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ENVIRONMENTAL



Environmental Impact Assessment for the Weltevreden Open Cast Coal Mine, Weltevreden 381JT, Belfast, Mpumalanga Province

Baseline Socio-Economic Report

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Abbreviations and acronyms

EF	Entitlement Framework
RAP	Resettlement Action Plan
RWG	Resettlement Working Group



1 Introduction

In anticipation of potential project-induced displacement, Digby Wells has been appointed to conduct a household survey of the community near the proposed Northern Coal Weltevreden project. As part of this process, Digby Wells undertook a census, socio-economic and asset survey of all individuals and households residing within the aforementioned community. This exercise had the following objectives:

- To determine the number and location of households in the potentially affected community in order to estimate the extent of physical or economic displacement as a result of the Northern Coal Weltevreden project, if any;
- To establish the baseline socio-economic conditions of the potentially affected community, which is required both for resettlement planning and subsequent monitoring purposes; and
- To detect and deter any influx of people, hoping to benefit from a possible resettlement and compensation process, into the community.

This report presents the summarised results of the aforementioned census, socio-economic and asset survey. In the event that displacement will indeed occur, the next steps to be taken as part of the resettlement planning process are highlighted.

2 Methodology

The activities undertaken as part of the study are outlined in the subsections below.

2.1 Data Collection

Data collection took place on 16 - 17 July 2014, and was carried out by two Digby Wells employees. The following activities were undertaken during the survey:

- A unique household number was assigned to each household. A card bearing that unique number was given to each household head;
- The GPS coordinates of each household was recorded, and entered into a database under the same unique number as the one on the card presented to the household;
- A photograph was taken of each household head; standing in front of his/her house and holding the household card (see Figure 1). This photographic database will serve as a method for verifying the identity of household heads;
- Socio-economic and demographic information on household members was collected by means of a semi-structured questionnaire administered by the enumerators. Information collected through the questionnaire includes:
 - The name, identity number and gender of the household head;



- The name, identity number and gender of the person interviewed in cases where the household head was absent, as well as the reason for his/ her absence;
 - The name, age, gender, education level and employment status of each household member, as well as his/ her relationship to the household head, and whether he/ she resides in the community on a full-time basis;
 - The household's home language;
 - The presence of any mining-related skills (operating equipment, administrative/ clerical skills, electrical or electronic skills, etc.) among household members. Such information could potentially be used to identify community members who are eligible for employment by Northern Coal;
 - The length of time that the household had resided in the community;
 - Household access to services (water, sanitation, electricity, schools, health services, etc.);
 - The household's main sources of livelihood, the approximate amount earned per month from each source, as well as whether this source of income is regular or occasional;
 - Because self-disclosed information on household income is sometimes unreliable, information on proxy indicators of poverty and vulnerability were also collected. These proxy indicators included information on household food security, moveable assets and health;
 - The existence of informal/ traditional graves or other sites of spiritual significance (initiation sites, etc.) in or near the community;
 - Household members' perceptions regarding the most pressing needs and challenges faced by the community; and
 - The households' preferences in terms of where to they would prefer to be relocated, if required.
-
- A photograph was taken of each homestead structure (residential, business, shelters for animals, etc.), and the sizes and building materials of all structures recorded;
 - The extent of each household yard was recorded by means of hand-held GPS devices; and
 - Vegetable gardens and land used for cultivation or grazing of livestock were recorded in the same way, and all crops grown by households were recorded.



Figure 1: Household head with structure and household card

2.2 Quality control, Data Capture and Analysis

Rigorous quality control measures were undertaken during fieldwork. These included the following:

- The fieldwork team consisted entirely of Digby Wells staff with extensive experience in social surveys; and
- Completed questionnaires were checked for internal consistency (e.g. employment status for individual household members, recorded during the rapid census, were checked against household-level information on sources of income as recorded during the detailed socio-economic survey).

The photographic, GPS and questionnaire-based data collected during fieldwork were then captured in an electronic database and subjected to quantitative analysis to generate descriptive statistics and to identify trends and patterns in households' socio-economic characteristics and asset ownership.

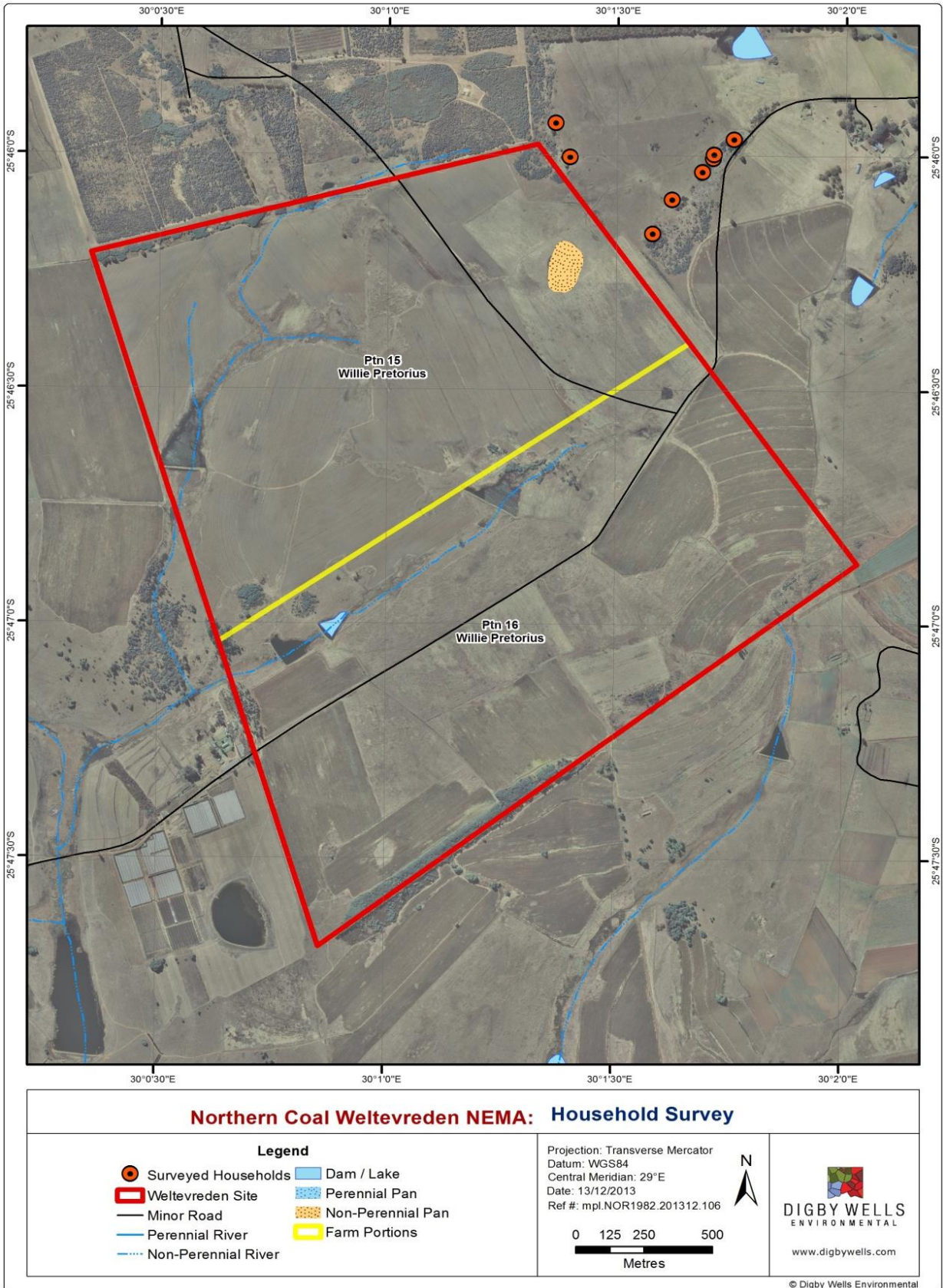
2.3 Data Limitations

Despite the rigorous quality control measures described above, the reliability of the data presented in this report may be limited by biases and inaccuracies in some self-reported data on household characteristics and assets. These may include the following:

- Exaggerated claims regarding the extent of land used by households, which may be motivated by the desire to increase the amount of land the household would receive should they be relocated;
- Exaggerated claims regarding livestock ownership, crop production and the income earned from these. Although such claims may also be motivated by a desire to increase potential future compensation packages, they may also be unintentional – i.e. they might be caused by inadequate numerical literacy (such as a clear grasp of the difference between 100, 1000 and 10 000).
- Non-disclosure of income. It is possible, and understandable, that some households may be unwilling to disclose the amount of money they earn per month. A crude and indirect way of verifying reported household income levels is by checking these against the moveable assets or conveniences owned by a household – see Section 3.5 below.

3 Summary of Results

The potentially affected community is located just east of portion 15 of the Weltevreden farm (see Plan 1), and consists of **54 individuals** comprising **eight households**. Women head six of these households.



Plan 1: Location of surveyed households



3.1 Demographics

Socio-demographic attributes of the households described in this section include household sizes, residents' age and gender composition, home language and the relationship of household members to the household head.

3.1.1 Household Sizes

Three households consist of between two and five members, and another three between six and 10 individuals (see Figure 2). One of the households consists of only one member, while the largest consists of 15 members. The average household size (the total number of individuals divided by the total number of households) is just over six persons per household.

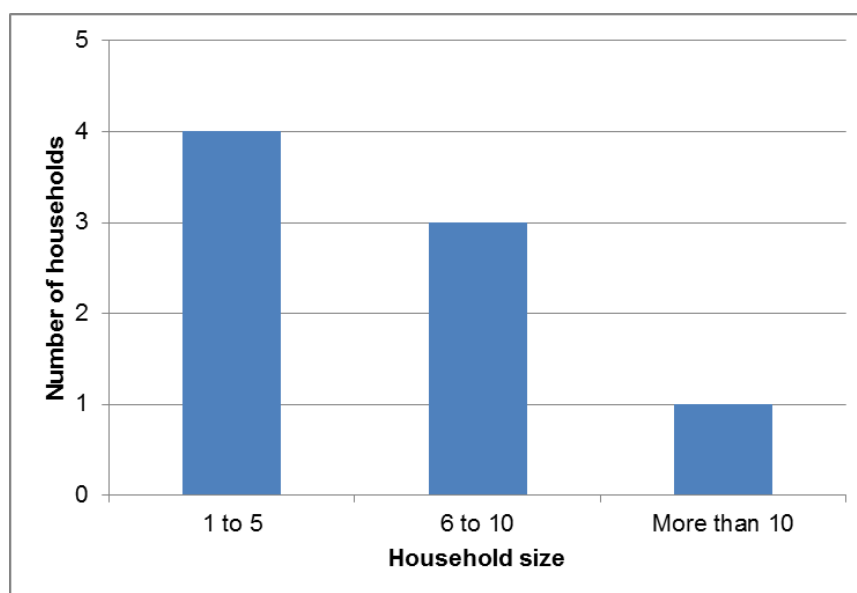


Figure 2: Distribution of household sizes

3.1.2 Age and Gender Distribution

Of the 54 community members, 46% are female and 54% male (see Table 1). Of these, 26 (48%) are aged 20 years or younger, while only two individuals are over the age of 60. The age-gender distribution of the community members is shown in Figure 3. As can be seen from this figure, the distribution does *not* display the characteristic “spike” among males in the young working-age interval (20-40 years) that would have been indicative of a community containing many migrant job-seekers who moved into the area in search of employment at nearby mines. Instead, this appears to be a more typical rural community whose population has increased over time through natural population growth rather than in-migration.

Table 1: Gender composition of the community

Gender	Number of individuals	% of individuals
Female	25	46%
Male	29	54%
Total	54	100%

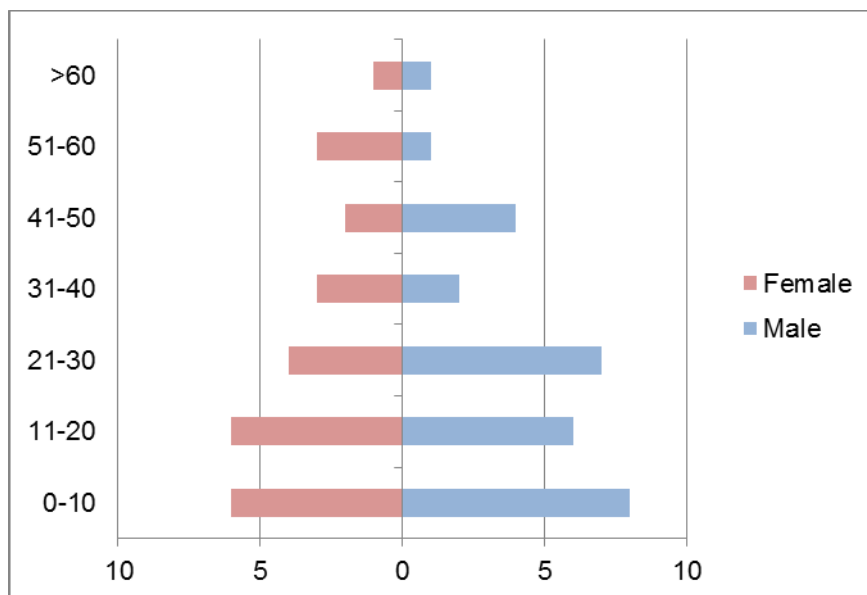


Figure 3: Age-gender distribution of community members

3.1.3 Home Language

The majority of households are Ndebele-speaking (see Figure 4), although Siswati and Zulu are also present in the community. This suggests that, from a cultural perspective, the community is fairly homogenous.

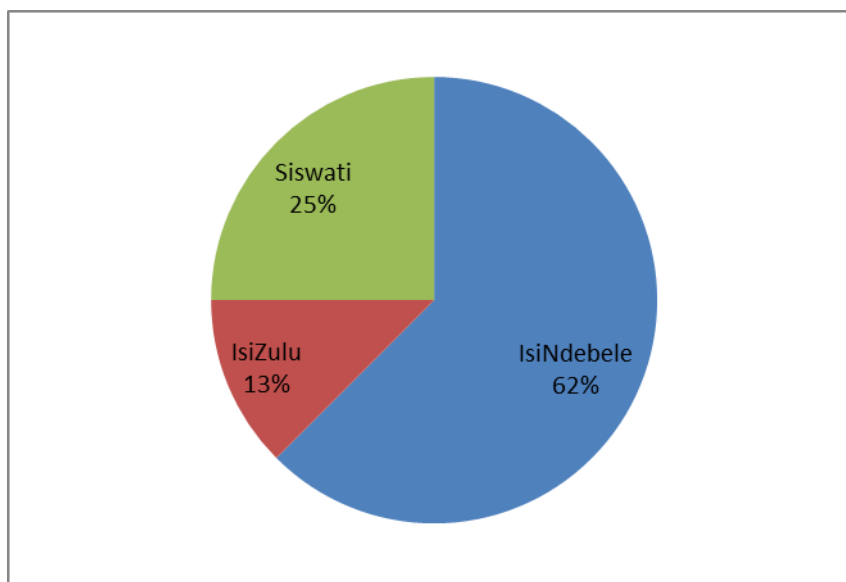


Figure 4: Home language of households

3.1.4 Relationship of Household Members to the Household Head

The relationships of household members to household heads are summarised in Table 2. Most of the community (67%) consists of children and grandchildren. Only a few households have extended family members (brothers, sisters, parents, nieces, nephews and grandparents) staying with them. No households reported that they have any tenants living with them.

Table 2: Relationships of household members to household heads

Relationship to household head	Number of individuals	% of individuals
Household Head	8	15%
Spouse	2	4%
Son/Daughter	22	41%
Brother/Sister	4	7%
Cousin	4	7%
Grandchild	14	26%
Grand Total	54	100%

3.2 Population Flux

This section provides information on the degree of fluctuation in the community’s population – either because of in-migration, or because of community members commuting between this community and other homes or occupations elsewhere.

3.2.1 Residential Status of Household Members

The residential status of the 54 members of the community is shown in Figure 5. As can be seen from this figure, the vast majority (93%) of community members reside in the community on a full-time basis.

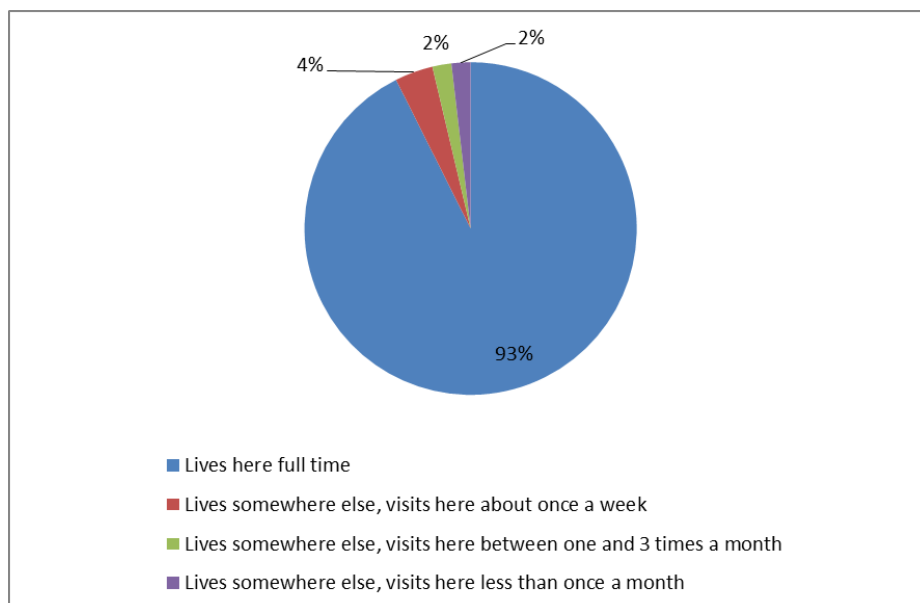


Figure 5: Residential status of household members

3.2.2 Length of Residence in the Community

The surveyed community is an established one; the shortest length of residency by a household is 14 years, while the longest is 45 years. Three households reported having lived at their current location for 25 years.

3.2.3 Households with Multiple Homes

None of the households reported having homes in another location, implying that their surveyed residence is their only residence.

3.3 Education and Skills

This section gives an overview of the highest levels of education attained by adult members of the community, as well as of the presence of mining-related skill and experience.

3.3.1 Education Levels among Adults

The highest education levels achieved by the adult community members (those over the age of 20) are shown in Figure 6. As can be seen from this figure, overall education levels are very low among males as well as females; overall, only 6% of adults have completed secondary school, while 27% have no schooling whatsoever.

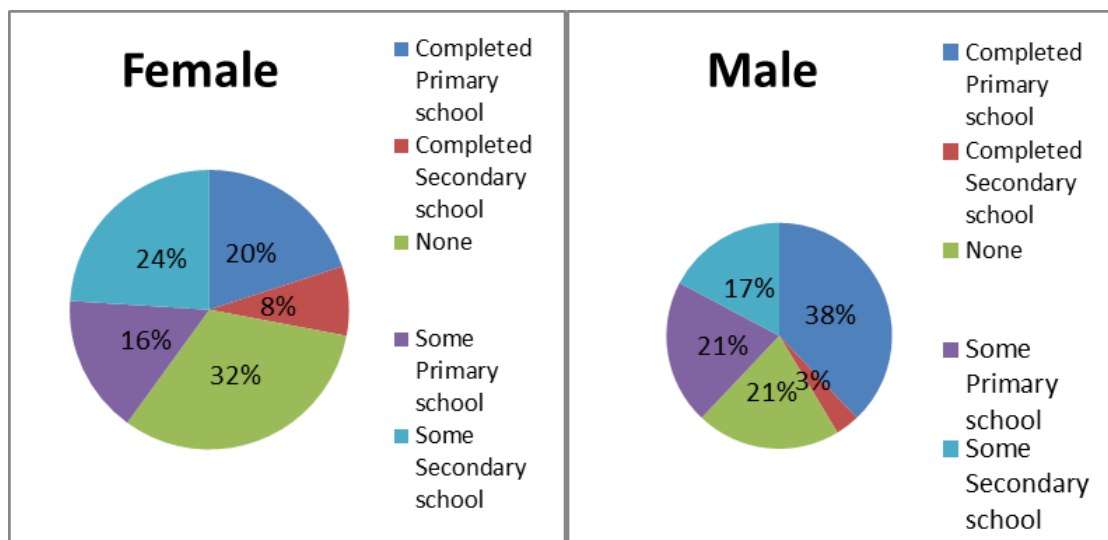


Figure 6: Education levels of adult community members

3.3.2 Mining-Related Skills and Experience

Respondents were asked to indicate whether any members of their household possessed mining-related skills (operating equipment, administrative/ clerical skills, electrical or electronic skills, etc.), and also to indicate whether these skills were based on training and/or previous work experience. The relevance of such information stems from the fact that employment by Northern Coal could potentially be used as means to compensate for losses of livelihood resources incurred through relocation, should it be required.

The survey results show that the predominant skill possessed by individuals in this community is driving, and some five community members have been employed as drivers (see Table 3). Other skills include industrial experience, administrative skills and plumbing. Four individuals reported having acquired more than one skill.

**Table 3: Mining-related skills among community members**

Skill	Skill acquired but never worked	Skill acquired and has worked
Driving	3	5
Any industrial experience	3	4
Driving & administrative skills	2	-
Driving, electrical skills & administrative skills	1	-
Mechanical skills & plumbing	-	1
Other	-	1
Grand Total	9	11

3.4 Employment and Income

This section discusses the economic status of the community at two levels: the employment status of individual household members, and the livelihood strategies and income sources of entire households.

3.4.1 Employment Status of Individuals

The current employment status of working-age community members (those between 18 and 65 years) is shown in Table 4. As can be seen from this table, unemployment is high in the community, with 36% of the working-age population being unemployed and looking for work. Unemployment is similarly distributed between men and women. Of the community members who are employed, the majority are employed as taxi drivers and domestic workers.

Table 4: Employment Status of Adult Community Members

Employment status	Female	Male	Total	%
Unemployed but looking for work	5	7	12	36%
Other employment	4	5	9	27%
Too old or sick to work	3	1	4	12%
Working on a farm	2	2	4	12%
Still in school or studying	2	1	3	9%
Employed in mining	-	1	1	3%
Total	22	25	33	100%

3.4.2 Household Sources of Income

Despite the high unemployment levels, all of the households have at least one source of income; seven of the eight households are reliant on social grants, four receive an income from wages, and one household receives a remittance.

The reported monthly income from regular sources per household are summarised in Figure 7. As can be seen from this figure, seven of the eight households survive on less than R 3 000 per month. The largest reported regular household income in the community is R 5 800 per month.

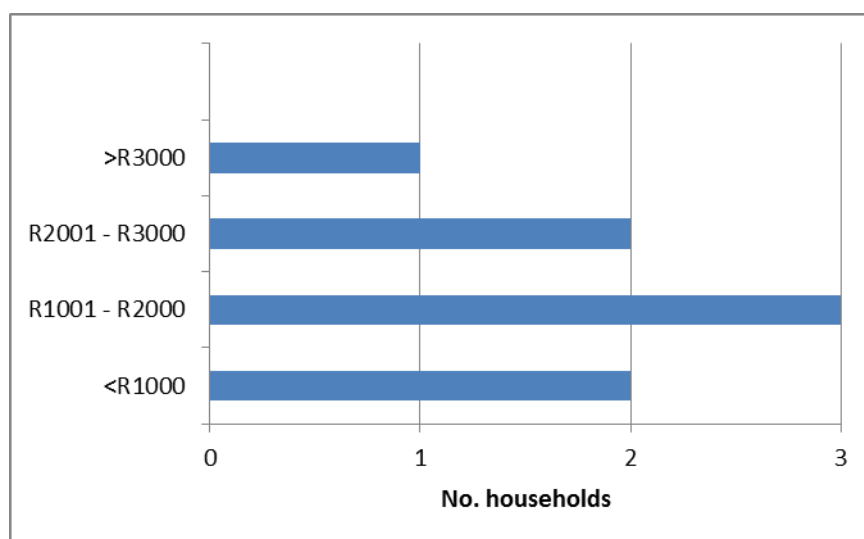


Figure 7: Reported regular monthly income per household

No households reported that they earned money through rent paid by tenants. This supports the absence of tenants reported in 3.1.4 above.

3.5 Proxy Measures of Poverty and Vulnerability

As mentioned in Section 2.3, self-disclosed information on household income is susceptible to deliberate or unintentional distortion. For this reason, data on proxy indicators of poverty and vulnerability were also collected. Proxy indicators discussed below include household ownership of moveable assets, food security, health, mortality, and perceived needs and challenges.

3.5.1 Moveable Assets

Ownership of moveable assets assessed during the survey range from basic items (such as beds and wood or charcoal stoves) to expensive commodities (motor vehicles and electronic equipment). As can be seen from Table 5 below, about half of the households in the target



population own a range of modern conveniences (including television sets, DVD players and sound systems); ownership of automobiles and computers/ laptops is less common.

Table 5: Ownership of moveable assets

Type of asset	No. of households that own at least one	Average per household	Largest number per household
Bed	8	5	9
Radio	8	1	2
Cellphone	8	6	15
Wood stove	8	1	1
TV	5	1	2
Bicycle	4	2	3
Bakkie, van or minibus	3	1	1
Computer/laptop	2	1	1
VCR / DVD	2	1	1
Sewing machine	1	1	1
Car	1	1	1
Motorbike/scooter	1	1	1

A measure of diversity in affluence among households is the distribution of the numbers of *types* of moveable assets per household. This distribution is shown in Table 6 (the *number* of each type of asset owned by a household is not taken into account in this table.) The figures shown in this table suggests fair diversity amongst the households in terms of affluence; some households only have the bare necessities (e.g. beds and cell phones) while others have virtually the full range of assets about which data was collected during the survey.¹

¹ One household consists of only one individual. This individual currently lives in Middelburg, and his structure in the project area is still in the construction phase. Thus, no movable assets were found in the partially constructed structure.

**Table 6: Contrast among households in terms of asset ownership**

No. of asset types	No. of households
0 asset types	1
4 asset types	1
5 asset types	2
6 asset types	1
7 asset types	1
10 asset types	2
Total	8

3.5.2 Nutrition, Health and Mortality

Two additional proxy indicators of poverty and vulnerability are discussed below:

- **Food security:** there was no report made that any of the households went to bed hungry the night before the survey, although all of the households reported experiencing a food shortage in the past year; and
- **Health:** 28 members of the community (52%) had suffered ill health in the month prior to the survey. Illnesses suffered by community members included respiratory illnesses (colds, flu), diarrhoea, eye infection, skin rashes and hypertension (see Table 7). Respondents were not required to disclose their HIV status.

Table 7: Reported health problems in the past month

Household members	Respiratory / cold / flu	Diarrhoea	Eye infection	Skin rash	Hypertension	Diabetes	Ulcers	Total
Children	3	-	1	3	-	-	-	7
Female	6	-	-	1	4	1	1	12
Male	3	3	1	-	1	1	-	9
Total	12 (22%)	3 (6%)	2 (4%)	4 (7%)	5 (9%)	2 (4%)	1 (2%)	28 (52%)

The high incidence of reported food insecurity confirms that many households in the community live in precarious socio-economic circumstances. Nevertheless, poverty levels do not appear to be so high that these translate into elevated levels of ill health and mortality: the prevalence of illnesses and fatalities are similar to what would be expected in more affluent communities in South Africa.



3.5.3 Perceived Needs and Challenges

During the survey, respondents were asked to identify the most pressing needs and challenges experienced by their household and community. Although the question was open-ended, most households reported the same types of problems – the distance of the settlement from the main road (which creates problems in terms of access to services, with that goes a lack of transport, unemployment, and poor housing that is falling apart) (see Table 8 below). The community's access to services is discussed in greater detail in the following section.

Table 8: Needs and challenges reported by community members

Problem	Number of households reporting this problem
Distance to the main road	8
Unemployment	7
Poor housing	7
Lack of transport	7
Lack of access to electricity	6
Inadequate sanitation	4

3.6 Infrastructure and Services

This section provides information on the community in terms of housing, water and sanitation services, sources of energy and access to public services such as schools, clinics, etc.

3.6.1 Housing

As was mentioned in Section 2.1, every permanent structure in the community was photographed and its dimensions and building materials recorded. The resulting database comprises a total of 43 structures. As is shown in Table 9, the number of structures per household varies greatly.

The types of structures and the average floor area of each are shown in Table 10 below. Multifunctional residential structures can be described as one structure with has multiple uses; e.g. consists of rooms for sleeping, has a living area, a kitchen, etc.

Table 9: Number of structures per household

No. of structures per household	No. of households
1	1
3	1
4	2
7	1
8	3
Total	8

Table 10: Types of structures owned by households

Purpose of structure	No. of structures	Average surface area (sq. m)
Multifunctional residential	10	113.1
Sleeping only	13	42.1
Toilet / shower	6	1.4
Shelter for animals	8	1.1
Garage	3	14.1
Tool shed	1	8.9
Structure used for rituals	2	4.9
Total	43	-

The building materials used for constructing the walls and roofs of the various structures are given in Table 11 below.

**Table 11: Building materials of structures**

Building material	Multifunctional residential	Sleeping only	Toilet / shower	Shelter for animals	Garage	Tool shed	Structure used for rituals	Total
Walls								
Dung / earth	6	4	-	2	-	-	2	14
Concrete	3	8	-	-	-	1	-	12
Wood	-	1	-	6	2	-	-	9
None	-	-	-	-	1	-	-	1
Other	1	-	6	-	-	-	-	7
Roof								
Corrugated iron	9	11	5	2	3	1	-	31
Other	1	2	1	6	-	-	2	12
Floor								
Dung / earth	7	5	6	8	3	-	2	31
Wood	3	8	-	-	-	1	-	12

3.6.2 Water and Sanitation

All eight households have access to water and sanitation. The sole water source is a centrally located standpipe, and all households make use of pit latrines.

3.6.3 Energy

The energy sources used by the community for lighting, cooking and heating are listed in Table 12. None of the surveyed households have access to electricity, and a wood-fired stove is the only source of energy used for heating and cooking purposes.

**Table 12: Energy sources**

Energy source	% of households
<i>Lighting</i>	
Candles	88%
Paraffin	12%
<i>Cooking</i>	
Wood stove	100%
<i>Heating</i>	
Wood stove	100%

3.6.4 Public Services

The public services used by the community, as well as their location and distance from the community, are listed in Table 13. The community is both rural and remote, and have to travel in excess of 10km to most services.

**Table 13: Location of and distance to services**

Type of service	Average distance	Location / Name
Clinic	1 km	Mobile
Bus stop	2 km	Zoekop
Primary school	10 km	Blomplaas Primary School
Bank/credit facilities	15 km	Belfast
Church		Belfast
Grant pay point		Belfast
Hospital		Belfast
Market		Belfast
Secondary School		Kyalami Secondary School
Shop		Belfast

3.7 Land Use

This section discusses the prevalence and nature of agricultural activities and livestock husbandry among the surveyed households.

3.7.1 Agriculture

The only agricultural activity the surveyed households engage in is vegetable gardening during the summer. These gardens are typically situated next to each household's residential structure, and are fenced off. Produce from the gardens are used exclusively for subsistence purposes.

3.7.2 Livestock

Six of the eight households own livestock, the type and use of which are shown in Table 14. It is likely that the reported numbers of livestock (e.g. chickens and goats) may be exaggerated. Nevertheless, the table makes it clear that livestock ownership – and, by implication, reliance on livestock produce for domestic use or cash income – is widespread in the community.

Table 14: Livestock owned by households

Type	No. households that own at least one	Total no. owned by the households	Largest no. per household	Most common use
Goats	5	44	26	Meat and rituals
Poultry	3	>100	>50	Meat and eggs
Sheep	2	6	4	Meat and rituals
Cattle	1	4	4	Meat and milk
Geese	1	9	9	Selling
Pigs	1	1	1	Selling
Total	-	>164	>94	-

3.8 Graves and Sites of Spiritual Significance

During the survey, respondents were asked to identify gravesites in or near the community where members of their household or community were buried. No gravesites were reported to belong to these households but three graves and a small graveyard was identified. The deceased's next of kin have all moved or passed away.

Respondents were also asked to identify sites of spiritual significance (initiation sites, etc.) in or near the community. The only sites identified are structures for ritual purposes (seen in 3.6.1). Most of the households use the yard outside their main structures for ritual purposes. No other sacred sites were reported.

4 The resettlement planning process

If the proponent opts to resettle the surveyed community (see Section **Error! Reference source not found.**), a Resettlement Action Plan (RAP) would have to be compiled prior to any actual displacement taking place. Simply stated, the purpose of a RAP is to identify all to-be-displaced households and individuals, establish the principles according to which affected parties will be relocated and compensated, outline plans for livelihood restoration and grievance redress, and provide a schedule according to which relocation will take place.

4.1 Methodology

In order to compile a RAP for the project under consideration, the following main additional activities would have to be undertaken:

- **Establishment of a resettlement working group (RWG):** the RWG represents the main consultative forum through which resettlement is planned in a collaborative and inclusive manner. The RWG usually consists of representatives of the resettlement-



affected households, the consultant, the proponent and local leadership structures (including both the local municipality – typically the ward councillor – and traditional leadership structures – typically the traditional authority, if applicable).

- **Development of an Entitlement Framework (EF):** one of the main functions of the RWG is to provide input into the development of an EF, which sets out the general principles/ formulas to be applied when determining what type and amount of compensation (in cash or in kind) each displaced person or household will receive. The EF forms the basis of resettlement and compensation agreements to be reached between the resettlement-affected households and the proponent, prior to displacement taking place.
- **Identification of a suitable resettlement site:** in consultation with the RWG, possible resettlement sites should be identified, and their suitability assessed in terms of, inter alia, its capacity to absorb the resettled households and its acceptability to the resettlement-affected community.
- **Compilation of a RAP document:** utilising secondary information, survey information already collected, as well as the outcomes of the abovementioned activities, a RAP document should be compiled. As alluded to above, this document represents the plan according to which affected households will be relocated. In addition, it considers South African legislative and regulatory requirements applicable to the resettlement process, and provides a timeline, budget and responsibility matrix for resettlement implementation.

4.2 Timeframe

Resettlement planning usually takes between six and 12 months to complete, and is dependent on a number of factors, including the degree of cooperation and availability of the RWG, the availability and suitability of relocation site options, and the affected households' attitude towards impending relocation. A total of six to eight RWG meetings are usually sufficient for the finalisation of the EF and selection of a relocation site, and constitute the most time consuming activity to be undertaken.

It should be noted that the outcome of resettlement planning is a RAP document, and that resettlement implementation can only commence once the RAP has been finalised.

5 Recommendations

Considering the close proximity of the surveyed community (as shown in Plan 1) relative to the proposed project infrastructure, the proposed location of the opencast pits (along the eastern boundary of Weltevrede portion 15), and the proposed project activities (which includes blasting), it is recommended that the proponent gives due consideration to the relocation of the surveyed community. The aforementioned factors will likely place the surveyed community at increased health and safety risks, primarily as a result of blasting that will take place at the pits. According to best practice principles, a blasting radius of 500

metres should be void of at least human habitation, and preferably of all non-mining activities.

It is further recommended that the surveyed community be relocated to an area as close as possible to their current location, but outside the blasting radius. As reported in Section 3.2.2, the potentially displaced community is an established one, with a minimum length of residency of 14 years. It is likely that the prospect of resettlement will be met with less resistance if the relocation site will offer the same lifestyle and social networks as what the community currently have available.

6 Conclusion

The results of the census, socio-economic and asset survey reported in this document indicate that there are eight households, consisting of 54 individuals and 43 structures, resident in close proximity to the proposed project. Most of these households fall within a 500 meter radius of the proposed opencast pits where blasting will take place. This exposes them to increased health and safety risks, which the proponent must address.

It is recommended that those households within the 500 meter blasting radius be relocated in their entirety (including vegetable gardens). Ideally, these households would be relocated to just outside the blasting radius, in order to minimise the disruption to their lives and lifestyle.