

TUG The Greater Good

Created by: Elmar Roberg

This Revision: v01A DRAFT / FINAL

Date Created: 9 September 2021

Project Confidential 0

1. Executive summary
2. Purpose of this Document
3. Background
 1. Environmental Context
 1. Summary
 2. State of the Community
 3. Economic Revitalisation
 2. Africary
 1. Summary
 2. The Company
 3. TUG Programme
 1. Opportunities
 2. Approvals
 4. Future Vision
4. Africary Makes the Difference
 1. Summary
 2. Enterprise Development
 1. Opportunities
 2. Types of Enterprise
 3. Enterprise Development Programmes
 4. Critical Success Factors
 5. Africary's Approach
 3. Socio-Economic Development
 1. Municipal infrastructure
 2. Research into indigenous systems
 3. Conclusion
 4. Principles in proposing projects
 5. Approach In Achieving The Obligations
5. Barriers to Progress
 1. The Green Revolution
 2. Reality Check
 3. What Is Really Going On?

Programme : Project : PR
Domain : Book : Chapter : Section
Subject

1 Executive summary

2 Purpose of this Document

3 Background

3.1 Environmental Context

3.1.1 Summary

3.1.2 State of the Community

By its own estimates a third of the population of the Lejweleputswa District Municipality¹ live under the most extreme level of poverty (less than R562 per person per month) and two thirds are classified as impoverished. This trend has steadily increased from 2011 to 2018.

98% of its operating income is derived from transfers and grants. As of 15 September 2020, the total amount owed by Matjhabeng Local Municipality to Eskom stood at R3.4 billion² a further R3.68 billion was owed to Sedibeng Water at the end of 2020³. As a mitigation measure, 139 farms owned by the municipality were ceded to Eskom to prevent the lights from being switched off. The value of the farms was estimated at R2.5 billion.

In 2019, according to its Executive Mayor, Matjhabeng was identified as the *third most stressed* municipality in the country. One cannot point to a single factor that is behind this. Life is not that simple, it is a complex set of factors that must be managed.⁴

Lejweleputswa District Municipality (LDM) is situated in the western region of the province and is one of four district municipalities in the Free State. The district is bordered by three district municipalities namely Thabo Mofutsanyana in the north east, Fezile Dabi in the north and Xhariep in the south west and Mangaung Metro in the south east, other borders include provinces of North West and Northern Cape in the west.

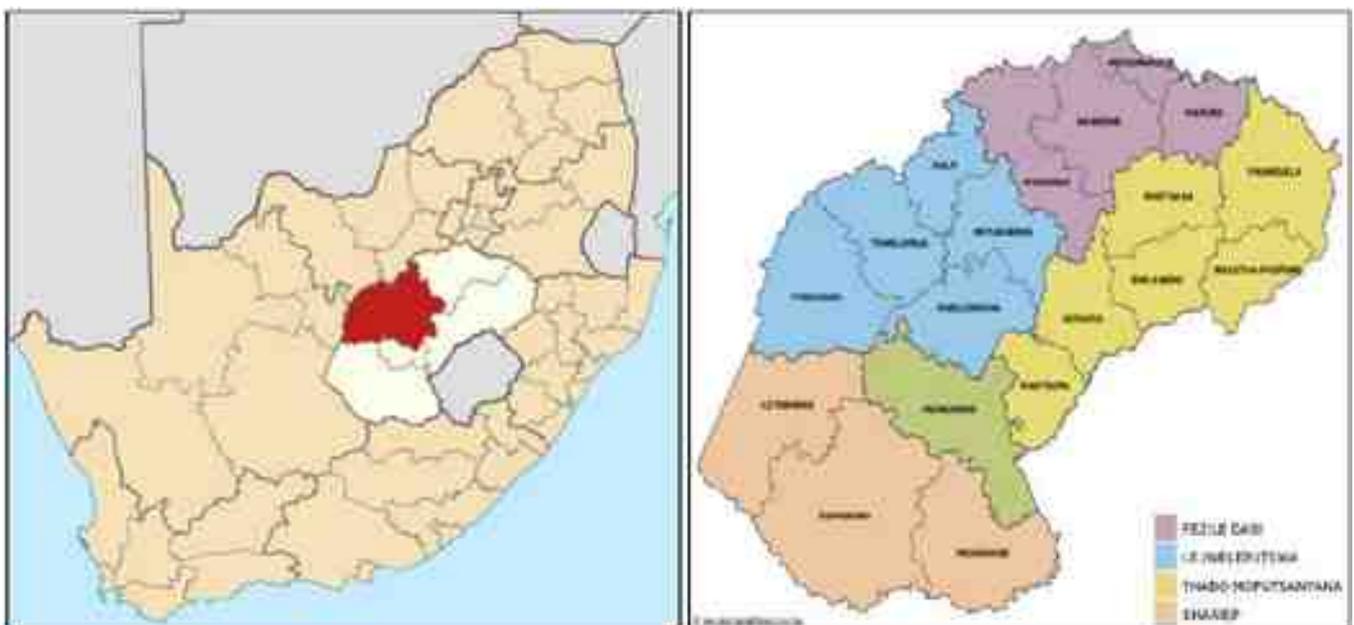


Figure 1: Lejweleputswa District Municipality

LDM makes up almost a third of the provincial landscape, with a land size of 32 287 km² and it is home to 22% of the province’s population. The district is further segmented into five local municipal areas; namely, Nala Local Municipality which is situated in the northern region of the district, Matjhabeng Local Municipality north-east, Masilonyana Local Municipality south-east, Tokologo Local Municipality south west and Tswelopele Local Municipality in the west.

Overall, district population increased by 0.8% for the period 2011–2016. Matjhabeng had the highest population growth of 1.2%.; followed by Masilonyana by 1.1%; and Tokologo by 0.1%. Nala population decreased by 0.8% and Tswelopele by 0.1%. The local municipality population profile showed that growth rate. This pattern has not changed since.

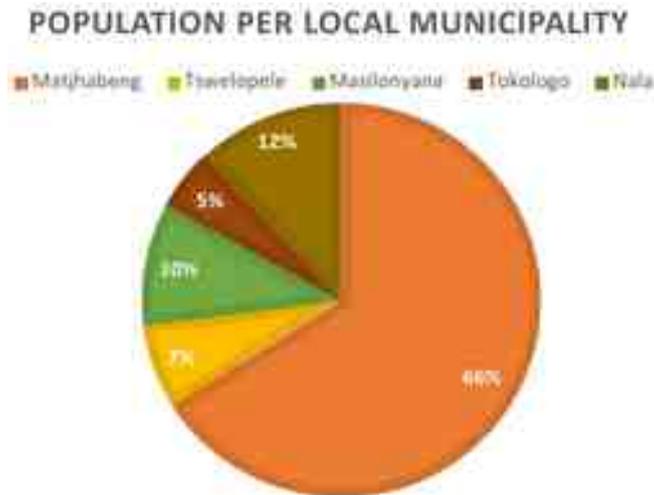


Figure 2: Population proportion per local municipality (2016).

Welkom is the second largest town in the province, after provincial capital Bloemfontein; and is also the most industrialised urban centre in the province.

However, due to the economic stagnation, the Lejweleputswa in the period 2009 to 2019 experienced a population growth rate of less than 0.3% per annum (a net 5,308 souls were added to the population in the period from 2009 to 2019 in a population of over 600,000). Contrast this with the population in the country as a whole which grew by 16% (Lejweleputswa : 0.8%) in the same period. Another telling statistic is that the median age is 27, contrast that with 26 years for the province, and 25 for the country.⁵

As one article puts it succinctly, *“In total, 275 200 people were employed in the Welkom gold fields region in 1987. By 2010, that had declined to a mere 84 700.”*⁶ And it is only likely to get worse without direct intervention.

“The downturn in gold mining was devastating to FSG. Gold mining represented almost three-quarters of the region’s economic output in 1990 (Marais & Cloete, 2016), and the rapid decline in mining output during the 1990s and 2000s had profound environmental and socioeconomic impacts across the province. In Matjhabeng, mine employment fell from 180,000 in the mid-1980s to less than 30,000 by 2013 (Marais, 2013b). The population also declined sharply from 180,000 in 1990 to 36,000 in 2010, as many workers emigrated (Marais & Cloete, 2016). ...

“The broader impacts on the region’s economy were catastrophic. The decline of mining triggered the closure of businesses that had provided services to the mines (e.g. engineering companies) or to mine

5 <https://www.cogta.gov.za/ddm/wp-content/uploads/2020/11/Lejweleputswa-DM-October-2020.pdf>

6 <https://irr.org.za/media/welkom-to-a-world-where-mining-dies-the-star>

workers and their families (e.g. local transportation operations) (Marais, 2013a; Seidman, 1993). Smaller manufacturing firms closed, and remaining firms were concentrated in the province’s larger urban areas (Nel et al., 2006). With the dismantling of housing compounds that mining companies had owned and created for workers, informal settlements expanded (Marais, 2013b). In the 1980s, mining companies tried to reduce their operating costs by selling their housing assets to individuals. As mining declined, average housing prices plummeted, saddling middle- and low-income households with debt and unsellable assets. This, in turn, increased the risk of non-payment of taxes on properties, creating an additional revenue problem for municipalities (Marais & Cloete, 2016). Investor confidence in the region evaporated.

“The crisis proved to be particularly devastating for women. As it deepened, many men sought employment opportunities elsewhere, meaning a high share of the people left behind were women. Divorce rates increased sharply (Baden et al., 1998).”⁷

According to Sibanye Stillwater, “unless gold prices move much higher and the investment environment improves, Sibanye is unlikely to exploit its Beatrix mine beyond about five years’ time.”⁸

Of six mines Harmony in the area, Harmony expects to close four within the next seven years, shedding up to 7,000 jobs.⁹

In March 2019 there were 175 mining right applications being considered by the Welkom office. Based on the names of the applications almost all were for minor operations (e.g. Dept of Roads for a stone or sand quarry). Currently, the largest development project in the area is being undertaken by Tetra4, and that is currently for R0.5bn. The impact on the community, even if it should grow dramatically, is marginal as its main product, helium, will probably almost all be exported.

In spite of a wish for tourism to be a major income generator, more than 70% of “trips by purpose” is made up of visits by friends and relatives. Only 7% of more than 350,000 visits is for leisure. No doubt most of the former are necessitated by the high unemployment rate – family members coming home from places of work elsewhere.

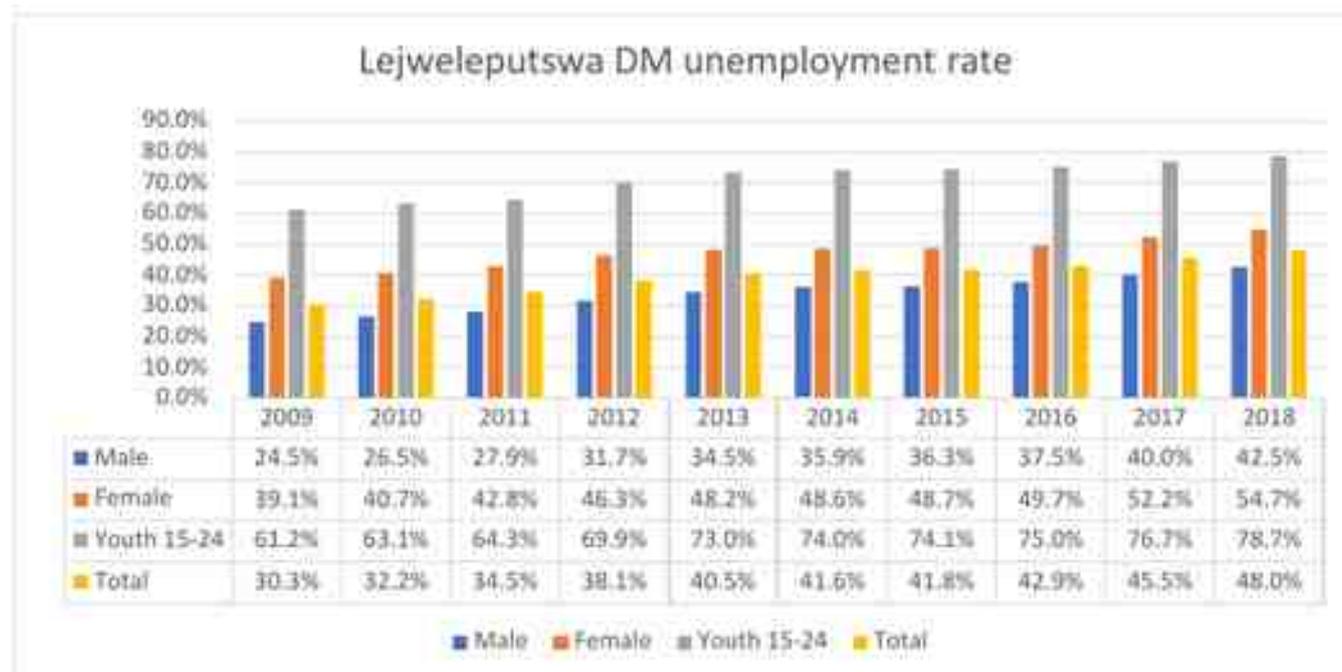


Figure 3: Unemployment rate in Lejweleputswa

The clock is running out.

From inception, Africary has been cooperating with the municipalities and *Free State Goldfields Business Chamber* (the Chamber), and has been consulted by and has consulted with Business Chamber members as to being a good local citizen.

In early 2019 Africary was approached by the Chamber to participate in the development of a proposal for the Matjhabeng mayor. Executive mayor Nkosinjani Speelman had been summoned by the President to a workshop because the municipality had been identified as #3 on the President's priority list of stressed municipalities.

Due to various factors, the area had suffered from economic stagnation for many years partly due to

- Mine closures; and
- the consequent shrinking and closure of associated industries; but also
- failed and failing infrastructure, especially related to water – in dry years the water quota of users along the SandVet canal can be reduced to as much as 10%. Then Sedibeng Water has to pump water to the area all the way from the Vaal river at Bothaville. This was what killed the BHP-Billiton / Eskom project. The underground gasification technology, on the other hand could require as little as 10% of the water required by conventional coal mining and power generation.

3.1.3 Economic Revitalisation

As a part of the mayor's turnaround strategy, the Chamber identified and proposed ten economic revitalisation projects. Some of these already exist but have fallen into a state of disrepair or need to be revitalised.

- I. Creation of Special Economic Zone (SEZ)
- II. Infrastructure stabilisation: energy, sewage, water, roads
- III. Africary and diversified mining
- IV. Welkom airport
- V. Phakisa Motor Racing Track (the only Nascar track in Africa)
- VI. Safe City / Smart City
- VII. Industrial Incubator / Business Park
- VIII. Training & education
- IX. Open Sky Film Studios
- X. Agri training for emerging farmers

A rough-cut assessment of the impact that these projects could have on the objective of revitalising the local economy was done and rated using the following criteria:

This was then applied to key performance areas (KPA). We noted particularly the impact that mining, and especially the Africary strategy could have on the area:

KPA1: Service Delivery and Infrastructure

KPA2: Local Economic Development

KPA3: Municipal Financial Viability

KPA4: Municipal Transformation and Institutional Development

KPA5: Good Governance

Subject to regulatory and other approvals, the following timeline was proposed as achievable, showing cumulative investment at 2019 NPV:

Important to note is that since the mining and power plant operations are largely automated, the job-creation opportunities were not great. Similarly, if the electricity was fed directly into the Eskom grid, it would also not provide any direct benefit to the people and enterprises of the area.

Nonetheless, one would see a period of ten years of continuous construction activities, with employment of more than 100 persons at varying skill levels.

In the mean time, the contributions to economic development projects would be growing steadily as revenue increased.

The picture however changes radically if one considers the other benefits of the syngas beneficial from the coal through polygeneration. If one of these projects had to be used to produce Ultra Low Sulphur Diesel (Euro Spec 5b) as the primary product, then, simply as by-products of the manufacturing process we have the following scenario:

3.2 Africary

3.2.1 Summary

3.2.2 The Company

3.2.3 Mining Right

Coal is the single largest baseload¹⁰ energy source that South Africa has. As the ability to store electricity improves, renewables can replace most if not all of our electricity needs. At present more than 70% of sa's energy needs are met by coal. About 20% is meat by imported oil and natural gas.

¹⁰ Baseload "the permanent minimum load that a power supply system is required to deliver", is a term that is used to describe electricity that is available 24x7.

Even the most optimistic projects for 2050 indicated that the demand for coal will still be significant (around 30% made up from coal and still imported oil and gas).

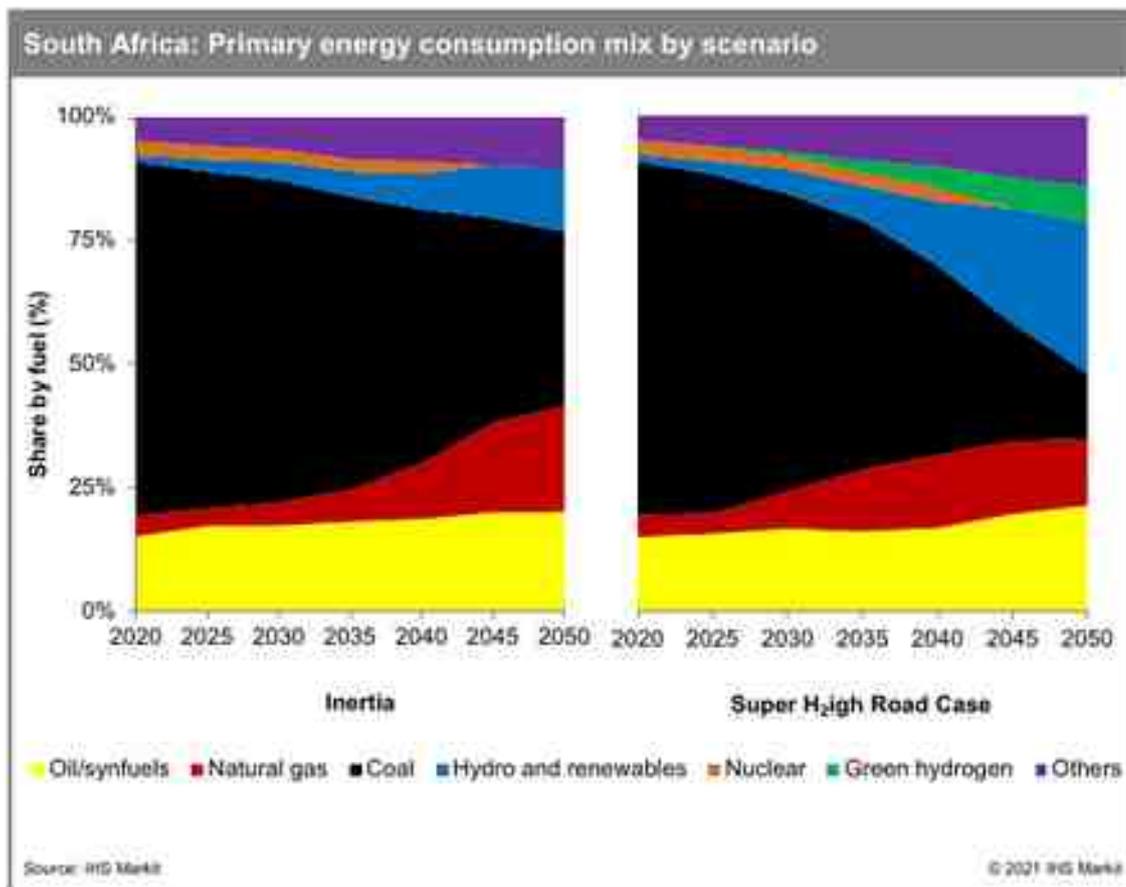


Figure 4: IHS Markinor Report

Prospecting for coal commenced early during 1900 over an area greater than 100 000 hectares in size and until the end of October 1981, 240 coal exploration boreholes were completed by Trans-Natal. The vast majority of minable coal is contained in the No.3 Seam, but the No.4 Seam also has adequate thickness and Calorific Value (energy) qualities to satisfy the requirements of a modern UCG power station.

When Sasol was incorporated in 1950, the demand for coal increased massively and

The Theunissen coal field¹¹

3.2.4 TUG Programme

¹¹ This is a bit of a misnomer since around 80% of the mining right area falls within Ward 24 of Matjhabeng Local Municipality. Previously, it fell within the Theunissen magisterial district. Small portions still fall within the Masilonyana and Tswelopele Local Municipalities.

3.2.4.1 Opportunities

3.2.4.2 Approvals

3.2.5 Future Vision

4 Africary Makes the Difference

4.1 Summary

4.2 Enterprise Development

4.2.1 Opportunities

4.2.2 Types of Enterprise

4.2.3 Enterprise Development Programmes

4.2.4 Critical Success Factors

4.2.5 Africary's Approach

4.3 Socio-Economic Development

4.3.1 Municipal infrastructure

4.3.2 Research into indigenous systems

4.3.3 Conclusion

4.4 Principles in proposing projects

4.5 Approach In Achieving The Obligations

5 Barriers to Progress

5.1 The Green Revolution

5.2 Reality Check

5.3 What Is Really Going On?

In 1997, two historians William Strauss and Neill Howe published a book entitled *The Fourth Turning: An American Prophecy*.