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The impact of platinum mining in Rustenburg

A high-level analysis

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research

1. Introduction

In an ongoing debate about the role of mining in South Africa, the government has expressed that it expects mining companies to increase their operations' wider socio-economic benefits. This high-level analysis provides a fresh outlook on the impact of the main platinum mining houses' operations in the Rustenburg area and aims to contribute to the existing debate on the role of mining, corporate sustainability and living conditions of mining communities in South Africa.

The quantitative data used in this report is primarily sourced from the 2011 census, the South African Department of Statistics, and public company reports. The qualitative analysis is mostly based on extensive on-the-ground research and interviews.

It is important to note that the scope of the research is limited to key socio-economic indicators and does not represent social, economic and environmental impact studies or in-depth social baseline assessments. Furthermore, the research was conducted in 2015 and the data predates the current commodity bear with its negative impact on jobs, social investment, and municipal revenues. This study provides a critical perspective into how this impact may manifest, and its implications.

2. The context: Rustenburg's structural socio-economic problems

Rustenburg's recent history has been closely linked with platinum. Although platinum had been discovered in the early 1900s, it was only in 1925 that platinum mining in the district became financially viable when sufficient deposits were discovered.

Rustenburg profited immensely from South Africa's rising platinum output between 1994 and 2009, which grew by 67% over that period. Before the 2012 strikes, Rustenburg had the third fastest growing economy out of the eight metropolitan municipalities in South Africa, outpaced only by Johannesburg and Ekurhuleni. In 2012, Rustenburg contributed about 4.9% of South Africa's Gross Domestic Product (GDP).

Yet, the mining boom has not benefited the majority of Rustenburg's population due to a plethora of underlying structural socio-economic problems:

1. Demographic effects of the migrant labour system

Rustenburg is one of the fastest-growing urban areas in South Africa. According to the 2011 census, Rustenburg's population grew by 3.5% from about 387,000 inhabitants in 2010 to 550,000 in 2011.

However, there is an abnormally high concentration of young men who are separated from their families due to the migrant labour system. The sex ratio (number of males to 100 females) was 121.8 in 2011. The census data also shows a considerable increase in the male population in the 20-34 age group. Many of these men are unmarried (57% of Rustenburg's total population is unmarried) and those married often live in single-sex hostels far from their families.

Rampant gender-based violence against female mine workers is one of the most important consequences of these challenging demographics. Interviews conducted for this report revealed that female mine workers were often in danger of sexual harassment and rape while underground, while 'sex for jobs' schemes are another issue. The number of reported sex crimes in 2013 – 357 – is higher than in other South African cities of similar size. There is a high number of female-headed households (27% of all households), which have proven to be more likely to be poor.¹

¹ International Fund for Agricultural Development (IFAD). 1999. "The issue of poverty among female-headed households in Africa."

Lastly, English is only the fifth most spoken language in Rustenburg, which causes a language barrier between mine managers and workers. There are 14 recognised and categorised languages in Rustenburg. Setswana is the most widely spoken language (47% in 2012), and its use has increased by 10% from 2010 to 2012. Afrikaans is the second most widely spoken language at 9% in 2012 (in 2010 was 7%), followed by IsiXhosa (8% in 2012), Tshivenda and English (both 5% in 2012). The number and variety of languages used in Rustenburg is also clear evidence of the migrant influx and the cultural differences in the area.

Table 1: Rustenburg ethnic groups

Ethnic group	Population	Percentage of population (in %)
Black Africans	486,373	88
White	51,840	9
Coloured	4,862	1
Indians or Asians	4,214	1

Source: 2011 census

2. HIV continues to plague Rustenburg's workforce

From 2001 to 2011, there was a 49% increase in the number of HIV-infected people in Rustenburg. This is based on an estimate that around 57,000 people in Rustenburg have HIV. Other estimates indicate that around 77,000 people in Rustenburg could be infected with the disease.

Further health problems among mine workers include tuberculosis, malnutrition, and respiratory illnesses. Other local interviewees noted high levels of substance abuse. These issues are compounded by a lack of access to health facilities, with Rustenburg only having one hospital, three health centres and 25 clinics.

3. Crime levels are higher than in other comparable South African cities

There is a higher number of reported thefts, sex crimes, drug-related crimes and residential burglaries in Rustenburg than in other South African cities of similar size. Furthermore, white-collar crime is widespread and frequently not investigated. Figures show that the crime rate in Rustenburg increased by 37% from 2010 to 2013.

4. Lack of access to formal education

Only 31% of Rustenburg's population aged 20 and over have completed high school and only 8.9% of that same age group have some form of higher education. 5.4% of those aged 20 and older have received no form of schooling. On-the-ground research revealed overcrowded schools and a lack of basic schooling infrastructure. In addition, the recent platinum strikes have contributed to a professional skills drain with many teachers leaving Rustenburg to find jobs elsewhere.²

5. Significant poverty levels and income inequality threaten social cohesion

At the last measurement in 2011, unemployment in Rustenburg stood at 26.4% (amounting to roughly 70,000 people), while youth unemployment was at 35%. Furthermore, 30% of the economically active population earn no income and 24% of households live on less than ZAR 600 per month. The poverty level is at almost 62% of the population, which is higher than the national poverty rate.

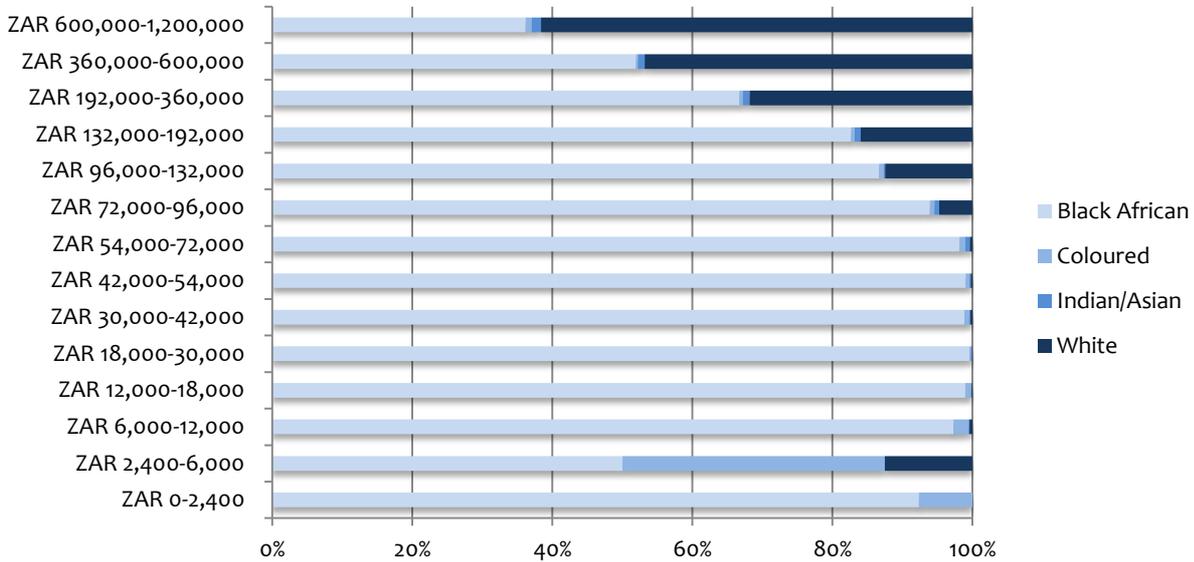
Additionally, income inequality is substantial and along racial lines with poverty highly concentrated among Black Africans. The annual earnings of the top 5% of earners represent the annual earnings of 70% of the general population, while the middle class consists of less than 3% of the total population.³ Black Africans account for 90% of the ZAR 0-2,400 income group (see Figure 1). The strong asymmetry between White families and Black families is compounded by the fact that segregation is not only economic, but also geographic.

² North West Department of Education. 2013. "Annual Report 2012/13."

³ Bureau of Market Research of the South Africa University. 2011. "Information Blurb 2011/06."

This marked inequality - combined with the high poverty rates – is a challenge to the local community’s social cohesion and issues of social justice.

Figure 1: Household annual average income by ethnic group, Rustenburg, 2012

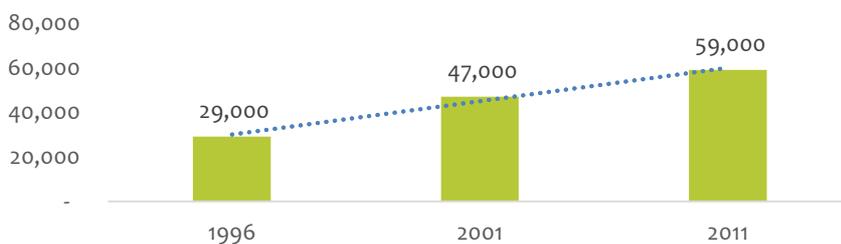


Source: Based on South Africa Integrated Development Plan 2012

6. Informal settlements and a housing backlog

The well-documented lack of adequate housing in Rustenburg contributes to many social issues in the mining communities. In 2011, there was a housing backlog of about 59,000 homes and hostels, while more than 45% of all dwellings in Rustenburg are informal (compared to the national average of 15%). 45% of Rustenburg rents their homes and about 30% own their property. The remaining population (around 20%) either live in hostels or in rent-free accommodation. The resulting crowded dormitory-style living conditions increase the risk of diseases spreading and sexual violence, as highlighted by a 2014 World Bank study.⁴

Figure 2: Housing backlog Rustenburg



Source: Housing Development Agency, 2011

7. Governance deficit

Inadequate local governance compounds many of the aforementioned structural issues, as public service delivery suffers from a mismanagement of local public finances, a lack in government capacity and expertise, and questionable policy decisions. For instance, the latest public budget shows that the local municipality invested more in sporting programmes (ZAR 64.13 million) than in health and housing infrastructure together

⁴ World Bank. 2014. “Southern Africa Tackles Tuberculosis in the Mining Industry.”

(ZAR 10.05 million). On average, social infrastructure (i.e. education, health and transport) accounted for 14% of the total budget allocation in 2014.

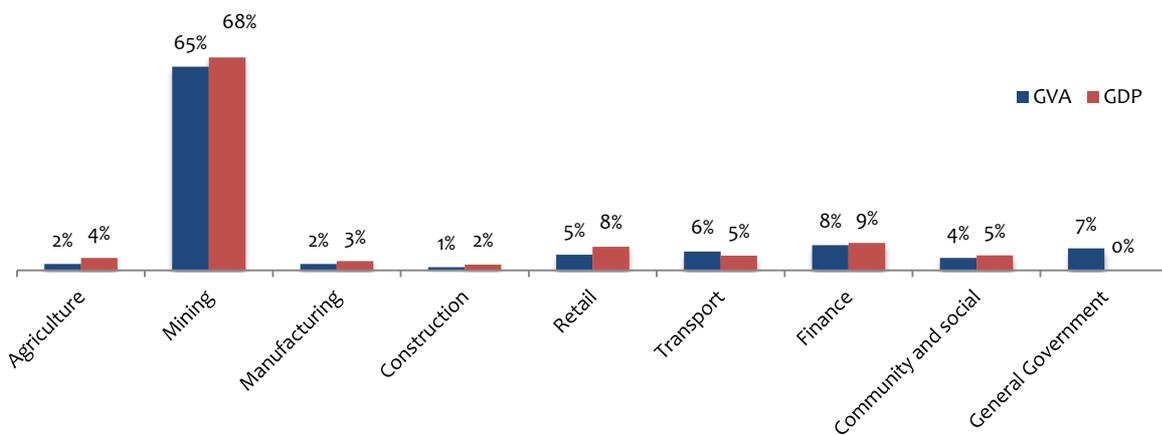
Public officials interviewed mentioned there was a lack of skills and ‘know-how’ in local administration to put a plan into action. Interviewees noted a lack of funding as a major constraint to local government work and efficiency and challenges in coordinating between the local municipality, the district and the province at large. For instance, experts have pointed out that government responses to the migration patterns have been insufficient due to a lack of capacity.

In sum, there is a local governance deficit at the municipality level that compounds many of the structural issues Rustenburg is facing.

8. Dependence on platinum mining

The Rustenburg area is almost solely reliant on the platinum mining industry, which is responsible for more than 65% of local GDP and 50% of all direct jobs. The secondary GDP contributors are, by a considerable margin, finance (9%) and retail (8%). Some interviewees estimate that 70% of all local businesses depend on the local mining industry. Such dependence on a finite natural resource poses a number of risks, including vulnerability to macro-economic shocks such as strikes, commodity price slumps, mine closures, mechanisation and the eventual exhaustion of platinum in the area.

Figure 3: Rustenburg Gross Value Added (GVA) and GDP distribution by local economic sectors



Source: Rustenburg municipality, 2011

9. Impact of the 2012 and 2014 strikes

This vulnerability became worryingly apparent during the 2012 and 2014 strikes, following which Rustenburg’s entire economy predictably suffered heavily from the stoppage of platinum operations and production: Up to 80% of local businesses came to the brink of collapse, while the municipality’s deficit rose to ZAR 423 million. In addition to the economic damage, issues such as high indebtedness, increased substance abuse, a surge in gender-based violence, and a professional skills drain among teachers surfaced.

Conclusion

The current situation represents substantial business and operating risk for the companies present in the Rustenburg area, including a weakened workforce and a heightened potential for labour unrest. The following sections seek to respond to the question if the three main platinum companies in the area have strategies in place to address these issues and what the impact of these strategies is.

3. The impact of platinum companies in Rustenburg

In addition to the direct economic role the three main platinum companies play in Rustenburg, they have also invested considerable amounts with the goal of ameliorating the socio-economic standing of their workers and nearby communities. This section attempts to quantify these investments and analyse their impact. As mentioned above, it must be noted that the data informing this impact assessment predates the current commodity prices with its likely negative impact on social investments.

Overall, and on a positive note, the 2014 Integrated Reporting and Assurance Services (IRAS) Sustainability Data Transparency Index (SDTI) report shows a marked improvement in the reporting of Social Corporate Investment (SCI) and their impacts. Furthermore, IRAS shows that the mining and metals sector is the largest contributor to corporate social investment and socioeconomic development expenditures in South Africa, with 33 companies contributing a reported total of ZAR 3.9 billion, or 46.4% of the total.

Several more nuanced conclusions can be made with regards to the impact of platinum companies in Rustenburg:

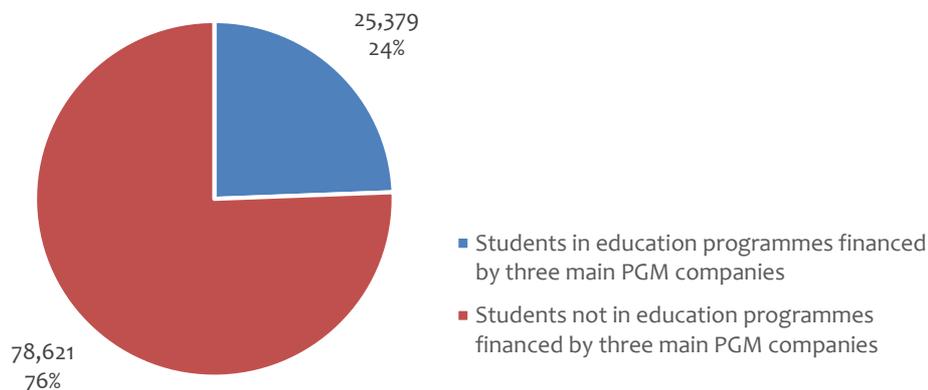
3.1. Platinum companies as employers and economic multipliers in Rustenburg

The three largest platinum companies were until recently responsible for over 66,000 jobs (71,000 total direct mining jobs), which amounted to almost 50% of all direct jobs in Rustenburg. When adding the total number of contractors and suppliers, the total number of direct and indirect mining jobs amounted to 127,000. Also, jobs with mining contractors and suppliers accounted for approximately the same percentage (15%) of total jobs in Rustenburg as public servants (14.7%). In sum, platinum miners acted not only as the largest job providers in Rustenburg, they can also be seen as significant economic multipliers. Sustained job losses therefore represent a significant risk to the area.

3.2. Investments in education

In 2013, the three companies invested a combined ZAR 43 million in education, which corresponded to 20% of total public expenditure in education and social assistance (ZAR 226 million). From 2011 to 2013, the three companies invested a total of ZAR 139.8 million in training and education programmes and over 25,000 students enrolled in company-financed education programmes over that time period, which corresponded to 24% of all total students. These amounts are likely to decrease in the current environment.

Figure 4: Share of total Rustenburg students in education companies financed by PGM producers, 2013



Source: Companies' Sustainable Development Reports, FY'13, Department of Statistics South Africa, 2013

However, on-the-ground research revealed that there was a sentiment that platinum companies should increase this reach and focus on fulfilling some of the schools' basic needs in terms of infrastructure and staffing. One source pointed out that both publicly funded and privately funded schools remain overcrowded.

3.3. Skills development

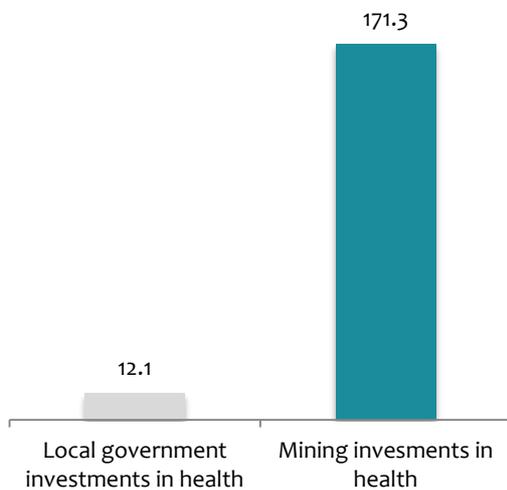
Skills development has been pinpointed by government as a priority in tackling unemployment levels. Additionally, it is also mandatory for mines to assist in the redeployment of workers who were retrenched from mines. In view of potential impending mechanisation, there is an urgent need for the provision of adequate skills to help lower-tiered employees find work after working on the mines. One of the ways in which the three main platinum companies have attempted to do so is through Adult Basic Education and Training (ABET).

In FY'13, 3,079 workers out of total mining workforce were enrolled in ABET, which represented 4.3% of the total mining workforce (71,396). Given that skills development forms an important part of social licensing, this percentage may be seen as insufficient by stakeholders, especially if social investments decrease in the current commodity price crisis. Further research also revealed that the content of skills development was not entirely appropriate to the Rustenburg population, as it did not adequately focus on essential skills in tax and personal finance. The absence of a centralised educational centre for workers of all platinum companies was also criticised.

3.4. HIV programmes

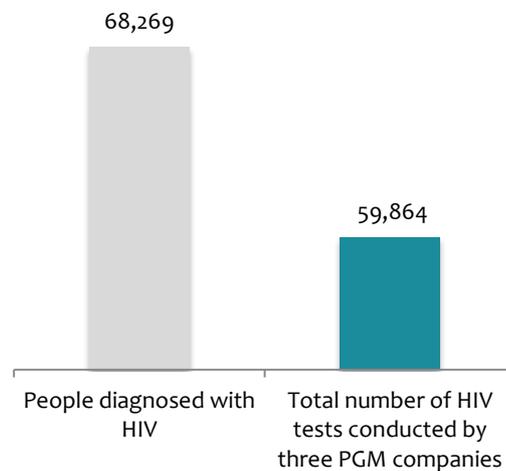
In 2013, the three main platinum producers invested ZAR 171 million in health programmes, which was a staggering 14 times more than the public administration (see Figure 5). Between 2011 and 2013, almost 17,000 people received health care services from the three main platinum producers. Most of these efforts have gone to programmes focusing on HIV. As a positive sign, 88% of all platinum workers took an HIV test in 2013 and all three companies invested in HIV testing for their employees. Furthermore, almost 60,000 HIV tests were conducted by the three main platinum companies (see Figure 6). Nonetheless, there were important differences in the three companies' HIV strategies.

Figure 5: Total investments in health in FY'13 (in ZAR million)



Source: Rustenburg municipality, 2013; Companies' SD reports, 2013

Figure 6: HIV incidences and HIV tests applied by PGM companies in 2013



Source: Rustenburg municipality, 2013; Companies' SD reports, 2013

One company invested in mandatory counselling and voluntary testing (CVT) for all of its employees and invested in expansion and construction of three extras health clinics in town. Another one has undertaken a number of programmes including confidential testing, care and counselling to infected employees through a wellness programme, HIV peer educators, and screening of new employees.

However, some of the companies' number of tested employees could be seen as insufficient given the high HIV prevalence rate. For example, one company reported that only a quarter of all employees were tested for HIV. Another one reported that only 20% of its employees participate in the company-funded HIV wellness programme. Cutbacks by mining companies would have a critical negative impact on these HIV projects.

3.5. Housing investments

The investments made in housing programmes over the last two years amount to ZAR 1.2 billion, which amounted to 60 times the municipal expenditure in that area. In total, between 2012 and 2013, platinum mining companies built around 18,000 new dwellings in Rustenburg, which is substantial given that it covers 30% of the housing backlog from 2011 (59,000 homes). It is estimated that the three main platinum companies provided shelter and accommodation to more than 35,000 employees.

Nonetheless, based on the research conducted for this report, it appears that the companies did not have strategic plans in place to manage the different types of accommodations. For instance, hostels and living-out allowances (renting) tended to cater to lower-tiered employees, migrants, and temporary workers, while the majority of housing projects catered to workers with higher paying jobs and/or those interested in settling down or living in Rustenburg for a long-term period. This nuanced demand did not feature in the publicly available housing strategies.

Another potential area of improvement on-the-ground research has highlighted was the availability of financing mechanisms to make housing more affordable for low-income workers. Such instruments could include affordable mortgages or microcredit programmes, amongst others. Interviewees noted that most company-financed accommodation is overwhelmingly suitable for medium-low and medium-income workers.

Given the current population growth rate, it can be foreseen that additional issues with regards to physical and financial access to social infrastructure, such as schools, recreation areas, and health facilities, may arise and should be taken into consideration when companies design future housing schemes. However, this may be mitigated by the current financial troubles in the industry.

3.6. Local infrastructure and community investments

Over the last three years, the three main platinum companies invested more than ZAR 370 million in local infrastructure, including in the expansion of water supply and treatment facilities, as well as in sport and tourism infrastructure. The private investments in infrastructure alone represented 8% of the total public expenditure in roads, energy, water and waste management (ZAR 4.3 billion) over the same period. One of the companies signed an off-take agreement with the Rustenburg Local Municipality to use treated sewerage effluent from its sewage treatment plant, as well as to expand water facilities in the local municipality. Additionally, the companies invested ZAR 12 million in enterprise development (ED) programmes over the last three years that have yielded the following results:

Table 2: Key performance indicators for company-funded ED programmes, FY'11 – FY'13

Total number of Small and medium-sized enterprises (SMEs) supported	1,377
Total investment in local economic programmes (in ZAR million)	107
Total amount invested in ED programmes (in ZAR million)	12
Total number local SMMEs invested (in in ZAR million)	114.31
Total number of local farmers	93

Source: Rustenburg municipality, Companies' SD reports

In addition, the platinum companies financed a number of cultural and artistic initiatives and social philanthropic activities. The objective of such investments was to promote local social coherence and public safety. However, beyond these projects, Eunomix was unable to identify projects funded by the three main platinum companies that focused directly on public safety. Additionally, the aforementioned social projects often had comparatively small budgets.

Anecdotal evidence also suggests that such projects may not have been seen as priorities: An informal visit to a number of company-sponsored initiatives revealed that one company project was non-existent, while a local entrepreneurship project had been inactive since the 2014 strike.

Conclusion

While further studies are needed to analyse the full impact of platinum companies' community investments on health, education, housing, income, crime, governance capacity and demographics, it can be concluded that the social development plans have been extensive in terms of financial investments, particularly compared to public investments in health and housing. On the other hand, there is space for the strategic direction of the sustainability investment to be more responsive to the nuanced issues that emanate from the structural problems outlined earlier. This may become even more critical in the following years, as the industry responds to the commodity price drop.

4. Recommendations

A number of recommendations can be derived from these conclusions:

- 1. Platinum companies need be more strategic with regards to their community investments:** Eunomix recommends a complete review of all mining projects, with subsequent strategies clearly based on further research on the varying and nuanced needs of the population. This includes, but is not limited to, investments targeting gender-based violence, schooling infrastructure, mine workers' basic finance skills, HIV testing and low-income housing financing schemes.
- 2. Industry players should improve coordination of sustainability projects:** At the moment, platinum companies focus their efforts on different social areas. While some companies invest more in education, others focus rather on HIV testing. Such uncoordinated efforts risk diluting the broader potential community impacts in each area. Therefore, a platinum industry-wide cooperation initiative should be implemented around Rustenburg to coordinate sustainability projects.
- 3. Government needs to invest more in the economic diversification of mining communities:** An analysis of Rustenburg's economic organisation indicates that more needs to be done in the promotion of second tier industries such as tourism. Government and local public institutions urgently need to work on a strategy for the economic diversification of Rustenburg in order to avoid a post-mining 'ghost-town' scenario.
- 4. More cooperation between government and the industry is needed:** A concerted effort towards rekindling relationships across all stakeholders in the public and private domains is needed. Not only would this ensure that companies' community investments target the specific needs of the municipality, more cooperation between government and the industry could also contribute to increasing governance capacity and mitigate the existing trust deficit between both parties.
- 5. Further studies are required:** Overall, Eunomix recommends further analysis, including surveys and a robust social baseline assessment to fully comprehend the past and current social, political and economic realities today. This would help both mining companies and government to create and develop better strategies to ensure better social cohesion and economic growth for Rustenburg's short and long-term future.

Annex

4.1. Combined KPIs and outputs

Indicator name	
Education	
Total number of people in internship programmes (year)	263
Community members in training courses (year)	438
Total number of students in education programmes (year)	25379
Total training and education expenditure (in ZAR million)	139.8
Health	
Total number of people received health care services (year)	16875
Total number of health clinics built (year)	3
Total health programme expenditure (in ZAR million)	160.2
Total amount invested in HIV programmes (in ZAR million)	26.6
Total number of HIV tests (year)	59864
Enterprise Development (ED)	
Total number of SME supported (year)	1377
Total investment in local economic programmes (in ZAR million)	107
Total amount invested in ED programmes (in ZAR million)	12
Total number local SMMEs invested (in in ZAR million)	114.31
Total number of local farmers (year)	93
Housing	
Total number of homes owned and leased (year)	6652
Total number of homes built (year)	4815
Employees accommodated in hostels (year)	11439
Total number of employees living in company's homes (year)	1171
Housing and accommodation expenditure (in ZAR million)	526
Community	
Social investment in youth (in ZAR million)	16
Community social investment (in ZAR million)	31
Total amount invested in community infrastructure (in ZAR million)	162.7
Total amount invested in sport programmes (in ZAR million)	12
Total amount invested in art and culture programmes (in ZAR million)	22.3
Total number of beneficiaries in all socio-economic development programmes (year)	168000
Total number of young beneficiaries	1463

4.2. Challenges in writing this report

As much as possible, Eunomix has strived to present an objective lay of the land and analysis of secondary data while continuously monitoring and comparing that objective data to the day-to-day realities through qualitative research and field visits. Due to the fact that most of the data is about three years old with the added problem of a significantly altered landscape post-strikes, we found notable discrepancies between our data driven analysis and our qualitative research based on field visits to the region. At this stage it is not possible to fully understand how significant the gaps are, and how and to what extent they may affect the impact analysis presented in this document.

4.2.1. Overarching challenges

- The primary challenge in analysing the current data available in a number of the areas studied is that often data from government departments, if available, is incomplete and inconsistent.

- Most of the data relies heavily on the 2011 National Census. While reliable, this presents a specific challenge because the census took place just at the tail end of the platinum boom and there has been significant economic and population growth in the area in the three years since.
- There does not seem to be a consensus amongst all sources Eunomix has used with regards to the geographical determination of Rustenburg. While some included surrounding villages, others seem to only regard the city itself as 'Rustenburg'. This has had various implications for our data collection and assessment.

4.2.2. *Demographics and socioeconomics*

- Most of the assessed social data from the mining houses was not organised or distributed by neighbourhoods, zones or even by urban and rural areas. This represents a challenge in interpreting the social environment and measuring the impact of the platinum companies on Rustenburg.
- Eunomix had access to demographic maps that helped us in visualising language distribution, as well as income and ethnic groups in Rustenburg. However, the detailed backing data of these maps are not available to the public.
- Eunomix had meetings with several public officials from various municipal departments and local public institutions. Whilst mostly welcoming, some officials were unwilling to discuss or share what should be publicly available information.
- We believe that most of the data on crime and household structures requires revaluation since the data available doesn't seem to match information provided by Eunomix's sources.
- Data on chronic diseases were surprisingly hard to locate and analyse. Therefore Eunomix could not assess any other chronic disease apart from HIV due to lack of clear data available and the data breakdown.

4.2.3. *Economic organisation*

- Most of the data on economic indicators (GVA, GDP, etc.) were out-dated (2011) and do not reflect the economic changes in Rustenburg after the 2014 strikes.
- Eunomix identified several secondary tier employers in Rustenburg; the business segments that employ the most after the mining companies. However, the majority of those companies don't publish annual reports or detailed data on the total number of employees, taxes paid, revenues and other economic indicators;
- The local municipality does not provide a detailed on tax revenue framework, municipal budget and budget allocation breakdown. This is unfortunate as this information should be in the public domain.
- Similarly, the local municipality does not provide information on the current and future investments in social infrastructure or services.

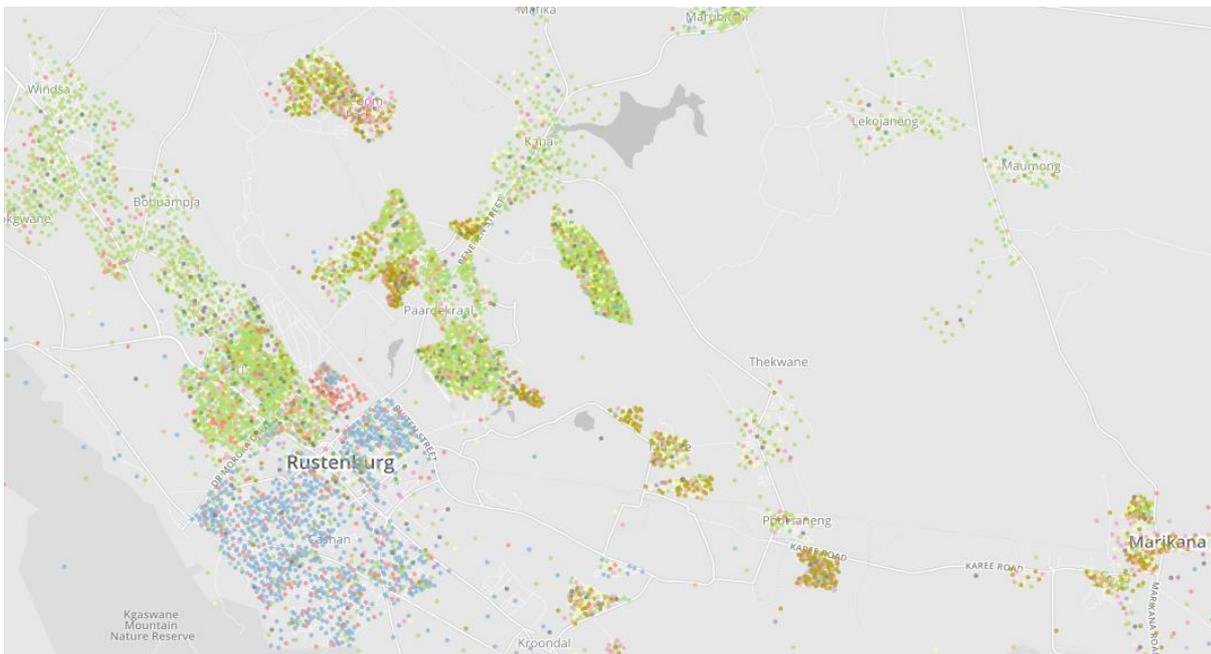
4.2.4. *Economic contributions of the platinum companies*

- The three platinum companies adopt different approaches in reporting economic indicators. For instance, Amplats SD reports don't have data on employees by municipalities, but by provinces or by country. This represents a challenge to compare and assess economic data of the platinum companies.
- Eunomix identified that all of three companies don't have the same approach in reporting taxes paid. Implats is the only company that has a breakdown of the information on taxes paid (i.e. income tax, royalties, etc.).

4.2.5. Social contributions of the platinum companies

- Eunomix identified that Implats, Amplats and Lonmin do not have common and standardised indicators to track and report social investments in the community. This represents a challenge to compare SD/CSR investments between companies and other entities.
- Most of the SD reports don't follow a standardised approach in presenting SD/CSR results. Also, most of the time the information of these SD /CSR results are fragmented in the SD reports and sometimes contradictory.
- There is a lack of information in the SD reports on stakeholders engaged in SD/CSR projects, as well as a list of projects containing total investments and number of beneficiaries.
- As such, missing information, lack of consistent KPIs year-after-year, lack of follow through on some of these social and ED projects paint an incomplete picture of the impact of the platinum mines corporate sustainability initiatives and strategy

4.1. Geographic distribution of languages



One dot = 50 people

■ Afrikaans	■ English
■ isiNdebele	■ isiXhosa
■ isiZulu	■ Sepedi
■ Sesotho	■ Setswana
■ siSwati	■ Tshivenda
■ Xitsonga	■ Other

First language from Census 2011. Note that some 800 000 people living in institutional settings were not asked about their languages and are not included here.

Source: Adrian Frith. "Mapping South Africa with dot distribution." <http://dotmap.adrianfrith.com/>



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