SOCIAL-ECONOMIC IMPACT ASSESSMENT

FOR THE PROPOSED CONSTRUCTION AND UPGRADING OF ROAD D5010 AND D5021, INCLUDING THE ASSOCIATED INFRASTRUCTURE WITHIN THE LEPELLE-NKUMPI AND FETAKGOMO TUBATSE LOCAL MUNICIPALITIES, CAPRICORN AND SEKHUKHUNE DISTRICT MUNICIPALITIES, LIMPOPO PROVINCE (RAL/T1282/2025)



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October 2026

Item	Description		
Proposed development and location	The proposed construction and upgrading of Road D5010 and D5021, including the associated infrastructure, within the Lepelle-Nkumpi and Fetakgomo Tubatse Local Municipalities, Capricorn and Sekhukhune District Municipalities, Limpopo Province (RAL/T1282/2025)		
Purpose of the study	The proposed construction and upgrading of Road D5010 and D5021, including the associated infrastructure, within the Lepelle-Nkumpi and Fetakgomo Tubatse Local Municipalities, Capricorn and Sekhukhune District Municipalities, Limpopo Province.		
Municipalities	Lepelle-Nkumpi and Fetakgomo Tubatse Local Municipalities, Capricorn and Sekhukhune District Municipalities		
Predominant land use of surrounding area	The current area is zoned as mixed rural-residential and natural land		
Applicant	RAL (SOC) Ltd		
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ABBREVIATIONS AND KEY CONCEPTS

AIDs	Acquired Immune Deficiency Syndrome
CS	Community Survey
CSI	Corporate Social Investment
HIV	Human Immunodeficiency Virus
IDP	Integrated Development Plan
SAHRA	South African Heritage Resource Act
SDF	Spatial Development Framework
SDS	Spatial Development Strategies
STD	Sexually Transmitted Disease
SIA	Social Impact Assessment

1. PROJECT DESCRIPTION

1.1.Background

Roads Agency Limpopo (RAL) SOC Ltd proposes the construction and upgrading of Roads D5010 and D5021, including the installation of associated culverts and construction of a bridge across the Olifants River. Both roads are currently gravel roads and are proposed to be upgraded to a bituminous-surfaced road standard to improve road safety, accessibility and connectivity within the surrounding communities. The proposed bridge will have an approximate length of 140 m and a footprint of approximately 1,687 m². The total length of the proposed road works is approximately 3.6 km, comprising approximately 2.2 km for the upgrading of Road D5010 and 1.4 km for the construction of the new section of Road D5021.

The proposed development also requires several associated regulatory applications, including a Water Use Licence Application (WULA) to the Limpopo-Olifants Catchment Management Agency (LOCMA), an application for the borrow pit authorisation from the Department of Mineral and Petroleum Resources (DMPR), and an application for a tree-cutting licence/permit in terms of the National Forests Act, 1998 (Act No. 84 of 1998). These associated applications are being undertaken in conjunction with the Environmental Authorisation process to ensure that all relevant environmental and resource-use requirements for the proposed development are addressed.

2. Project Locality

The proposed construction and upgrading of Roads D5010 and D5021 project is located within Apel and Nkotokwane villages, with the construction of a bridge over the Olifants River within Lebowakgomo Town. The proposed project is located on Portion 0 of Farm Olifantspoort 479 KS, Portions 0 and 2 of Farm Mooiplaats 516 KS, and Portion 0 of Farm Eerste Recht 502 KS. The project site spans the boundary between the Fetakgomo Tubatse Local Municipality within the Sekhukhune District Municipality and the Lepelle-Nkumpi Local Municipality within the Capricorn District Municipality, Limpopo Province. Figure 1 illustrates the location of the proposed development, while Table 1 provides a summary of the properties affected by the project.

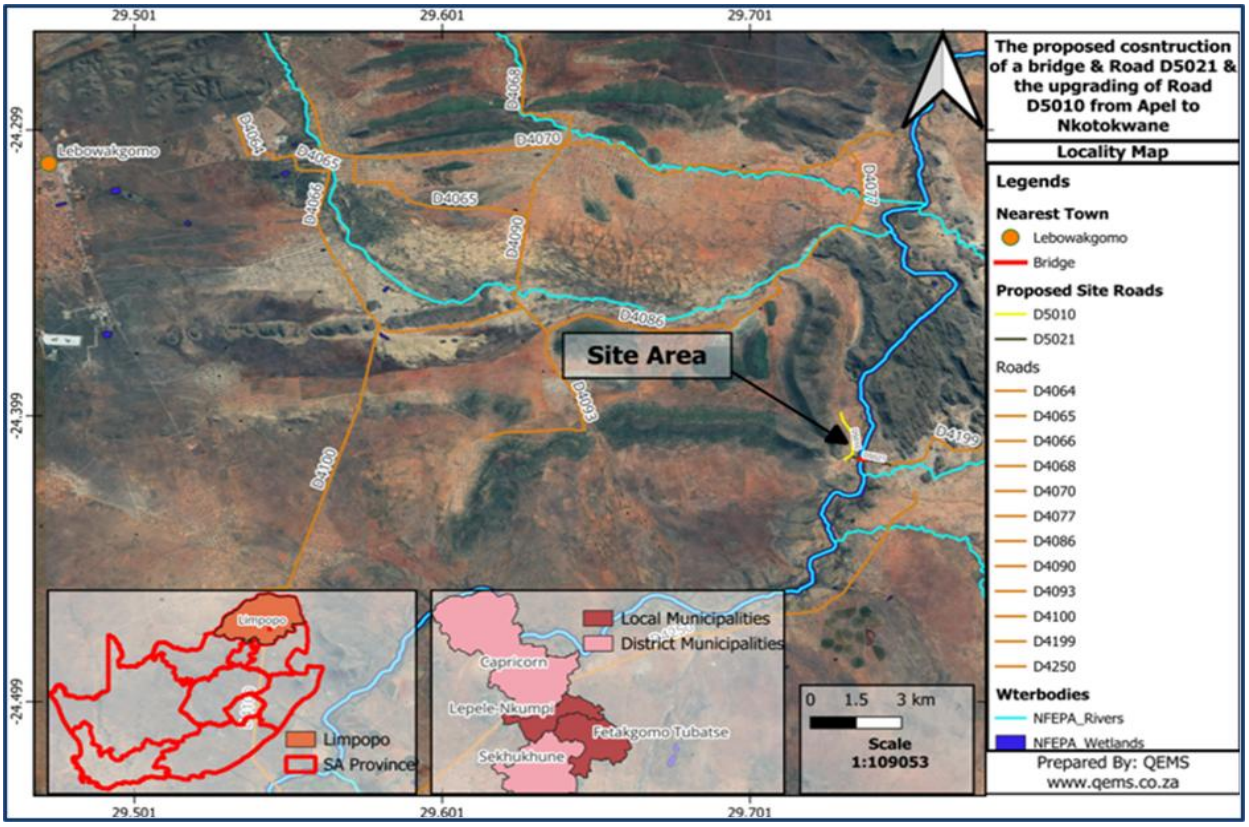


Figure 1: Locality map

Table 1: Surveyor General 21-digit code

Farm Name and No.	Farm Portion	Surveyor General 21 Digit code
Road D5021 & Bridge		
Olifantspoort 479 KS	0	T0KS00000000047900000
Mooiplaats 516 KS	0	T0KS00000000051600000
Mooiplaats 516 KS	2	T0KS00000000051600002
Eerste Recht 502 KS	0	T0KS00000000050200000
Road D5010		
Olifantspoort 479 KS	0	T0KS00000000047900000

3. LEGISLATION AND POLICY GUIDELINE

3.1 APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES.

Table 2: Applicable Legislation, Policies and/or Guidelines

Title of legislation, policy, or guideline:	**Administering authority:**	**Date:**
Constitution of the Republic of South Africa, 1996 (Act 108 of 1996)	Government of South Africa	1996
National Environmental Management Act (NEMA), 1998 (Act 107 of 1998)	Department of Forestry, Fisheries and the Environment (DFFE) and the Limpopo Economic Development, Environment and Tourism (LEDET)	1998
National Water Act, 1998 (Act 36 of 1998)	Department of Water and Sanitation (DWS)	1998
National Heritage Resources Act (No 25 of 1999)	South African Heritage Resources Agency (SAHRA)	1998
National Environmental Management: Waste Act, 2008 (Act 59 of 2008)	LEDET / Local Municipality	2008
National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)	LEDET / Local Municipality	2004
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)	DFFE/ LEDET	2004
Conservation of Agricultural Resources Act (CARA), 1983 (Act 43 of 1983)	Department of Agriculture, Land Reform and Rural Development (DALRRD)	1983
Municipal By-laws Spatial Planning and Land Use Management By-law	Local Municipalities: Lepelle-Nkumpi and Fetakgomo Tubatse Local Municipalities	2019

4. PURPOSE OF THE SIA

This document serves to support the assessment of potential socio-economic impacts associated with the proposed development and its interaction with the surrounding communities of

Nkotokwane and Apel. It provides a socio-economic baseline against which potential project-related social risks and opportunities can be identified, assessed, and managed in accordance with applicable South African legislation and relevant international best-practice standards.

The socio-economic assessment was undertaken in a phased manner to align with the environmental authorisation requirements and the social impact assessment (SIA) process. The first phase comprised a desktop assessment, which involved a review of available demographic and socio-economic data to establish the local and regional context and to identify potential socio-economic sensitivities associated with the affected communities. The second phase included site observations, which informed an improved understanding of local conditions, livelihood patterns, and community dynamics, as well as potential socio-economic impacts associated with the proposed development. The third and final phase involved the impact assessment component, which focused on evaluating the significance of the identified socio-economic impacts and formulating appropriate mitigation and management measures aimed at avoiding, reducing, or managing adverse impacts, while enhancing potential positive outcomes.

The integration of these phases provided the information required to inform the SIA and contribute to the broader Environmental and Social Impact Assessment (ESIA) process.

The key aims and objectives of the socio-economic assessment are to:

- Identify and assess the potential positive and negative socio-economic impacts associated with all phases of the proposed development;
- Develop feasible and context-specific mitigation measures to enhance positive impacts and to avoid, reduce, or manage negative impacts; and
- Establish appropriate management and monitoring measures to be implemented throughout the project life cycle.

4. TERMS OF REFERENCE

Based on the above, this SIA entails:

- Describing the environment that may be affected by the establishment of an integrated agriculture project and its associated infrastructure, within the Limpopo Province, Lepelle-

Nkumpi and Fetakgomo Tubatse Local Municipalities, Capricorn and Sekhukhune District Municipalities.

- Highlighting the manner in which the environment may be affected by the proposed development;
- Describing and assessing the potential social issues associated with the proposed development; and
- Identifying negative and positive impacts that may arise as a result of the proposed development and suggesting ways in which these impacts may be enhanced or mitigated.

5. ASSUMPTIONS AND LIMITATIONS

All data from published sources is accurate and valid at the time of publication.

The scope of this study is limited to assessing the potential social impacts arising as a result of the establishment of an integrated agriculture project with associated infrastructure.

6. SOCIO-ECONOMIC PROFILE

7. Background

A socioeconomic profile gives an overview of the social and economic traits of a specific group. It looks at factors like education, age, gender, and population size. This information helps us understand their status in society, their access to resources and opportunities, and their overall quality of life. Such profiles are important for analysing trends, developing policies, and understanding different populations in areas like healthcare and urban planning. In this case, the socioeconomic profile uses data from the 2011 census conducted by Statistics South Africa (StatsSA). This is the latest national population census offering detailed village-level insights, thereby allowing for an in-depth analysis of small villages. In contrast, the 2022 Census provides only provincial and municipal summaries without the detailed "small area/place" tables. Adrian Frith is a researcher who has compiled and visualised the 2011 Census data from Statistics South Africa (Stats SA) at a detailed level, from province to subplace (Frith, 2011). His website simplifies access to demographic statistics, including population numbers, age structures, household sizes, languages, and gender breakdowns at the subplace level. The Nkotokwane and Apel villages' data

were found simplified on the Adrian Frith website. The Nkotokwane and Apel villages are recorded as the main place on the website.

According to Statistics South Africa (Stats SA) Census 2011, Main Places represent the primary geographical units in the census place-name hierarchy, while Sub-places are subdivisions of Main Places. Both Apel and Nkotokwane are classified as Main Places in the Census 2011 geographical records. The census provides demographic and socio-economic information, including population size, household numbers, employment status, and access to basic services. However, as the data is more than a decade old, it may not accurately reflect the current demographic and socio-economic conditions of these areas. Changes in population size, household numbers, migration patterns, unemployment rates, and access to basic services may have occurred since the 2011 census. The study focuses on Apel and Nkotokwane, located within Fetakgomo Tubatse and Lepelle-Nkumpi Local Municipalities, respectively, in the Sekhukhune and Capricorn Districts of Limpopo Province. The geographical distribution of these two study areas is illustrated in the locality map presented in Figure 2.

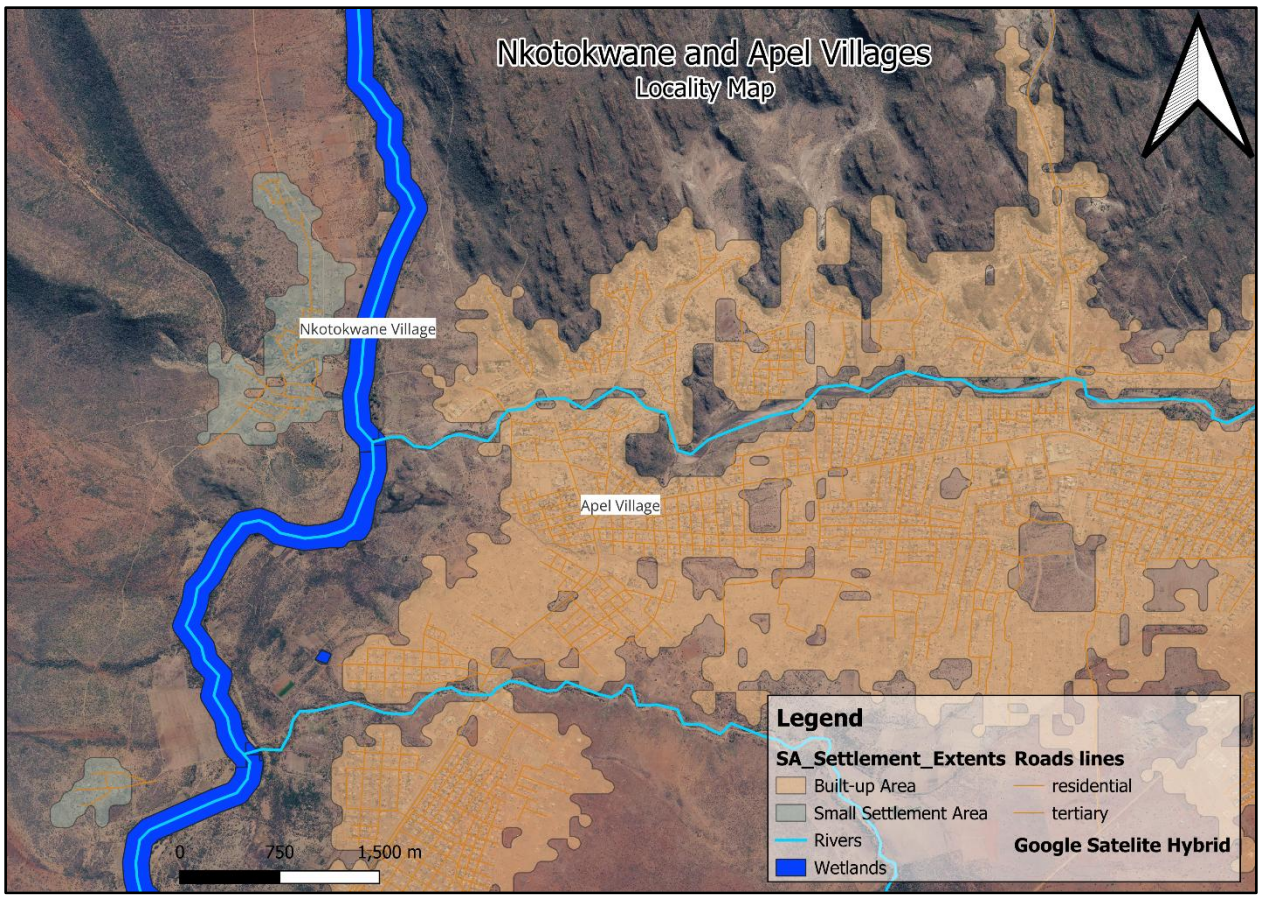


Figure 2: The locality map for Nkotokwane and Apel villages

Limpopo, previously called the Northern Province, is located in the northern part of South Africa. It shares borders with Botswana, Zimbabwe, and Mozambique. The province is famous for its rich cultural heritage and is home to the Mapungubwe Cultural Landscape, a UNESCO World Heritage Site. According to the 2022 Census, Limpopo has a population of about 6.6 million. Around 96.5% of the residents are Black African, while 2.2% are White. The three most common languages spoken in the province are Sepedi (55.5%), Tshivenda (17.4%), and Xitsonga (17.3%) (Statistics South Africa, 2024). In 2022, Limpopo was the fifth-largest province contributing to South Africa's national GDP (Statistics South Africa, 2024). The GDP growth rate for Limpopo was 1.0%, which is lower than the national growth rate of 1.9%. This rate placed Limpopo sixth in the country. Figure 3 shows where the Limpopo province is located in South Africa.

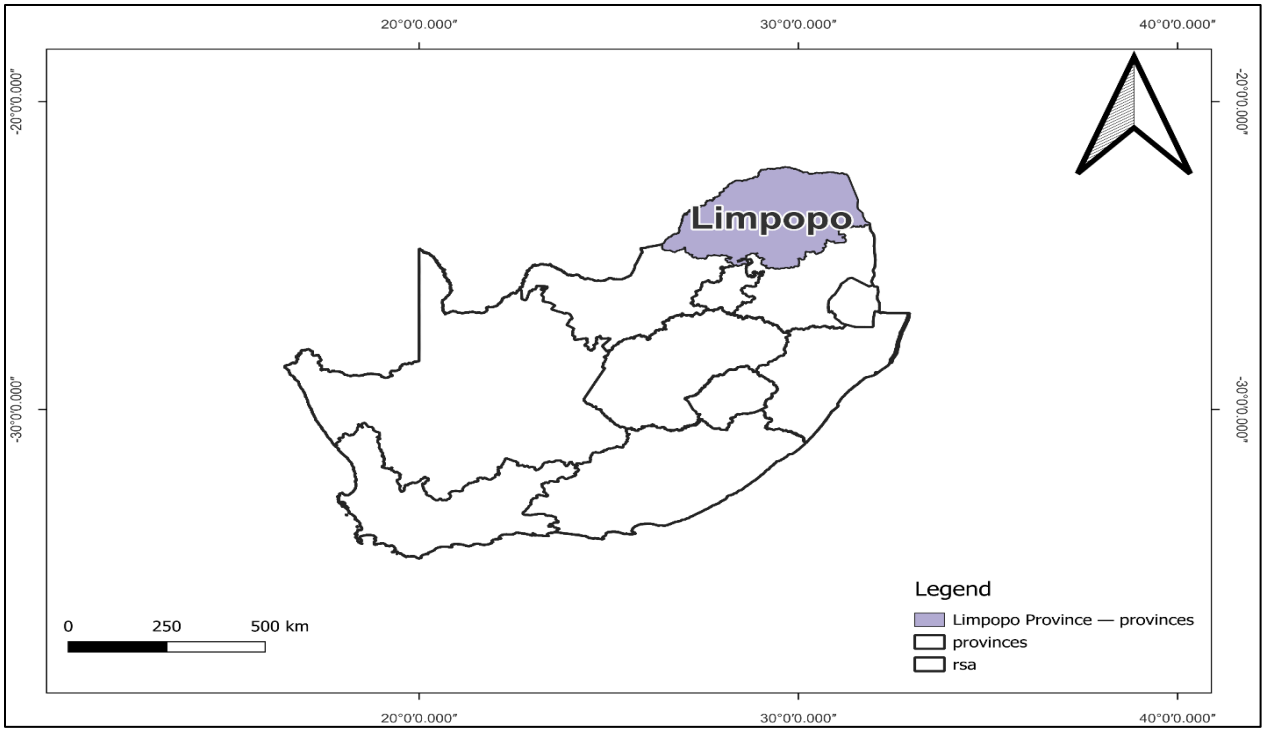


Figure 3: Location of Limpopo in South Africa

Limpopo's GDP in 2022 was boosted mainly by mining, personal services, and finance. Mining was the biggest contributor, accounting for 25% of the GDP. Personal services followed closely at 24%, finance contributed 14%, and transport made up 5%. In Limpopo, there are more females than males, following the national trend, with 47.2% males and 52.8% females. The age structure from Census 2022 shows fewer people aged 0 to 29 compared to Census 2011. However, there are more individuals aged 30 to 70 in 2022 than in 2011. The data shows a notably low number of people aged 15-24 in 2022. Both censuses indicate that Limpopo has a large proportion of children and working-age individuals, while the number of older individuals decreases with age.

In Limpopo, Sepedi is the most spoken language, used by 55.5% of people. The next most common languages are Tshivenda, spoken by 17.4%, and Xitsonga, spoken by 17.3%. Khoi, Nama, and San languages have the fewest speakers. About 1,000 people use sign language, which is now one of the official languages in the country. The Census 2022 shows that 1.6% of people in the province speak Shona. More people speak Shona than English and other local languages like IsiNdebele, IsiXhosa, IsiZulu, Sesotho, Setswana, and Siswati. Only Afrikaans, Sepedi, Tshivenda, and Xitsonga are spoken in more households than Shona.

The Sekhukhune District Municipality is situated in the south-eastern part of Limpopo Province and shares boundaries with the Capricorn and Mopani Districts to the north, Mpumalanga Province to the south and east, and the Waterberg District to the west. The district covers approximately 13,528 square kilometres and is predominantly rural, comprising four local municipalities, namely Elias Motsoaledi, Ephraim Mogale, Makhuduthamaga and Fetakgomo-Tubatse. Some of the main towns and settlements within the district include Burgersfort, Steelpoort, Groblersdal, Marble Hall, Apel, June Furse and Driekop. Apel, the study area, falls within the Fetakgomo Tubatse Local Municipality. The district's economy is primarily driven by mining, agriculture and community services, with mining being the largest economic contributor. According to the CoGTA District Profile (2020), mining accounted for approximately 48% of the district's gross value added in 2019, equivalent to R18.6 billion. Community services contributed 16%, followed by the finance sector at 14%. These economic activities play an important role in the district's economic development and employment opportunities (Department of Cooperative Governance and Traditional Affairs, 2020). Figure 4 shows the Sikhukhune District in Limpopo Province with the 4 municipalities found in the Sikhukhune District.

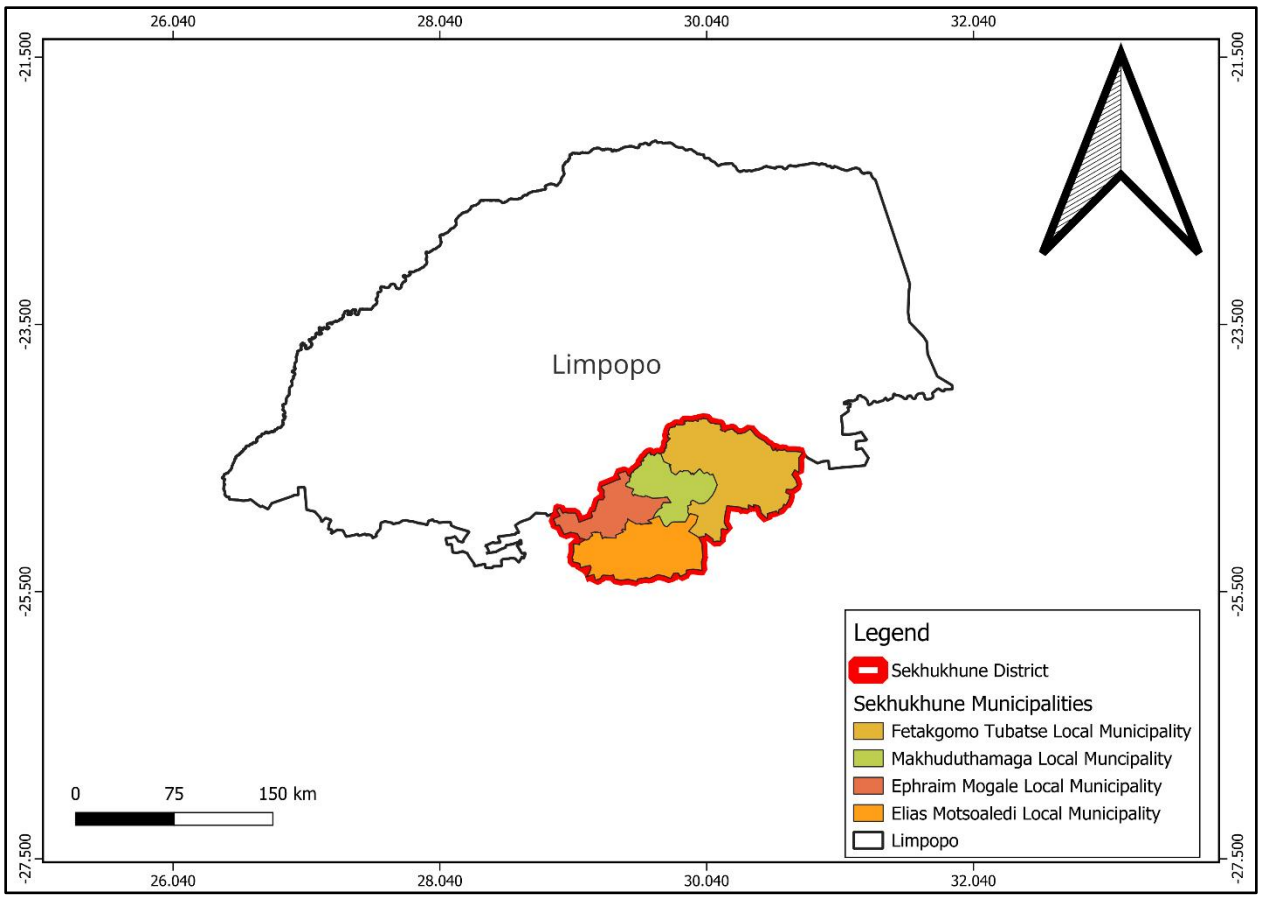


Figure 4: The Sekhukhune District municipalities

The Capricorn District Municipality is situated in the central part of Limpopo Province and shares boundaries with the Vhembe District to the north, Mopani District to the east, Sekhukhune District to the south and Waterberg District to the west. The district covers approximately 16,970.30 square kilometres and comprises four local municipalities, namely Blouberg, Molemole, Polokwane and Lepelle-Nkumpi. The City of Polokwane, which is also the provincial capital, serves as the district's main administrative and economic centre. Other important towns include Lebowakgomo, Senwabarwana, Morebeng and Zebediela. Nkotokwane, the study area, falls within the Lepelle-Nkumpi Local Municipality. The district's economy is driven by agriculture, manufacturing, mining, trade and community services, with Polokwane serving as an important commercial and transport hub due to its strategic location along the N1 corridor connecting Gauteng with the northern parts of Limpopo and neighbouring countries. According to the CoGTA District Profile (2020), the district employed approximately 353,000 people in 2018, representing 26.56% of total employment in Limpopo Province. Community services and trade were the largest contributors to

employment within the district, accounting for 26% and 25%, respectively (Department of Cooperative Governance and Traditional Affairs, 2020). Figure 5 shows the Capricorn District in Limpopo Province with the 4 municipalities found in the Capricorn District.

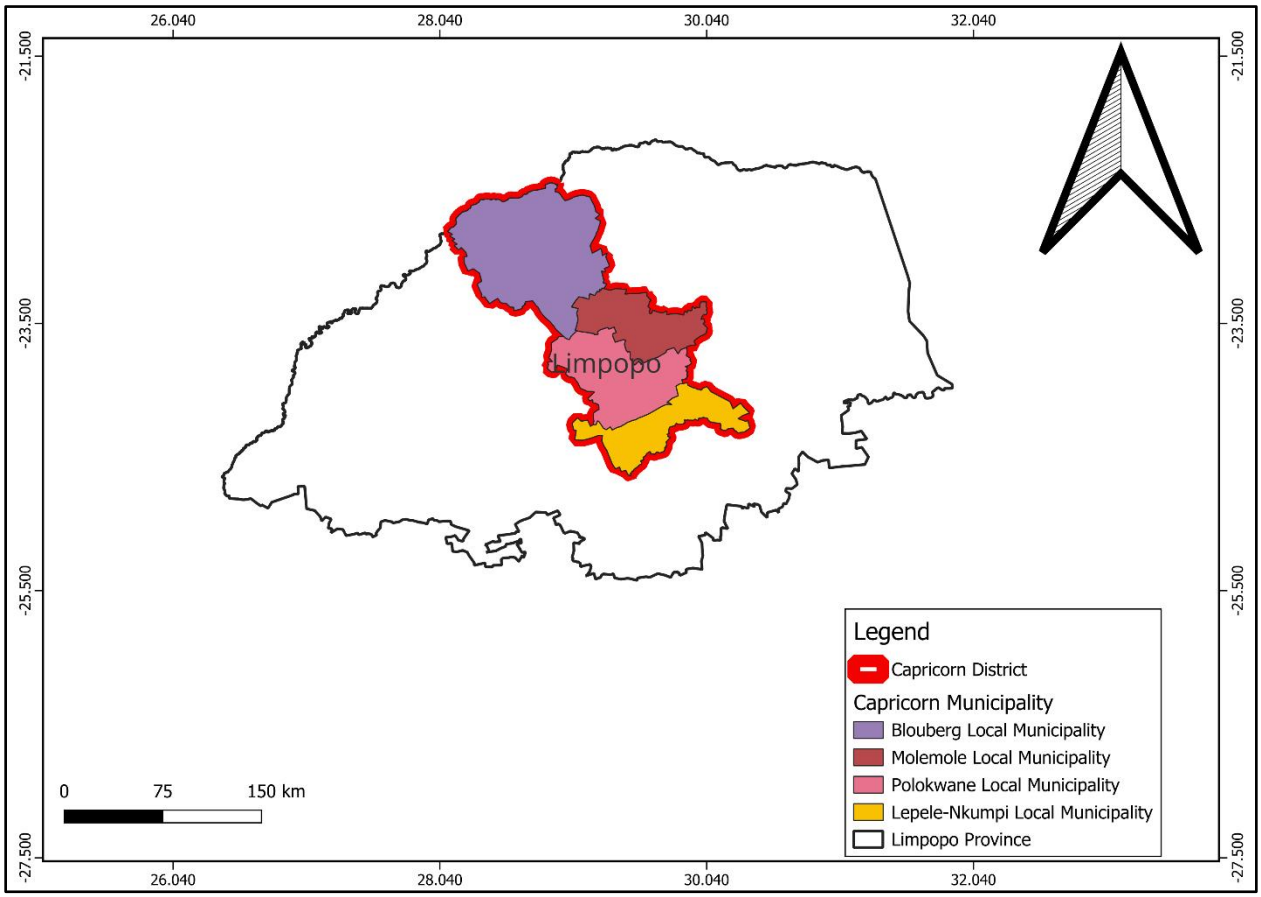


Figure 5: The Capricorn District municipalities

It is important to note that, although Figure 4 illustrates the current municipal boundaries, the municipal arrangements were different when the 2011 Census data was collected. In Sekhukhune District, Fetakgomo and Greater Tubatse existed as separate local municipalities in 2011. These municipalities were subsequently amalgamated following the 2016 municipal elections to form the current Fetakgomo-Tubatse Local Municipality (Department of Cooperative Governance and Traditional Affairs, 2020). In Capricorn District, the Aganang Local Municipality was dissolved during the subsequent municipal boundary changes, with its geographical areas incorporated into Blouberg, Molemole and Polokwane Local Municipalities. Consequently, Capricorn District currently comprises four local municipalities, namely Blouberg, Lepelle-Nkumpi, Molemole and

Polokwane (Statistics South Africa, 2022). It is also important to distinguish between the 2011 Census geographical classifications and the current municipal boundaries. According to the Stats SA Census 2011 profiles, Apel was recorded under Fetakgomo Tubatse Local Municipality, while Nkotokwane was recorded under Lepelle-Nkumpi Local Municipality. However, the current geographical mapping of the Apel study area places it within Fetakgomo-Tubatse Local Municipality. These differences should be considered when interpreting historical census data in relation to the current municipal boundaries.

Fetakgomo-Tubatse Local Municipality is situated in the eastern part of Limpopo Province and forms part of the Sekhukhune District Municipality. The municipality was established in August 2016 following the amalgamation of the former Fetakgomo Local Municipality and Greater Tubatse Local Municipality. It covers an area of approximately 5,693 km² and is characterised by predominantly rural settlements, particularly in its northern parts. The main towns within the municipality include Burgersfort, Steelpoort and Ohrigstad, while Apel is one of the settlements within its jurisdiction. The municipality's economy is supported by mining and quarrying, agriculture, trade, tourism, manufacturing and community services. Mining is an important economic activity in the area, while agriculture and informal economic activities also contribute to local livelihoods (Department of Cooperative Governance and Traditional Affairs, 2020; Local Government Handbook, 2021).

Lepelle-Nkumpi Local Municipality is located in the southern part of Capricorn District Municipality in Limpopo Province. The municipality is predominantly rural and comprises numerous villages and settlements, with approximately 95% of its land falling under the jurisdiction of traditional authorities. Its administrative centre is Lebowakgomo, which also serves as an important economic and service centre within the municipality. Other prominent settlements include Magatle, Mamaolo, Moletlane, Mogoto and Zebediela. The local economy is characterised by a combination of formal and informal economic activities, including agriculture, subsistence farming, informal trading and service-related activities. The municipality also provides an important rural settlement and agricultural base within the Capricorn District (Department of Cooperative Governance and Traditional Affairs, 2020; Lepelle-Nkumpi Local Municipality, 2025).

Table 3: The Municipality changes for the selected villages in the Sekhukhune and Capricorn District Municipalities.

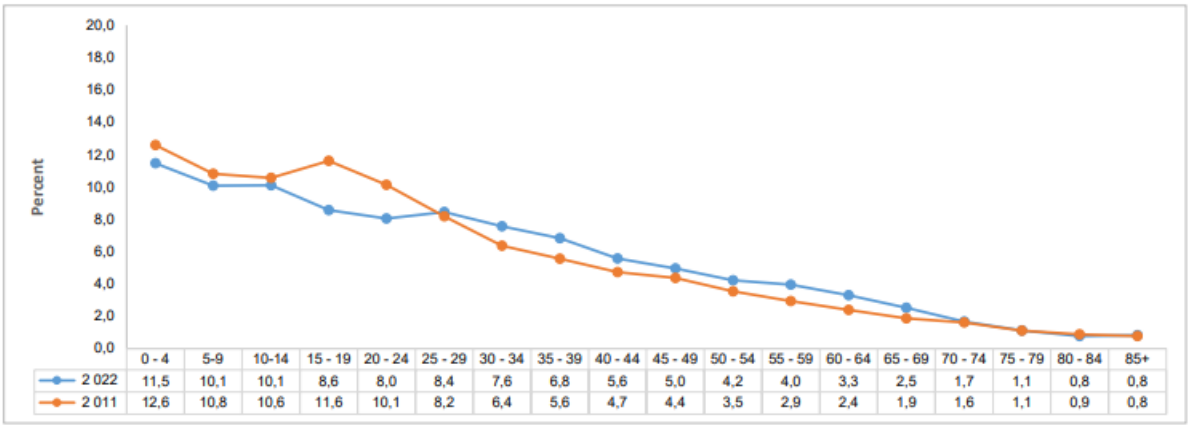
Village	**Former Municipality**	**Current Municipality**
Nkotokwane	Lepelle-Nkumpi Local Municipality	Lepelle-Nkumpi Local Municipality
Apel	Fetakgomo Local Municipality	Fetakgomo Tubatse Local Municipality

Table 4 shows the area of the land, population, and population density for the Limpopo Province using the local municipality for the 2011 and 2022 censuses. This shows the difference in the census for 2011 (which had a population density of 43) and the census of 2022 (with a population density of 52), showing an increase in both population density and population size. Figure 6 and Figure 7 show a comparison of age structures as well as gender pyramids for the census 2011 and 2022, respectively.

Table 4: The population density by local municipality for the census 2011 to 2022 (Statistics South Africa, 2024)

Local Municipality	**Land Area**	**Population**		**Population Density**	
		2011	**2022**	**2011**	**2022**
Limpopo	**125 757**	**5 404 866**	**6 572 721**	**43**	**52**
Greater Giyani	4 167	242 986	316 841	58	76
Greater Letaba	1 896	213 932	261 038	113	138
Greater Tzaneen	2 896	389 623	478 254	135	165
Ba-Phalaborwa	7 490	150 637	188 603	20	25
Maruleng	3 563	95 328	128 137	27	36
Musina	10 347	104 709	130 899	10	13
Thulamela	2 642	450 131	575 929	170	218
Makhado	7 605	411 353	502 452	54	66
Collins Chabane	5 003	328 529	443 798	66	89
Blouberg	9 540	175 085	192 109	18	20
Molemole	3 628	126 506	127 130	35	35
Polokwane	5 054	728 633	843 459	144	167
Lepele-Nkumpi	3 484	231 239	284 405	66	82
Thabazimbi	11 190	85 234	65 047	8	6
Lephalale	13 794	118 864	125 198	9	9
Bela-Bela	3 406	66 500	64 306	20	19
Mogalakwena	6 156	304 585	378 198	49	61
Modimolle-Mookgophong	10 368	104 153	130 113	10	13
Ephraim Mogale	2 011	123 648	132 468	61	66
Elias Motsoaledi	3 713	249 363	288 049	67	78
Makhuduthamaga	2 110	274 880	340 328	130	161
Fetakgomo Tubatse	5 694	428 948	575 960	75	101

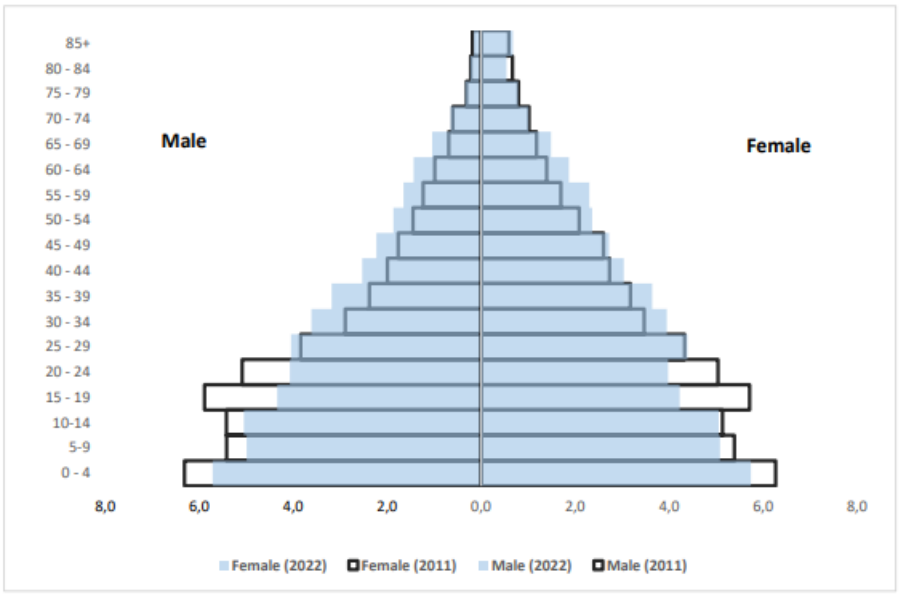
Source: Census 2011-2022



	0 - 4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75 - 79	80 - 84	85+
2 022	11,5	10,1	10,1	8,6	8,0	8,4	7,6	6,8	5,6	5,0	4,2	4,0	3,3	2,5	1,7	1,1	0,8	0,8
2 011	12,6	10,8	10,6	11,6	10,1	8,2	6,4	5,6	4,7	4,4	3,5	2,9	2,4	1,9	1,6	1,1	0,9	0,8

Source: Census 2011-2022

Figure 6: A comparison of age structures for census 2011 and census 2022 (Statistics South Africa, 2024)



Source: Census 2011-2022

Figure 7: Limpopo population pyramid, Census 2011 (transparent) and 2022 (blue shaded) (Statistics South Africa, 2024)

7.1.1. Population

To effectively plan and implement community development projects, it's important to understand the total population, population density, number of households, area, population groups, and languages spoken. The total population and households indicate how much demand there is for services and resources. Population density and land area help us understand settlement patterns,

land use, and where to place infrastructure. Information about population groups gives us insight into the community's social structure and helps ensure fair development. Knowing the languages spoken in the community is crucial for clear communication, awareness campaigns, and working with stakeholders. This helps build trust and ensures that everyone has access to information. Table 3 shows the total population, population density, number of households, land area, population groups, and languages. Figures 8 and 9 display the total population and languages for the Nkotokwane and Apel villages.

Table 5: The total population, population density, groups, and languages

Characteristics	**Apel**	**Nkotokwane**
Total population	2096	689
Number of households	575 persons/km²	386 persons/km²
Area	652	134
Population group	3.65 km²	1.78 km²
Languages	Sepedi =95.22% IsiZulu = 1.34% Other = 1.15% isiNdebele = 0.76% English = 0.57% Afrikaans = 0.33% Setswana = 0.24% Tshivenda = 0.19% Sesotho = 0.10% Xitsonga = 0.10%	Sepedi =90.17% IsiZulu = 4.60% isiNdebele = 1.27% English = 0.63% Setswana = 0.16% Tshivenda = 0.79% Sesotho = 1.43% Xitsonga = 0.16% Siswati = 0.63% IsiXhosa = 0.16%

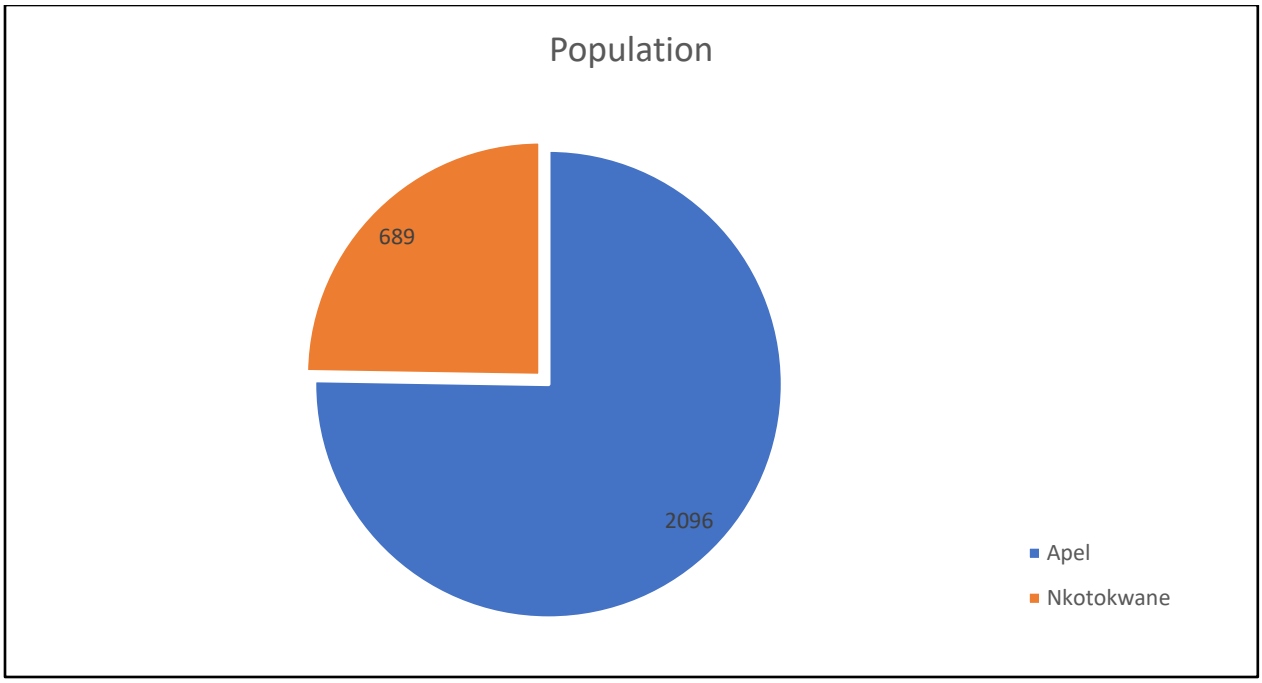


Figure 8: The total population for the selected villages

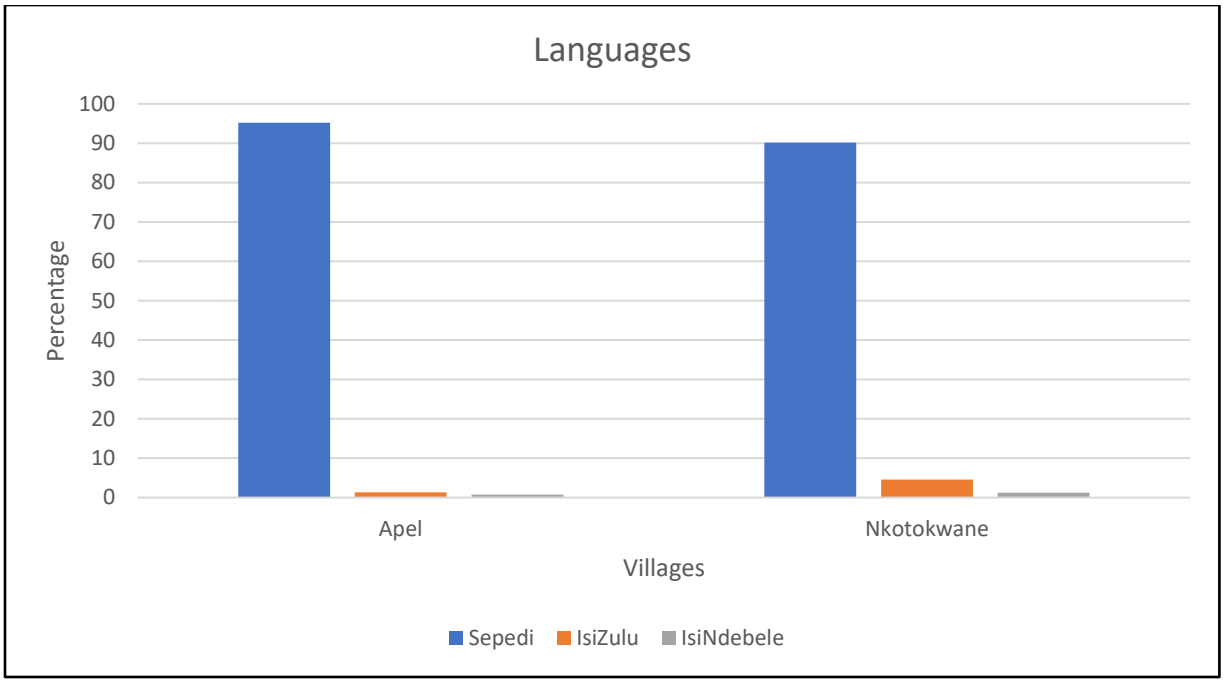


Figure 9: Languages spoken in the selected villages

7.1.2. Gender

Knowing the gender distribution in a community is crucial for planning and carrying out development projects. Understanding how many men and women are in the community, along with the sex ratio, helps us see the demographic balance, social roles, and service needs. A balanced or unbalanced sex ratio can affect the availability of workers, household structures, and how the community engages in the project. It also makes sure that development initiatives respond to the needs of both men and women equally—whether in water use, health and sanitation, job opportunities, or community decision-making. Table 6 shows the gender and sex ratio for the selected villages. Figure 10 illustrates the genders of the selected villages in a graph.

Table 6: The Gender and sex ratio

	Males	**Females**	**Sex ratio**
Apel	43%	57%	75.4
Nkotokwane	55%	45%	122.3

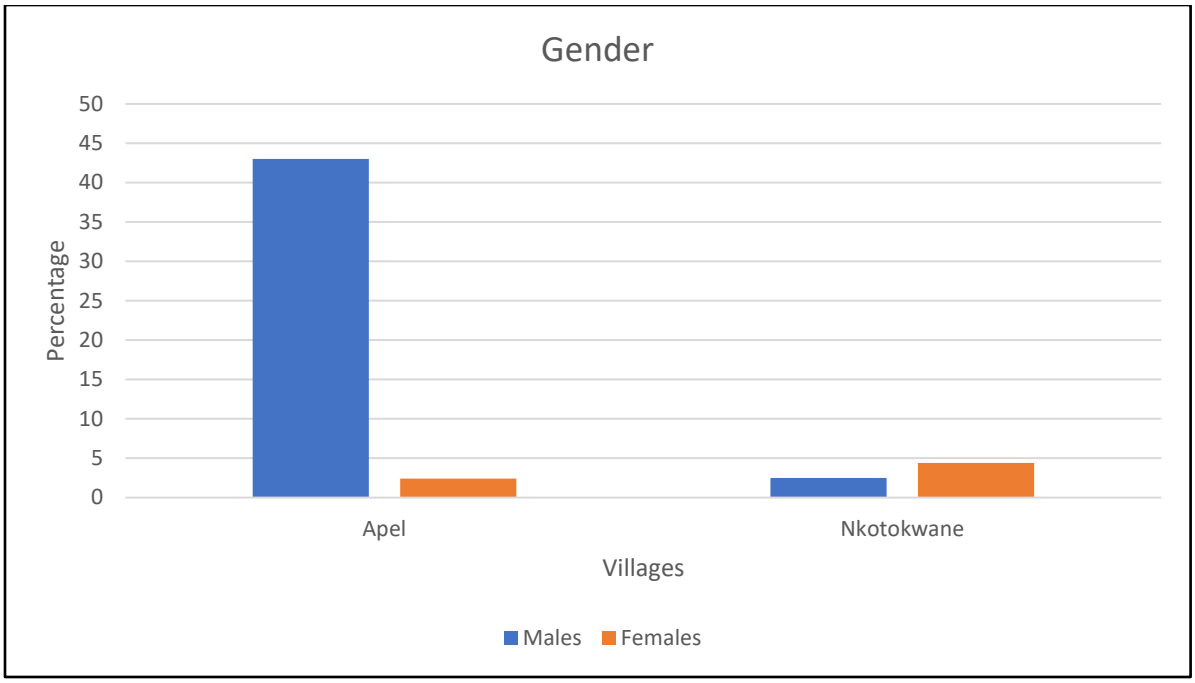


Figure 10: Illustration of the gender in the selected villages

7.1.3. Age

Understanding the age distribution of a community is important for assessing its demographic profile and informing development planning. It provides insight into the proportion of children, working-age adults and elderly people within a population, which has implications for service delivery, dependency ratios, employment opportunities, education and healthcare provision. The distribution of the population across different age groups also helps identify the potential needs and vulnerabilities of different segments of the community.

For the selected villages of Apel and Nkotokwane, age distribution data is important for understanding the demographic characteristics of the local population. However, the availability of age-disaggregated data, particularly by sex, may vary depending on the level of detail provided in the Census 2011 dataset. Where age data is not separated into male and female categories, the analysis is limited in its ability to identify gender-specific demographic patterns and needs. This limitation should be considered when interpreting the available information.

Table 7: Age distribution for the selected villages

Age Group	Apel	Nkotokwane
	M & F	M & F
0-4	16.42%	10.41%
5-9	14.13%	11.00%
10-14	13.79%	10.56%
15-19	9.31%	11.58%
20-24	7.35%	11.00%
25-29	4.77%	11.73%
30-34	5.20%	8.06%
35-39	6.11%	4.25%
40-44	6.78%	3.96%
45-49	4.92%	3.67%
50-54	3.29%	2.49%
55-59	3.25%	3.67%
60-64	1.48%	1.61%
65-69	1.38%	1.32%
70-74	0.81%	1.76%
75-79	0.38%	1.32%
80-84	0.19%	0.59%
85+	0.43	1.03%

7.1.4. Dependency

Understanding the dependency ratio and percentage is important for planning development. This ratio shows how many people rely on the working-age population, including children and the elderly. A high dependency ratio means more pressure on workers, which can affect household income, demand for social services, and the sustainability of development projects. To calculate the dependency percentage, add the child and elderly dependency percentages. Apel and Nkotokwane villages did not have recorded ratios, so we used a calculation formula instead:

$$\text{Total Dependency Ratio} = \frac{(\textbf{Population aged 15–64} + \textbf{Population aged 0–14})}{\textbf{Population aged 65+}} \times 100$$

This approach ensures consistency across villages and provides a more accurate basis for comparing dependency levels within the project area.

Table 8: The dependency of the selected villages

Village	Dependency percentage	Old age dependency percentage	Child dependency percentage	Dependancy ratio
Apel	47.53%	3.19%	44.34%	90.9
Nkotokwane	37.99%	6.02%	31.97%	61

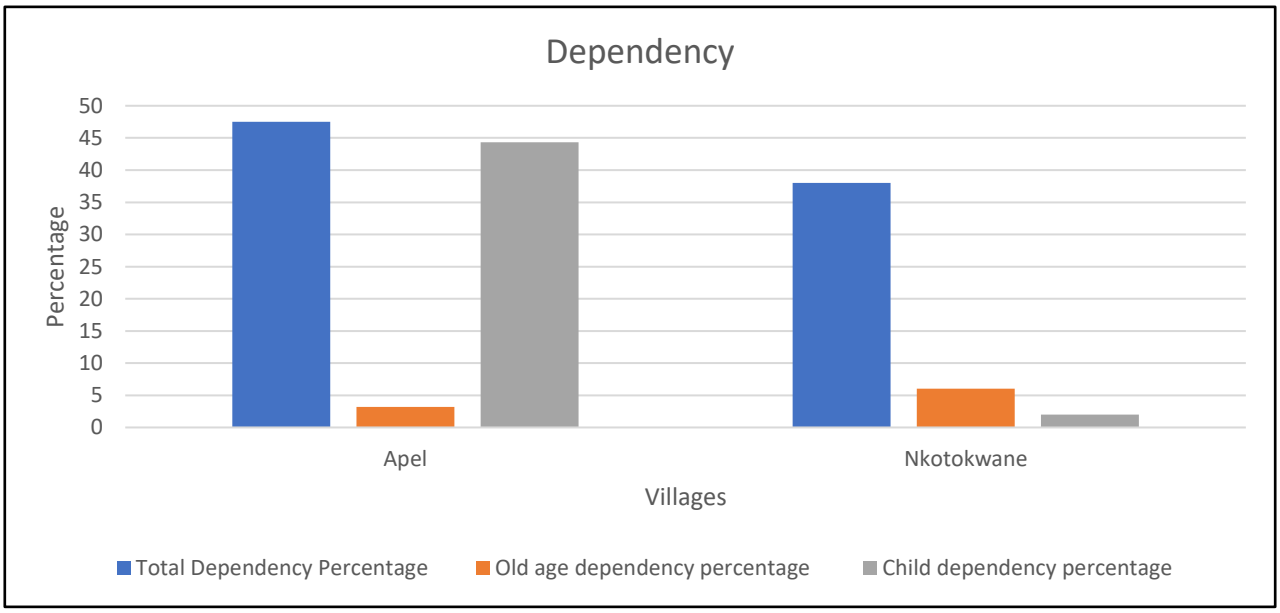


Figure 11: Dependency ratio for selected villages

7.1.5. Marital status

Understanding marital status in a community is crucial for planning development. It helps us learn about household structures, social stability, and how resources are shared. This data can affect decisions regarding housing, water use, and service delivery. For instance, households led by single individuals or widows may face different challenges than those headed by married or cohabiting couples. However, we do not have marital status data for Apel and Nkotokwane villages, which limits our ability to compare these areas with others. This lack of information reduces our

understanding of the social dynamics that might impact project implementation. Table 9 displays the marital status of people aged 12 and older in the selected villages.

Table 9: Marital status for selected villages

Villages	Married	Living together	Never married	Widower/ widow	Separated	Divorced
Apel	24.5%	0.2%	71.9%	3.1%	0.3%	0.0%
Nkotokwane	19.7%	1.3%	75.8%	3.0%	0.1	0.0%

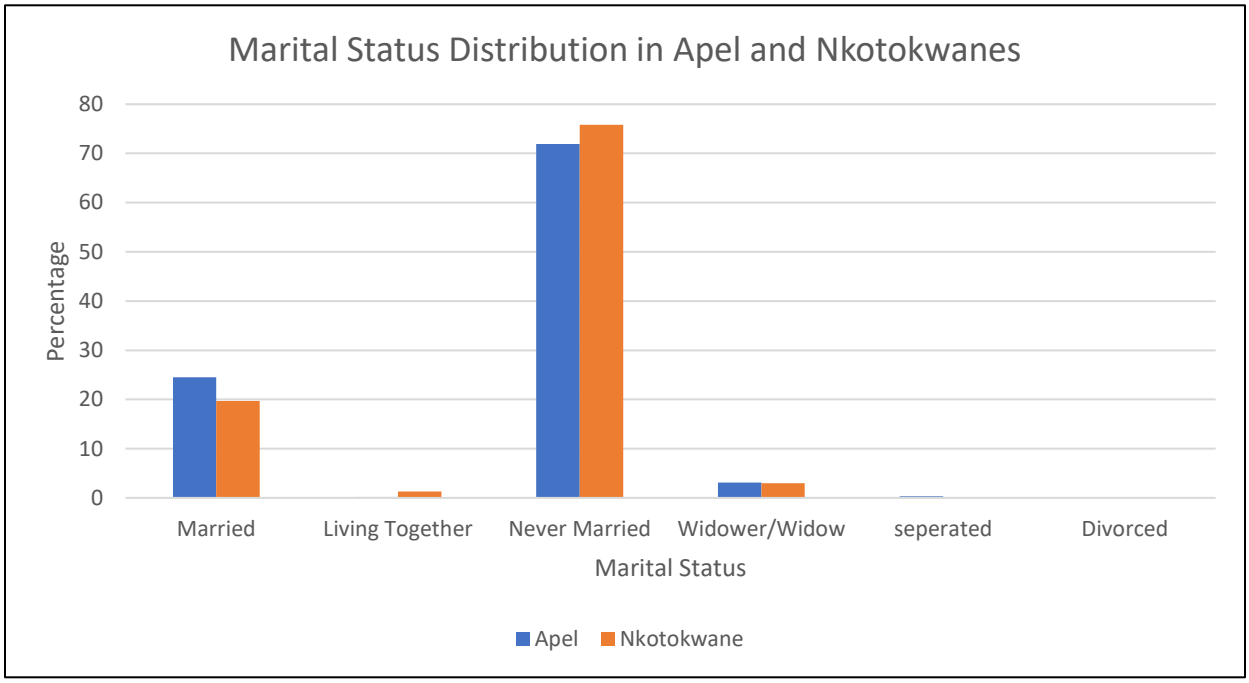


Figure 12: Marital status distribution in Apel and Nkotokwane

7.1.6. Education outcomes

Education outcomes are important for development projects because they show the skills, literacy, and community involvement of people. When education levels are higher, people are generally more aware of health, water management, and using resources sustainably. This knowledge is crucial for the success of projects like water harvesting and building infrastructure. However, we could not get education outcome data for Apel and Nkotokwane villages. This lack of information makes it hard to fully understand the community's skills and compare these villages with others in the area.

Table 10: Education outcomes for selected villages

Villages	No schooling	Some primary	Completed primary	Some secondary	Matric	Higher education
Apel	14.6%	9.1%	3.7%	37.8%	22.5%	12.3%
Nkotokwane	12.8%	16.6%	6.5%	42.4%	19.6%	2.1%

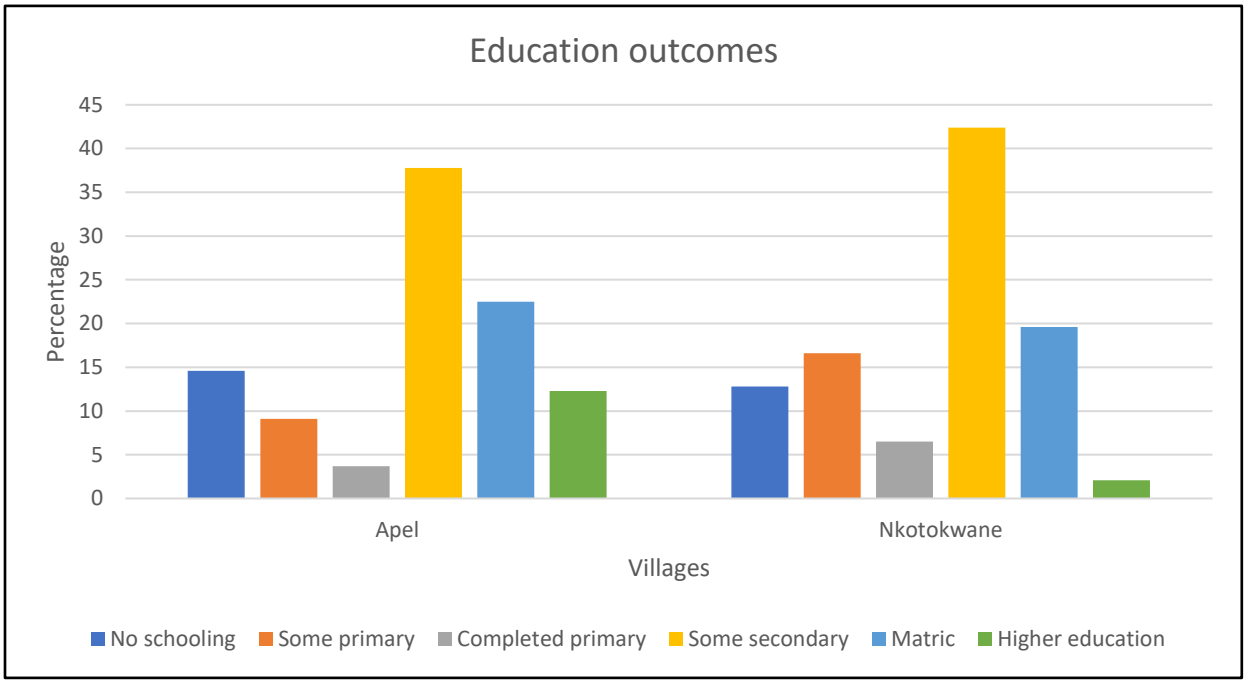


Figure 13: Education outcomes for selected villages illustrated as graphs

7.1.7. Household headship and settlement type

Understanding household headship and settlement type is important for studying how communities are organized. Household headship, whether a household is led by a man or a woman, shows us how decisions are made, highlights economic risks, and reveals social support structures. These factors can influence how people take part in development projects. Settlement type, which includes formal, informal, or traditional areas, helps us understand the level of infrastructure, the quality of housing, and land use. This information is crucial for planning where to place water pipelines, treatment facilities, and other services. However, it is important to note that we do not have data for Apel and Nkotokwane villages. This lack of information makes it hard to compare and fully understand the dynamics of households and settlements in those areas.

Table 11: Household headship and settlement type for selected villages

Villages	**Female-headed households**	**Tribal/traditional**
Apel	59%	N/A
Nkotokwane	62.7%	100%

7.1.8. Ownership of dwellings

Land and dwelling ownership are important indicators of residential tenure arrangements within the study areas. Land ownership refers to the legal ownership or administration of the land, while dwelling ownership relates to whether households own, rent or occupy the residential structures in which they live. Based on the available land ownership information, Nkotokwane falls under traditional authority land, while Apel is registered under the National Government of the Republic of South Africa. Census data on dwelling ownership provides further insight into household tenure arrangements within the two communities. It is important to distinguish between land ownership and dwelling ownership, as ownership or administration of the land does not necessarily establish ownership of the houses situated on it.

Table 12: Ownership of dwellings for the selected villages

Villages	Owned but not yet paid off	Occupied rent-free	Rented	Owned and fully paid off	Other	Owned and fully paid off/paying off
Apel	0%	20%	0%	40%	0%	40%
Nkotokwane	0%	5.6%	5.6%	44.4%	0%	44.4%

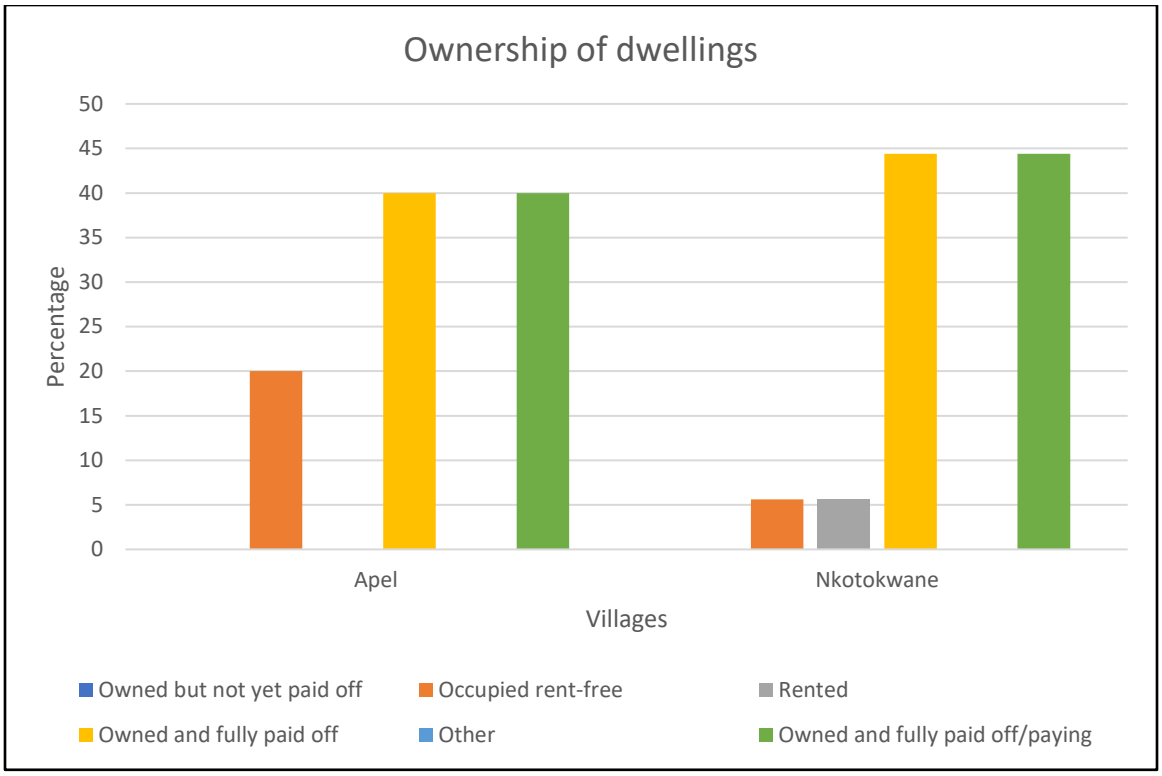


Figure 14: Ownership of dwellings for selected villages illustrated in graphs

7.1.9. Household goods

Household ownership of selected goods, such as refrigerators, stoves, computers, satellite televisions, motor vehicles and mobile phones, provides an indication of the socio-economic conditions and living standards of households within the study areas. This information helps assess access to basic household appliances, communication technology and transport, while providing insight into household resources and material well-being. It can also inform development planning by highlighting differences in access to essential goods and services among communities. The available household goods data for the study villages provides a basis for comparing their socio-economic conditions and assessing differences in household living standards.

Table 13: Household goods for selected villages

	Apel	**Nkotokwane**
Refrigerator	43.8%	81.2%

Electric/gas stove	54.5%	54.1%
Computer	6.9%	6.0%
Satellite Television	12.4%	39.8%
Motor car	15.2%	12.8%
Television	48.1%	72.2%
Radio	47.8%	45.9%
Landline / Telephone	0%	0%
Cellphone	71.8%	89.5%

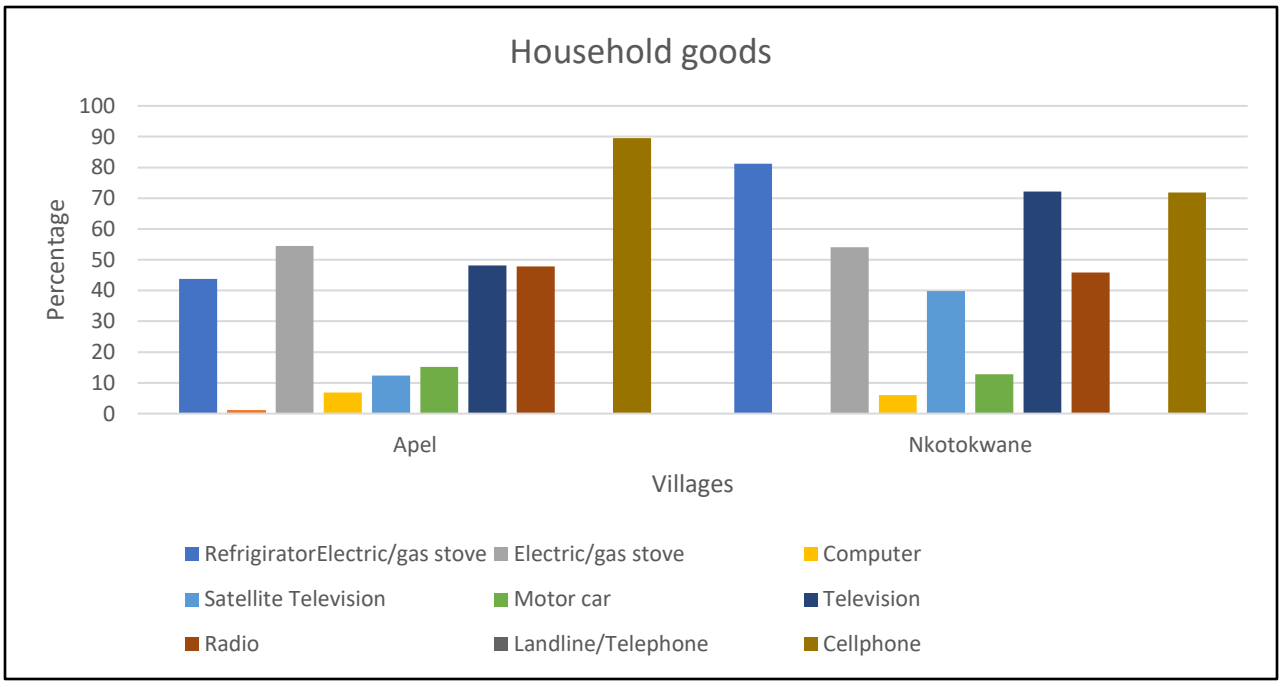


Figure 15: Household goods for selected villages, illustrated in graphs

7.1.10. Income

Understanding household income is important for development planning, as it provides insight into the economic circumstances and financial capacity of households within the study areas. Household income information helps assess the affordability of basic services, the ability of households to contribute towards infrastructure maintenance, and the extent of economic vulnerability within communities. It also supports the identification of households that may require targeted assistance and informs appropriate interventions, such as subsidies and affordable payment arrangements. The available household income data for the study villages provides a basis for assessing and comparing their socio-economic conditions.

Table 14: Household Income for selected villages

	Apel	Nkotokwane
No Income	28.7%	15%
R1 - R4,800	8.3%	8.3%
R4,801 - R9,600	19.8%	15%
R9,601 - R19,600	17.5%	21.1%
R19,601 - R38,200	9.1%	22.6%
R38,201 - R76,400	4.8%	9%
R76,401 - R153,800	6.6%	6%
R153,801 - R307,600	4.1%	0.8%
R307,601 - R614,400	0.8%	0.8%
R614,001 - R1,228,800	0.2%	0%

R1,228,801 - R2,457,600	0%	0.8%
R2,457,601+	0.2%	0.8%

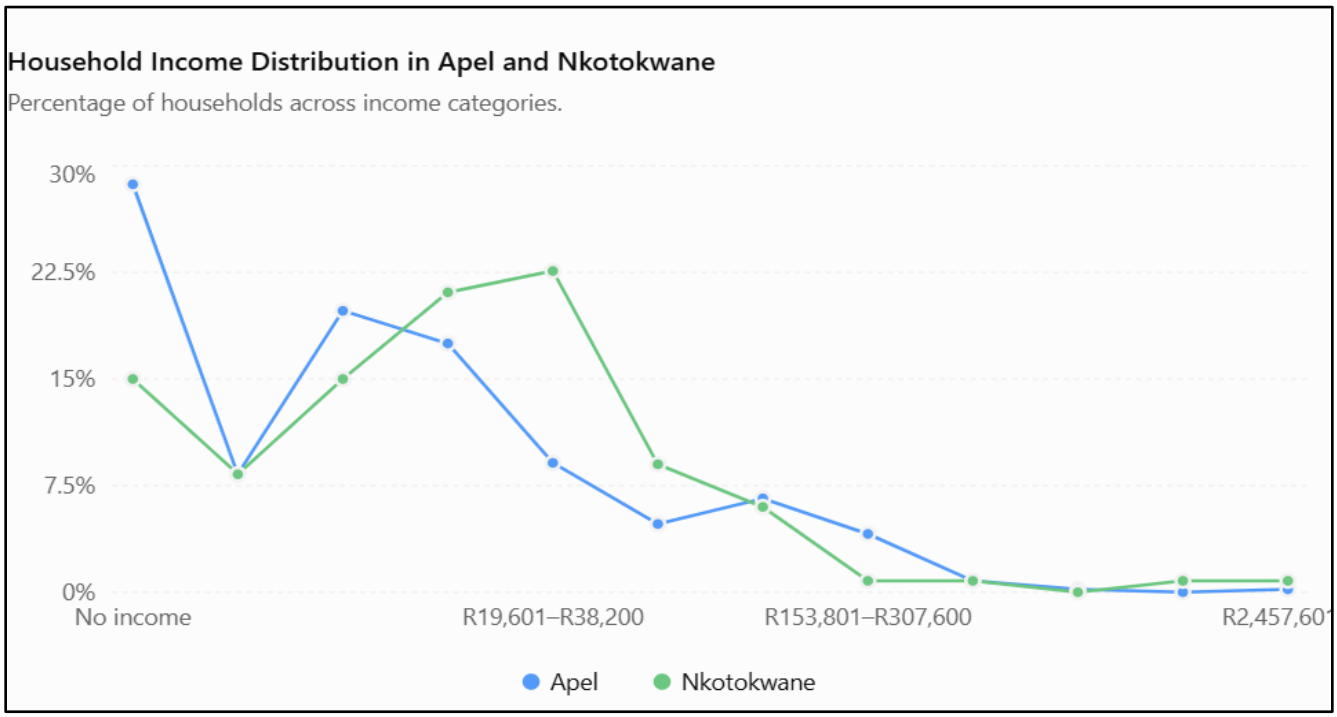


Figure 16: Household income for selected villages, illustrated in graphs

7.1.11. Household refuse removal

Household waste management practices are an important consideration in development planning, as they provide insight into the level of waste collection and disposal services available within the study areas. This information helps assess environmental health conditions and identify potential risks associated with inappropriate waste disposal, including pollution of water resources and public spaces. It also informs the planning of appropriate waste management services, sanitation measures, and community awareness initiatives. The available Census data on household waste removal provides a basis for assessing and comparing waste management practices in Apel and Nkotokwane.

Table 15: Household refuse removal in the selected villages

	Removed by local authority/private company at least once a week	Removed by local authority/private company less often	Communal refuse dump	Own refuse dump	No rubbish disposal	Other
Apel	0.3%	0.2%	0.3%	94%	4.5%	0.8%
Nkotokwane	0.7%	0%	0%	98.5%	0.7%	0%

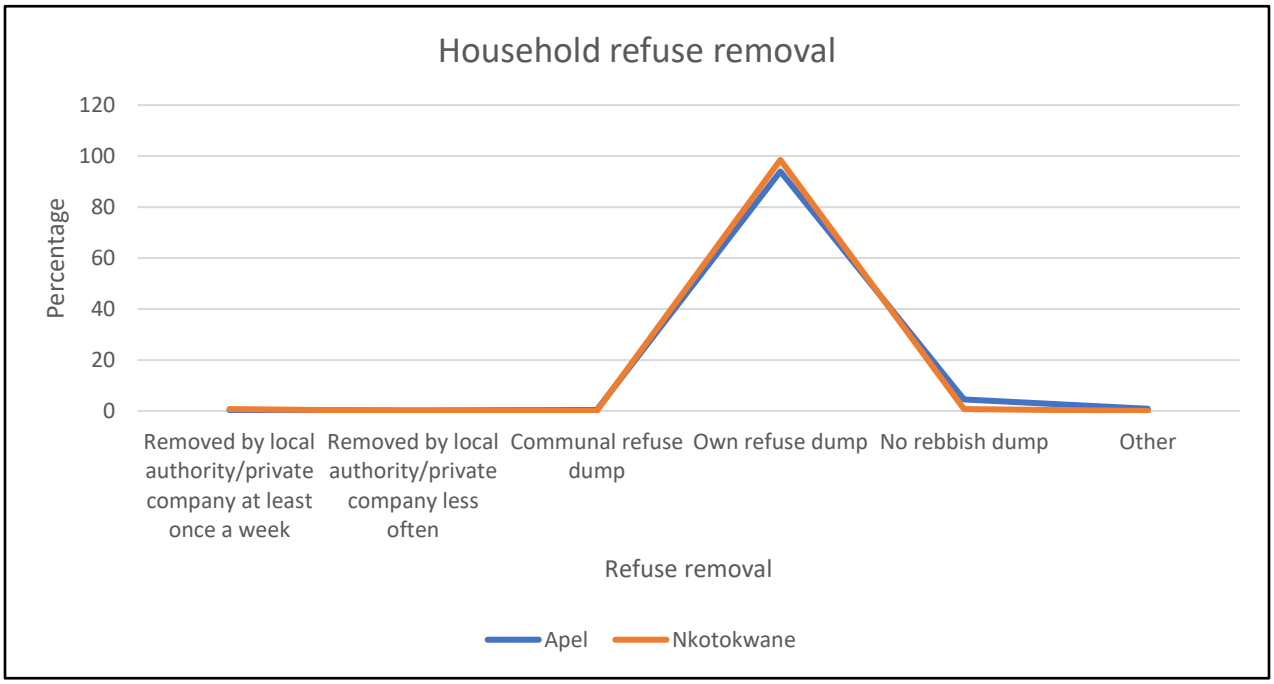


Figure 17: Household refuse removal for the selected villages, illustrated in graphs

7.1.12. Household with access to toilet facilities

Access to toilet facilities is an important indicator of household sanitation and living conditions within the study areas. This information helps assess the availability and adequacy of sanitation services, identify potential public health risks associated with inadequate sanitation, and determine the need for improved sanitation infrastructure. It also supports planning for safe water supply, hygiene promotion, and appropriate sanitation interventions. The available Census data on

household access to toilet facilities provides a basis for assessing and comparing sanitation conditions in Apel and Nkotokwane.

Table 16: Households with access to toilet facilities for selected villages

	None	Flush toilet (connected to sewerage system)	Flush toilet (with septic tank)	Chemical toilet	Pit toilet with ventilation	Pit toilet without ventilation	Bucket toilet	Other
Apel	25%	0.9%	0.8%	0.2%	4%	67.3%	1.7%	0.2%
Nkotokwane	10.5%	0.8%	0.8%	0%	11.3%	76.7%	0%	0%

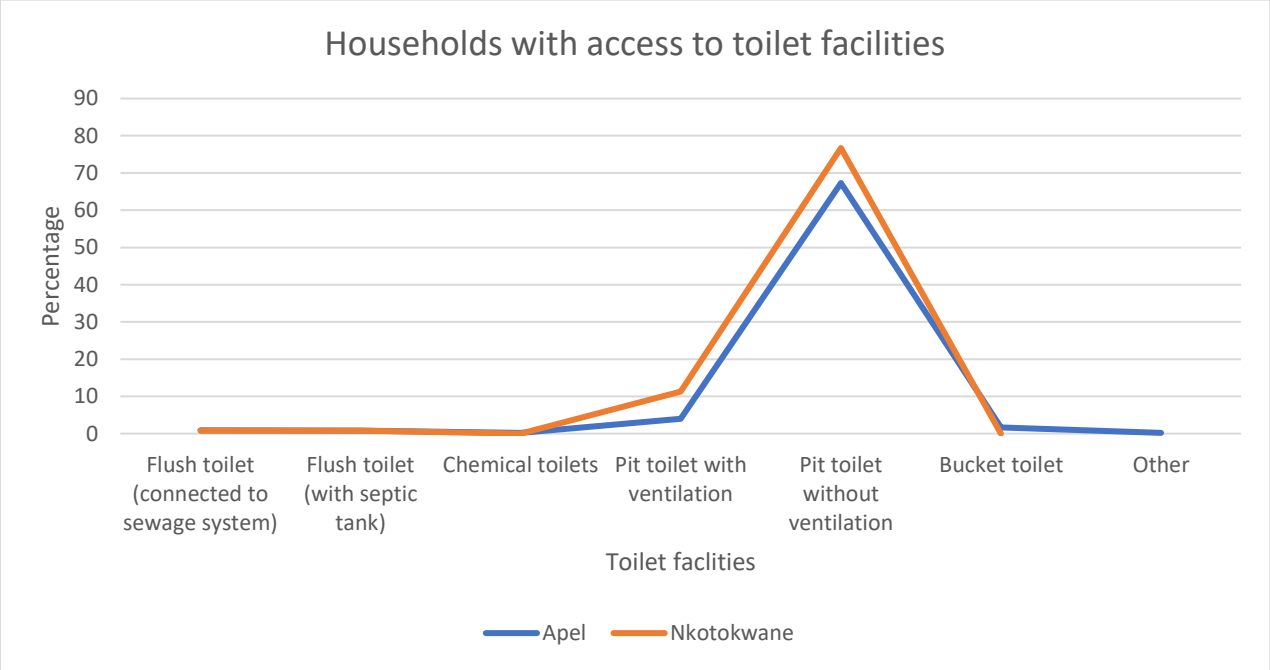


Figure 18: Household with access to toilet facilities for selected villages, illustrated in graphs

7.1.13. Household with access to the internet

Household access to the internet is an important indicator of digital connectivity and access to information within the study areas. It provides insight into the extent to which households can access online services, educational resources, communication platforms and digital opportunities. This information also supports development planning by informing communication strategies,

project awareness campaigns and the use of digital platforms to share information with affected communities. The available Census data on household internet access provides a basis for assessing and comparing digital connectivity in Apel and Nkotokwane

Table 17: Households with access to the internet for selected villages

	From Home	From Cellphone	From Work	From Elsewhere	No access
Apel	1.4%	11.0%	1.1%	2.3%	84.2%
Nkotokwane	0%	2.3%	1.5%	0.8%	95.5%

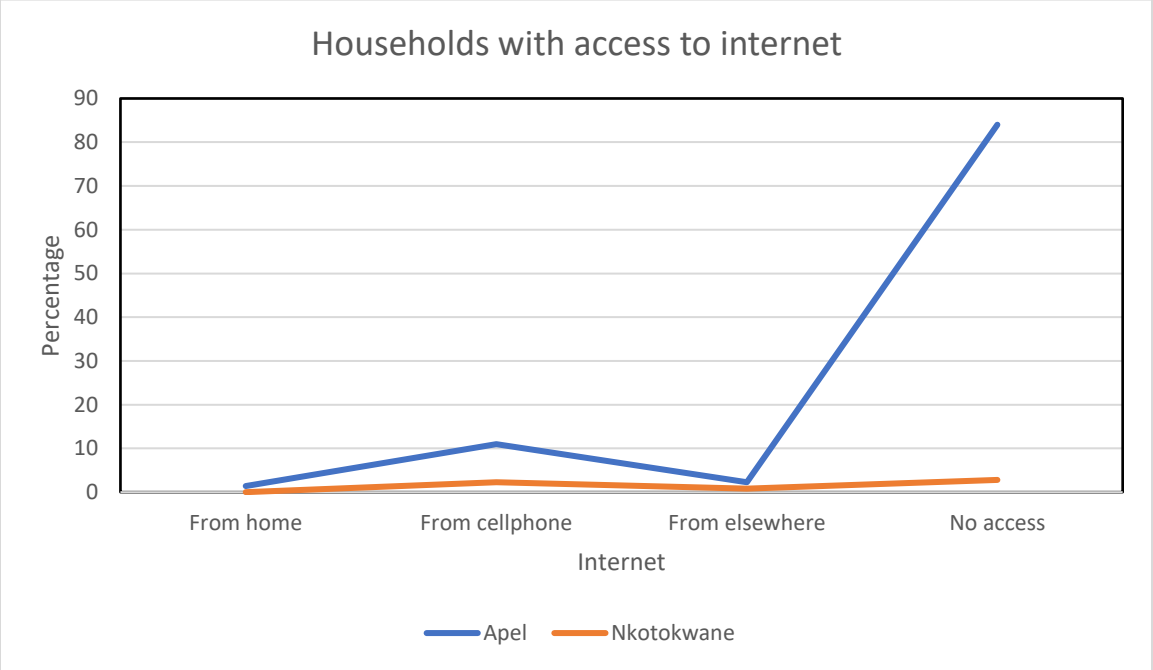


Figure 19: Household with access to the internet for selected villages, illustrated in graphs

7.1.14. Household energy source

Household energy sources for cooking, lighting and heating are important indicators of living conditions and access to basic services within the study areas. This information provides insight into household energy-use patterns, affordability, safety and potential environmental impacts associated with different energy sources. It also helps identify energy-related challenges and informs the planning of appropriate interventions, including access to safer and more efficient

energy alternatives. The available Census data on household energy sources provides a basis for assessing and comparing energy-use patterns in Apel and Nkotokwane.

Table 18: Household energy source for selected villages

	Villages	Electricity	Gas	Paraffin	Solar	Candles	Wood	Coal	Animal dung	Other	None
Apel	Cooking	45.2%	3.2%	4.1%	0%	0%	47.2%	0%	0.2%	0%	0%
	Heating	44.1%	2.9%	1.8%	0.2%	0%	46.1%	0.5%	0%	0%	4.4%
	Lighting	44.1%	2.9%	1.8%	0.5%	46.1%	0%	0%	0%	0%	0%
Nkotokwane	Cooking	11.9%	0%	0%	0%	0%	88.1%	0%	0%	0%	0%
	Heating	12.7%	0%	0%	0%	0%	29.6%	0%	0%	0%	60.4%
	Lighting	12.7%	0%	0%	0%	26.9%	0%	0%	0%	0%	0%

7.1.15. Source of water

Household water sources are an important consideration in development planning, as they provide insight into the availability, accessibility and reliability of water supply within the study areas. This information helps assess household access to water, identify communities that may rely on potentially unsafe or unreliable sources, and determine the need for improved water supply infrastructure. It also supports planning for sustainable water provision, sanitation services and interventions aimed at improving access to safe drinking water. The available Census data on household water sources provides a basis for assessing and comparing water access in Apel and Nkotokwane.

Table 19: Source of water for selected villages

	Apel	Nkotokwane

Regional/Local water scheme	15.6%	1.5%
Borehole	11%	0%
Spring	9.2%	0%
Rainwater tank	0.3%	0%
Dam/Pool/Stagnant water	12.3%	0.8%
River/stream	34.7%	95.5%
Water vendor	2.8%	0.8%
Water tanker	13.5%	1.5%
Other	0.6%	0%

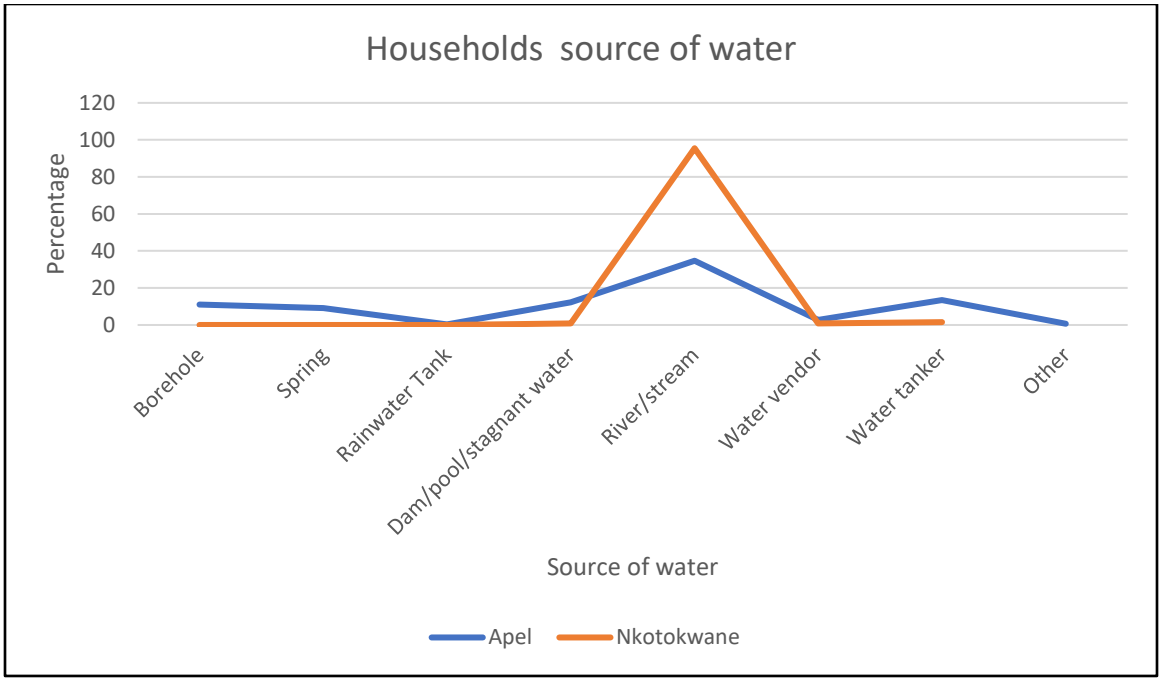


Figure 20: Source of water for selected villages, illustrated in graph

8. Socio impacts rating methodology

The proposed construction and upgrading of Roads D5010 and D5021, including the installation of associated culverts and the construction of a bridge across the Olifants River, is expected to generate various positive and negative social impacts. These impacts can be effectively managed through the implementation of appropriate mitigation measures, good construction practices and adherence to the recommended social management strategies. The proposed development is located within the rural areas of Apel and Nkotokwane, where surrounding communities depend on communal land, subsistence farming and other rural livelihood activities. Consequently, the project has the potential to influence the social and economic well-being of affected communities during both the construction and operational phases.

Given the scale, nature, and location of the proposed agricultural hub, it was determined that a Social Impact Assessment (SIA) is required to inform project planning and decision-making. The SIA is a systematic process used to identify, predict, evaluate, and manage the social consequences of development interventions. The assessment assists decision-makers in understanding potential impacts on affected communities and in identifying opportunities to enhance social benefits while minimising adverse effects.

The findings and recommendations presented in this chapter should therefore be considered alongside other specialist studies, relevant legislation, municipal planning frameworks, and environmental management measures to ensure that the development contributes positively to local socio-economic development and community well-being.

More broadly, social impacts describe the direct and indirect effects that a development may have on people, communities, livelihoods, social infrastructure, cultural resources, and quality of life. For the purposes of this assessment, social impacts are assessed based on their nature, extent, duration, intensity, probability of occurrence, and significance. The significance of each impact is evaluated before and after the implementation of mitigation measures to determine residual impacts and inform management recommendations.

8.1. Existing Conditions

In order to identify potential impacts on affected communities and other receptors, an understanding of the existing socio-economic environment was established prior to the assessment

of project activities. The desktop review and site observations indicate that the proposed construction and upgrading of Roads D5010 and D5021, including the installation of associated culverts and the construction of a bridge across the Olifants River may result in impacts on the following receptor groups:

- Local communities residing in Apel, Nkotokwane and surrounding settlements along the proposed road alignments;
- Road users, including pedestrians, cyclists, public transport operators and motorists;
- Local businesses, traders and service providers that may benefit from or be affected by changes in road access and traffic conditions;
- Vulnerable groups, including women, children, youth, elderly persons, persons with disabilities and low-income households;
- Local job seekers and community members who may benefit from temporary employment opportunities during construction;
- Municipal and traditional authority structures within the study area.

The sections below describe the methodology used to assess social impacts associated with the proposed development.

The preliminary assessment, including desktop analysis and site investigations, captured key background information regarding the local socio-economic context, development priorities, and stakeholder concerns. A variety of secondary data sources were reviewed, including but not limited to:

- Fetakgomo Tubatse Local Municipality Integrated Development Plan (IDP), 2021/2022–2025/2026;
- Lepele-Nkumpi Local Municipality Integrated Development Plan;
- Sikhukhune District Municipality planning documents;
- Capricorn District Municipality planning documents;
- Statistics South Africa Census 2011;

- Statistics South Africa Community Survey 2016;
- Municipal Spatial Development Frameworks (SDFs);
- Relevant provincial development strategies and agricultural sector plans; and
- Municipal and district websites.

8.2.Data Analysis

The socio-economic issues identified through the desktop review, site observations, and available project information were analysed to determine the potential social implications of the proposed construction and upgrading of Roads D5010 and D5021, including the installation of associated culverts and the construction of a bridge across the Olifants River. The assessment considered two primary streams of impacts:

8.3.Potential Negative Impacts

Potential adverse impacts that may arise during the construction and operational phases of the proposed road and bridge development were identified and assessed. These may include temporary disturbances associated with construction activities, increased traffic volumes, noise and dust generation, restricted access to properties and local facilities, disruption to pedestrian and vehicular movement, potential road safety risks, pressure on existing infrastructure and services, temporary employment-related expectations, and other social concerns commonly associated with road construction and upgrading projects.

Potential Positive Impacts

Potential positive impacts associated with the proposed road construction and upgrading, including the construction of the bridge across the Olifants River, were also assessed. These include temporary employment opportunities during the construction phase, skills development and on-the-job training, improved road accessibility and connectivity, reduced travel times, improved access to social and economic facilities, enhanced mobility of people and goods, improved road safety, and increased access to local markets and services. The development may also stimulate local economic activity by creating opportunities for local businesses, suppliers and service providers, while contributing to broader municipal and regional development objectives.

The significance of each identified impact was assessed using the established impact assessment methodology, taking into consideration the likelihood of occurrence, duration, spatial extent, severity and reversibility of the impacts.

9. Assumptions and Limitations

This assessment is based on the assumption that all specialist studies undertaken as part of the Environmental Impact Assessment process will adequately assess impacts relevant to their respective disciplines and provide appropriate mitigation measures where necessary.

It is further assumed that the proposed development will comply with all applicable legislation, environmental authorisation conditions, municipal planning requirements, and industry best-practice standards throughout the project lifecycle.

The assessment is limited by the fact that detailed stakeholder engagement and primary social survey data have not yet been undertaken. As a result, the study relies primarily on secondary data sources, desktop analysis, available project information, and site observations

10. Impact significance assessment

An impact is defined as where an interaction occurs between a project activity and a social receptor. The SIA process ranks impact according to its "significance" determined by considering project activity, "event magnitude," and "receptor sensitivity".

Determining event magnitude requires the identification and quantification (as far as practical) of the sources of potential socio-economic effects from routine and non-routine project activities.

Potential environmental and social impacts associated with the project have been evaluated using a recognised risk assessment methodology. This methodology has been developed to ensure all procedures for the investigation, assessment, and communication of the potential consequences or impacts of activities on the environment, as set out in the National Environmental Management Act (107 of 1998) (NEMA), Section 24(4b), are met. In addition, the impact assessment methodology must ensure that all information requirements of the environmental impact assessment (EIA) Regulations of 2014, as amended in 2017, are provided, and it is aligned with

the IFC performance standards. In order to assess the significance as objectively as possible, the following method has been used:

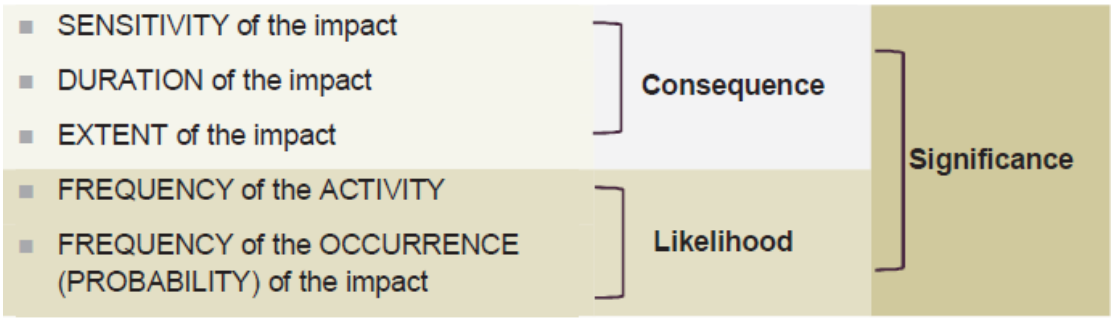


Figure 21: Impact Significance Assessment

This system derives environmental significance on the basis of the consequences of the impact on the environment and the likelihood of the impact occurring.

The following methodology was applied to the prediction and assessment of impacts/risks. Potential impacts were rated in terms of the direct, indirect, and cumulative:

Table 20: Potential Intensity/Severity Rating

Potential Intensity Description (negative)	**Intensity**	**Score**
Change is slight, often not noticeable; the natural functioning of the environment and socio-economic aspects not affected.	Negligible	1
Natural functioning of the environment and socio-economic aspects is minimally affected. Natural, cultural and social functions and processes can be reversed to their original state.	Low	2
Environmental and socio-economic aspects remarkably altered, still functions, albeit in a modified way. Negative impacts cannot be fully reversed.	Medium	3
Environmental, cultural and social functions and processes disturbed – potentially ceasing to function temporarily.	High	4
Natural, cultural and social functions and processes permanently cease, and valued, important, sensitive or vulnerable systems or communities are substantially affected. Negative impacts cannot be reversed.	Very high	5

- Direct impacts are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.

- Indirect impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.

- Cumulative impacts result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present, or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.

Nature of impact - this reviews the type of effect that a proposed activity will have on the environment and should include "what will be affected and how?"

Spatial extent – The size of the area that will be affected by the risk/impact:

Table 21: Extent Description/Impact Extent

The Extent of the impact generally expresses the spatial influence of the effects produced by a disturbance to a single or number of environmental systems or components.

Extent Description		**Score**
Site specific	Effect limited to only the site – the actual extent of the activity.	1
Local	Impacted area is limited to the site and its immediate surrounding area.	2
Regional/ District	Impacted area extends to the surrounding area, the immediate and the neighbouring municipalities.	3
Provincial	Impact considered of provincial importance.	4
National/ International	Impacted area impacts the more than one province, the country and can be global.	5

Duration – The timeframe during which the risk/impact will be experienced:

Table 22: Duration Description

Duration Description		**Score**
Temporary	Less than 1 month or duration of the construction period. This impact is fully reversible. e.g. the construction noise temporary impact that is highly reversible as it will stop at the end of the activity or construction period.	1
Short Term	1 month to 1 year. The impact is reversible with the implementation of appropriate mitigation and management actions.	2
Medium Term	> 1 year but < 10 years where the impact will cease after the operational life of the activity. The impact is reversible with the implementation of appropriate mitigation and management actions. e.g. the noise impact caused by the desalination plant is a long-term impact but can be considered to be highly reversible at the end of the project life, when the project is decommissioned.	3
Long Term	> 10 years but where the impact will cease after the operational life of the activity. The impact is reversible with the implementation of appropriate mitigation, management and rehabilitation actions. Effect will cease after the operational life of the activity either because of natural process or by human intervention e.g. the revegetation of a site post decommissioning. Long term impact can be considered to be reversible at the end of the project life, when the project is decommissioned only if rehabilitation measures are implemented and monitored.	4
Permanent	Mitigation will not occur in such a way or in such a time span that the impact can be considered transient). This impact is irreversible.	5

Using the criteria above, the impacts were further be assessed in terms of the following:

Table 23: Frequency of Impact

Frequency Description	**Score**
Improbable (little or no chance of occurring <10%)	1

Low Probability (10 - 25% chance of occurring)	2
Probable (25 - 50% chance of occurring)	3
Highly probable (50 – 90% chance of occurring)	4
Definite (>90% chance of occurring).	5

- Magnitude–The anticipated severity of the impact (Intensity + Extent + Duration):

- Extreme (extreme alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they permanently cease);

- Severe (severe alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);

- Substantial (substantial alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);

- Moderate (notable alteration of natural systems, patterns or processes, i.e. where the environment continues to function but in a modified manner); or

- Slight (negligible alteration of natural systems, patterns or processes, i.e. where no natural systems/environmental functions, patterns, or processes are affected).

- Significance – Will the impact cause a notable alteration of the environment? To determine the significance of an identified impact/risk, the consequence is multiplied by probability.

Table 24: Frequency/ Probability of Activity Occurring

Probability/ Frequency Description	**Score**
Rarely to not occurring during project life cycle (little or no chance of occurring <10%)	1
Low Probability annually (10 - 25% chance of occurring)	2

Probable monthly (25 - 50% chance of occurring)	3
Highly probable weekly (50 – 90% chance of occurring)	4
Daily (>90% chance of occurring).	5

The probability of the impact describes the likelihood of the impact actually occurring.

The **Consequence** of the impact or impact magnitude is therefore calculated as = (Impact Extent) + (Duration of Impact) + (Severity of Impact)

The **Likelihood** of the impact occurring is the sum of the (Frequency of Activity) + (Frequency of Impact)

In order to establish the significance of the impact we therefor need to consider the consequence and likelihood of the impact. This is calculated as**: Significance rating = Consequence** (Impact magnitude) *** Likelihood** (Probability) of impact occurring**.**

Table 25:Guide to assessing risk/impact significance as a result of consequence and likelihood

Scoring	**Significance rating**	**Description**
111 – 150	High	The project cannot be authorised unless major changes to the environmental and socio-economic considerations of the design are carried out to reduce the significance rating.
81 – 110	Medium High	The impacts will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making.
51 – 80	Medium Low	The impact will result in moderate alteration of environmental and socio-economic issues and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated.

31 – 49	Medium	The impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making.
1 – 30	Low	The impact may result in none to very minor alterations of the environment, social and economic issues and can be avoided without and also through the implementation of minor mitigation measures.

- Significance was rated as follows (based on **Table 25** above)

  o Low (the risk/impact may result in minor alterations of the environment and can be easily avoided by implementing none or appropriate minimum mitigation measures, and will not have an influence on decision making);

  o Medium-Low (the risk/impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated); or

  o Medium-High (the risk/impacts will result in a considerable alteration to the environmental and socio-economic aspects, even with the implementation of the appropriate mitigation measures, and will have an influence on decision making).

  o High (the risk/impacts will result in major alteration to the environment, social and economic aspects, even with the implementation of the appropriate mitigation measures, and will have an influence on decision making (i.e., the project cannot be authorized unless major changes to the engineering design or socio-economic components are carried out to reduce the significance rating).

Impacts have been described both before and after the implementation of the proposed mitigation and management measures. The scenario “without mitigation” considers all management actions already proposed by the proponent as part of the project description. “With mitigation” assesses the significance rating of the potential impact, taking into account any additional management actions recommended by the specialist.

Linked to the above, for each impact assessment, mitigation measures are generally listed under the following three categories (as applicable):

- Mitigation measures inherent to the project design (i.e., mitigation/management actions that the proponent had planned to implement as part of the project description);
- Additional management actions proposed by the specialist (management actions to be considered by proponent and authority).

10.1. Significance Assessment

Significance rating (importance) of the associated impacts embraces the notion of extent and magnitude, but does not always clearly define these, since their importance in the rating scale is very relative. For example, if 60 ha of a grassland type were destroyed, the impact would be VERY HIGH if only 100 ha of that grassland type were known. The impact would be VERY LOW if the grassland type was common.

Table 26: Significance of Impact

Significance of Impact	
Low	Where the impact will have a relatively small effect and will not have an influence on the decision
Medium	Where the impact can have an influence on the environment and the decision and should be mitigated
High	Where the impact definitely has an impact on the environment and the decision regardless of any possible mitigation

10.2. Potential impacts

The proposed agricultural development has the potential to result in a range of socio-economic impacts, both positive and negative, during the construction and operational phases. At this scoping stage, the impacts identified are preliminary and are based on the nature, scale, and location of the

project, as well as the socio-economic characteristics of the surrounding communities. For the purpose of assessing these impacts, the project has been divided into two phases, from which impacting activities can be identified, namely:

i. Planning Phase: Designing, acquiring land, and notification of stakeholders

ii. Construction phase: All the construction-related activities on site, until the contractor leaves the site.

iii. Operational phase: All activities, including the operation and maintenance of the proposed development.

10.3. Potential Impacts

10.3.1. Potential Positive Impacts

- Employment Creation – The proposed road construction and upgrading, including the construction of the bridge across the Olifants River, is expected to create temporary employment opportunities during the construction phase. These may include positions in site preparation, vegetation clearing, earthworks, road construction, bridge construction, culvert installation, traffic control and general labour. Local community members may benefit from these opportunities, contributing to household income generation and improved livelihoods in Apel, Nkotokwane and surrounding villages.
- Local Economic Stimulation – The project may stimulate the local economy through the procurement of goods and services required during construction, including transport, construction materials, equipment, fuel and other supplies. Local businesses, suppliers and service providers may benefit from increased economic activity and expenditure associated with the construction workforce and project operations.
- Skills Development and Knowledge Transfer – The construction activities may provide opportunities for local community members to acquire practical skills and experience in road construction, bridge construction, civil engineering works, traffic management, occupational health and safety, and general construction activities. These skills may improve future employment prospects and contribute to local skills development.

- Improved Road Accessibility and Connectivity – The construction and upgrading of Roads D5021 and D5010, together with the construction of the Olifants River bridge, is expected to improve connectivity between Apel, Nkotokwane and surrounding settlements. Improved road infrastructure may reduce travel times, improve access to social and economic facilities, and facilitate the movement of people and goods.
- Improved Road Safety and Mobility – The proposed road improvements, including associated culverts and bridge infrastructure, may improve road conditions and facilitate safer and more reliable movement for motorists, pedestrians and other road users, subject to appropriate road safety measures and infrastructure design.
- Improved Access to Social and Economic Opportunities – Improved road connectivity may enhance access to essential services and facilities, including healthcare centres, schools, commercial facilities and public transport services. This may contribute to improved mobility and accessibility for communities within the study area.
- Municipal Revenue and Regional Development – The project may contribute indirectly to local economic growth through temporary employment, procurement of local goods and services, and increased business activity. Improved road infrastructure may also support broader municipal and regional development objectives by strengthening transport connectivity and accessibility.

10.3.2. Potential Negative Impacts

- Increased Pressure on Local Employment Expectations – The proposed development may raise expectations of employment among residents of Apel, Nkotokwane and surrounding communities. However, if the available construction jobs are limited or do not meet community expectations, this may result in frustration, dissatisfaction or tension among local residents.
- Influx of Job Seekers – The proposed project may attract job seekers from surrounding villages and nearby towns in search of temporary employment opportunities. If the number of job seekers exceeds the available positions, this may increase competition for employment and potentially place additional pressure on local social networks and services.

- Impacts on Land Use and Access – The construction of the roads, bridge, culverts and associated infrastructure may require land clearance and temporary occupation of certain areas. This could affect existing land uses, access routes, pedestrian pathways and activities taking place within or adjacent to the proposed road reserves. Temporary or permanent restrictions on access to properties and community facilities may also occur during construction.
- Traffic and Road Safety Impacts – During the construction phase, increased movement of construction vehicles, machinery and trucks transporting materials may affect traffic conditions along the existing roads. Potential impacts may include:
  - Increased traffic volumes and congestion;
  - Temporary disruption to normal traffic flow;
  - Restricted access to properties and community facilities;
  - Increased risk of accidents involving motorists, pedestrians and cyclists; and
  - Potential safety risks associated with construction activities near public roads and the Olifants River crossing.
- Dust and Noise Disturbance – Construction activities, including vegetation clearing, excavation, earthworks, transportation of materials and operation of construction machinery, may generate dust and noise. These disturbances could temporarily affect nearby households, road users and other sensitive receptors, particularly those located close to the construction areas.
- Pressure on Local Infrastructure and Services – Construction activities and the presence of construction workers may result in additional demand for certain local services and infrastructure, particularly:
  - Existing road networks and access routes;
  - Water supply facilities;
  - Waste management services; and
  - Local social and community facilities.
  - The extent of this impact will depend on the number of workers employed, the duration of construction and the availability of existing services.
- Social Tension and Inequality Risks – Competition for temporary employment opportunities, procurement contracts and other project-related benefits may result in

disagreements among individuals or communities if opportunities are not communicated and allocated transparently and fairly. This could create tension between villages, community groups and project stakeholders.

10.3.3. Potential Impacts on Vulnerable Groups

Certain groups within Apel, Nkotokwane and surrounding communities may be more vulnerable to project-related impacts due to their socio-economic circumstances and dependence on local infrastructure and services. These include:

- Unemployed youth and job seekers who may have expectations of temporary employment opportunities during the construction phase;
- Women, who may be disproportionately affected by temporary disruptions to access routes, public facilities and essential services;
- Elderly residents and persons with disabilities, who may experience difficulties navigating temporary road diversions, restricted access routes and construction areas;
- Children and school-going learners, who may face increased road safety risks due to construction traffic and changes in pedestrian movement; and
- Low-income households, which may be more vulnerable to disruptions in mobility, access to services and local economic activities.

These groups may experience both positive and negative impacts. Positive effects may include temporary employment opportunities, improved accessibility and enhanced connectivity, while potential negative effects may include construction-related disturbances, restricted access and increased road safety risks.

10.3.4. Cumulative and Long-Term Considerations

Over the long term, the proposed construction and upgrading of Roads D5010 and D5021, including the bridge across the Olifants River, may contribute to socio-economic changes within Apel, Nkotokwane and surrounding communities. These may include:

- Improved access to employment opportunities, social facilities and essential services;

- Increased mobility and connectivity between surrounding settlements and economic centres;
- Improved access to markets, businesses and public transport services;
- Changes in local economic activities resulting from improved road accessibility; and
- Potential improvements in household livelihoods through enhanced access to economic and social opportunities.

These changes may have both positive and negative socio-economic implications, depending on how the improved road infrastructure influences community access, mobility, local economic activities and livelihoods over time.

10.3.5. Potential impacts matrix

The proposed construction and upgrading of Roads D5010 and D5021, including the installation of associated culverts and construction of a bridge across the Olifants River, is expected to result in a range of socio-economic impacts during both the construction and operational phases. These impacts are anticipated to be largely localised and manageable through appropriate planning and the implementation of suitable mitigation measures. The table below presents a preliminary assessment of the potential positive and negative impacts, their significance, and the recommended mitigation measures. These findings are based on the nature, scale and location of the proposed development and will be refined during subsequent phases of stakeholder engagement.

Table 27: Potential impacts during construction phase

Stage of Development	**Construction**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Temporary Employee	**Without Mitigation**	Local	Temporary	High	Highly Probable	Definite	7	9	Medium Low
		2	1	4	4	5			63
	Mitigation Measures	• Prioritise local labour • ensure fair recruitment process • Provide basic skills training							
	With Mitigation	Local	Temporary	Very High	Daily	Definite	8	10	Medium Low
		2	1	5	5	5			80

Stage of Development	**Construction**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Increased income opportunities	**Without Mitigation**	Local	Temporary	High	Daily	Definite	7	10	Medium Low
		2	1	4	5	5			70
	Mitigation Measures	• Recruit locally • Fair wages							
	With Mitigation	Local	Temporary	Very High	Daily	Definite	8	10	Medium Low
		2	1	5	5	5			80

Stage of Development	**Construction**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Influx of Job Seekers	**Without Mitigation**	Local	Temporary	Medium	Highly probable	Probable	6	8	Medium
		2	1	3	4	4			48
	Mitigation Measures	• Communicate clearly about the number of jobs and procedure • recruit locally first							
	With Mitigation	Local	Temporary	Low	Low probability	Low Probability	5	4	Low
		2	1	2	2	2			20

Stage of Development	**Construction**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Noise and Dust affecting nearby households	**Without Mitigation**	Local	Temporary	Medium	Highly probable	Probable	6	7	Medium
		2	1	3	4	3			42
	Mitigation Measures	• Limit working hours • Implement dust suppression measures • Maintain machinery							
	With Mitigation	Local	Temporary	Low	Low probability	Low Probability	5	4	Low
		2	1	2	2	2			20

Stage of Development	**Construction**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Increased traffic and road safety risks	**Without Mitigation**	Local	Temporary	High	Highly Probable	Highly Probable	7	8	Medium Low
		2	1	4	4	4			56
	Mitigation Measures	• Use designated access routes; • enforce speed limits; • warning signage							
	With Mitigation	Local	Temporary	Low	Low Probability	Low Probability	5	4	Low
		2	1	2	2	2			20

Stage of Development	**Construction**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Pressure on local natural resources (water, land use)	**Without Mitigation**	Local	Temporary	High	Highly Probable	Probable	7	7	Medium
		2	1	4	4	3			49
	Mitigation Measures	• Implement responsible water use and environmental management practices • Avoid unnecessary clearing of land							
	With Mitigation	Local	Temporary	Low	Low probable	Low Probability	9	6	Medium Low
		2	1	2	2	2			54

Stage of Development	**Construction**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Community expectations around employment	**Without Mitigation**	Local	Temporary	High	Highly probable	Definite	7	9	Medium Low
		2	1	4	4	5			63
	Mitigation Measures	• Transparent communication through the municipality or traditional leaders • Transparent hiring process • Prioritise local recruitment							
	With Mitigation	Local	Temporary	Medium	Probable	Probable	6	6	Medium
		2	1	3	3	3			36

Table 28:Potential impacts during operational phase

Stage of Development	**Operational Phase Impacts**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Long term employment opportunities	**Without Mitigation**	Local	Long term	High	Daily	Definite	10	10	Medium High
		2	4	4	5	5			100
	Mitigation Measures	• Maintain preference for local hiring • Ensure fair working conditions • Provide stable contracts where possible • Skills development opportunities							
	With Mitigation	Local	Long term	Very High	Daily	Definite	11	10	Medium High
		2	4	5	5	5			110

Stage of Development	**Operational Phase Impacts**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Skills transfer and capacity building	**Without Mitigation**	Local	Long term	Medium	Highly Probable	Highly Probable	9	8	Medium - High
		2	4	3	4	4			72
	Mitigation Measures	• Provide on-the-job training • Skills development Programmes • Mentorship opportunities							
	With Mitigation	Local	Long term	High	Daily	Definite	10	10	Medium High
		2	4	4	5	5			100

Stage of Development	**Operational Phase Impacts**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Local economic stimulation	**Without Mitigation**	Local	Long term	Medium	Highly Probable	Highly Probable	9	8	Medium High
		2	4	3	4	4			72
	Mitigation Measures	• Change in land use patterns • Source goods and services locally • Support small and informal businesses							
	With Mitigation	Local	Long Term	High	Daily	Definite	10	10	Medium High
		2	4	4	5	5			100

Stage of Development	**Operational Phase Impacts**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Potential exclusion from job opportunities	**Without Mitigation**	Local	Long Term	High	Highly Probable	Probable	10	7	Medium Low
		2	4	4	4	3			70
	Mitigation Measures	• Fair recruitment process • Engage with traditional leaders regarding recruitment process							
	With Mitigation	Local	Long Term	Low	Low Probability	Low Probability	8	4	Medium
		2	4	2	2	2			32

Stage of Development	**Operational Phase Impacts**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Pressure on local infrastructure (roads, services)	**Without Mitigation**	Local	Long term	Medium	Highly Probable	Probable	9	7	Medium Low
		2	4	3	4	3			63
	Mitigation Measures	• Maintain access roads • Manage traffic flow							
	With Mitigation	Local	Long term	Low	Low probability	Low probability	8	4	Medium
		2	4	2	2	2			32

Stage of Development	**Operational Phase Impacts**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Social tension if benefits are perceived as unequal	**Without Mitigation**	Local	Long term	High	Highly probable	Probable	10	7	Medium Low
		2	4	4	4	3			70
	Mitigation Measures	• Engage local structure • Transparent communication with community • Fair and transparent employment allocation							
	With Mitigation	Local	Long Term	Medium	Probable	Probable	9	6	Medium Loww
		2	4	3	3	3			54

Table 29:Impacts on Vulnerable Groups

Stage of Development	**Impacts on Vulnerable Groups**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Employment opportunities for unemployed youth	**Without Mitigation**	Local	Long term	High	Daily	Definite	10	8	Medium low
		2	4	4	5	5			80
	Mitigation Measures	• Prioritise youth and women for suitable positions • Prioritise local youth in recruitment processes. • Provide entry-level positions and internships. • Partner with local training institutions for skills development. • Communicate job opportunities transparently through local structures.							
	With Mitigation	Local	Long Term	Very High	Daily	Definite	11	10	Medium High
		2	4	5	5	5			110

Stage of Development	**Impacts on Vulnerable Groups**								
Potential Impacts	**Mitigation Status**	**Spatial Extent**	**Duration**	**Severity**	**Frequency Of Activity**	**Frequency Of Impact**	**Consequence**	**Likelihood**	**Significance**
Reduced informal access to land/resources	**Without Mitigation**	Local	Long Term	High	Daily	Definite	9	10	Medium High
		2	3	4	5	5			90
	Mitigation Measures	• Clearly demarcate project boundaries to avoid unnecessary restrictions. • Provide alternative access routes where possible. • Engage affected households on resource-use concerns. • Implement livelihood restoration support where access is limited.							
	With Mitigation	Local	Long Term	Medium	Probable	Definite	9	8	Medium Low
		2	4	3	3	5			72

11. ASSESSMENT OF NO-GO OPTION

The No-Go Alternative would result in the proposed road construction and upgrading, including the construction of the bridge across the Olifants River, not being developed and the affected land remaining under its current land-use conditions. While this option would avoid any potential social and environmental impacts associated with the construction and operation of the project, it would also represent a missed opportunity to promote socio-economic development within Apel and Nkotokwane villages, located within the Sekhukhune and Capricorn District municipalities and Fetakgomo Tubatse and Lepele-Nkumpi Local municipalities.

The proposed construction and upgrading of Roads D5010 and D5021, including the construction of the bridge across the Olifants River and installation of associated culverts, is expected to contribute positively to local development through the creation of temporary employment opportunities during the construction phase. In addition, the project has the potential to stimulate local economic activity, promote skills development and provide opportunities for local suppliers, contractors and service providers. Improved road infrastructure is also expected to enhance accessibility and connectivity between surrounding communities, facilitate the movement of people and goods, and improve access to social and economic facilities.

Should the proposed project not proceed, the anticipated socio-economic benefits would not be realised. This would include the loss of temporary employment opportunities associated with the construction phase, as well as opportunities for skills development and income generation through project-related procurement and local economic activities. The opportunity to improve road infrastructure, enhance accessibility and connectivity, and facilitate the movement of people and goods within the study area would also be forfeited.

The No-Go Alternative would maintain the existing road conditions and socio-economic circumstances within the surrounding communities, including the challenges associated with unemployment, poverty, limited economic opportunities and access to essential services. Consequently, this option would not contribute towards broader development objectives relating

to rural development, improved infrastructure, poverty reduction, economic growth and job creation as reflected in relevant national, provincial, district and local planning frameworks.

From a social perspective, although the No-Go Alternative would avoid potential project-related disturbances such as increased construction traffic, noise, dust, temporary access restrictions and community concerns associated with construction activities, it would also prevent the realisation of the potential benefits associated with the proposed road and bridge development.

Therefore, based on the findings of the Social Impact Assessment, the No-Go Alternative is not considered the preferred option. The proposed construction and upgrading of Roads D5010 and D5021, including the installation of associated culverts and construction of the bridge across the Olifants River, is considered the more favourable alternative, provided that appropriate mitigation measures and social management interventions are implemented to address identified impacts and maximise benefits for local communities.

12. CONCLUSION

The socio-economic profile of Apel and Nkotokwane reflects characteristics and challenges commonly associated with rural settlements in Limpopo Province. These communities experience socio-economic challenges relating to unemployment, poverty, limited economic opportunities and access to essential services. Such conditions highlight the importance of infrastructure development in improving connectivity, facilitating access to social and economic opportunities, and supporting local development.

The Social Impact Assessment (SIA) undertaken for the proposed construction and upgrading of Roads D5010 and D5021, including the installation of associated culverts and construction of a bridge across the Olifants River, indicates that the project has the potential to generate positive socio-economic benefits while also resulting in certain adverse social impacts. The assessment concludes that the anticipated benefits are likely to outweigh the potential negative impacts, provided that appropriate mitigation measures and social management interventions are implemented throughout the project lifecycle.

The proposed development is aligned with broader national, provincial, district and local development priorities aimed at improving transport infrastructure, strengthening rural connectivity, promoting economic development and enhancing access to essential services. The project has the potential to contribute to socio-economic development within Apel, Nkotokwane and surrounding communities through temporary employment creation, skills development, local procurement opportunities and improved access to social and economic facilities.

During the construction phase, the project is expected to create temporary employment opportunities and generate demand for local goods and services. Construction activities may also provide opportunities for local community members to gain practical experience and develop skills related to road construction, bridge construction, culvert installation, traffic management and general construction work. During the operational phase, the upgraded roads and bridge are expected to improve connectivity between surrounding settlements, reduce travel times, facilitate the movement of people and goods, and enhance access to employment opportunities, schools, healthcare facilities, businesses and other essential services.

Potential negative social impacts identified during the assessment include temporary increases in traffic, noise and dust generation, construction-related safety risks, restricted access to properties and community facilities, and possible disruption to pedestrian and vehicular movement. Additional concerns may arise from heightened community expectations regarding employment opportunities, potential conflict associated with recruitment processes, and increased pressure on local infrastructure and services during construction.

The assessment further recognises that vulnerable groups, including unemployed youth, women, elderly persons, persons with disabilities, children and low-income households, may experience both positive and negative effects associated with the proposed development. It is therefore important that project implementation promotes equitable access to employment, skills development and procurement opportunities, while ensuring that the safety, mobility and accessibility needs of vulnerable community members are adequately considered.

Overall, the identified social impacts are considered to be largely localised, manageable and capable of being effectively mitigated through the implementation of appropriate environmental

and social management measures. The proposed construction and upgrading of Roads D5010 and D5021, including the associated culverts and Olifants River bridge, is therefore considered socially acceptable, provided that the recommended mitigation measures are implemented. The project is expected to contribute positively to improved transport infrastructure, rural connectivity, local economic activity and access to essential services within Apel, Nkotokwane and the surrounding communities.

13. RECOMMENDATIONS

In order to maximise the positive socio-economic benefits of the proposed road construction and upgrading project and minimise potential adverse impacts, the following recommendations are made:

Employment and Local Economic Development

- Priority should be given to the employment of suitably qualified local residents from Apel, Nkotokwane and surrounding communities, particularly for low-skilled and semi-skilled positions during the construction phase.
- Transparent, fair and well-communicated recruitment procedures should be implemented to manage community expectations and minimise the risk of conflict, perceptions of favouritism or social exclusion.
- The project should seek to maximise local procurement opportunities by sourcing goods, services and materials from local businesses and suppliers wherever feasible.
- Opportunities for Small, Medium and Micro Enterprises (SMMEs), local contractors and service providers should be promoted to support local economic development and broaden the distribution of project benefits.

Stakeholder Engagement and Communication

- Continuous engagement should be maintained with traditional authorities, ward councillors, municipal representatives, community leaders, Interested and Affected Parties (I&APs) and surrounding communities throughout the planning and construction phases, as well as where relevant during operation.

- A formal grievance mechanism should be established to provide community members with an accessible and transparent process for raising concerns and obtaining feedback.
- Regular communication regarding project progress, construction activities, employment opportunities, traffic arrangements and potential disruptions should be provided to affected communities.

Skills Development and Capacity Building

- The project should promote skills transfer and on-the-job training opportunities to enhance the long-term employability and capacity of local residents.
- Where possible, opportunities should be provided for local community members to gain practical experience in road construction, bridge construction, culvert installation, traffic management and occupational health and safety.
- Contractors should be encouraged to provide relevant training and mentorship to local workers to support the development of transferable construction-related skills.

Management of Construction-Related Impacts

- Appropriate measures should be implemented to minimise dust generation, noise disturbance, traffic disruptions and safety risks during construction activities.
- Construction traffic should be carefully managed to reduce potential impacts on existing roads, pedestrians, cyclists, motorists and community access routes.
- Safe pedestrian access and suitable temporary traffic accommodation measures should be provided where construction activities affect existing roads, pathways or access to properties and community facilities.
- Contractors should be required to comply with applicable environmental, health and safety requirements, approved management plans and good housekeeping practices throughout the construction phase.
- Appropriate signage, barriers and traffic control measures should be installed around construction areas, particularly near the Olifants River bridge construction site and other areas where public safety may be affected.

Water Resource and Environmental Management

- Water use during construction should be carefully managed and monitored to avoid unnecessary pressure on available water resources and to prevent adverse effects on surrounding communities and existing water users.
- Appropriate measures should be implemented to prevent pollution of surface water and groundwater, particularly in areas near the Olifants River and associated watercourses.
- Erosion and sediment control measures should be implemented during earthworks, excavation, culvert installation and bridge construction to minimise sediment runoff into nearby water resources.
- Construction waste, excavated material and hazardous substances should be appropriately stored, handled and disposed of to prevent environmental contamination.
- Disturbed areas should be rehabilitated following the completion of construction activities, where applicable, to minimise erosion and restore affected areas.

Community Health and Safety

- Appropriate occupational and public safety measures should be implemented to protect construction workers, residents and other road users throughout the construction phase.
- Construction areas should be clearly demarcated, and unauthorised access should be restricted, particularly where excavations, heavy machinery and bridge construction activities present safety risks.
- Road safety awareness and communication should be provided to local communities, particularly children, pedestrians and other vulnerable road users.
- Emergency response procedures should be established to address accidents, injuries, spills and other incidents that may occur during construction.

14. REFERENCES

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