiatives will be mentioned in this section.

The Global Reporting Initiative (GRI) is a leading organisation in the sustainability field that promotes sustainability reporting as a way for companies to become more sustainable and contribute to sustainable development. A company publishes a sustainability report to report the economic, social, and environmental impacts of its everyday activities, present its values and governance model and explain the link between its strategy and its commitment to sustainable development (GRI, [sa]). The GRI have strategic partnerships with the United Nations Environment Programme, the United Nations Global Compact, the Organisation for Economic Co-operation and Development and the International Organisation for Standardisation, amongst others (GRI, [sa]). The social category relates to the impact of the company on the social systems in which it operates. The social category consists of four subcategories namely labour practices and decent work; human rights; society; and product responsibility. Each of the categories is unpacked by using a number of aspects that should be considered (GRI, [sa]). GRI Focal Points are national offices that drive the initiatives in particular countries and regions. On 26 February 2013 the GRI Focal Point South Africa was launched. South Africa is one of the countries with the largest number of GRI

reporters in the world. The GRI Focal Point South Africa aims to work with multi-national companies to expand and share best practices across the continent (GRI, [sa]).

Many of the multi-lateral funding agencies such as the World Bank have social standards that they must uphold. The most frequently used in the EIA industry is the International Finance Corporation's (IFC) principles (IFC, 2012). The IFC is a member of the World Bank group, and as a part of their sustainability framework they created performance standards on environmental and social sustainability (IFC, 2012). The standards relevant to the social environment are the following:

1. Environmental and Social Standard 1. Assessment and Management of Environmental and Social Risks and Impacts
2. Environmental and Social Standard 2: Labour and Working Conditions
3. Environmental and Social Standard 4: Community Health and Safety
4. Environmental and Social Standard 5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
5. Environmental and Social Standard 8: Cultural Heritage
6. Environmental and Social Standard 10. Stakeholder Engagement and Information Disclosure (World Bank, 2016)

Issues such as gender, climate change, water and human rights are addressed across the standards. A guidance note accompanies each standard (IFC, 2012:4). Environmental and social risks and impacts must be managed by using an Environmental and Social Management System. The standard applies to all the activities funded by the IFC for the duration of the loan period. A number of private banks adopted most of the IFC standards in an initiative known as the Equator Principles (Esteves, Franks & Vanclay, 2012).

4.8.3 International Principles for SIA

The practice of SIA is guided by a set of *International Principles* that defines the core values, fundamental principles for development and principles specific to SIA practice (Vanclay, 2003). When the *International Principles* are considered, it is clear that SIA aspires to more than just assessing the impact of development on people and includes sustainable outcomes. The following specific principles refer to these sustainable outcomes (Vanclay, 2003):

1. Development projects should be broadly acceptable to the members of those communities likely to benefit from, or be affected by, the planned intervention.
2. The primary focus of all developments should be positive outcomes, such as capacity building, empowerment, and the realisation of human and social capital.
3. The term "environment" should be defined broadly to include social and human dimensions, and in such inclusion, care must be taken to ensure that adequate attention is given to the realm of the social.
4. Equity considerations should be a fundamental element of impact assessment and of development planning.
5. There should be a focus on socially sustainable development, with the SIA contributing to the determination of best development alternative(s) – SIA (and EIA) has more to offer than just being an arbiter between economic benefit and social cost.
6. In all planned interventions and their assessments, avenues should be developed to build the social and human capital of local communities and to strengthen democratic processes.
7. Local knowledge, experience and acknowledgement of different cultural values should be incorporated in any assessment.
8. Development processes that infringe the human rights of any section of society should not be accepted.

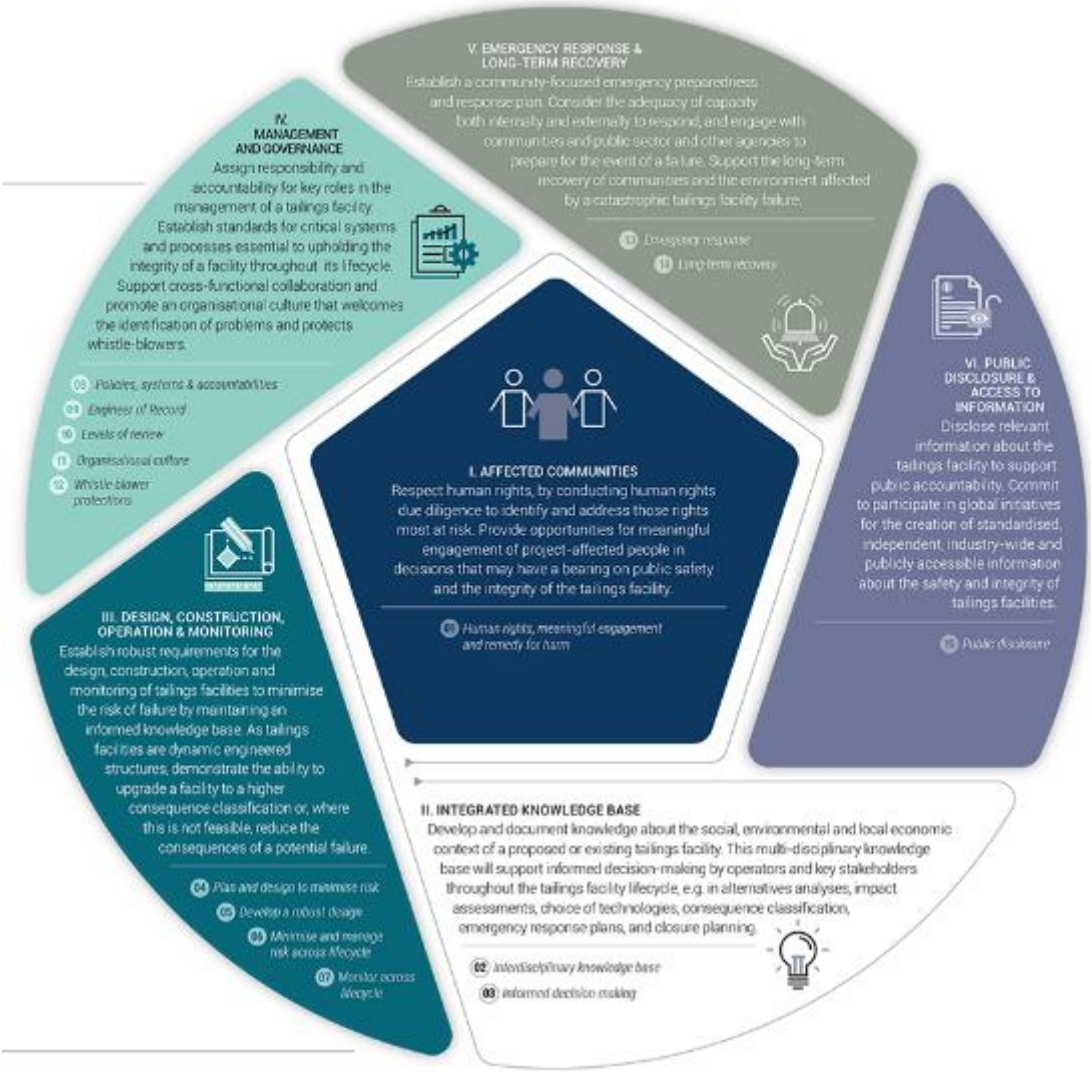
In addition to the *International Principles*, the international SIA community produced a document titled: *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects* (Vanclay, Esteves, Aucamp & Franks, 2015) in April 2015. The purpose of this document is to provide advice to various stakeholders (including proponents) about good practice SIA and social impact management (Vanclay et al., 2015). This document aspires to provide a benchmark for SIA practice across the globe.

4.9 Global Industry Standard on Tailings Management (GISTM) and social performance

The Global Industry Standard on Tailings Management (GISTM) is organised around six Topic areas, 15 Principles and 77 auditable Requirements. The aim of the standard is to adopt an integrated approach to tailings management. Social performance[1] spans all six Topic Areas of the Standard, with specialist components defined in 14 (18 %) of the Standard's 77 Requirements, with a further 18 Requirements (23 % of the Standard) requiring operators to integrate social performance inputs into processes, systems, and decisions about tailings facility management (Joyce & Kemp, 2020).

[1] Social performance refers to how a company handles its commitments, interactions, and activities as they relate to local communities.

Figure 2: Summary of GISTM



Under *Topic I, Affected Communities* there are four explicit social performance requirements namely consideration of human rights throughout the lifecycle of the TSF, Free, Prior, Informed Consent of indigenous and tribal people, meaningful engagement, and a grievance mechanism. *Topic II, Integrated Knowledge Base* package social, environmental, and local economic conditions together. Understanding of local context, human exposure and vulnerability is important in this topic. Impact assessment and mitigation plans fall under this topic. Although *Topic III, Design, Construction, Operation and Monitoring* deals mainly with technical aspects, social requirements are included when additional steps to minimise consequences are considered, and in the mention that international standards should be followed if involuntary resettlement is required (Joyce & Kemp, 2020).

Topic IV, Management and Governance requires the establishment of a tailings governance framework and confirms the Environmental and Social Management System (ESMS) as an integral component. This topic nominates one or more

Accountable Executive(s) as responsible for, amongst other matters, avoiding or minimising the consequences of a tailings facility failure for local people. Other requirements include multi-disciplinary risk assessments, and the review and audit of the ESMS as it relates to the tailings facility (Joyce & Kemp, 2020).

Topic V, Emergency Preparedness and Recovery is critically important from a social performance perspective. It requires meaningful engagement with employees and contractors in the development of Emergency Preparedness and Response Plans, and 'locks in' the role of project-affected people in the co-development of community-focused emergency preparedness measures. Topic V also cover the long-term recovery of people and the environment in the event of a catastrophic failure event – a topic that is not covered in any other tailings or social performance standard. Requirement 14.1 asks operators to take reasonable steps, before a failure event, to meaningfully engage with public sector agencies and other organisations that would participate in medium- and long-term social and environmental post-failure response strategies. These agencies are likely to be quite different to the first responder groups engaged. Topic V would involve post hoc impact assessments, and stakeholder engagement to develop and implement plans that enable the participation of affected people in restoration and recovery works and ongoing monitoring activities (Joyce & Kemp, 2020).

The documents listed under *Topic VI, Public Disclosure and Access to Information* will likely be in the hands of other functions, such as external affairs and legal, many of these concerns fall within the purview of social performance. Regularly publishing and updating information and responding to reasonable requests for additional information is fundamental to meaningful engagement at the local-level, and for generating trust across the stakeholder spectrum (Joyce & Kemp, 2020).

4.10 Additional governance tools

Legislation is not the only tool that authorities can use to achieve sustainable development and social development outcomes. There are several tools, policies and strategic planning instruments that can contribute to this.

4.10.1 Integrated Development Plans

For the purpose of this project, Integrated Development Plan (IDP) documents of two municipalities need to be considered: the Lejweleputswa District Municipality and the Matjhabeng Local Municipality.

The Lejweleputswa District Municipality IDP (2022/23) highlights that the purpose of municipal integrated development planning is to:

- Ensure sustainable provision of services;
- Promote social and economic development;
- Promote a safe and healthy environment;
- Give priority to the basic needs of communities; and
- Encourage involvement of communities.

Matjhabeng Local Municipality identified the following mayoral strategic priorities (IDP 2023/24):

- Road maintenance;
- Local economic development;
- Replacement of ageing infrastructure;
- Achieving housing accreditation;
- Build internal capacity;
- Develop climate change strategy, adaptation, and mitigation;
- Improve private-public partnerships for growth and development;
- Economic corridors linking six towns; and
- Economic infrastructure and development.

4.10.2 Provincial Growth and Development Strategies

The Free State Provincial Growth and Development Strategy (FGDS) is based on six pillars, each with its own set of drivers (FSDF, 2012). The drivers and pillars are:

1. Inclusive economic growth and sustainable job growth creation

    a. Diversify and expand agricultural development and food security.

    b. Minimise the impact of the declining mining sector and ensure that existing mining potential is harnessed.

    c. Expand and diversify manufacturing opportunities.

d. Capitalise on transport and distribution opportunities.

e. Harness and increase tourism potential and opportunities.

2. Education, innovation, and skills development

    a. Ensure an appropriate skills base for growth and development.

3. Improved quality of life

    a. Curb crime and streamline criminal justice performance.

    b. Expand and maintain basic and road infrastructure.

    c. Facilitate sustainable human settlements.

    d. Provide and improve adequate health care for citizens.

    e. Ensure social development and social security services for all citizens.

    f. Integrate environmental limitations and change into growth and development planning.

4. Sustainable rural development

    a. Mainstream rural development into growth and development planning.

5. Build social cohesion

    a. Maximise arts, culture, sports and recreation opportunities and prospects for all communities.

6. Good governance

    a. Foster good governance to create a conducive climate for growth and development.

The Free State Provincial Spatial Development Framework (FSDF) supplements the FGDS as guidance document for the province to use resources in a way that will ensure

sustainable outcomes based on provincial development needs and priorities (FSDF, 2012). The FSDF outlines Vision 2030, a collective response to the need for the province to describe and map its future destiny through long-term development planning, and to forge a common and shared development agenda across a wide spectrum of service delivery mechanisms. The Free State Vision 2030 envisages that, by 2030, *the Free State shall have a resilient, thriving, and competitive economy that is inclusive, with immense prospects for human development anchored on the principles of unity, dignity, diversity, equality and prosperity for all* (FSDF, 2012).

Encouraged by this vision, the Free State of 2030 will be characterised by an economy that encourages the development of new growth sectors with emphasis on the knowledge-based industries and the green economy (FSGDS).

The Free State Vision 2030 furthermore envisages that, *by 2030, ownership and control patterns of the economy will be transformed, spatial under-development will be addressed, basic services such as healthcare, education, electricity, water, and sanitation will be equitably accessed by the people of the province. In the quest for inclusive economic growth and development, the environment will be protected for future generations. Lasting responses to climate changes will be part of the landscape of the development of the province. Steeped within the democratic principles, the Provincial Government will be accountable, transparent, effective, efficient, responsive to people's needs, and corruption will be eliminated* (FSDF, 2012).

4.10.3 National Development Plan

On 11 November 2011 the National Planning Commission released the National Development Plan: Vision for 2030 (NPC, 2012) for South Africa and it was adopted as government policy in August 2012. The National Development Plan (NDP) was undertaken to envision what South Africa should look like in 2030 and what action steps should be taken to achieve this (RSA, 2013). The aim of the NDP is to eliminate poverty and reduce inequality by 2030. The report identifies nine central challenges to development in South Africa:

1. Too few people work.

2. The standard of education for most black learners is of poor quality.
3. Infrastructure is poorly located, under-maintained and insufficient to foster higher growth.
4. Spatial patterns exclude the poor from the fruits of development.
5. The economy is overly and unsustainably resource intensive.
6. A widespread disease burden is compounded by a failing public health system.
7. Public services are uneven and often of poor quality.
8. Corruption is widespread.
9. South Africa remains a divided society (NPC, 2012).

The plan focuses on creating an enabling environment for development and wants to shift from a paradigm of entitlement to a paradigm of development that promotes the development of capabilities, the creation of opportunities and the involvement of all citizens (NPC, 2012). The National Development Plan (NPC, 2012) wants to achieve the following:

1. An economy that will create more jobs.
2. Improving infrastructure.
3. Transition to a low-carbon economy.
4. An inclusive and integrated rural economy.
5. Reversing the spatial effects of apartheid.
6. Improving the quality of education, training and innovation.
7. Quality healthcare for all.
8. Social protection.

9. Building safer communities.
10. Reforming the public service.
11. Fighting corruption.
12. Transforming society and uniting the country.

Each of the points above is a chapter in the plan and contains a range of targets and proposals. Some are general statements of policy intent, while others are specific policy proposals, actions or processes that should take place (NPC, 2012). Through its contribution to the economy, the project will assist with achieving the goal of creating an economy that will create more jobs.

4.10.4 Sustainable Development Goals

All 189 Members States of the United Nations, including South Africa, adopted the United Nations Millennium Declaration in September 2000 (UN, 2000). The commitments made by the Millennium Declaration are known as the Millennium Development Goals (MDGs), and 2015 was targeted as the year to achieve these goals. The United Nations Open Working Group of the General Assembly identified seventeen sustainable development goals, built on the foundation of the MDGs as the next global development target (UN, 2014). The sustainable development goals include aspects such as ending poverty, addressing food security, promoting health, wellbeing and education, gender equality, water and sanitation, economic growth and employment creation, sustainable infrastructure, reducing inequality, creating sustainable cities and human settlements, and addressing challenges in the physical environment such as climate change and environmental resources (UN, 2014). These aspects are included in the NDP, and it can therefore be assumed that South Africa's development path is aligned with the international development agenda. The project can assist with contributing to achieving goals such as economic growth and employment creation and promoting health, wellbeing, and education through their SLP.

4.11 Human Rights

Core human rights principles — participation, accountability and transparency, non-discrimination, empowerment and linkage to the international human rights framework — align in spirit with the social impact assessment principles, therefore it is necessary to adopt a human rights-based approach to SIA. The adoption of the United Nations Guiding Principles on Business and Human Rights (UNGP) in 2011 confirmed the corporate responsibility to respect human rights (Vanclay et al, 2015). Harmony Gold can only mitigate and manage human rights infringements if it is aware of the potential for these impacts to take place, and the associated risks. Many social impacts can be understood in human rights terms. This includes recognising project-affected individuals and communities as human rights-holders with legal entitlements, including the right of legal redress for impacts on their human rights. Thus, when a project creates social impacts, it may also be in breach of its responsibility to respect human rights (Vanclay et al, 2015). Protection of an individual's rights is embedded in a range of international and national principles, law, conventions, guidelines, and practices. Human rights are a complex concept, but the United Nations (1987) provides a general definition:

> *"…those rights, which are inherent in our nature and without which we cannot live as human beings. Human rights and fundamental freedoms allow us to fully develop and use our human qualities, our intelligence, our talents, and our conscience and to satisfy our spiritual and other needs. Human rights are based on mankind's increasing demand for a life in which the inherent dignity and worth of each human being will receive respect and protection."*

Human rights are enshrined in the South African Constitution (1996), which forms the basis of all the country's legislation. Chapter 2 consists of a Bill of Rights, which explicitly spells out the rights of every South African citizen. The human rights that are safeguarded by the Constitution of the Republic of South Africa 1996 in the Bill of Rights and which are relevant to the Harmony mine, includes:

- Right to a healthy environment;

- Rights of access to land and to security of tenure;
- Right to adequate housing and protection against evictions and demolitions; and
- Children's rights to basic nutrition, shelter, basic health care services and social services.

The group whose rights may potentially be affected are the adjacent and downstream farmers, and communities residing in Rheederpark Extension 2, Jabulani Village and Reahola Housing Association, especially from the perspective of a right to a healthy environment. Some of the human rights impacts are legacy human rights impacts that occur due to a combination of factors and cumulative impacts. It must be considered that the potentially affected community can be seen as a vulnerable community with a low socio-economic status, where there are high levels of poverty and unemployment. Vulnerability refers to a situation or condition characterized by low resilience and/or higher risk and reduced ability of an individual, group or community to cope with shock or negative impacts. Vulnerability is associated with having low socio-economic status, disability, ethnicity, or one or more of the many factors that influence people's ability to access resources and development opportunities (Vanclay et al, 2015).

Human rights cannot be considered without considering environmental justice. Hornberg and Pauli (2007) define environmental injustice as an uneven distribution of environmental quality between different social groups and relate decreasing socio-economic status to an increasing burden of environmental hazards. Environmental justice acknowledges that some groups within the population face a larger risk from exposure to environmental hazards than others (Ikeme, 2003). The Rheederpark Extension 2, Jabulani Village and Reahola Housing Association communities are exposed to multiple sources of potential environmental hazards, such as mines, commercial agriculture, and failed governance leading to lack of sanitation and other services. These sources contribute to the water and air pollution in the area. Being vulnerable communities, the people does not have the resources to protect

themselves or move away from the area, mainly due to socio-economic reasons. Acknowledging that potential human rights impacts and environmental justice issues are possible in the project area will assist Harmony with mitigating and managing these issues, and to avoid potential pitfalls. The mitigation measures suggested as part of the impact management strategy will include measures to address potential human rights impacts and environmental injustice.

4.12 Social licence to operate

Social licence to operate is a popular expression to imply that the acceptance of the community is also necessary for a project to be successful (Vanclay et al.,2015). In 2003 Pierre Lassonde drew attention to the observation that "*Without local community support, your project is going nowhere."* He described social license as *"…the acceptance and belief by society, and specifically local communities, in the value creation of activities"*. Social licence cannot be obtained by going to a government ministry and making an application or simply paying a fee. It requires far more than money to truly become part of the communities in which a company operates (Lassonde 2003). A primary objective of gaining a social license is to minimize project risk. *"Successful operations require the support of the communities in which they operate now, and in the future, to ensure continued access to land and resources"* (Render 2005). The social license to operate can be further described as the degree of match between stakeholders' individual expectations of corporate behaviour and companies' actual behaviour.

Earning a social licence to operate starts in the planning phase of any given project. First impressions are long lasting, and Harmony must recognize that community opinion will be conditioned by previous experience, knowledge gained from elsewhere and the approach taken by the company. Conflict can arise very quickly if there is a failure to respect local customs, give notice of actions, address community concerns and so on. Knowledge of the community and on-going communications are prerequisites for good relations. At the moment Harmony mine's social licence to operate in the surrounding communities is not very strong. This is due to historical and current issues related to water, dust and the perceived value that the mine add

to the communities. The farming community feels very strongly that they do not want any further development of the mine, as the mine has broken many promises in the past, and the farmers are left to deal with the consequences. Urban communities closest to the site echo this feeling, especially because they feel let down and forgotten by the mine. Although the mine technically does not need the permission or approval of the community to continue with the expansion, there is significant risks associated with continuing with mining activities without a social licence to operate. These risks include social unrest, sabotage and damage to the corporate image of the mine.

5 Receiving environment

According to the National Environmental Management Act (NEMA, 1998) environment refers to the surroundings in which humans exist. When viewing the environment from a socio-economic perspective the question can be asked what exactly the social environment is. Different definitions for social environment exist, but a clear and comprehensive definition that is widely accepted remains elusive. Barnett & Casper (2001) offers the following definition of human social environment:

> *"Human social environments encompass the immediate physical surroundings, social relationships, and cultural milieus within which defined groups of people function and interact. Components of the social environment include built infrastructure; industrial and occupational structure; labour markets; social and economic processes; wealth; social, human, and health services; power relations; government; race relations; social inequality; cultural practices; the arts; religious institutions and practices; and beliefs about place and community. The social environment subsumes many aspects of the physical environment, given that contemporary landscapes, water resources, and other natural resources have been at least partially configured by human social processes. Embedded within contemporary social environments are historical social and power relations that have become institutionalized over time. Social environments can be experienced at multiple scales, often simultaneously, including households, kin networks, neighbourhoods, towns and cities, and regions. Social environments are dynamic and change over time as the result of both internal and external forces. There are relationships of dependency among the social environments of different local areas, because these areas are connected through larger regional, national, and international social and economic processes and power relations."*

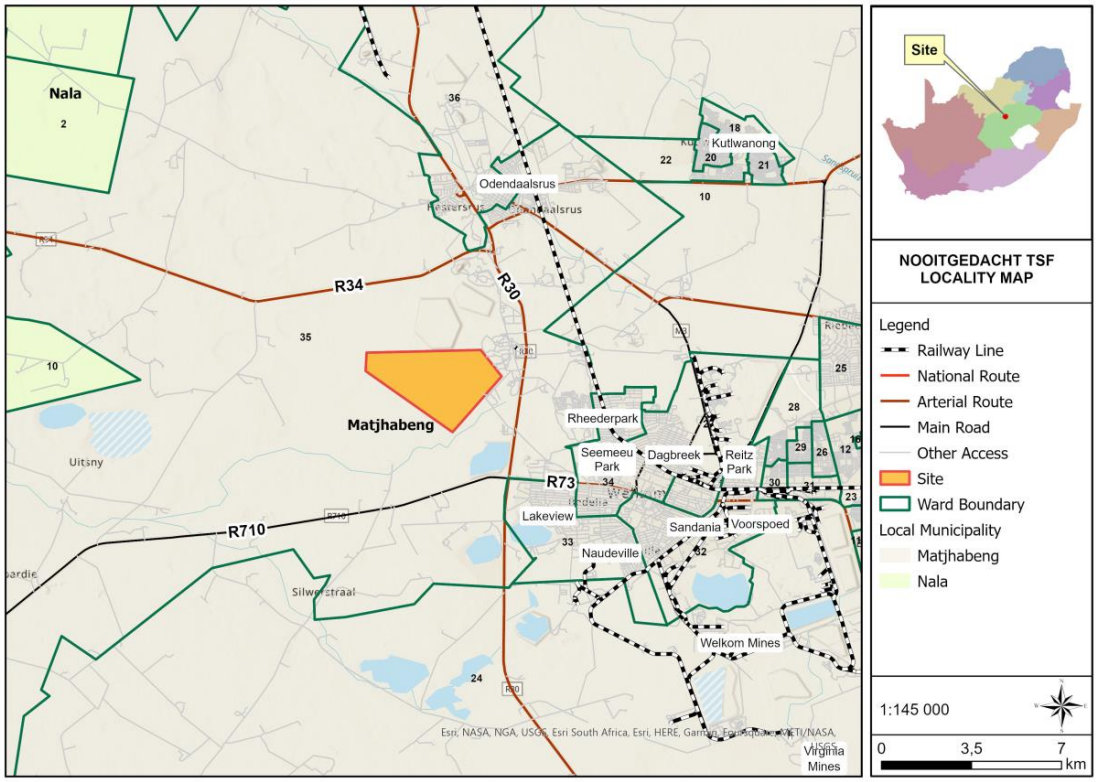
Environment-behaviour relationships are interrelationships (Bell, Fisher, Baum & Greene, 1996). The environment influences and constrains the behaviour of people, but behaviour also leads to changes in the environment. The impacts of a project on

people can only be truly understood if their environmental context is understood. The baseline description of the social environment will include a description of the area within a provincial, district and local context that will focus on the identity and history of the area and a description of the population of the area based on a number of demographic, social and economic variables.

5.1 Description of the area

The proposed site for the project is located in Ward 35 of the Matjhabeng Local Municipality that forms part of the Lejweleputswa District Municipality in the Free State Province. The baseline description of the environment will include these areas. Figure 3 shows the location of the proposed project as well as social and physical infrastructure in the area.

Figure 3: Location of the proposed Nooitgedacht TSF.



5.1.1 Free State Province

The Free State province lies in the centre of South Africa between the Vaal River in the north and the Orange River in the south. The province borders on the Northern Cape, Eastern Cape, North-West, Mpumalanga, KwaZulu-Natal, and the Gauteng province.

It also shares a border with Lesotho. With a total area of 129 825 km^2, the Free State is the country's third-largest province but has the second-smallest population (www.municipalities.co.za).

The Free State is a rural province, and its economic activities are dominated by mining, agriculture, and manufacturing. The province is the fifth-largest producer of gold in the world and is also home to Sasol, a large synthetic fuels company.

About 90% of the Free State is used for crop production (www.municipalities.co.za). About 34% of the total maize production of South Africa, 37% of wheat, 53% of sorghum, 33% of potatoes, 18% of red meat, 30% of groundnuts and 15% of wool is produced in the Free State.

Bloemfontein is the capital of the Free State and South Africa's judicial capital. The province is divided into one metropolitan municipality (Mangaung Metropolitan Municipality) and four district municipalities, namely Fezile Dabi, Lejweleputswa, Xhariep and Thabo Mofutsanyane. Other important towns in the Free State include Welkom, Kroonstad, Sasolburg, and Bethlehem.

5.1.2 Lejweleputswa District Municipality

The Lejweleputswa District Municipality (LDM) is situated in the north western part of the Free State and borders the North West Province to the north; the Fezile Dabi and Thabo Mofutsanyane District Municipalities to the north-east and east respectively; the Xhariep District Municipality and Mangaung Metropolitan Municipality to the south; and the Northern Cape Province to the west. The LDM is accessible from Johannesburg, Cape Town, Klerksdorp, and Kimberley through one of South Africa's main national roads, the N1. The district covers an area of 32 286 km^2 and make up almost a third of the Free State province. It consists of the Masilonyana, Matjhabeng, Nala, Tokologo and Tswelopele Local Municipalities (www.lejweleputswa.co.za).

The economy of the district relies heavily on the gold mining sector which is dominant in the Matjhabeng and Masilonyana Local Municipalities (Lejweleputswa DM IDP 2021/22). The mining sector is on a downward trend and many businesses that have

traditionally depended on the mining sector have either closed down are in the process of closing down. The other municipalities are dominated by agriculture.

5.1.3 Matjhabeng Local Municipality

The main towns in the Matjhabeng Local Municipality are Welkom, Odendaalsrus, Virginia, Hennenman, Allanridge and Ventersburg (www.matjhabeng.fs.gov.za). The economy of the municipality is centred on mining activities in and around Welkom, Allanridge, Odendaalsrus and Virginia. Manufacturing aimed at the mining sector exists to a limited extent in the above towns, with other activities being limited. Other main economic sectors include manufacturing, tourism, agriculture, gold jewellery, transportation (logistics), and retail (Matjhabeng LM IDP 2022/2023).

5.2 Description of the population

The baseline description of the population will take place on three levels, namely provincial, district and local. Impacts can only truly be comprehended by understanding the differences and similarities between the different levels. The baseline description will focus on the Matjhabeng Local Municipality in the Lejweleputswa District Municipality in the Free State Province (referred to in the text as the study area), as these are the areas that will be most affected by the proposed project. Where possible, the data will be reviewed on a ward level – Ward 35 of the Matjhabeng LM. The data used for the socio-economic description was sourced from Census 2011. Census 2011 was a *de facto* census (a census in which people are enumerated according to where they stay on census night) where the reference night was 9-10 October 2011. The results should be viewed as indicative of the population characteristics in the area and should not be interpreted as absolute.

Although a Census was conducted in 2022, StatsSA could to date upon query not indicate when the results would be released. It is acknowledged that the Census 2011 data is very outdated and as such should be interpreted with care. Where possible, data will be supplemented by data from Community Survey 2016, which is a bit more recent.

The following points regarding Census 2011 must be kept in mind (www.statssa.co.za):

- Comparisons of the results of labour market indicators in the post-apartheid population censuses over time have been a cause for concern. Improvements to key questions over the years mean that the labour market outcomes based on the post-apartheid censuses must be analysed with caution. The differences in the results over the years may be partly attributable to improvements in the questionnaire since 1996 rather than to actual developments in the labour market. The numbers published for the 1996, 2001, and 2011 censuses are therefore not comparable over time and are different from those published by Statistics South Africa in the surveys designed specifically for capturing official labour market results.

- For purposes of comparison over the period 1996–2011, certain categories of answers to questions in the censuses of 1996, 2001 and 2011, have either been merged or separated.

- The tenure status question for 1996 has been dropped since the question asked was totally unrelated to that asked thereafter. Comparisons for 2001 and 2011 do however remain.

- All household variables are controlled for housing units only and hence exclude all collective living arrangements as well as transient populations.

- When making comparisons of any indicator it must be considered that the time period between the first two censuses is five years and that between the second and third census is ten years. Although Census captures information at one given point in time, the period available for an indicator to change is different.

5.2.1 Population and household sizes

According to the Community Survey 2016, the population of South Africa is approximately 55,7 million and has shown an increase of about 7.5% since 2011. The household density for the country is estimated on approximately 3.29 people per household, indicating an average household size of 3-4 people (leaning towards 3) for most households, which is down from the 2011 average household size of 3.58 people

per household. Smaller household sizes are in general associated with higher levels of urbanisation.

The greatest increase in population since 2011 has been on local level (Table 1), but still lower than the national average. Population density refers to the number of people per square kilometre and the population density on a national level has increased from 42.45 people per km^2 in 2011 to 45.63 people per km^2 in 2016. In the study area the population density has increased since 2011 with the highest density in the Matjabeng LM. Given the steady decline in employment in the gold mining industry (www.mineralscouncil.org.za), it is likely that the population in the area have declined since 2016, rather than increased, but this remain to be confirmed by more recent demographic data of the area.

Table 1: Population density and growth estimates (sources: Census 2011, Community Survey 2016)

Area	Size in km^2	Population 2011	Population 2016	Population density 2011	Population density 2016	Growth in population (%)
Free State Province	129,825	2,745,590	2,834,714	21.15	21.83	3.25
Lejweleputswa DM	31,930	627,626	649,964	19.66	20.36	3.56
Matjhabeng LM	5,155	406,461	428,843	78.85	83.19	5.51

The number of households in the study area has increased on all levels (Table 2). The proportionate increase in households were greater than the increase in population on all levels and exceeded the growth in households of 12.3% on a national level. The average household size has shown a decrease on all levels, which means there are more households, but with less members.

Table 2: Household sizes and growth estimates (sources: Census 2011, Community Survey 2016)

Area	Households 2011	Households 2016	Average household size 2011	Average household size 2016	Growth in households (%)
Free State Province	823,316	946,639	3.33	2.99	14.98
Lejweleputswa DM	183,163	219,014	3.43	2.97	19.57
Matjhabeng LM	123,195	149,021	3.30	2.88	20.96

The total dependency ratio is used to measure the pressure on the productive population and refer to the proportion of dependents per 100 working-age population. As the ratio increases, there may be an increased burden on the productive part of

the population to maintain the upbringing and pensions of the economically dependent. A high dependency ratio can cause serious problems for a country as the largest proportion of a government's expenditure is on health, social grants and education that are most used by the old and young population.

The total dependency ratio in the Matjhabeng LM is lower than on district or provincial level (Table 3). The same trend applies to the youth, aged and employment dependency ratios. Employed dependency ratio refers to the proportion of people dependent on the people who are employed, and not only those of working age. The employed dependency ratio for the Matjhabeng LM is lower than on district and provincial level. In Ward 35 the total dependency and the youth dependency ratios are quite low, suggesting a smaller proportion of youth in this ward than on local or district level.

Table 3: Dependency ratios (source: Census 2011).

Area	Total dependency	Youth dependency	Aged dependency	Employed dependency
Free State Province	52.88	44.48	8.39	76.34
Lejweleputswa DM	51.33	43.71	7.61	77.16
Matjhabeng LM	46.93	40.09	6.85	75.46
Ward 35	25.83	21.18	4.65	74.76

Poverty is a complex issue that manifests itself in economic, social, and political ways and to define poverty by a unidimensional measure such as income or expenditure would be an oversimplification of the matter. Poor people themselves describe their experience of poverty as multidimensional. The South African Multidimensional Poverty Index (SAMPI) (Statistics South Africa, 2014) assess poverty on the dimensions of health, education, standard of living and economic activity using the indicators child mortality, years of schooling, school attendance, fuel for heating, lighting, and cooking, water access, sanitation, dwelling type, asset ownership and unemployment.

The poverty headcount refers to the proportion of households that can be defined as multi-dimensionally poor by using the SAMPI's poverty cut-offs (Statistics South Africa, 2014). The poverty headcount has increased on all levels since 2011 (Table 4), indicating an increase in the number of multi-dimensionally poor households.

The intensity of poverty experienced refers to the average proportion of indicators in which poor households are deprived (Statistics South Africa, 2014). The intensity of poverty has increased slightly on all levels. The intensity of poverty and the poverty headcount is used to calculate the SAMPI score. A higher score indicates a very poor community that is deprived on many indicators. The SAMPI score in the Matjhabeng LM area has decreased, suggesting an improvement in some respects relating to poverty in this area.

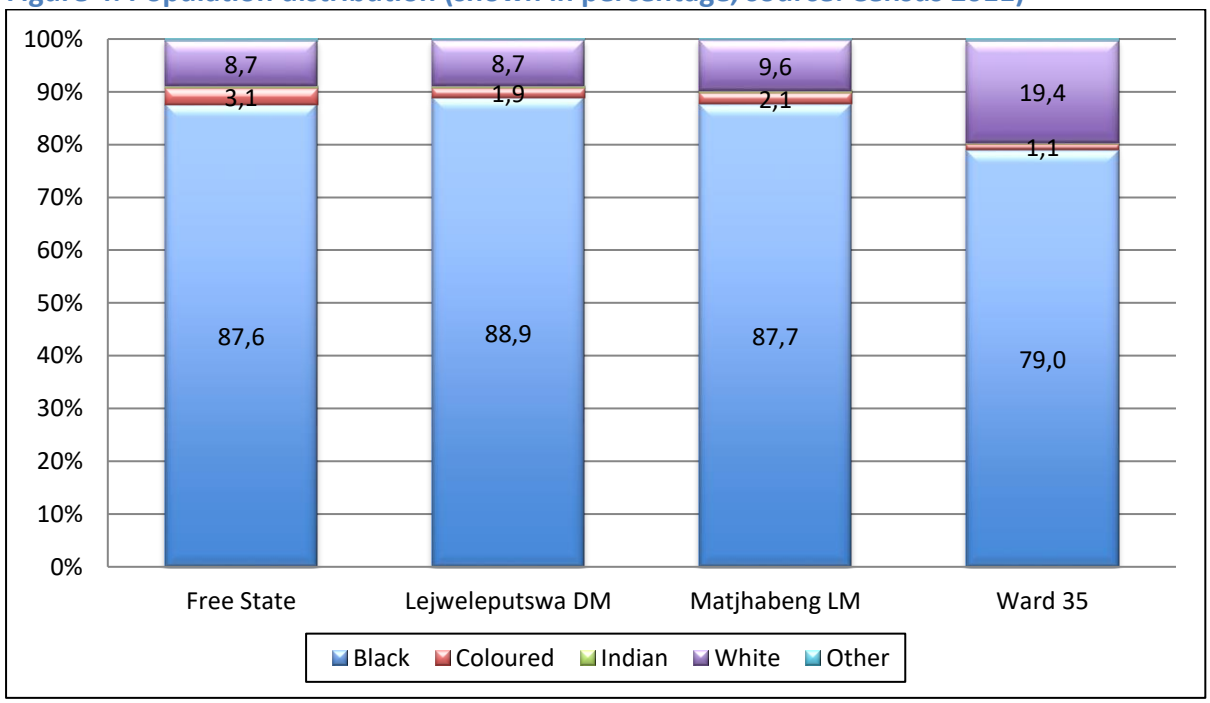
Table 4: Poverty and SAMPI scores (sources: Census 2011 and Community Survey 2016).

Area	Poverty headcount 2011 (%)	Poverty intensity 2011 (%)	SAMPI 2011	Poverty headcount 2016 (%)	Poverty intensity 2016 (%)	SAMPI 2016
Free State Province	5.5	42.2	0.023	5.5	41.7	0.023
Lejweleputswa DM	5.6	42.8	0.024	4.8	42.2	0.020
Matjhabeng LM	5.5	43.0	0.024	4.3	41.8	0.018

5.2.2 Population composition, age, gender and home language

In all the areas under investigation, the majority of the population belongs to the Black population group (Figure 4). In Ward 35 almost a fifth of people belong to the White population group.

Figure 4: Population distribution (shown in percentage, source: Census 2011)



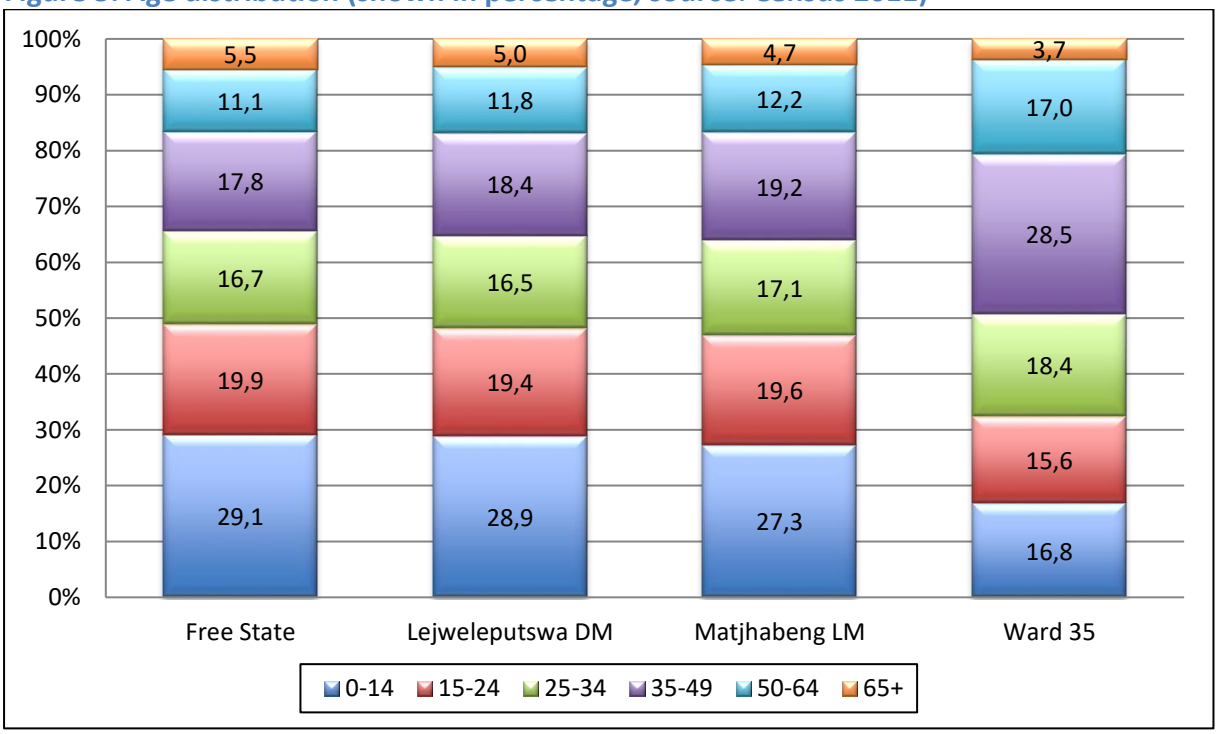
The average age is very similar on local, district and provincial level (Table 5), with a much higher average age on a ward level.

Table 5: Average age (source: Census 2011).

Area	Average Age (in years)
Free State Province	28.38
Lejweleputswa DM	28.52
Matjhabeng LM	28.89
Ward 35	33.90

The age distribution of the areas under investigation shows that the population in on a ward level tend to be older than on local, district or provincial level, with a greater proportion of people aged between 35 years to 64 years (Figure 5).

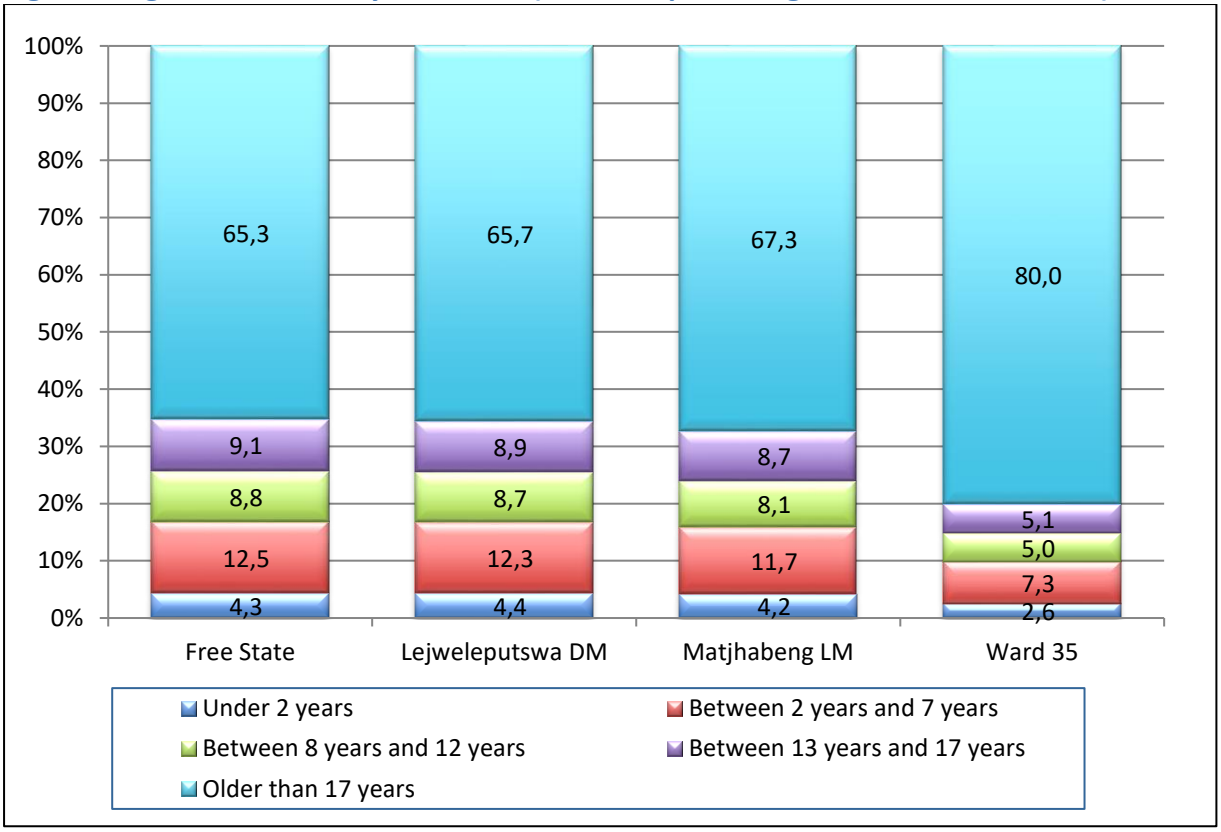
Figure 5: Age distribution (shown in percentage, source: Census 2011)



When focusing on the portion of the population that is aged 17 years or younger (

Figure 6), approximately two thirds of the population on provincial, district or local level are older than 17 years. In Ward 35 about 80% of the population is older than 17 years.

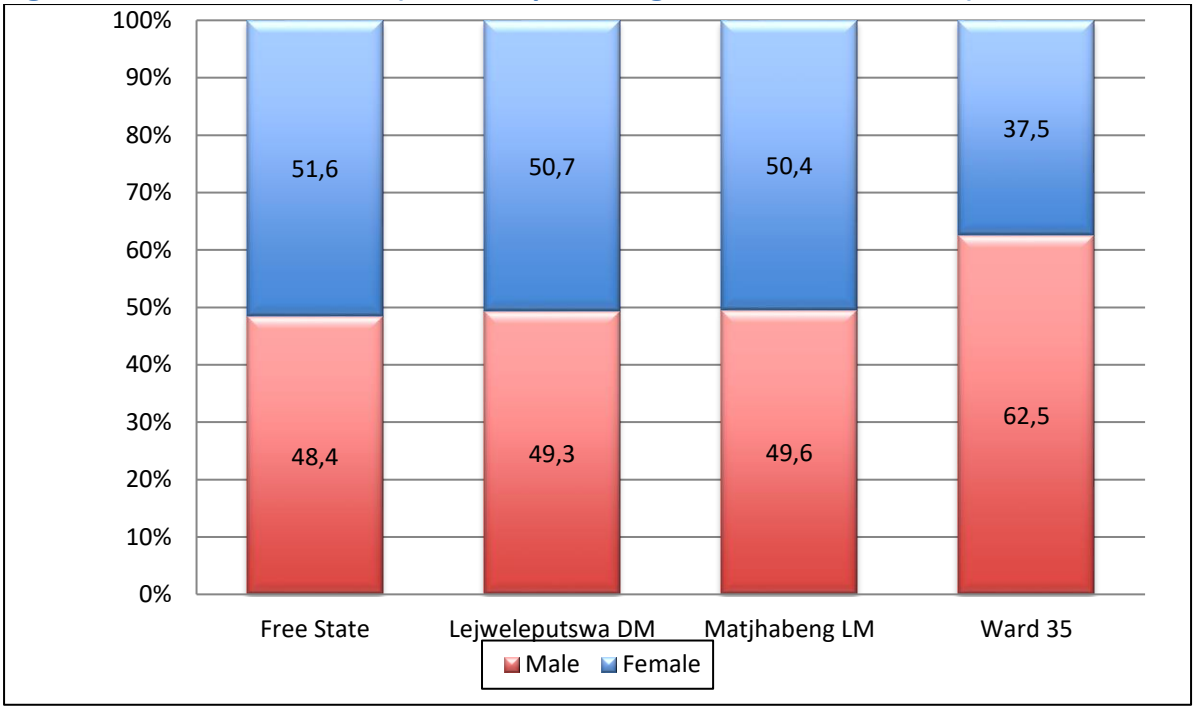
Figure 6: Age distribution – youth focus (shown in percentage, source: Census 2011)



5.2.3 Gender

The gender distribution on provincial, district and local level is balanced (Figure 7), but on a ward level there is a strong bias towards males. A higher incidence of males is usually found in mining areas.

Figure 7: Gender distribution (shown in percentage, source: Census 2011)

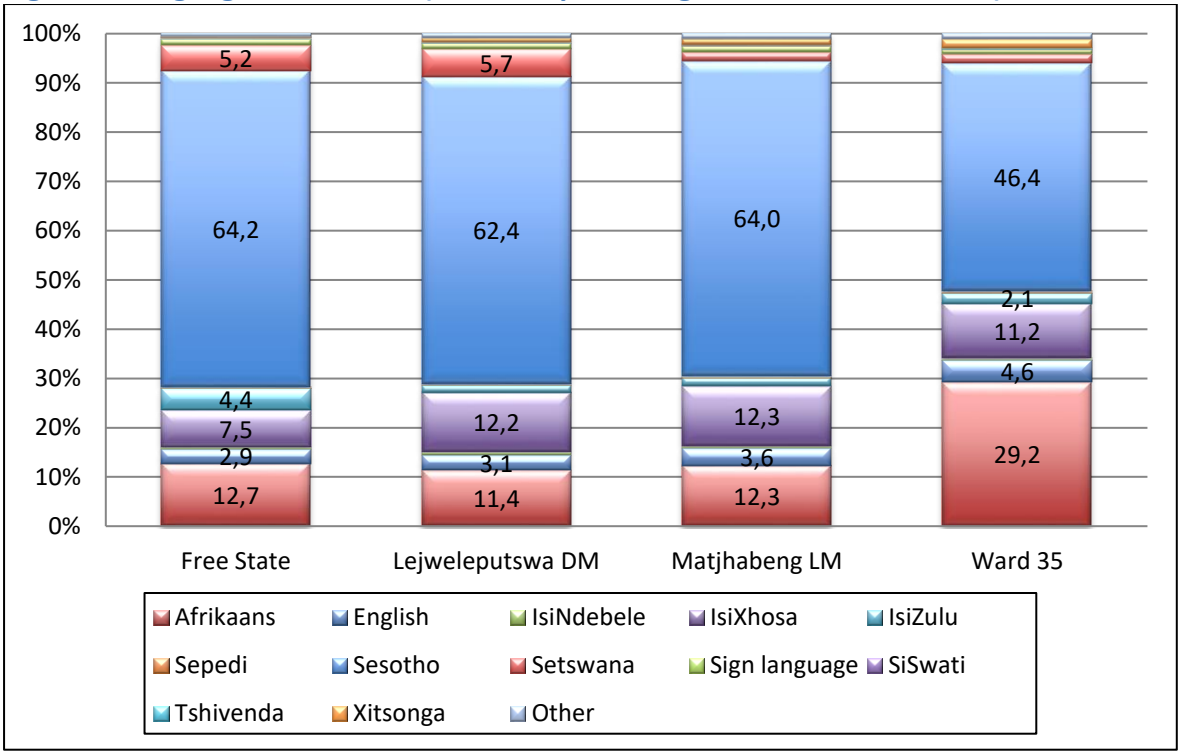


5.2.4 Language

Almost two thirds of people in the area under investigation have Sesotho as home language (

Figure 8), except in Ward 35 where it is just less than half of the people. In Ward 35 almost 30% of people have Afrikaans as home language. Home language should be taken into consideration when communicating with the local communities and based on the profile of the area communication should take place in Sesotho, Afrikaans, and English.

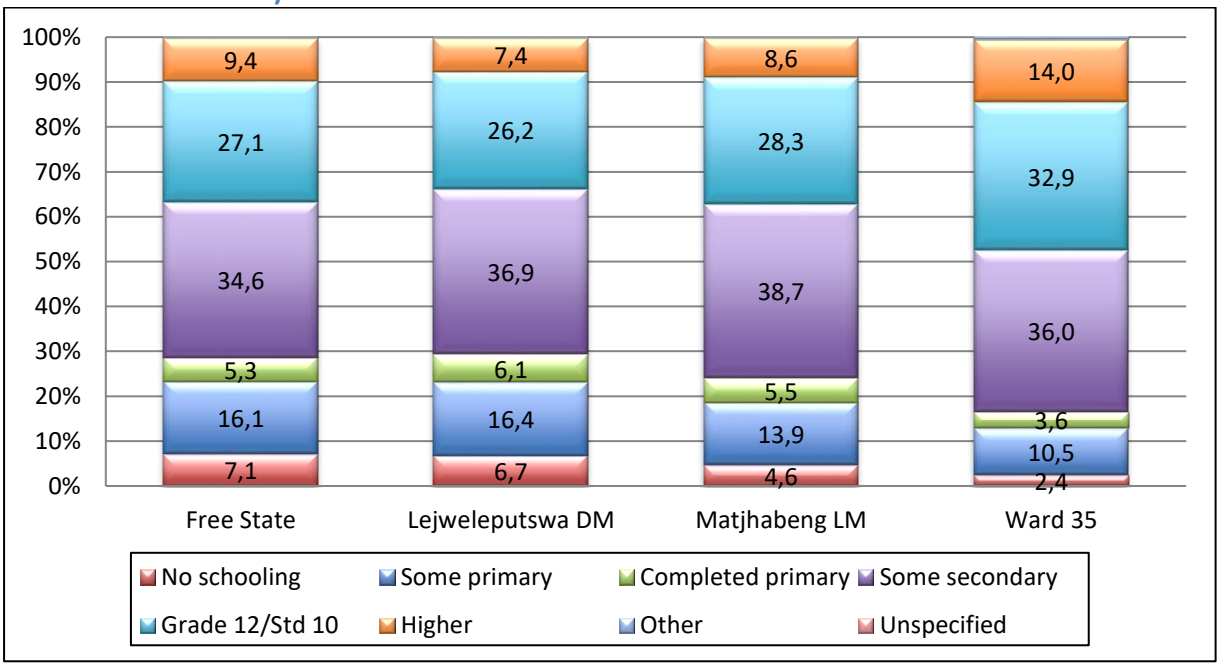
Figure 8: Language distribution (shown in percentage, source: Census 2011)



5.2.5 Education

Figure 9 shows the education profiles for the areas under investigation for those aged 20 years or older. Ward 35 has the highest proportion of people who have completed Grade 12 or higher.

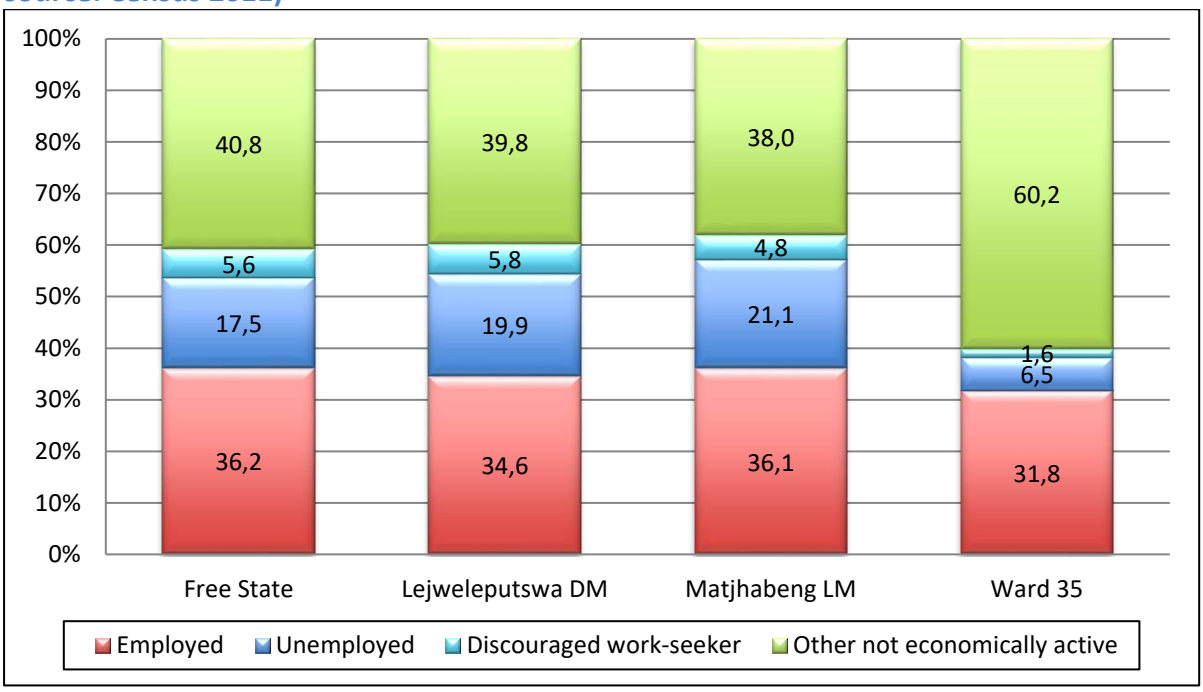
Figure 9: Education profiles (those aged 20 years or older, shown in percentage, source: Census 2011)



5.2.6 Employment

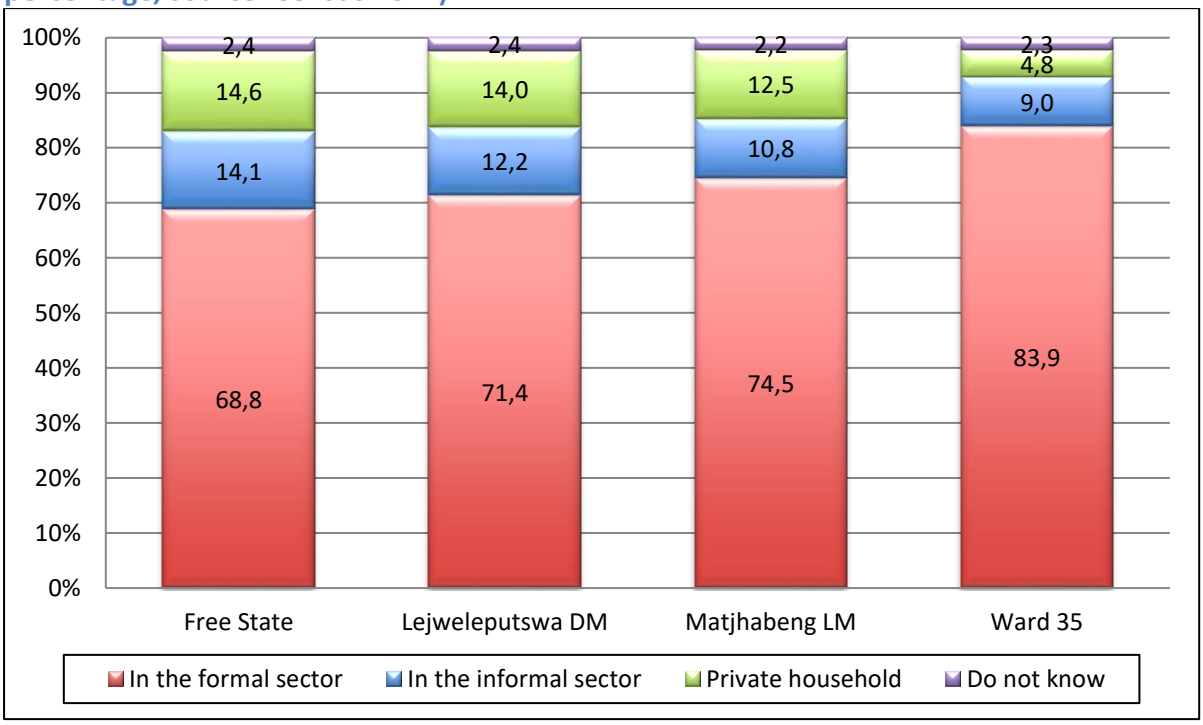
Ward 35 has the highest proportion of people of economically active age (aged between 15 years and 65 years) that are employed (Figure 10). Since 2010 employment in the gold mining industry showed a steady decline from 157 019 in 2010 to 93 841 in 2022 (www.mineralscouncil.org.za). As such the proportion unemployed people in the area are likely to have increased since 2011.

Figure 10: Labour status (those aged between 15 - 65 years, shown in percentage, source: Census 2011)



The majority of the employed people in the areas under investigation work in the formal sector (Figure 11). Ward 35 has the highest proportion of people working in the formal sector.

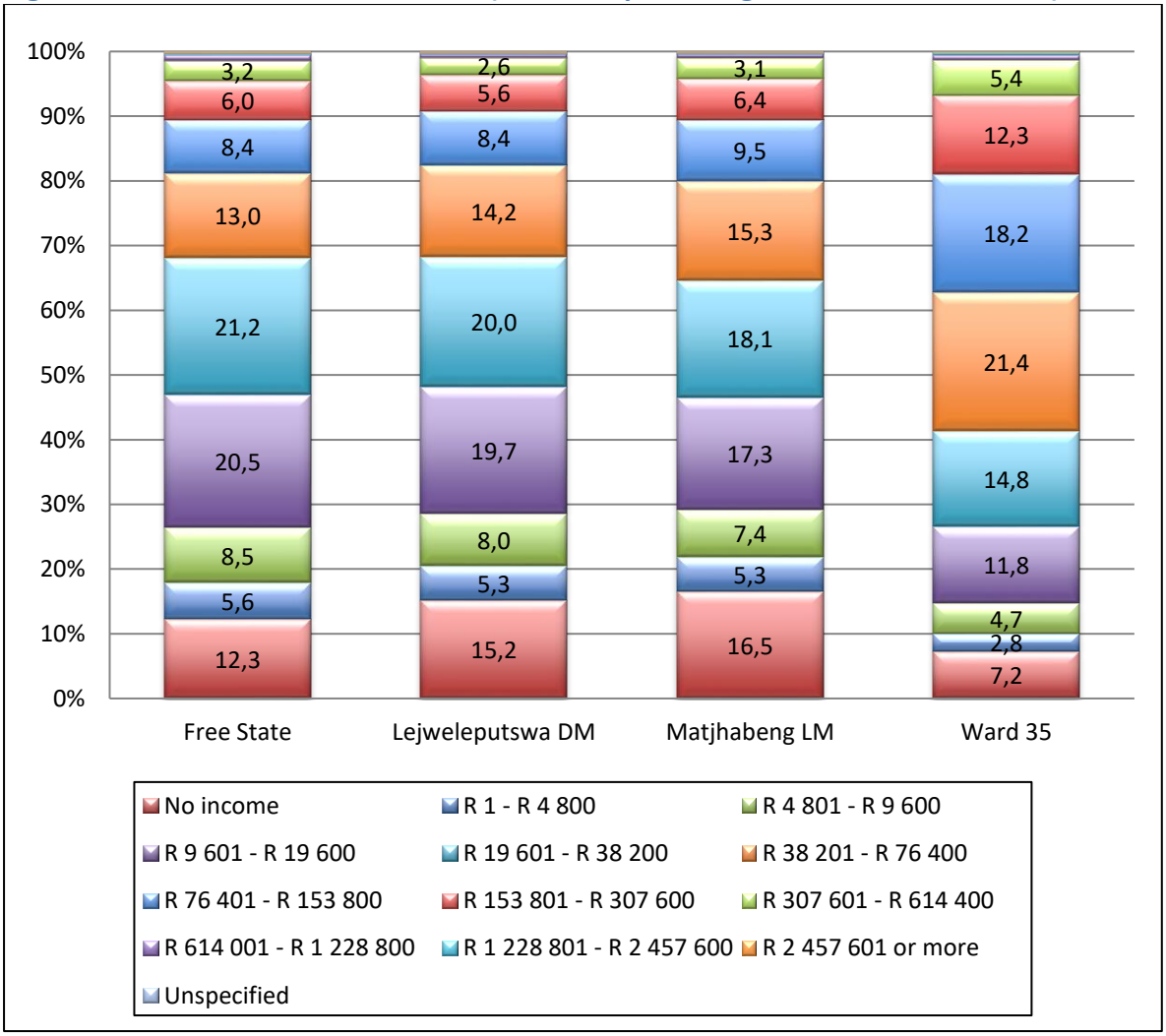
Figure 11: Employment sector (those aged between 15 - 65 years, shown in percentage, source: Census 2011)



5.2.7 Household Income

Ward 35 has the highest average household income (Figure 12), indicating more employed people than on local, district or provincial level.

Figure 12: Annual household income (shown in percentage, source: Census 2011)



5.2.8 Housing

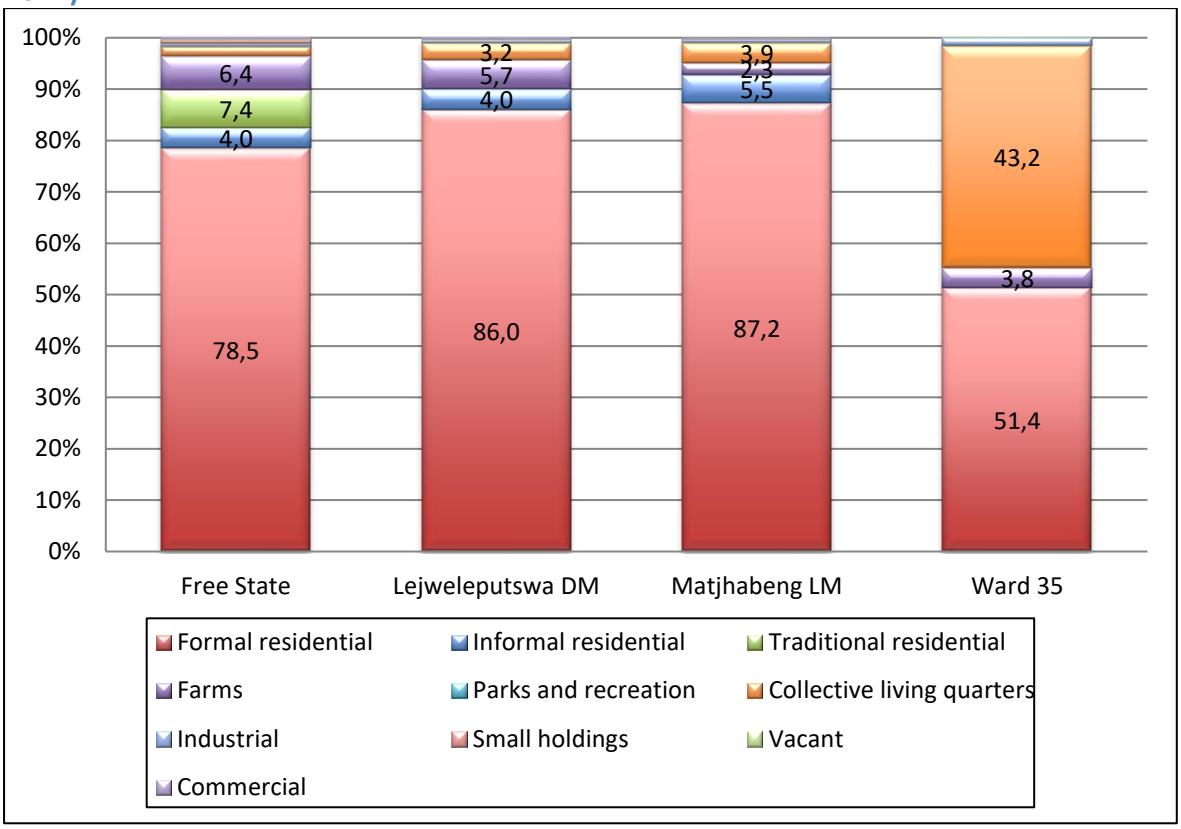
On a ward level the majority of households live in areas classified as urban.

Table 6: Geotypes (source: Census 2011, households)

Area	Urban	Tribal/Traditional	Farm
Free State Province	84.5	8.8	6.7
Lejweleputswa DM	93.9	0.0	6.1
Matjhabeng LM	97.7	0.0	2.3
Ward 35	94.5	0.0	5.5

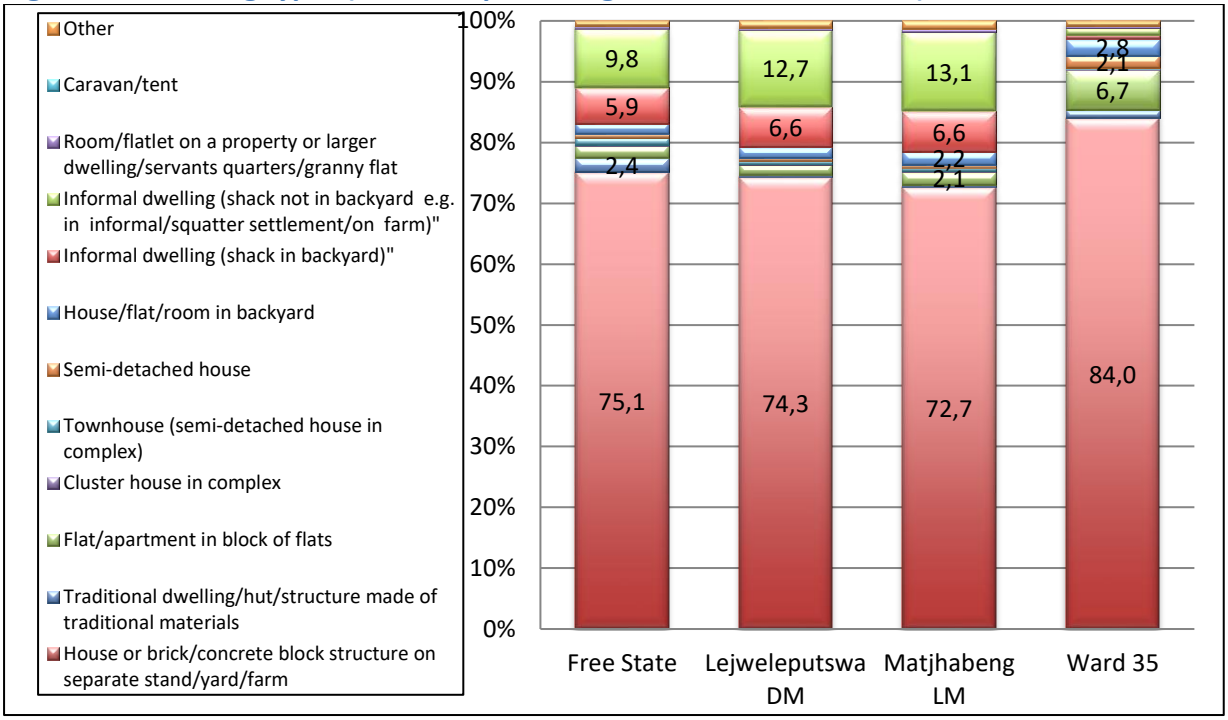
Most households live in formal residential areas (Figure 13), with about two fifths of households in Ward 35 residing in collective living quarters.

Figure 13: Enumeration area types (persons, shown in percentage, source: Census 2011)



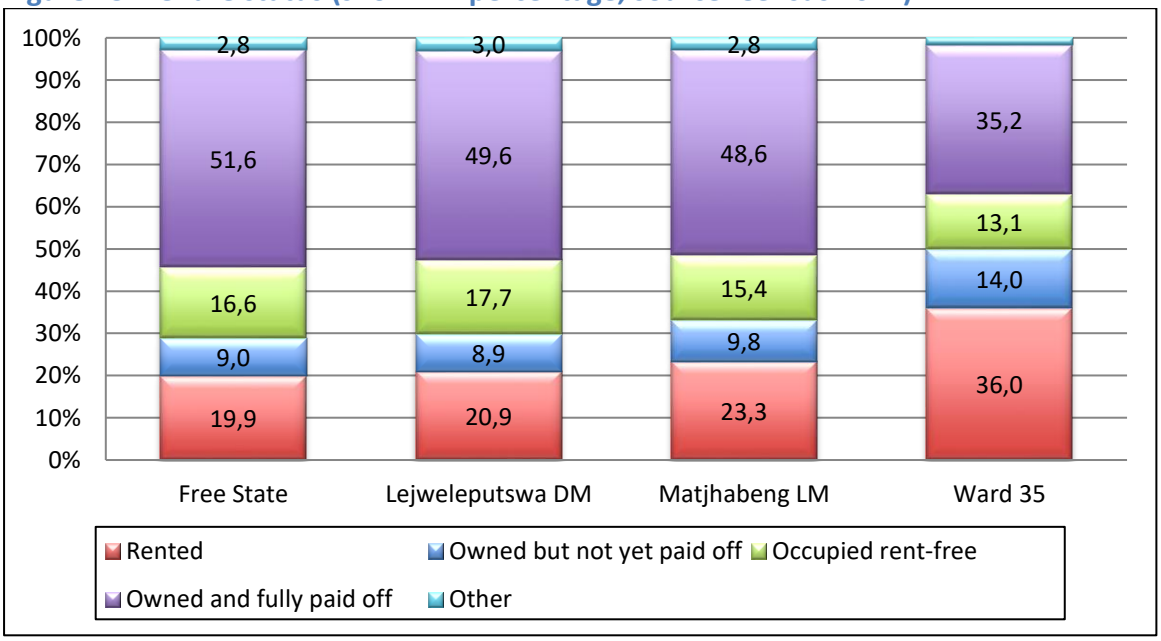
Most of the dwellings in the area are houses or brick/concrete block structures that are on a separate yard, stand or farm (Figure 14). Although there are informal dwellings in Ward 35, it is a lower proportion than on local, district or provincial level.

Figure 14: Dwelling types (shown in percentage, source: Census 2011)



Ward 35 has the largest proportion of households that are renting their dwellings (Figure 15), with about a third of the households renting their dwellings.

Figure 15: Tenure status (shown in percentage, source: Census 2011)

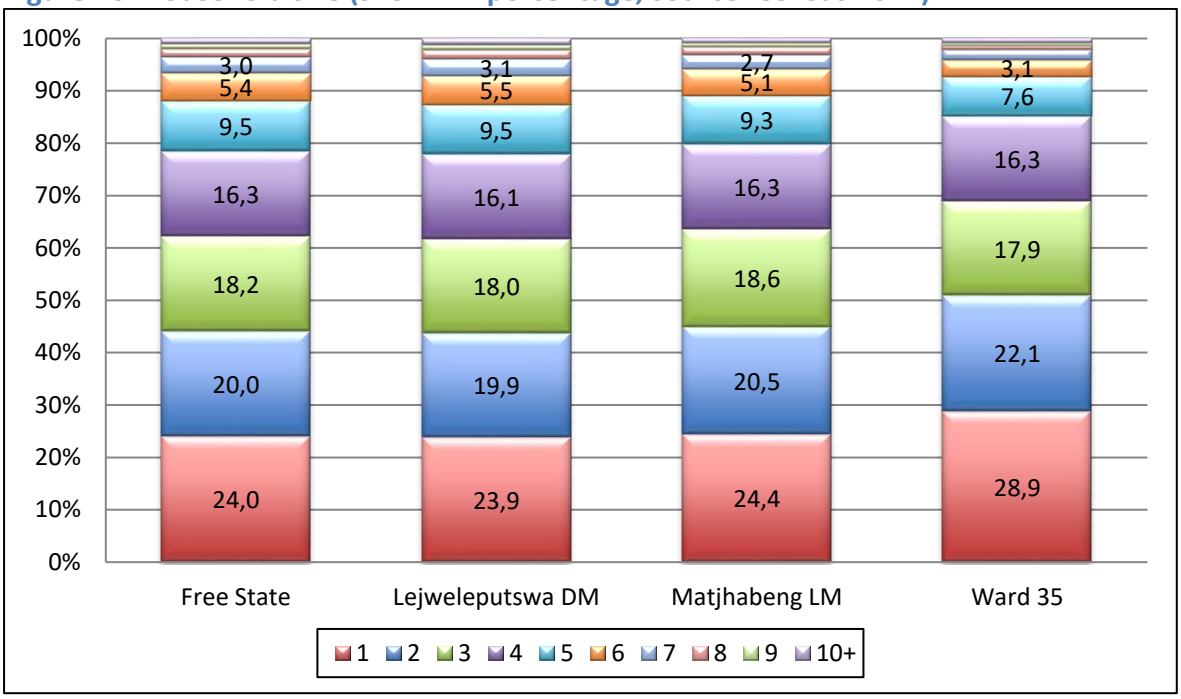


5.2.9 Household Size

Household sizes on a ward level in the Matjhabeng LM tend to be smaller than on local, district or provincial level (Figure 16), with approximately 50% or more of households

on ward level consisting of one or two people, compared to just over 40% on local, district and provincial level. This is very typical in mining areas where there are migrant workers.

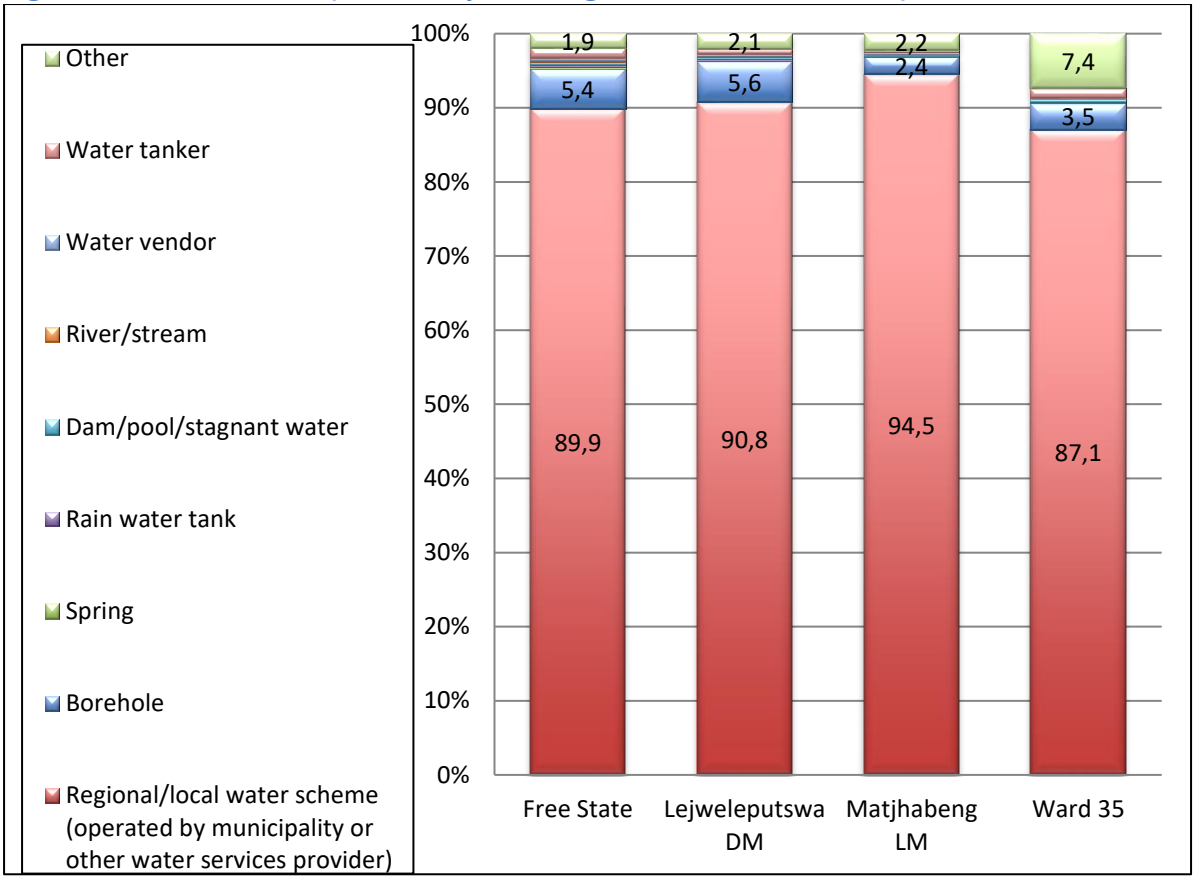
Figure 16: Household size (shown in percentage, source: Census 2011)



5.2.10 Access to water and sanitation

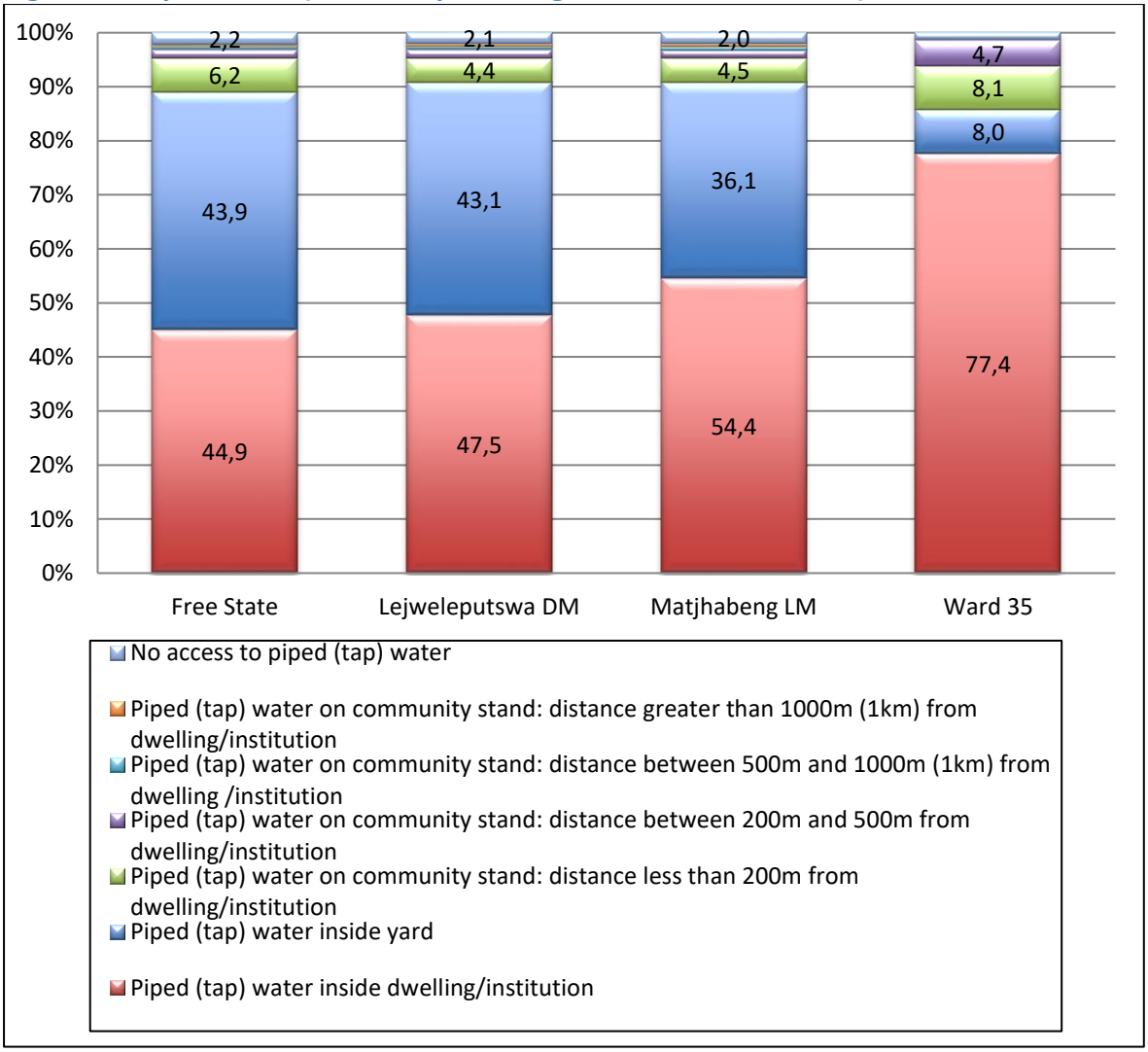
Ward 35 has the lowest incidence of households that access to water from a local or a regional water scheme, but the highest incidence of households that get their water from another source (Figure 17). Census 2011 does not specify what the 'other' water sources include.

Figure 17: Water source (shown in percentage, source: Census 2011)



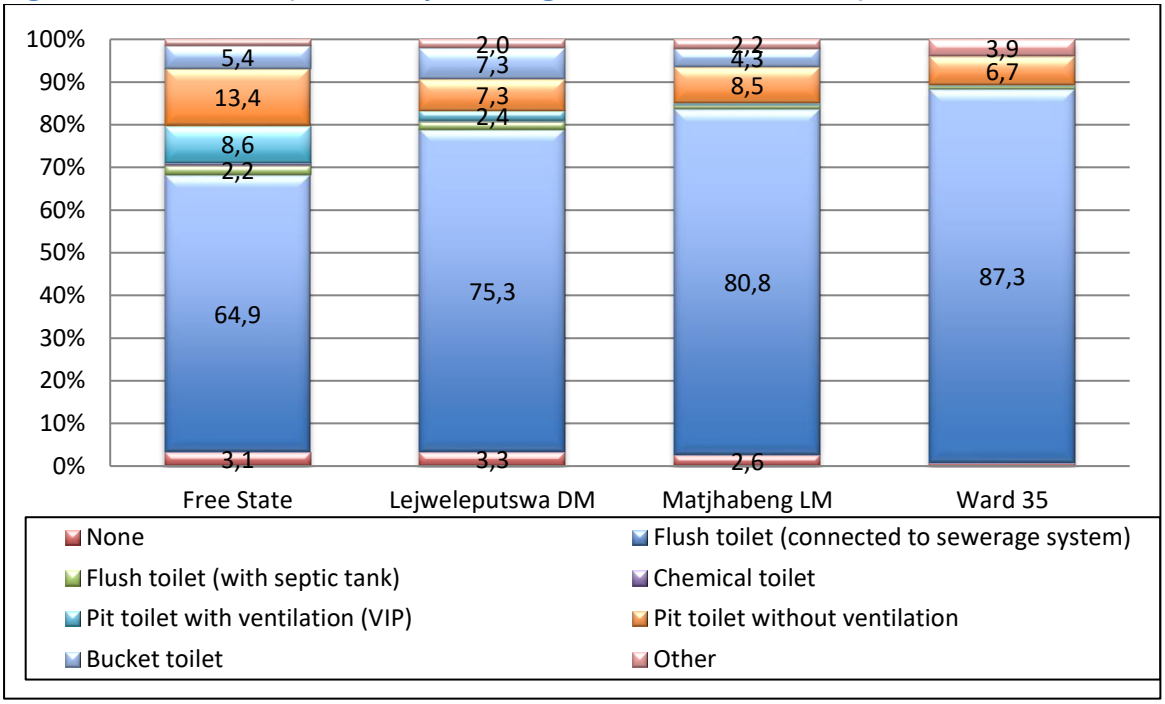
Access to piped water, electricity and sanitation relate to the domain of Living Environment Deprivation as identified by Noble et al (2006). Just over three quarters of households in Ward 35 has access to piped water inside the dwelling (Figure 18). This is much higher than on local, district and provincial level.

Figure 18: Piped water (shown in percentage, source: Census 2011)



The majority of households in Ward 35 have access to any sanitation services (Figure 19), with the bulk of the households in the ward having access to flush toilets that are connected to a sewerage system.

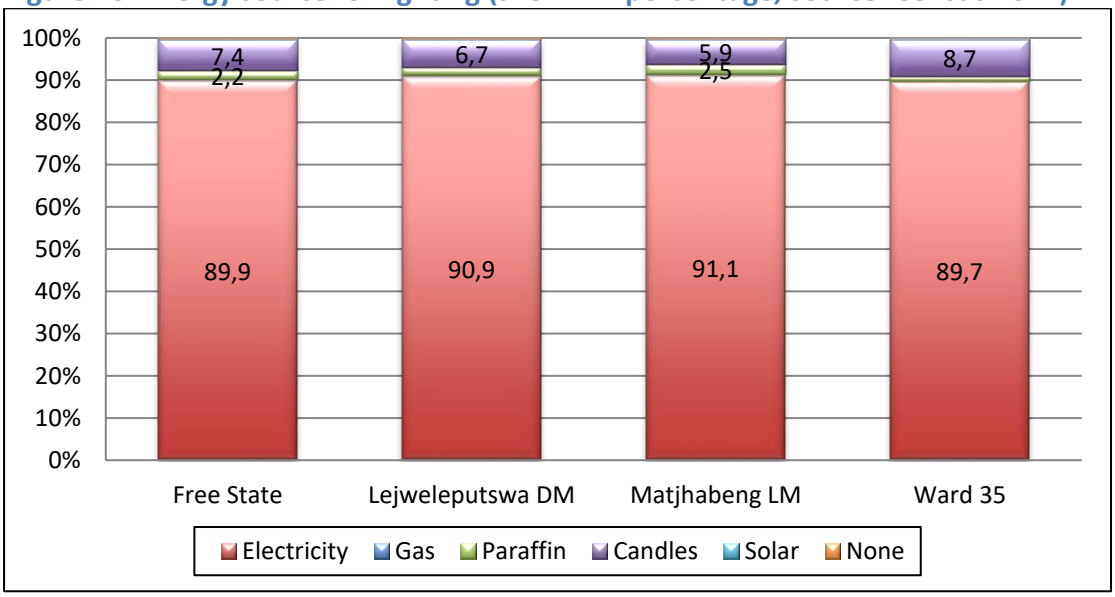
Figure 19: Sanitation (shown in percentage, source: Census 2011)



5.2.11 Energy

Electricity is seen as the preferred lighting source (Noble et al, 2006) and the lack thereof should thus be considered a deprivation. Even though electricity as an energy source may be available, the choice of energy for cooking may be dependent on other factors such as cost. Almost 90% of households have access to electricity as energy source for lighting (Figure 20), with candles the second most used source.

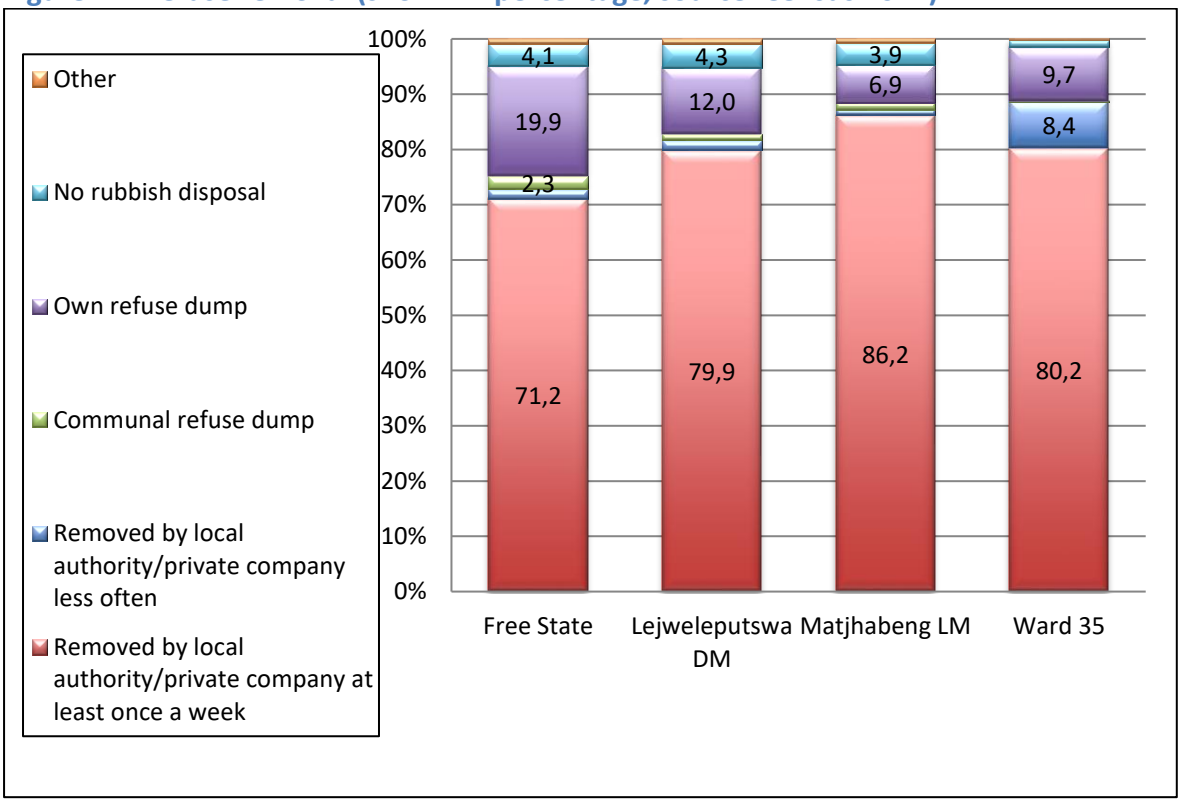
Figure 20: Energy source for lighting (shown in percentage, source: Census 2011)



5.2.12 Refuse removal

The incidence of households that have their refuse removed at least once a week by a local authority or private company (Figure 21) in Ward 35 is lower than on municipal level, with a larger proportion than on local, district or provincial level that indicated that their refuse is removed less frequently than once a week.

Figure 21: Refuse removal (shown in percentage, source: Census 2011)



6 Stakeholder Identification and Analysis

6.1 Approach

Stakeholders include all individuals and groups who are affected by, or can affect, a given operation. Stakeholders consist of individuals, interest groups and organizations (Vanclay, Esteves, Aucamp & Franks, 2015). Stakeholder analysis is a deliberate process of identifying all stakeholders of a project - the individuals and groups that are likely to impact or be impacted by it - and understanding their concerns about the project and/or relationship with it (Vanclay et al, 2015). Stakeholder analysis assists the proponent with understanding the local cultural and political context. It is acknowledged that different stakeholder groups have different interests, and that there are individual differences within stakeholder groups.

The purpose of this section of the report is to introduce the stakeholder groups that will be affected by the proposed projects. The following stakeholder groups were identified and their interest in the projects will be discussed briefly in the section below.

- Internal stakeholders;
- Government;
- Business;
- Farmers;
- Environmental; and
- Residents/communities.

The **internal stakeholders** include the employees of Harmony Gold, the board of the mine and all the shareholders. The internal stakeholders are supportive of the project since it will increase the life of the mine and profitability. It will also assist them with controlling their environmental impact and increasing dam safety when constructing a new TSF. The stakeholder relations department of Harmony is also an internal stakeholder. Participants claimed that they do not trust the stakeholder relations staff from the mine, as they often do not turn up for meetings, or they refuse interaction

with ward councillors. Direct neighbours claim that they do not have a specific person in Harmony to engage with as there seem to be a high staff turnover and the spokesperson keeps on changing. They also claim that there is no environmental forum that meets regularly and keep them informed about the monitoring results, especially water monitoring. According to the participants, Harmony makes lots of promises, but does not deliver on the promises. To quote a participant: *"Where the mine is involved, there is always chaos".*

Government stakeholders include national, provincial, and local government. The national and provincial departments of Mineral Resources and Energy, Water and Sanitation and Forestry, Fisheries and Environment (Department of Economic, Small Business Development, Tourism and Environmental Affairs in the Free State province) are the most important government stakeholders in their capacity as decision-makers and regulators. Water pollution and dust is a major problem in the area. Participants claimed that the government departments do not care about the communities, and they feel that their needs are simply ignored. The farming community said that the Department of Water and Sanitation is aware of their issues and problems but does not stand up to the mine to force them to address the issues. Other government stakeholders include the Lejweleputswa District Municipality and the Matjhabeng Local Municipality. Communities said that they do not trust the local municipality due to a lack of service delivery and responses to their problems. It is reported that politics interfere with the successful running of the municipality. With the elections planned for 2023 everything is politically motivated. A participant in the study said: *"The politics in the area are cut-throat. Things spin out of control easily and result in social and political unrest."*

Business stakeholders include all the local and regional businesses that provide services to the mines and communities. This includes primary services such as different types of contractors, and secondary services such as the food and hospitality industry.

The proposed site is surrounded by **farmers.** It includes commercial and commonage farmers. The farmers mainly farm with cattle. One of the farms next to the proposed

site has been in the family for more than 120 years and was established before the mine started. The water and soil next to the existing TSF are heavily polluted. Farmers can no longer use their boreholes for drinking water for themselves or their livestock, and the mine provide water to some farmers, but not to everyone. Farmers claim that the water is so polluted that in some instances the bath water makes people sick. The chemicals in the water also pollute the soil. According to the farmers the municipality's sewage facility does not operate optimally, some of the sewage pipelines are cracked and broken, and the result is that sewage water mix with the water from the TSF and this makes an already bad situation worse. Fences and fence poles rust because of the acid water, and they must constantly replace their fences. They claimed that one of the slimes dams has burst and the water, combined with sewage water keeps on polluting their properties. They allege that the dams were not fixed after breaking. They are also concerned about the impact should a larger TSF fail, especially in the light of the Merriespruit disaster in Virginia during 1994. Dams on the farms are so polluted that the barbel climb out of the dam and die next to it, rather than staying in the water. There used to be yellow fish and carp in the dams, but it no longer occurs. Storm water control also seems to be a problem.

Another problem is the lack of rehabilitation on the existing TSFs. The white dust covers the ground and all the plants. This prevents plants from photosynthesising and also pollute the soil. Farmers indicated that red grass no longer grow on their properties, and that the soil has become sterile. They feel that their properties have lost all value, and that they are already unable to sell it, mostly due to the lack of potable water. As a farmer stated: *"They are taking our future away from us. We are stuck in a corner, we cannot move forward or backwards, our land is sterile and worthless"*. One of the direct neighbours said that they had to start decreasing their farming activities since 1981, due to the decrease in soil productivity and water issues. The carrying capacity of the farms has decreased by about 50%. A decrease in the number of calves born has also been reported. A number of the farms in the area are earmarked for commonage farmers through the land restitution process. These farmers also bear the negative consequences of the current TSFs. Cattle theft is a challenge for all farmers, commonage and commercial. There are many zama-zamas

(illegal mineworkers) in the area, and they contribute to the cattle theft and general sense of safety. Zama-zamas steal the cattle and throw them down the unused mine shafts to provide food for people working illegally.

People have health concerns related to pollution – these include sinusitis, asthma, allergies, and other respiratory diseases. Burning eyes and nosebleeds has also been reported.

There are **environmental** groups and activists present in the area. Some of the groups are local activists, but rights organisations that operate on a national level also have an interest in the area. The main concern is the impact of the pollution (water and air) on the human rights of the current residents. The rights of a future generation to a clean environment are another consideration.

The **residents and communities** close to the proposed project site have all been affected by the dust generated by the current TSFs. One of their main concerns and expectations are job creation. Any potential new activities raise community expectations, and there has been social unrest due to hiring practices that was perceived as unfair. Service delivery is a major challenge and another source of social unrest. Communities feel as if the municipality is taking no responsibility for their lack of service provision, and there is a perception that mines *"just pack up and leave, without considering their legacy."* The communities are poor, and many survive on SASSA for grants or pension. People are desperate for jobs. Directly affected communities include Rheederpark Extension 2, Jabulani Village and Reahola Housing Association. Other issues in these communities include service delivery (especially water and sanitation), streetlights, and road conditions. The unemployment rates in Rheederpark are estimated to be around 90%. Jabulani and Reahola have higher rates of employment. In Reahola there are 209 title deeds, but only 5 of these have been transferred. The communities indicated that they feel that there is very little benefit for them coming from the mine.

7 Description of potential impacts

7.1 Social Impact Assessment

> *"Almost all projects almost always cause almost all impacts. Therefore, more important than predicting impacts is having on-going monitoring and adaptive management."* Frank Vanclay

Considering the statement above, it must be considered that some social impacts will not be discussed in detail and that the focus will be on the most severe impacts. The focus should rather be on the active management of social impacts than on the prediction and once-off mitigation thereof. Successful mitigation and management of social impacts requires long-term commitment and involvement and should form part of the strategic planning and management of the project until decommissioning. Suggestions for the management of social impacts are included in the report in the form of a social impact management plan (SIMP). The implementation of the relevant management suggestions should start as soon as possible since the social impacts of the project started when the project was announced. Another important consideration in this project is the social context in which it will be executed. Impacts are assessed from a community perspective, and where it will influence a specific group of stakeholders it will be indicated as such. An attempt was made to simplify the impact assessment and to focus on aspects that can aid the decision-making process.

Social impacts are the result of social change, and to fully understand the potential impacts it is important to know the impact pathways. A social change process is a discreet, observable, and describable process that changes the characteristics of a society, taking place regardless of the societal context (that is, independent of specific groups, religions etc.). Social change processes can be measured objectively. The way in which social change processes are perceived, given meaning, or valued, depend on the social context in which various societal groups act. Some groups in society are able to adapt quickly and exploit the opportunities of a new situation. Others (e.g. vulnerable groups) are less able to adapt, and will bear most of the negative consequences of change. These social change processes may, in certain circumstances

and depending on the context, lead to the experience of social impacts. Social impacts are therefore completely context dependent (Vanclay, 2003).

7.2 Impact assessment criteria

The impact tables and ratings were adapted from the environmental sciences and that it is not always possible to compartmentalise the social impacts. For the sake of consistency this has been attempted, but it is not innate to social sciences. Allowance for the changing and adaptive nature of social impacts should be made when interpreting the impact tables.

The rating criteria used in determining the significance ratings are summarised in the tables below:

Table 7: Criteria for determination of impact consequence.

Aspect	Score	Definition
Nature	- 1	Likely to result in a negative/ detrimental impact
	+1	Likely to result in a positive/ beneficial impact
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site
	5	Provincial / National (i.e. extends beyond 50 km from the site)
Duration	1	Immediate (<1 year)
	2	Short term (1-5 years),
	3	Medium term (6-15 years),
	4	Long term (the impact will cease after the operational life span of the project),
	5	Permanent (no mitigation measure of natural process will reduce the impact after construction).
Magnitude/ Intensity	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected),
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected),
	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way),
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease), or
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease).

Reversibility	1	Impact is reversible without any time and cost.
	2	Impact is reversible without incurring significant time and cost.
	3	Impact is reversible only by incurring significant time and cost.
	4	Impact is reversible only by incurring prohibitively high time and cost.
	5	Irreversible Impact

Table 8: Probability scoring.

Aspect	Score	Definition
	1	Improbable (the possibility of the impact materialising is very low as a result of design, historic experience, or implementation of adequate corrective actions; <25%),
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur),

Table 9: Criteria for the determination of prioritisation.

Aspect	Score	Definition
Cumulative Impact (CI)	Low (1)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.
	Medium (2)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	High (3)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.
Irreplaceable loss of resources (LR)	Low (1)	Where the impact is unlikely to result in irreplaceable loss of resources.
	Medium (2)	Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.
	High (3)	Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).
Degree of Confidence	Low	<30% certain of impact prediction
	Medium	>30% and <60% certain of impact prediction
	High	>60% certain of impact prediction

7.3 Social impacts and mitigation

This section describes and assesses the specific social impacts that will be associated with the proposed Nooitgedacht TSF. When the mitigation and management of social impacts are considered, one must consider that social impacts occur in communities surrounding the proposed project, and although the project proponent may be the catalyst for some impacts, there may be a number of external factors contributing to the impact. Many of these factors are outside the control of the project proponent. The proponent cannot mitigate many of the social impacts alone, and partnerships with local government and Non-Profit Organisations are often required. Social impacts must be managed in the long term. This complex process requires insight in the social environment and community dynamics. The social environment adapts to change quickly, and social impacts therefore evolve and change throughout the project cycle.

7.4 Social impacts

Sources of social impacts are often not as clear-cut as those in the biophysical environment. Social impacts are not site-specific but occur in the communities surrounding the proposed site – where the people are. Mitigation measures are context specific and the mitigation measures in this report should be viewed as guidelines.

7.4.1 Existing and cumulative impacts

Given that Harmony Mine has an existing TSF in close proximity to where the new facility is proposed, it must be considered that many of the impacts are existing impacts. When considering existing impacts, the complexity of the social environment must be contemplated. Social impacts are not site-specific but occur in communities surrounding the site. The activities taking place in the area surrounding the project site has also caused a number of impacts. From a social perspective it is not possible to pinpoint which percentage of any given impact result from a specific activity or proponent. For example, agricultural, tourism and mining activities may cause an influx of people into an area due to the possibility of employment creation. It is not possible to say, for example, that 30% of people moving into the area looked for an

agricultural job, 60% for a mining job and 10% for a tourism job. It is possible to say that all these industries contributed to the honeypot effect (project-induced in-migration where people move to the project site in search of work or economic opportunities that arise from the project) that compounded unemployment in the area. Harmony and its activities are not the only responsible party for the existing social impacts in the area, but the mine does contribute greatly to these impacts, and will continue to do so through the life of mine. The following existing impacts that are associated with mining are experienced in the community:

7.4.1.1 Environmental impacts with social dimensions

- Water quality and availability – Jones and Wagener compiled a report in 2014[2] about the dire status of the water resources surrounding the current TSF. Access to potable water is a primary human right that is protected in the South African constitution and recognised globally.

- Acid rain erode fences and other structures very quickly, meaning the farmers must replace this infrastructure more frequently than usual.

- Dust/air pollution – dust from the current TSF in the area is a huge problem (Figure 22). This has health, quality of life and livelihoods impacts and also impact on the right to live in a clean environment that is not detrimental to your health.

[2] Harmony Gold Mining Company LTD. Desktop Review of the Geohydrology and Ground Water Quality at Dankbaar Pan, Final Report. JW204/14/E756-Rev 1. November 2014. Jones & Wagener.

Figure 22: Example of dust pollution

7.4.1.2 Economic impacts

- Job creation – Especially in the lower socio-economic groups, each income can support a number of family members and dependents through remittances.

- Competition for jobs – South Africa has an unemployment rate of 32,6% in 2023, one of the highest in the world. There is therefore a high demand for available jobs.

- Skills development – according to the requirements of the MPRDA the mine is required to have skills development plans. This is not only to the advantage of the contractors and employees, but also benefit people from the local community. The MPRDA requires that skills development must focus on transferable skills that can be used outside of the mining industry. Harmony has an extensive skills development plan. In their approved Human Resources Development plan that forms part of their Social and Labour Plan they made provision for Adult Education and Training, Learnerships and Skills Development (Harmony SLP 2018-2022, Free State Operations).

- Social and Labour Plan – according to the MPRDA the mine is required to have a Social and Labour Plan (SLP). The SLP commits to significant investment in the surrounding communities. The SLP projects identified in the 2018-2022 cycle included:
    - LED Strategy for Matjhabeng
    - Improvement of road infrastructure
    - Development of youth business corners
    - Industrial Development, SMME Development, Agriculture
    - Community training centre
    - Projects in labour sending areas (not specified which areas in SLP)
    - Virginia Jewellery project
    - Virginia Sports Academy

These projects were identified in the 2018 -2022 SLP cycle. The 2023 -2027 SLP was not available at the time of writing this report.

7.4.1.3 Impacts on infrastructure

- Traffic congestion and potential road surface damage through movement of construction materials, mine products and transport of staff.

- Infrastructure in the Matjhabeng LM is not well maintained. There are existing issues with road maintenance, service delivery and municipal sewage contaminating some of Harmony's infrastructure, which caused an overflow of dams and flooding of roads. People are concerned that the TSF may fail, and this would cause a social and environmental disaster.

7.4.1.4 Community-based impacts

- Community expectations – the community expect benefits because of the proximity of the mine to the community.

- Community relations – According to stakeholders, there is a history of mistrust and tensions between Harmony and the farmers and communities. A lot of the mistrust are due to environmental issues such as water and dust and the perceptions of the stakeholders that Harmony are not addressing their concerns, despite promises made.

- Influx of people into the area and illegal miners (zama-zamas). Local people are concerned about the safety impacts of illegal mining in the area. This include fear of crime such as cattle theft, assault, theft and murder; fear of structural damage to the land and arson.

- Health impacts - The spread of diseases such as HIV/AIDS and Tuberculosis are an existing problem in the local area.

7.4.2 Social impacts specific to the proposed Nooitgedacht TSF

The following impacts will be triggered by the proposed Nooitgedacht TSF. Some of the impacts are existing impacts but have been included here because it will be caused by activities associated with the TSF.

7.4.2.1 Impact on livelihoods

Description of impact

A livelihood refers to the way of life of a person or household and how they make a living, in particular, how they secure the basic necessities of life, e.g., their food, water, shelter and clothing, and live in the community (Vanclay et al., 2015). The farming community in the area is close-knit, and the majority of stakeholders that will be affected by the project rely on farming as a livelihood, in some cases for generations. This includes vulnerable parties like farm workers. The farms are not only their homes, but their businesses. They generate their income from the land. Any aspect that impacts on the ability of a farmer to make a living from his/her land can be seen as an impact on his/her livelihood. The majority of farmers in the area farm with livestock. They report a decrease in the carrying capacity of the land and the birth rates of the livestock. According to the farmers all red grass, an important source of food for the

livestock, has disappeared from the area. The farmers feel that they are stuck with farms that have no value and cannot be sold due to the current pollution levels.

There are three major impacts on the livelihoods of the farming community. The first is the cumulative impact on water sources. Harmony provides water to the direct neighbours, but not to all the affected farmers downstream or on the commonage. Harmony stated that they currently spend in excess R1 million annually to provide water to impacted farmers around and to the west of the proposed Nooitgedacht TSF site.

This is a legacy commitment dating back to pre-harmony ownership, which Harmony has honoured and is continuing with. Farmers claim that they are no longer able to use their boreholes due to the water quality – the water is not safe for human or animal use. Although the water points are outside of the applicable TSF, farmers stated that the proposed TSF will block some of the access roads to the current water delivery points. This means that farmers will have to build pipelines and pump water to camps for their animals at their own cost. According to Harmony, they do not know what water delivery points the farmers refer to, and they deliver the water to the points established by the affected landowners.

Another issue is the management of storm water(mine) and sewage (municipality). Farmers claim that it is not managed well at the moment, municipal sewage is pumped into slimes dams and storm water trenches, and contaminated storm water ends up in the Mahemspruit, an intermittent stream in the area, causing pollution for kilometres downstream. Farmers feel that their land has been sterilised by the water and dust pollution, and that they have been forced to decrease farming activities since 1981.

The second impact on the livelihoods of the farmers is the white dust that settles on the soil and plants. Farmers claim that it has an impact on the productivity of the land, as plants cannot photosynthesise, and the soil is less fertile. Plants are less palatable to the animals, and when the animals eat the plants, they also ingest the white dust, which farmers believe is poisonous to their livestock. Farmers reported that the productivity of the land is already compromised, and that the birth-rate of livestock

has decreased significantly. The construction of the new TSF will compound these issues.

The third impact on livelihoods is related to fences. Farmers indicated that fences corrode very quickly, and that they are constantly replacing fences. They claim that a fencepost can disintegrate within a year. The farmers need to keep their cattle on their property, but with the bad state of fences it is easier for people to cut the wires and steal cattle. With the construction activities associated with the new TSF there will be more activities and people in the area, and sturdy fences become even more important. The new TSF should also be fenced when operational, with fences strong enough to keep people and livestock out of the area.

Any negative impact on the livelihood of a farmer impacts on farmworkers, who are much less resilient. Many of the affected people have dependents such as elderly parents and young children, in addition to their workers. Impacts on livelihoods are seen as some of the most significant impacts from a social perspective, as the ripple effect of this impact can be felt on so many levels, and people always experience this impact severely on a personal level.

Table 10: Potential mitigation for impacts on existing livelihoods.

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
1.	Harmony must establish an environmental forum that include all the affected farmers - neighbouring and downstream. Results of water and dust monitoring must be shared with the public through the forum.	All phases	Throughout the life of the project	Harmony	The environmental forum must meet at least three times a year. Minutes and records of each meeting should be kept.	Inform the directly affected farmers about the impact of the mine on their properties	Minutes of meetings
2.	If access to current water delivery points is affected by the placing of the new TSF new points must be determined with input from the farmers. These points must be easily accessible. If water pipes are required, the mine must provide and install the pipes.	Pre-construction phase Construction phase	Before the construction start and during the construction phase	Harmony	Duration of the construction phase.	Ensure that people and livestock always have access to potable water.	Water delivery contract with affected farmers.
3.	Dust suppression activities should be	Construction Operation	As soon as activities on	Harmony Environmental	Daily during construction	Protect the livelihoods of	Monitoring results Proof that results

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
	conducted as prescribed by the relevant specialist.		site commence until the decommissioning phase	Officer	Weekly during operation.	landowners against negative environmental impacts	has been shared with the affected land owners.
4.	If investigations prove actual losses due to the activities performed by Harmony, Harmony will enter into discussions with the landowner. Where compensation is required, it should follow the IFC principles, which states that market related prices should be paid, and if anything is restored, it must be to the same or better standards than before.	All phases	Commence in the planning phase and continue throughout the life of the project	Harmony CLO	As required – claims received by CLO and records of all claims must be kept	Ensures that landowners do not suffer actual losses because of the project.	Claims register Completed claim forms
5.	If areas are fenced, the fences must be checked on a daily basis [AM1] for the duration of the construction period. All broken fences must be reported to the farmer and the Harmony CLO.	Construction	Throughout the construction period	Harmony	Daily[AM2]	To ensure no harm is done to livestock	Record of inspections

7.4.2.2 Community expectations and social license to operate

The Matjhabeng LM is highly politicised and experience frequent service delivery protests. The areas closest to the proposed TSF are Rheederpark Extension 2, Jabulani Village and Reahola Housing Association. Farmers and community members expressed that they do not feel that Harmony has a social license to operate from the local people. They claim to that the community spokesperson for Harmony constantly changes and often makes commitments that are not met. Farmers said that they have become emotional about the issues, because it feels as if nothing that they do makes any difference. Community members feel that they do not receive any support from the mine, and that at the end of the life of the mine, it will pack up and leave without considering the people that are left behind. Due to the mistrust, and the expectations that some community members have, there is a strong possibility of local conflict. The current reality in South Africa is that communities tend to resort to violent protests if they feel that they are not heard. There is a risk that lives can be in danger and property damaged during these protests, and the mine should have emergency procedures in place should there be protests of this nature that endangers its assets and the lives of staff and community members.

Although some of the community expectations are realistic, the extent to which the mine can meet some of the expectations are limited. Unless the expectations of the community are managed carefully, this impact may pose a significant risk to the mine, on different levels.

Despite the negative feedback from stakeholders, it must be considered that Harmony delivers benefits to a broad range of stakeholders through the creation of primary and secondary economic opportunities, the Harmony Gold Community trust and provisions of the Social and Labour plan. Mining plays an important role in the local, regional and national economy. The Tshepong mine employs approximately 9000 people, whilst the Masimong,Unisel and Saaiplaas operation provides approximately 2600 job. Both operations provide ongoing skills development and training.

SLP projects in the 2023 -2027 cycle include the following:

- Impound Facility and Livestock Auction Cente
- Commercial and Industrial Agriculture Project
- Lesotho School Project
- Mobile study and development project

The ongoing projects which Harmony will drive in the new plan will be as follows:

- Waste water infrastructure development project infrastructure development project;
- Ongoing Youth Development.

Potential types of costs of conflict between mines and communities are explained in Table 11 below:

Table 11: Types of cost to company as a result of community conflict.

Types of cost to company	
Security	• Payments to state forces or company security contractors. • Increased operational cost of security: fences, patrols, escorts, transport, alarm systems, reduced mobility. • Increased security training and management: staff time, lost production, costs of programs.
Project modification	• Design modification costs: application, redesign, legal. • Additional works.
Risk management	• Insurance: higher premiums and coverage, risk rating, withdrawal of coverage. • Legal and conflict expertise: specialist training for staff, additional staff.
Material damage	• Damage or destruction of private property or infrastructure. • Damage or destruction to public property or infrastructure.
Lost productivity	• Operations discontinued: voluntary closure or enforced through injunction. • Temporary shutdown of operations. • Lost opportunity for future expansion and/or for new projects. • Disruption to production: temporary or indefinite delays, absenteeism. • Delays in deliveries/supplies. • Greater regulatory burden/scrutiny.
Capital	• Loss of value of property: full write-off, other depreciation, sale at a loss, theft. • Inability to repay debt or default on debt. • Difficulty raising new capital. • Share price instability/loss in value (within relevant time period).
Personnel	• Staff time spent on risk and conflict management. • Costs of remediation: meetings, negotiations, mediators. • Hostage-taking: ransom payments, rescue operations, compensation. • Arrests of staff.

	• Injuries to staff and fatalities. • Low morale and stress-related effects. • Retention: higher salaries, compensation packages, bonuses. • Recruitment: advertising positions, screening, interviewing, induction training.
Reputation	• Higher expenditure on public relations: consultants, dissemination of information. • Competitive loss/disadvantage: impact on brand, investor confidence.
Redress	• Compensation (out of court payments). • Fines. • Increased social and environmental obligations: health care, education and training, provision of other services, clean-up and remediation costs. • Costs of administrative proceedings or litigation: costs of proceedings themselves, judgment/settlement costs.

Adapted from Davis & Franks, 2014

Table 12: Mitigation measures for impacts relating to community expectations and social license to operate.

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
1.	Harmony must continue to invest in their Stakeholder Relations Division	Design and planning, Construction Operation Decommission	Commence in the planning phase and continue through to the decommission phase of the project	Harmony Management	N/A	Manage social and community aspects of the mining operation	A functional and Effective Stakeholder Relations Division with a Stakeholder Relations Manager and Community Relations Officer
2.	Harmony must continue to implement their grievance mechanism and ensure that it is community-friendly. Harmony must continue to address and keep record of community grievances. Harmony must continue to keep a grievance register. It is important to have documented evidence of community/mine interactions. This will assist the mine to track the issues, and the community to see what actions the mine has taken.	Design and planning, Construction Operation Decommission	Commence in the planning phase and continue through to the decommission phase of the project	Stakeholder Relations Manager (SRM) Community Liaison Officer (CLO) Community groups Mine management	Grievance register must be checked on a weekly basis. Feedback to community about grievances must be done on a monthly basis by the CRO to the SRM	Record, track and address grievances	Grievance register Monthly feedback reports

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
3	The mine must include planning and budgeting for external conflict situations (such as roadblocks or invasions) in their emergency response procedure and ensure that their current insurance remains updated. They must also periodically review their stakeholder engagement plan to guide their interaction with stakeholders	Design and planning, Construction Operation Decommission	Commence in the planning phase and continue through to the decommission phase of the project	SRM CLO Safety manager	Review the emergency response procedure and stakeholder engagement plan once a year	Ensure all staff knows what action to take in a conflict situation	Emergency response plan Stakeholder engagement plan

7.4.2.3 Health and wellbeing

The proposed construction of the TSF will create dust, which will continue in the operational phase of the project. The dust potentially has health impacts and impact on the grazing areas of farmers. Dust is also a significant nuisance factor, because even if it is within the legal limits, it is something that is visible to the communities. Communities report that they suffer from asthma, sinusitis, nose bleeds and allergies, which they ascribe to the dust.

People also report that vulnerable parties such as children and the elderly became ill as a result of bathing in the untreated borehole water downstream. The fact that the farmers do not have access to potable water even though they do have boreholes and surface water on their properties and need to rely on external parties (the mine) for water, is another concern that affects their wellbeing. The farmers feel that the establishment of a new TSF will increase the already negative impact.

Illegal mine workers(zama-zamas) are a problem in most mining areas in South Africa, and the South African national Defence Force have been deployed to assist the South African Police Service. As such, the presence of illegal mine workers and open shafts are also a concern in the social area of influence of the proposed project. Farmers claim that illegal mine workers steal their cattle and throw the carcasses down abandoned shafts to provide food for the people working underground. The farmers claim that the mine does not close the abandoned shafts, making it easy for the illegal mine workers to enter the shafts. They also allow the illegal mine workers to continue with their activities and reign of terror. The illegal mine workers are often heavily armed, and farmers and community members are too scared to get close to them. Harmony responded that they have a full security team deployed with one of its duties to track down and apprehend the illegal miners. The mine also stated that they are in the process of rehabilitating many of the shaft areas which include the sealing of the shafts to prevent illegal mining activities.

Apart from the zama-zamas there are also other criminal elements in the area, causing a general feeling of unsafety. The lack of fences aggravates this aspect. The

farmers and communities fear that during the construction period when there is an increase in activity around the site it may provide new opportunities for the criminals already active in the area.

Although the likelihood is low there is always a risk that a TSF may fail, with dire consequences to people and the environment. Farmers and communities living in the zone of influence of a TSF should be included in the emergency preparedness planning in case of such an event.

Table 13: Mitigation measures for health and wellbeing.

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
1.	The relevant specialists will provide scientific mitigation measures for the dust and water issues. From a social perspective it is important to continue to communicate the mitigation, monitoring and management measures to the affected parties. Ongoing rehabilitation can play an important role in minimising the impact.	Design and planning, Construction, Operation.	Commence in the planning phase and continue through to the operation phase of the project	SRM CLO Environmental Manager	As prescribed by specialists Feedback meetings arranged by SRM and CRO	Minimise the dust impact on the neighbouring properties and communities.	Minutes of meetings Monitoring results from relevant specialist studies.
2.	The SRM should establish relationships with the surrounding farmers. This can include a yearly courtesy visit and sharing of environmental data to keep the farmers informed. All meetings should be recorded, and records must be included in the communication register.	Design and planning, Construction, Operation.	Commence in the planning phase and continue through to the operation phase of the project	SRM CLO Environmental Manager	Once a year	Improve relationship with farmers to allow quick action should there be an incident	Meeting minutes with farmers Communication register
3.	The mine management should with	Design and	Commence	SRM	As prescribed by	Manage the	Monitoring results

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
	engage with the farmers about water supply. The negotiations must be recorded.	planning, Construction, Operation.	in the planning phase and continue through to the operation phase of the project	CLO Environmental Manager Harmony management	specialists Meetings with farmers to discuss water supply issues	impact on water in the farming community	from relevant specialist studies. Practical solutions implemented by the mine Minutes of meetings with farming community.
4.	Where recommended by specialists, conduct a water census and repeat periodically. Keep the affected people informed about the census and monitoring results. Share water monitoring results with farmers once a year.	Construction Operation Decommissio n	Use the design and planning phase to get communicati on channels in place	Environmental Manager SRM CLO Farmers	As prescribed by relevant specialists Yearly feedback to farmers	Build relationship with farming community and inform them in time about potential risks	Monitoring results Yearly report to farmers
5.	The mine must ensure that its properties are fenced, the fences are intact, and all abandoned shafts must be covered.	Construction Operation Decommissio n	Throughout the life of the mine and once mine is decommissio ned.	Mine management Health and Safety manager	To be checked on a monthly basis	Prevent illegal miners from entering mine property. Discourage cattle theft	Inspection report with action list for completed tasks.

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
6.	Harmony must investigate and where possible and feasible adopt and / or adapt the Global Industry Standard on Tailings Management for the new TSF	All phases	Throughout the life of the mine	Harmony	As per GISTM	Meet the GISTM requirements	As per GISTM

7.4.2.4 Economic impacts from a social perspective

The project will ensure job security for currently employed people, as they will be able to continue with their current jobs. This impact would be experienced on a wider level since it will allow them to meet the needs of their family members. During the construction of the Nooitgedacht TSF the peak manpower onsite will be 715 people, and approximately 185 people will be employed during normal operation. Wages that employees receive will increase their spending power in the study area. This will be especially beneficial to retail and other service providers. The job creation will be a significant positive impact during the construction phase. There are high levels of poverty and unemployment in the area, and this may cause significant competition for jobs. Communities indicated that job opportunities must be shared in a transparent manner and communicated widely. For general jobs they do not want the mine to use a list of people that qualify, but rather that names are thrown in a hat and drawn by a community member or the ward councillor. In the past competition for jobs caused significant conflict in the area, and therefore this aspect must be handled with care.

Apart from the direct economic impacts of the proposed project, there will also be secondary economic opportunities that can potentially benefit local service providers. The use of local service providers will ensure that the local economy benefits directly from the proposed project. The positive impact of the mine on the local economy will continue for the life of the mine. The SLP also commits to secondary economic development in the area, and if it is implemented as planned should be a significant contribution.

The mitigation measures are captured in Table 14 below.

Table 14: Mitigation measures for economic impacts from a social perspective.

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
1.	Skills development plans must be focussed on skills that the mine needs, and that are also transferable. Support must be given to people after the training to ensure that their newly acquired skills can be implemented.	Design and planning Construction Operation	Commence in the planning phase and continue through to the operation phase of the project	Skills Development Manager Harmony management	Yearly reviews of SLP and skills development initiatives.	Develop transferable skills in the local community.	SLP Training reports Number of people successfully trained and earning a living from the skills that they acquired
2.	The mine should put measures in place to ensure the most effective local employment strategy.	Design and planning Construction Operation Decommission	Use the design and planning phase to refine strategy	SRM CLO HR manager Local leaders such as ward councillors	Advertise available jobs on a quarterly basis	Communicate the availability of jobs to the community in a mutually agreed and accessible manner.	Number of people of the local community employed by the mine
3.	Harmony should ensure a fair number of **secondary economic opportunities** are	Construction, operation,	Throughout life of the	Harmony Local business	Review supplier list on a yearly	To ensure Harmony	Signed service provider

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
	given to local contractors. A percentage of goods as determined by Harmony and the relevant stakeholders must also be **procured** locally. Services and goods must be procured locally as far as reasonably possible. Aspects of this positive impact will occur by default when the construction force lives locally and they utilise local services and support local shops.	decommission, closure and rehabilitation	mine	chamber	basis	contribute to the local economy through secondary opportunities	agreements

7.4.2.5 Increase in social pathologies such as prostitution, sexually transmitted diseases, teenage pregnancies and alcohol and substance abuse

The construction of the tailings dam will include specialised construction teams. It is not clear where the construction workers will be housed, but it is anticipated that the levels of activities in the local areas will increase, especially during weekends. Depending on where they come from, workers will probably not be able to go home every weekend. People with access to more money and different value systems may mix with local community members.

In-migration triggers a dramatic rise in the "four M's": men, money, movement (influx), and mixing (i.e., the interaction between high and low disease prevalence groups). These factors are the conditions necessary to produce a surge in sexually transmitted diseases. Other drivers of the HIV epidemic that may be relevant for the project include high levels of alcohol and drug abuse, transactional and commercial sex, sexual and gender-based violence, migratory labour, poverty, income disparities and unequal access to prevention, treatment, and care. Another important consideration is the impact of contractors bringing in materials from other provinces, especially during the construction phase. The truck drivers are often required to stop overnight. The truck stops become "hot spots" with a considerable pull factor luring people with economic opportunities, including sex work. It is difficult to manage these transient factors, but it does contribute to the spread of the disease amongst transportation routes, and it is therefore important to consider the impact.

Given the high unemployment levels in the area, people may deploy livelihood strategies such as prostitution. Vulnerable parties such as young girls may also fall victim to sexual predators and there can be an increase in teenage pregnancies. Promiscuous behaviour can lead to an increase in the spread of sexually transmitted diseases. There may be an increase in alcohol and substance abuse due to these substances being more easily available.

Table 15: Potential mitigation impacts on social pathologies.

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
1.	Toolbox talks should include talks about the impact of promiscuous behaviour. Harmony should develop an in-house infectious diseases strategy to address health issues within the workforce and align the strategy with a community HIV strategy implemented by a non-profit organisation. Local schools and communities living close to the project must be included in the strategy. The strategy should include voluntary counselling and testing and training of peer educators. A workforce code of conduct should be developed to maximise positive employee behaviour in the local community, and optimise integration	Construction	Align with the construction period	Harmony Health care service provider NPO	SRM and CLO to ensure strategy implemented in construction phase. If needed can be repeated in other phases as well	To create awareness about social pathologies and the spread if diseases	In-house infectious diseases strategy Voluntary testing and counselling events organised Trained peer educators Accepted workforce code of conduct
2.	Extend the workplace programme for HIV beyond the company's operations, and	Construction Operation	Throughout the	Harmony Contractors	Audit all contractors yearly	To create awareness	Written into contracts

	include all contractors, suppliers, transportation companies and local communities. Make it a contractual requirement. The spread of HIV along transportation routes (roads and railways) is well documented, so this component of the project (transportation of all goods and services to and from the project site) needs special attention. • Select suppliers who have in-house HIV programmes and policies in place; • Develop tailored behaviour change communication (BCC) materials such as mirror hanger messages and bumper stickers; • Include condoms in the road safety kit; • Work with truck company managers to ensure that their drivers receive adequate HIV training;		construction and operation phase of the project	Communities	to make sure that they adhere to the requirements	about HIV and prevent the spread of disease	Awareness raising materials visually displayed by contractors Results of audit

Table 16: Impact Ratings.

Impact	Phase	Pre-Mitigation							Post-Mitigation							Confidence	Impact Prioritisation		Priority Factor	Final Score
		Nature	Extent	Duration	Magnitude	Reversibility	Probability	Pre-mitigation ER	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER		Cumulative Impact	Irreplaceable		
Impact on livelihoods	Construction	-1	3	4	5	4	5	-20	-1	2	2	4	3	4	-11	High	3	3	1,50	-16,5
Impact on livelihoods	Operation	-1	3	4	5	4	5	-18	-1	3	4	4	4	4	-15	High	3	3	1,50	-22,5
Impact of community expectations and social licence to operate	Construction	-1	4	4	4	3	5	-18,75	-1	3	3	3	3	4	-12	High	3	2	1,38	-16,5
Impact of community expectations and social licence to operate	Operation	-1	3	4	4	3	4	-14	-1	3	3	3	3	3	-9	High	2	2	1,25	-11,25
Impact on health and wellbeing	Construction	-1	2	2	3	3	5	-12,5	-1	2	2	3	3	4	-10	High	2	1	1,13	-11,25
Impact on health and wellbeing	Operation	-1	2	3	5	4	5	-17,5	-1	2	3	4	3	4	-12	High	2	1	1,13	-13,5
Impact on health and wellbeing	Decommissioning	-1	2	3	5	3	5	-16,25	-1	2	2	4	3	4	-11	High	2	1	1,13	-12,375
Economic impacts from social perspective	Construction	1	3	2	4	2	4	11	1	3	3	4	2	4	12	High	2	1	1,13	13,5
Economic impacts from social perspective	Operation	1	3	3	4	2	4	12	1	2	2	3	2	3	6,75	High	3	3	1,50	10,125

Increase in social pathologies	Construction	-1	3	2	4	3	4	-12	-1	3	3	4	2	4	-12	High	2	1	1,13	-13,5

Table 17: Social Impact Management Plan.

SOCIAL IMPACT MANAGEMENT PLAN				
Phase	**Management action**	**Timeframe for implementation**	**Responsible party for implementation (frequency)**	**Responsible party for monitor/audit/review (frequency)**
Planning Phase	Develop social action plan Ensure SRM and CLO are appointed for the life of the mine to deal with social aspects of the project throughout the life of the mine	As soon as project enters public domain	Applicant	Wellness Officer External but not legally required
	Develop stakeholder engagement strategy	Before consultation with stakeholders start Updated and revised throughout the life of the project as needed	Applicant Continued for the life of project	SRM CLO Internal No external review required
	Develop community conflict	In consultation with	Applicant	SRM

SOCIAL IMPACT MANAGEMENT PLAN				
Phase	**Management action**	**Timeframe for implementation**	**Responsible party for implementation (frequency)**	**Responsible party for monitor/audit/review (frequency)**
	plan, grievance mechanism and compensation policy in case of claims	stakeholders	Continued for the life of project	CLO Internal No external review required
	Investigate and where possible and feasible adopt and / or adapt the Global Industry Standard on Tailings Management for the new TSF	For the life of the TSF	TSF engineer SRM Mine management	As prescribed by GISTM
Construction Phase	Monitoring of social mitigation and management measures	Throughout construction	Applicant (SRM &CLO) Continued for the life of project	Management Once a year or as required
	Implementation of stakeholder engagement plan	Throughout construction	Applicant (SRM &CLO) Continued for the life of project	Management Once a year or as required
	Implement community conflict plan, grievance mechanism and	Throughout construction	Applicant (SRM&CLO) Continued for the life of project	Management Once a year or as required

SOCIAL IMPACT MANAGEMENT PLAN				
Phase	**Management action**	**Timeframe for implementation**	**Responsible party for implementation (frequency)**	**Responsible party for monitor/audit/review (frequency)**
	compensation policy			
	Investigate and where possible and feasible adopt and / or adapt the Global Industry Standard on Tailings Management for the new TSF	For the life of the TSF	TSF engineer SRM Mine management	As prescribed by GISTM
Operation Phase	Monitoring of social mitigation and management measures	Throughout operation	Applicant (SRM&CLO) Continued for the life of project	Management Once a year or as required
	Implementation of community relations strategy	Throughout operation	Applicant (SRM&CRO) Continued for the life of project	Management Once a year or as required
	Implement community conflict plan, grievance mechanism and compensation policy	Throughout operation	Applicant (SRM&CRO) Continued for the life of project	Management Once a year or as required
	Investigate and where	For the life of the TSF	TSF engineer	As prescribed by GISTM

SOCIAL IMPACT MANAGEMENT PLAN				
Phase	**Management action**	**Timeframe for implementation**	**Responsible party for implementation (frequency)**	**Responsible party for monitor/audit/review (frequency)**
	possible and feasible adopt and / or adapt the Global Industry Standard on Tailings Management for the new TSF		SRM Mine management	
Decommissioning Phase	Implement community conflict plan, grievance mechanism and compensation policy	Throughout decommissioning	Applicant (SRM&CRO) Continued for the life of project	Management Once a year or as required
	Continue with stakeholder engagement strategy	Throughout decommissioning	Applicant (SRM&CRO) Continued for the life of project	Management Once a year or as required
	Conduct SIA for closure and implement social mitigation for closure	Throughout decommissioning	External SIA consultant Applicant (SRM&CRO) Continued for the life of project	Closure SIA – once off Management Once a year or as required
	Investigate and where possible and feasible adopt	For the life of the TSF	TSF engineer SRM	As prescribed by GISTM

SOCIAL IMPACT MANAGEMENT PLAN				
Phase	**Management action**	**Timeframe for implementation**	**Responsible party for implementation (frequency)**	**Responsible party for monitor/audit/review (frequency)**
	and / or adapt the Global Industry Standard on Tailings Management for the new TSF		Mine management	
Closure and Rehabilitation Phase	Continue stakeholder engagement strategy until all activities on site cease and rehabilitation is completed	Until all rehabilitation activities have ceased	Applicant (SRM&CRO) Continue until all rehabilitation activities have been completed	Management Once a year or as required
	Continue with community conflict plan, grievance mechanism and compensation policy.	Until all rehabilitation activities have ceased	Applicant (SRM&CRO) Continue until all rehabilitation activities have been completed	Management Once a year or as required
	Ensure that there is a champion to monitor and inspect the TSF for safety and environmental aspects, even after mine closure.	For the life of the TSF	TSF engineer SRM Mine management	As prescribed by GISTM

8 Stakeholder Engagement Plan

Social impacts already start in the planning phase of a project and as such it is imperative to start with stakeholder engagement as early in the process as possible. A stakeholder engagement plan will assist Harmony to outline their approach towards communicating in the most efficient way possible with stakeholders throughout the life of the project. Such a plan cannot be considered a once off activity and should be updated on a yearly basis to ensure that it stays relevant and to capture new information. Stakeholders must provide input in the Stakeholder Engagement Plan.

The Harmony Stakeholder Engagement Plan should have the following objectives:

- To identify and assess the processes and/or mechanisms that will improve the communication between local communities, the wider community and Harmony.
- To improve relations between Harmony staff and the people living in the local communities.
- To provide a guideline for the dissemination of information crucial to the local communities in a timely, respectful, and efficient manner.
- To provide a format for the timely recollection of information from the local communities in such a way that the communities are included in the decision-making process.

The Stakeholder Engagement Plan should be compiled in line with International Finance Corporation (IFC) Guidelines and should consist of the following components:

- Stakeholder Identification and Analysis – time should be invested in identifying and prioritising stakeholders and assessing their interests and concerns.
- Information Disclosure – information must be communicated to stakeholders early in the decision-making process in ways that are meaningful and

accessible, and this communication should be continued throughout the life of the project.

- Stakeholder Consultation – each consultation process should be planned out, consultation should be inclusive, the process should be documented, and follow-up should be communicated.

- Negotiation and Partnerships – add value to mitigation or project benefits by forming strategic partnerships and for controversial and complex issues, enter into good faith negotiations that satisfy the interest of all parties.

- Grievance Management – accessible and responsive means for stakeholders to raise concerns and grievances about the project must be established throughout the life of the project.

- Stakeholder Involvement in Project Monitoring – directly affected stakeholders must be involved in monitoring project impacts, mitigation, and benefits. External monitors must be involved where they can enhance transparency and credibility.

- Reporting to Stakeholders – report back to stakeholders on environmental, social and economic performance, both those consulted and those with more general interests in the project and parent company.

- Management Functions – sufficient capacity within the company must be built and maintained to manage processes of stakeholder engagement, track commitments and report on progress.

It is of critical importance that stakeholder engagement takes place in each phase of the project cycle and it must be noted that the approach will differ according to each phase.

9 Proposed Grievance Mechanism

In accordance with international good practice Harmony mine should establish a specific mechanism for dealing with grievances. A grievance is a complaint or concern raised by an individual or organisation that judges that they have been adversely affected by the project during any stage of its development. Grievances may take the form of specific complaints for actual damages or injury, general concerns about project activities, incidents and impacts, or perceived impacts. The IFC standards require Grievance Mechanisms to provide a structured way of receiving and resolving grievances. Complaints should be addressed promptly using an understandable and transparent process that is culturally appropriate and readily acceptable to all segments of affected communities and is at no cost and without retribution. The mechanism should be appropriate to the scale of impacts and risks presented by a project and beneficial for both the company and stakeholders. The mechanism must not impede access to other judicial or administrative remedies.

The grievance mechanism should be based on the following principles:

- Transparency and fairness;
- Accessibility and cultural appropriateness;
- Openness and communication regularity;
- Written records;
- Dialogue and site visits; and
- Timely resolution.

Based on the principles described above, the grievance mechanism process involves four stages:

- Receiving and recording the grievance;
- Acknowledgement and registration;

- Site inspection and investigation; and
- Response.

10 Conclusions and recommendations

The proposed TSF is situated in a mining area where there are already high levels of impact and complex social dynamics. The communities are already exposed to a number of social and environmental impacts from different sources. The livelihoods of adjacent farmers have already been impacted on, and they do not have any trust in Harmony to manage new impacts, since they are of the opinion that current impacts are not managed well. They also feel that the mine does not listen to them and that participating in any processes is useless, since nothing will change. This is despite the positive economic impacts the mine makes in the local, regional and national environment. The impacted urban communities are poor and there are high levels of unemployment. There is likely to be a lot of competition for jobs. Given its proximity to other mining areas, it is not expected that the project will cause a significant influx of people into the area, as there are already people with some skills in the area that the mine could employ.

From an SIA perspective, the construction of the TSF will mostly result in existing impacts continuing. The new development will not add significant social impacts. It must be considered that there will also be positive social impacts, such as skills development, CSI projects and SLP projects. Should the TSF not be allowed, these impacts will fall away.

In order for the farming community to be comfortable with the construction of the TSF, it is critical that the mine and the farmers come to an agreement on how to deal with the issues between themselves and the mine. If the mine can resolve some of the current issues, it will assist with improving their social licence to operate.

The mine will need to work hard on improving relationships with the community before the construction of the TSF start. This is not an easy task, due to the mistrust in the community. However, if the mine fails to do so, it may come at a great cost to them.

Many of the issues between the mine and the community have historic roots and relate to some of the predecessors of the current mine, the failure of government on

all levels to fulfil their mandate in terms of services and the current dire socio-economic conditions in South Africa.

The following recommendations are made:

- Any further impacts on the livelihoods of the farming community may cause permanent loss of livelihoods and should be carefully managed. The tipping point where the farmland can no longer provide the required ecosystem services is close, and it may result in displacement and legal struggles;
- The mine must continue to invest in their Stakeholder Relations Division and revisit its current efficiency;
- The mine must implement a community-friendly external grievance mechanism in conjunction with farmers and communities;
- The mine must develop a community relations strategy to plan for and guide its involvement with the community. The strategy should include feedback mechanisms about aspects of concern to the community;
- The mine should put measures in place to ensure the most effective local employment strategy, in conjunction with local leadership;
- The mine must ensure that social requirements as specified in the mitigation measures are included in their contracts with sub-contractors;
- The mine must ensure that they comply with the GISTM;
- All agreements about water provision should be done in writing.

The list of recommendations should be included in the environmental authorisation. From a social perspective, there are no fatal flaws but there are a few red lights. Therefore, the recommendation is that the construction of the TSF should be approved on the condition that the mine put certain social processes such as a grievance mechanism in place, and that the current issues between the mine, the farmers and the communities must be attended to.

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