

# ALLEPAD PV ONE

Northern Cape Province

Social Impact Assessment – Scoping Report

September 2018

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**Prepared for:**

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## REPORT DETAILS

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<b>Title</b>	:	Social Impact Assessment (SIA) Scoping Report for Allepad PV One, Northern Cape Province
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<b>Client</b>	:	ILEnergy Development (Pty) Ltd
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## SPECIALIST DECLARATION OF INTEREST

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I, Sarah Watson, declare that –

- » I act as the independent specialist in this application.
- » I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.
- » I declare that there are no circumstances that may compromise my objectivity in performing such work.
- » I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity.
- » I will comply with the Act, Regulations and all other applicable legislation.
- » I have no, and will not engage in, conflicting interests in the undertaking of the activity.
- » I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing – any decision to be taken with respect to the application by the competent authority; and – the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority.
- » All the particulars furnished by me in this form are true and correct.
- » I realise that a false declaration is an offence in terms of Regulation 48 and is punishable in terms of section 24F of the Act.

Sarah Watson

Name

  
Signature

September 2018

Date

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## ACRONYMS

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DEA	Department of Environmental Affairs
DENC	Department of Environment and Nature Conservation
DoE	Department of Energy
DM	District Municipality
EAP	Economically Active Population
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EP	Equator Principles
GDP	Gross Domestic Product
GGP	Gross Geographic Product
GNR	Government Notice
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
IFC	International Finance Corporation
IPP	Independent Power Producer
km	Kilometre
kV	Kilovolt
LED	Local Economic Development
LM	Local Municipality
MW	Mega Watt
NEMA	National Environmental Management Act (No. 107 of 1998)
NC	Northern Cape
PGDS	Provincial Growth and Development Strategy
PSDF	Provincial Spatial Development Framework
PV	Photovoltaic
RE	Renewable Energy
REIPPP	Renewable Energy Independent Power Producer Procurement Programme
SDF	Spatial Development Framework
SIA	Social Impact Assessment
UNESCO	United Nations Educational, Scientific and Cultural Organisation

# 1. INTRODUCTION

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ILEnergy Development (Pty) Ltd proposes the development of Allepad PV One, a PV solar energy facility and associated infrastructure on a site near Upington, in the Northern Cape Province (refer to **Figure 1.1**). The proposed project comprises a commercial solar energy facility, and is intended to form part of the Department of Energy's (DoE's) Renewable Energy Independent Power Producer Procurement (REIPPP) Programme. The REIPPP Programme aims to secure 14 725MW of new generation capacity from renewable energy sources, while simultaneously diversifying South Africa's electricity mix, and positively contributing towards socio-economic and environmentally sustainable growth.

The proposed development of Allepad PV One requires Environmental Authorisation (EA) from the National Department of Environmental Affairs (DEA) in accordance with the National Environmental Management Act (No. 107 of 1998) (NEMA), and the 2014 Environmental Impact Assessment (EIA) Regulations (GNR 326) subject to the completion of a full Scoping and EIA Process.

Sarah Watson of Savannah Environmental (Pty) Ltd has been appointed as the independent social consultant responsible for undertaking a Social Impact Assessment (SIA) as part of the EIA process being undertaken for the project.

## 1.1. Project Description

Allepad PV One is proposed on the Remaining Extent of Erf 5315 Upington (the project site), which is located approximately 11km north-west of Upington, in the Dawid Kruiper Local Municipality (LM), of the ZF Mgcawu District Municipality (DM), in the Northern Cape Province. The project will be designed to have a contracted capacity of up to 100MW, and will make use of either fixed-tilt, single-axis tracking, or double-axis tracking photovoltaic (PV) solar technology for the generation of electricity.

The proposed project will comprise the following key infrastructure and components:

- » Arrays of PV panels with a generation capacity of up to 100MW.
- » Mounting structures to support the PV panels.
- » Combiner boxes, on-site inverters (to convert the power from Direct Current (DC) to Alternating Current (AC)), and power transformers.
- » An on-site substation up to 1ha in extent to facilitate the connection between the solar energy facility and the Eskom electricity grid.
- » A new 132kV power line, up to 5km in length, between the on-site substation and Eskom grid connection point.
- » Cabling between the project's components (to be laid underground where practical).
- » Meteorological measurement station.
- » An energy storage area up to 2ha in extent.
- » Access road and internal access road network.
- » On-site buildings and structures, including a control building and office, ablutions and guard house.
- » Perimeter security fencing, access gates and lighting.
- » Temporary construction equipment camp up to 1ha in extent, including temporary site offices, parking and chemical ablution facilities.
- » Temporary laydown area up to 1ha in extent, for the storage of materials during the construction.



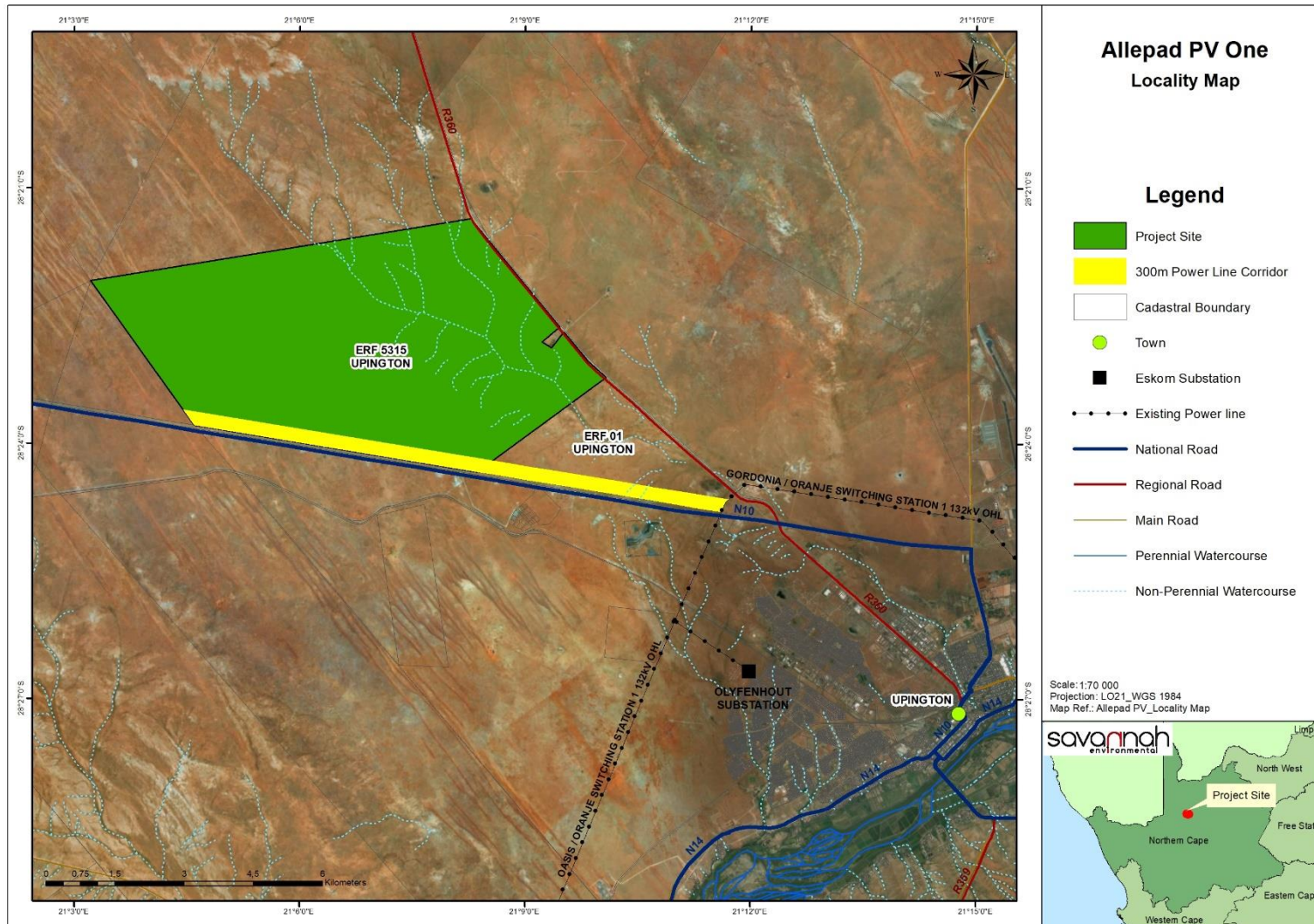


Figure 1.1: Proposed Project Site for Allepad PV One, Northern Cape Province.

Electricity generated by the project will feed into Eskom's national electricity grid via a new 132kV power line which will connect the on-site substation to the upgraded 132kV double circuit power line running between the new Upington Main Transmission Substation (MTS) (currently under construction approximately 15km south of the project site), and the Gordonia Distribution Substation (located in Upington town). The point of connection is located approximately 5km east of the project site, and will make use of a loop-in and loop-out configuration. The proposed power line required for the project will be constructed within a 32m wide servitude. A 300m wide power line corridor has been identified for investigation along the southern boundary of the site, running immediately north of, and parallel to, the N10 national road<sup>1</sup>.

## 1.2. Objective of the Scoping Process

This SIA Scoping Report has been prepared as part of the Scoping Process being undertaken for Allepad PV One. The purpose of this SIA Scoping Report is to provide details on the nature and extent of Allepad PV One, and the potential social impacts associated with the construction, operation, and decommissioning, of the project. The inputs contained within this SIA Scoping Report are intended to provide a high-level overview of the social environment within which Allepad PV One is proposed, and set the scene for issues which will be addressed in detail as part of the EIA Phase specialist investigations.

The objective of this SIA Scoping Report is to:

- » Identify and review policies and legislation which may have relevance to the activity from a social perspective.
- » Provide comment on the need and desirability of the proposed activity from a social perspective.
- » Identify potential impacts and risks associated with the preferred activity and technology alternatives.
- » Identify key social issues to be addressed in the EIA phase.
- » Agree on the level of assessment to be undertaken, including the methodology to be applied to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site.
- » Identify suitable measures to avoid, manage or mitigate identified social impacts and determine the extent of residual risks that need to be managed and monitored.

## 1.3. Details of the Independent Specialist

This SIA has been undertaken by Sarah Watson of Savannah Environmental.

- » Sarah Watson is an Environmental Consultant at Savannah Environmental. Sarah has a Bachelor of Social Science Honours Degree in Geography and Environmental Management (B.Soc.Sci. Honours GEM) from the University of KwaZulu-Natal (UKZN). She has over 8 years of experience as an Environmental and Social Consultant in the field of impact assessment and management. Sarah has experience conducting environmental and social impact assessment processes for a range of projects

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<sup>1</sup> A total of four 100MW PV projects are proposed for development on the project site (i.e. Allepad PV One, Allepad PV Two, Allepad PV Three and Allepad PV Four). Should more than one PV project be constructed on the site, the additional plants will be interconnected to each other via the on-site power line corridor (in loop-in and loop-out configurations), and then ultimately be connected to existing Eskom infrastructure in the area, including the possibility of a direct connection to the Upington MTS by additional power lines (the route and details of which are not known at this stage). This transmission inter-connection will be assessed through a separate application for EA at a later stage once routing information and design requirements are given by Eskom.

in the telecommunications, residential, industrial, bulk infrastructure, rural development, and energy sectors.

#### 1.4. Structure of this SIA Scoping Report

This SIA Scoping Report has been structured as follows:

- » **Chapter 2** provides an overview of the methodology and approach utilised in preparing this SIA Scoping Report.
- » **Chapter 3** provides an overview of the legislative and policy environmental within which Allepad PV One is proposed.
- » **Chapter 4** provides an overview of the socio-economic profile of the Dawid Kruiper LM, ZF Mgcawu DM, Northern Cape Province, and South Africa as a whole.
- » **Chapter 5** describes the potential social impacts which have been identified for the project and which will be assessed in more detail as part of the EIA.
- » **Chapter 6** provides the conclusion of the scoping study and recommendations for further study to be incorporated into the Plan of Study for EIA to be approved by DEA.

## 2. METHODOLOGY AND APPROACH

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### 2.1. Purpose of the Study

The International Principles for Social Impact Assessment define SIA as:

*"The processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions"*.

The International Principles for Social Impact Assessment define social impacts as changes to one or more of the following:

- » People's way of life – that is, how they live, work, play and interact with one another on a day-to-day basis.
- » Their culture – that is, their shared beliefs, customs, values and language or dialect.
- » Their community – its cohesion, stability, character, services and facilities.
- » Their political systems – the extent to which people are able to participate in decisions that affect their lives, the level of democratisation that is taking place, and the resources provided for this purpose.
- » Their environment – the quality of the air and water people use; the availability and quality of the food they eat; the level of hazard or risk, dust and noise they are exposed to; the adequacy of sanitation, their physical safety, and their access to and control over resources.
- » Their health and wellbeing – health is a state of complete physical, mental, social and spiritual wellbeing and not merely the absence of disease or infirmity;
- » Their personal and property rights – particularly whether people are economically affected, or experience personal disadvantage which may include a violation of their civil liberties.
- » Their fears and aspirations – their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children.

The purpose of this SIA Scoping Report is therefore to:

- » Provide baseline information describing the social environment within which the project is proposed, and which may be impacted (both positively and negatively) as a result of the proposed development.
- » Identify, describe and assess possible social risks / fatal flaws and social impacts that may arise as a result of the proposed development (in terms of the detailed design and construction, operation, and decommissioning phases of the project).
- » Recommend ways in which negative impacts can be avoided, minimised, or their significance reduced; and positive impacts maximised or enhanced.

### 2.2. Approach to the Study

This SIA Scoping Report provides a snapshot of the current social setting within which Allepad PV One is proposed. It provides an overview of the manner and degree to which the current status quo is likely to change or be impacted on by the construction, operation and decommissioning of the project; as well as the manner in which the social environment is likely to impact on the development itself.

The SIA process completed to date comprised the following:

- » Collection and review of existing information, including Provincial, District and Local plans, policies, programmes; Census data; and available literature from previous studies conducted within the area. Project specific information was obtained from the project proponent.
- » Identification of potential direct, indirect and cumulative impacts likely to be associated with the construction, operation, and decommissioning of the proposed project.
- » Preparation of an SIA Scoping Report for inclusion in the Scoping Report to be prepared for the project.

### **2.2.1. Collection and Review of Existing Information**

Existing desktop information which has relevance to the proposed project, project area and / or surrounds was collected and reviewed. The following information was examined as part of this process:

- » Project map.
- » Google Earth imagery.
- » A description of the project (as provided by the project proponent).
- » Census data (2011).
- » Planning documentation such as Provincial Growth and Development Strategies (PGDSs), Local and District Municipality Integrated Development Plans (IDPs), Spatial Development Frameworks (SDFs), and development goals and objectives.
- » Relevant legislation, guidelines, policies, plans, and frameworks.
- » Available literature pertaining to social issues associated with the development and operation of solar PV power plants and associated infrastructure.

### **2.3. Limitations and Assumptions**

The following assumptions and limitations are applicable to this SIA Scoping Report:

- » Data derived from the 2011 Census, Northern Cape Provincial Spatial Development Framework (PSDF) 2012, ZF Mgcaawu District Municipality Draft Integrated Development Plan (IDP) 2017 – 2022 (2018 / 2019), Dawid Kruiper LM IDP 2017 / 2022 (2018 / 2019), and Dawid Kruiper LM SDF (2017) was used to generate the majority of information provided in the baseline profile of the study area. The possibility therefore exists that the data utilised may be out of date, and may not provide an accurate reflection of the current status quo.
- » This SIA Scoping Report is intended to provide an overview of the current social environmental and assist in the identification of potential social impacts which require further investigation as part of the EIA phase. As a result no consultation has been conducted with key stakeholders as part of the Scoping process to date.
- » This SIA Scoping Report was prepared based on information which was available to the specialist at the time of preparing the report. The sources consulted are not exhaustive, and the possibility exists that additional information which might strengthen arguments, contradict information in this report, and / or identify additional information might exist.
- » This SIA Scoping Report was conducted in accordance with, and therefore restricted by, a predetermined timeframe and budget.
- » Some of the project projections reflected in this SIA Scoping Report may be subject to change, and therefore may be higher or lower than those estimated by the project proponent.

- » It is assumed that the motivation for, and planning and feasibility study of the project were undertaken with integrity; and that information provided by the project proponent was accurate and true at the time of preparing this SIA Scoping Report.

### 3. LEGISLATION AND POLICY REVIEW

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The legislative and policy context applicable to a project plays an important role in identifying and assessing the potential social impacts associated with the development. In this regard a key component of the SIA process is to assess a proposed development in terms of its suitability with regards to key planning and policy documents.

The following key pieces of documentation were reviewed as part of this legislation and policy review process:

#### **National Policy and Planning Context:**

- » Constitution of the Republic of South Africa, 1996
- » National Environmental Management Act (No. 107 of 1998) (NEMA)
- » White Paper on the Energy Policy of the Republic of South Africa (1998)
- » White Paper on the Renewable Energy Policy of the Republic of South Africa (2003)
- » National Energy Act (No. 34 of 2008)
- » Integrated Energy Plan (IEP) (2015)
- » Integrated Resource Plan (IRP) for Electricity (2010 – 2030) (2011) (and subsequent updates thereto)
- » National Development Plan (NDP) 2030 (2012)
- » Strategic Infrastructure Projects (SIPs)

#### **Provincial Policy and Planning Context:**

- » Northern Cape Provincial Spatial Development Framework (PSDF) 2012

#### **Local Policy and Planning Context:**

- » ZF Mgcawu District Municipality Draft Integrated Development Plan (IDP) 2017 – 2022 (2018 / 2019),
- » Dawid Kruiper LM IDP 2017 / 2022 (2018 / 2019)
- » Dawid Kruiper LM SDF (2017)

#### **3.1. National Policy and Planning Context**

Any project which contributes positively towards the objectives mentioned within national policies could be considered strategically important for the country. A review of the national policy environment suggests that the increased utilisation of Renewable Energy (RE) sources is considered integral to reducing South Africa's carbon footprint, diversifying the national economy, and contributing towards social upliftment and economic development. As the project comprises a RE project and would contribute RE supply to provincial and national targets set out and supported within these national policies, it is considered that the project fits within the national policy framework.

A brief review of the most relevant national policies is provided below.

##### **3.1.1. Constitution of the Republic of South Africa, 1996**

The Constitution of the Republic of South Africa, 1996 is the supreme law of South Africa, and forms the foundations for a democratic society in which fundamental human rights are protected. The Bill of Rights contained in Chapter 2 of the Constitution enshrines the rights of all people in South Africa and affirms the

democratic values of human dignity, equality and freedom. Section 24 of the Constitution pertains specifically to the environment. It states that:

24. Everyone has the right –

- (a) To an environment that is not harmful to their health or well-being; and
- (b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:
  - (i) Prevent pollution and ecological degradation.
  - (ii) Promote conservation.
  - (iii) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

The Constitution outlines the need to promote social and economic development. Section 24 of the Constitution therefore requires that development be conducted in such a manner that it does not infringe on an individual's environmental rights, health, or well-being. This is especially significant for previously disadvantaged individuals who are most at risk to environmental impacts.

### **3.1.2. National Environmental Management Act (No. 107 of 1998) (NEMA)**

The National Environmental Management Act (No. 107 of 1998) (NEMA) is South Africa's key piece of environmental legislation, and sets the framework for environmental management in South Africa. It provides for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment. NEMA is founded on the principle that everyone has the right to an environment that is not harmful to their health or well-being as contained within the Bill of Rights. In accordance with this it states that:

- » *The State must respect, protect, promote and fulfil the social, economic and environmental rights of everyone and strive to meet the basic needs of previously disadvantaged communities.*
- » *Sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations.*
- » *Everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.*

In addition, the national environmental management principles contained within NEMA state that:

- » *Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.*
- » *Development must be socially, environmentally and economically sustainable.*
- » *The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment*

The need for responsible and informed decision-making by government on the acceptability of environmental impacts is therefore enshrined within NEMA.



### **3.1.3. White Paper on the Energy Policy of the Republic of South Africa (1998)**

The White Paper on Energy Policy places emphasis on the expansion of energy supply options to enhance South Africa's energy security. This can be achieved through increased use of RE and encouraging new entries into the generation market. South Africa has an attractive range of cost effective renewable resources, taking into consideration social and environmental costs. Government policy RE is thus concerned with meeting the following challenges:

- » Ensuring that economically feasible technologies and applications are implemented.
- » Ensuring that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options.
- » Addressing constraints on the development of the renewable industry.

The policy states that the advantages of RE include; minimal environmental impacts during operation in comparison with traditional supply technologies, generally lower running costs, and high labour intensities. Disadvantages include; higher capital costs in some cases; lower energy densities; and lower levels of availability, depending on specific conditions, especially with sun and wind based systems. Nonetheless, renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future. The White Paper on Energy Policy therefore supports the advancement of RE sources and ensuring energy security through the diversification of supply.

### **3.1.4. White Paper on the Renewable Energy Policy of the Republic of South Africa (2003)**

The White Paper on Renewable Energy Policy supplements Government's predominant policy on energy as set out in the White Paper on the Energy Policy of the Republic of South Africa (DME, 1998). The policy recognises the potential of RE, and aims to create the necessary conditions for the development and commercial implementation of RE technologies. The position of the White Paper on RE is based on the integrated resource planning criterion of:

*"Ensuring that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options."*

The White Paper on RE sets out Government's vision, policy principles, strategic goals and objectives for promoting and implementing RE in South Africa. The country relies heavily on coal to meet its energy needs due to its abundant, and fairly accessible and affordable coal resources. However, massive RE resources that can be sustainable alternatives to fossil fuels, have so far remained largely untapped. The White Paper on Renewable Energy Policy fosters the uptake of RE in the economy and has a number of objectives that include: ensuring equitable resources are invested in renewable technologies; directing public resources for implementation of RE technologies; introducing suitable fiscal incentives for RE and; creating an investment climate for the development of the RE sector.

The White Paper on Renewable Energy of 2003 set a target of 10 000GWh to be generated from RE by 2013 to be produced mainly from biomass, wind, solar and small-scale hydro. The target was subsequently reviewed in 2009 during the RE summit of 2009. The objectives of the White Paper on Renewable Energy Policy are considered in six focal areas, namely; financial instruments, legal instruments, technology development, awareness raising, capacity building and education, and market based and regulatory instruments. The policy supports the investment in RE facilities as they contribute towards ensuring energy

security through the diversification of energy supply, reducing GHG emissions and the promotion of RE sources.

### **3.1.5. National Energy Act (No. 34 of 2008)**

The purpose of the National Energy Act (No. 34 of 2008) is to ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation; while taking environmental management requirements into account. In addition, the Act also provides for energy planning, and increased generation and consumption of Renewable Energies (REs).

The objectives of the Act, are to amongst other things, to:

- » Ensure uninterrupted supply of energy to the Republic.
- » Promote diversity of supply of energy and its sources.
- » Facilitate energy access for improvement of the quality of life of the people of the Republic.
- » Contribute to the sustainable development of South Africa's economy.

The National Energy Act therefore recognises the significant role which electricity plays growing the economy while improving citizens' quality of life. The Act provides the legal framework which supports the development of RE facilities for the greater environmental and social good, and provides the backdrop against which South Africa's strategic planning regarding future electricity provision and supply takes place. It also provides the legal framework which supports the development of RE facilities for the greater environmental and social good.

### **3.1.6. Integrated Energy Plan (IEP), 2015**

The Integrated Energy Plan (IEP) (which was developed under the National Energy Act (No. 34 of 2008)), recognises that energy is essential to many human activities, and is critical to the social and economic development of a country. The purpose of the IEP is essentially to ensure the availability of energy resources, and access to energy services in an affordable and sustainable manner, while minimising associated adverse environmental impacts. Energy planning therefore needs to balance the need for continued economic growth with social needs, and the need to protect the natural environment.

The IEP is a multi-faceted, long-term energy framework which has multiple aims, some of which include:

- » To guide the development of energy policies and, where relevant, set the framework for regulations in the energy sector.
- » To guide the selection of appropriate technologies to meet energy demand (i.e. the types and sizes of new power plants and refineries to be built and the prices that should be charged for fuels).
- » To guide investment in and the development of energy infrastructure in South Africa.
- » To propose alternative energy strategies which are informed by testing the potential impacts of various factors such as proposed policies, introduction of new technologies, and effects of exogenous macro-economic factors.

The 8 key objectives of the integrated energy planning process, are as follows:

- » Objective 1: Ensure security of supply.
- » Objective 2: Minimise the cost of energy.
- » Objective 3: Promote the creation of jobs and localisation.
- » Objective 4: Minimise negative environmental impacts from the energy sector.
- » Objective 5: Promote the conservation of water.
- » Objective 6: Diversify supply sources and primary sources of energy.
- » Objective 7: Promote energy efficiency in the economy.
- » Objective 8: Increase access to modern energy.

### **3.1.7. Integrated Resource Plan for Electricity (2010-2030)**

The Integrated Resource Plan (IRP) for Electricity 2010 – 2030 is a subset of the IEP and constitutes South Africa's national electricity plan. The primary objective of the IRP is to determine the long term electricity demand and detail how this demand should be met in terms of generating capacity, type, timing and cost. The IRP also serves as input to other planning functions, including amongst others, economic development and funding, and environmental and social policy formulation.

The current iteration of the IRP, led to the Revised Balanced Scenario (RBS) that was published in October 2010. Following a round of public participation which was conducted in November / December 2010, several changes were made to the IRP model assumptions. The document outlines the proposed generation new-build fleet for South Africa for the period 2010 to 2030. This scenario was derived based on a cost-optimal solution for new-build options (considering the direct costs of new build power plants), which was then "balanced" in accordance with qualitative measures such as local job creation.

The Policy-Adjusted IRP reflects recent developments with respect to prices for renewables. In addition to all existing and committed power plants, the plan includes 9.6GW of nuclear; 6.25GW of coal; 17.8GW of renewables; and approximately 8.9GW of other generation sources such as hydro, and gas.

### **3.1.8. National Development Plan 2030 (2012)**

The National Development Plan (NDP) 2030 is a plan prepared by the National Planning Commission in consultation with the South African public which is aimed at eliminating poverty and reducing inequality by 2030. The NDP aims to achieve this by drawing on the energies of its people, growing and inclusive economy, building capabilities, enhancing the capacity of the state and promoting leaderships and partnerships throughout society. While the achievement of the objectives of the NDP requires progress on a broad front, three priorities stand out, namely:

- » Raising employment through faster economic growth.
- » Improving the quality of education, skills development and innovation.
- » Building the capability of the state to play a developmental, transformative role.

In terms of the Energy Sectors role in empowering South Africa, the NDP envisages that, by 2030, South Africa will have an energy sector that promotes:

- » Economic growth and development through adequate investment in energy infrastructure. The sector should provide reliable and efficient energy service at competitive rates, while supporting economic growth through job creation.
- » Social equity through expanded access to energy at affordable tariffs and through targeted, sustainable subsidies for needy households.
- » Environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change.

The NDP aims to provide a supportive environment for growth and development, while promoting a more labour-absorbing economy. The proposed project will assist in reducing carbon emissions targets and creating jobs in the local area as well as assist in creating a competitive infrastructure based on terms of energy contribution to the national grid.

### **3.1.9. Strategic Infrastructure Projects (SIPs)**

The Presidential Infrastructure Coordinating Committee (PICC) are integrating and phasing investment plans across 18 Strategic Infrastructure Projects (SIPs) which have the following 5 core functions:

- » To unlock opportunity.
- » Transform the economic landscape.
- » Create new jobs.
- » Strengthen the delivery of basic services.
- » Support the integration of African economies.

A balanced approach is being fostered through greening of the economy, boosting energy security, promoting integrated municipal infrastructure investment, facilitating integrated urban development, accelerating skills development, investing in rural development and enabling regional integration.

SIP 8 of the energy SIPs supports the development of RE projects as follow:

- » SIP 8: Green energy in support of the South African economy:

*Support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the Integrated Resource Plan (IRP 2010) and supports bio-fuel production facilities.*

The development of the proposed project is therefore also aligned with SIP 8 as it constitutes a green energy initiative which would contribute clean energy in accordance with the IRP 2010 – 2030.

## **3.2. Provincial Policies**

This section provides a brief review of the most relevant provincial policies. Allepad PV One is considered to align with the aims of these policies, even if contributions to achieving the goals therein are only minor.

### **3.2.1. Northern Cape Provincial Spatial Development Framework (PSDF) 2012**

The Northern Cape Provincial Spatial Development Framework (PSDF) 2012 states that the overarching goal for the Province is to enable sustainability through sustainable development. The Province considers social

and economic development as imperative in order to address the most significant challenge facing the Northern Cape, which is poverty.

The PSDF considers the release of greenhouse gas (GHG) emissions created by human activity as the key cause of global warming, which in turn could result in major negative effects and disasters in the short- and medium-term. This effect would increasingly undermine human development gains. Innovative strategies would have to be implemented to reduce the impact of global deterioration.

The PSDF identifies key sectoral strategies and plans which are considered to be the key components of the PSDF. Sectoral Strategy 19 refers to a provincial renewable energy strategy. Within the PSDF a policy has been included which states that renewable energy sources (including the utilisation of solar energy) are to comprise 25% of the Province's energy generation capacity by 2020.

The overall energy objective for the Province also includes promoting the development of renewable energy supply schemes which are considered to be strategically important for increasing the diversity of domestic energy supply and avoiding energy imports, while also minimising the detrimental environmental impacts. The implementation of sustainable renewable energy is also to be promoted within the Province through appropriate financial and fiscal instruments.

Considering the need for the development of renewable energy facilities in order to achieve the objective of sustainability the development of the proposed solar energy facility within the Northern Cape and within the study area is considered to be aligned with the Northern Cape PSDF.

### **3.3. District and Local Municipalities Policies**

The strategic policies at district and local level have similar objectives for the respective areas, namely to accelerate economic growth, create jobs, and uplift communities. Allepad PV One is considered to also align with the aims of these policies, even if contributions to achieving the goals therein are only minor.

#### **3.3.1. ZF Mgcawu District Municipality Draft Integrated Development Plan (IDP) 2017 – 2022 (2018 / 2019)**

The vision of the ZF Mgcawu DM as contained within its IDP 2017 – 2022 (2018 / 2019) is as follows:

*“Quality support to deliver quality services.”*

The mission of the ZF Mgcawu DM is:

*“Centre of excellence in providing quality basic services through support to local municipalities.”*

The following strategic objectives and development objectives have been identified for the ZF Mgcawu DM:

Strategic Objective	Dev Objective Linkage codes	Development Objective
(i) To monitor and determine the housing backlogs in the district as well as to eradicate sanitation & infrastructure backlogs	BSD: 1	01. Maintain and report on the housing requirements
	BSD: 2	02. Provide project management support to B-Municipalities
(ii) To assess and provide targeted support improving institutional capacity and service delivery capabilities of category B-municipalities	MIT: 1	03. Assess and report on the institutional capacity of B-municipalities to fulfil their statutory mandates
	MIT: 2	04. Assess and report on the service delivery capabilities of B-municipalities to fulfil their statutory mandates
	GGP: 1	05. Provide targeted support to B-municipalities (e.g. including legal support to B-municipalities regarding land use matters)
(iii) To promote environmental health and safety of communities in the ZF Mgcawu District through the proactive prevention, mitigation, identification and management of environmental health services, fire and disaster risks	BSD: 3	06. Providing environmental health services to B-municipalities
	GGP: 2	07. Implement special programmes (e.g. HIV / Aids)
(iv) To promote safety of communities in the ZF Mgcawu District through the proactive prevention, mitigation, identification and management of fire and disaster risks	BSD: 4	08. Establish disaster management mechanisms and programmes in the ZF Mgcawu District
(v) To Facilitate the Development of Sustainable regional land use, economic, spatial and environmental planning frameworks that will support and guide the development of a diversified, resilient and sustainable district economy	LED: 1	09. Establish a vehicle to ensure all businesses are co-operating (i.e. District LED Forum)
	LED: 2	10. Create investment opportunities in sectoral development (i.e. investment activities; Entrepreneurial business support programme)
	LED: 3	11. Enable an environment for business establishment and support initiatives (i.e. Increase the number of businesses; entrepreneurial support)
(v) To market, develop and co-ordinate tourism in the ZF Mgcawu District	LED: 4	12. Promote the Green Kalahari tourism brand in the ZF Mgcawu district
(vi) To assess and monitor the status of infrastructure needs and requirements of B Municipalities	BSD: 5	13. Establish and provide selected infrastructure needs to targeted B Municipalities
(vii) To ensure efficient business operations and to fulfils the assurance statutory requirements of the ZF Mgcawu District Municipality	MFV: 1	14. Enable and improve financial viability and management through well-structured budget processes, financial systems, and MFMA compliance (i.e. promote good budget and fiscal management; Unqualified audits)
	MIT: 3	15. Enable efficient and effective administrative support and Planning processes (i.e. Maintaining sound labour relations, practices and overall administrative support, IDP planning etc.

The implementation of Allepad PV One would contribute positively towards the strategic objective of supporting and guiding the development of a diversified, resilient and sustainable district economy, and the development objectives of creating investment opportunities in sectoral development (i.e. investment activities; Entrepreneurial business support programme), and enabling an environment for business establishment and support initiatives (i.e. Increase the number of businesses; entrepreneurial support) through its local content and local economic development requirements as prescribed under the REIPPP Programme.

### **3.3.2. Dawid Kruiper LM IDP 2017 / 2022 (2018 / 2019)**

The vision of the Dawid Kruiper LM as contained within the IDP 2017 / 2022 (2018 / 2019) is as follows:

*"To provide an affordable quality service to Dawid Kruiper and its visitors and to execute the policies and programmes of the Council."*

The mission of the Dawid Kruiper LM is as follows:

*"As an authority that delivers Municipal Services to Dawid Kruiper, we attempt by means of a motivated staff, to develop Dawid Kruiper increasingly as a pleasant, safe and affordable living and workplace for its residents and a hospitable relaxed visiting place for its visitors."*

According to the IDP 2017 / 2022 (2018 / 2019) the focus of the IDP is still on the present (status quo) situation, but with strategic development objectives set the focus is set to shifts to the future. Development objectives were aligned with national imperatives and frameworks, and in line with the powers and functions of the municipality.

Guidelines governing these development objectives and strategies include the national key priority (focal) areas:

- » Focal Area 1: Basic Service Delivery
- » Focal Area 2: To promote Local Economic Development
- » Focal Area 3: To promote municipal Transformation and Organisational Development
- » Focal Area 4: Ensure Financial Viability and Management
- » Focal Area 5: Ensure Good Governance and Public Participation
- » Focal Area 6: Spatial Development Framework

Six Key Priority Areas (KPAs) with ten Development Priorities were identified based on the challenges faced by the LM, and prioritised by both ward committees and the community during public participation processes. These KPAs were linked to the six National Key Performance Areas and the SDF development objectives of the municipality, and include the following:

<b>Development Priority</b>	Spatial Development, Town Planning and Land Use Management
<b>Key Priority Area</b>	<b>Development Objectives</b>
Spatial Development Framework	» Develop, manage and maintain essential bulk water infrastructure and facilities to accommodate the aspirations, needs and pressures of present and

	<p>future industries, businesses and dependent communities.</p> <ul style="list-style-type: none"> <li>» Develop, manage and maintain necessary infrastructure and facilities required to improve the provision of water services.</li> </ul>
<b>Development Priority</b>	Sewerage
<b>Key Priority Area</b>	<b>Development Objectives</b>
Service Delivery and Infrastructure Development	<ul style="list-style-type: none"> <li>» Develop, manage and maintain essential bulk sewerage infrastructure and facilities to accommodate the aspirations, needs and pressures of present and future industries, businesses and dependent communities.</li> <li>» Develop, manage and maintain necessary infrastructure and facilities required to improve the provision of sewerage services.</li> </ul>
<b>Development Priority</b>	Human Settlements and Housing
<b>Key Priority Area</b>	<b>Development Objectives</b>
Service Delivery and Infrastructure Development	<ul style="list-style-type: none"> <li>» Eradicate housing backlogs in municipal area.</li> <li>» Provide for sustainable human settlements (housing).</li> </ul>
<b>Development Priority</b>	Energy and Electricity
<b>Key Priority Area</b>	<b>Development Objectives</b>
Service Delivery and Infrastructure Development	<ul style="list-style-type: none"> <li>» Provide, manage and maintain essential infrastructure required to improve the provision of electrical services</li> </ul>
<b>Development Priority</b>	Roads, Transport and Stormwater Drainage
<b>Key Priority Area</b>	<b>Development Objectives</b>
Service Delivery and Infrastructure Development	<ul style="list-style-type: none"> <li>» Develop, manage and maintain necessary Road, Transport and Storm Water infrastructure and facilities required to improve transportation in, and Aesthetic qualities of urban areas.</li> </ul>
<b>Development Priority</b>	Sanitation, Waste Management and Waste Removal
<b>Key Priority Area</b>	<b>Development Objectives</b>
Service Delivery and Infrastructure Development	<ul style="list-style-type: none"> <li>» Regulate and manage waste disposal to prevent pollution of the natural environment and natural resources.</li> </ul>
<b>Development Priority</b>	Economic Growth and Job Creation
<b>Key Priority Area</b>	<b>Development Objectives</b>
Local Economic Development	<ul style="list-style-type: none"> <li>» Promote the development of tourist infrastructure that will enhance tourism</li> <li>» Create an environment that promotes the development of a diversified and sustainable economy.</li> </ul>



Development Priority	Community Development and Facilities
Key Priority Area	Development Objectives
Service Delivery and Infrastructure Development	<ul style="list-style-type: none"> <li>» Pro-active prevention, mitigation, identification and management of environmental health, fire and disaster risks.</li> <li>» Provide safety to communities through law enforcement services and through legislative requirements.</li> <li>» Provide equal access to sport, park, recreational facilities and other public amenities to all residents.</li> </ul>

Development Priority	Administrative and Institutional Capacity
Key Priority Area	Development Objectives
Institutional Development and Organisational Transformation	<ul style="list-style-type: none"> <li>» Enable and improve financial viability and management through well-structured budget processes, financial systems, and MFMA compliance through legislative requirements</li> <li>» Align institutional arrangements to provide an effective and efficient support service to deliver on organisational objectives</li> <li>» Provide quality basic services to all communities within the municipality (i.e. electricity; water; sanitation; refuse)</li> <li>» Manage and maintain municipal property, plant, equipment and vehicle fleet</li> <li>» Facilitate the establishment of good governance practices</li> <li>» Promote and improve public relations through stakeholder participation and good customer service.</li> </ul>
Good Governance	

The implementation of Allepad PV One would contribute positively towards several of the development priorities and development objectives identified by the Dawid Kruiper LM, specifically with regards to economic growth and job creation, and could also contribute towards the LM achieving some of the other development priorities and objectives through the provision of increased revenue which would enable municipal spending.

### 3.3.3. Dawid Kruiper LM SDF (2017)

In addition, the IDP identified the following 8 pillars as being important for development and the Dawid Kruiper Council's envisagement of a self-sustaining ecology with long-term benefit for all inhabitants of Dawid Kruiper:

1. **Agriculture** as an optimally efficient and economically viable market-directed sector representing a socio-economic 'pivot' of Dawid Kruiper.
2. **Manufacturing and industry** as a viable sector which builds on the comparative economic advantages of Dawid Kruiper, and operates in accordance with the highest standards for environmental management.

3. **Tourism** as a sustainable industry, supporting or enhancing marginal industries and contributing significantly to the improvement of the quality of life of all the communities of Dawid Kruiper.
4. **Urban development** in a safe, healthy and aesthetically pleasing urban environment, with the architectural and spatial character depicting the historic and cultural background of the habitant communities.
5. **Rural development** in an environmentally sustainable manner with the infrastructure and services that is essential for the development of the rural communities of Dawid Kruiper whilst enhancing its unique rural character.
6. **Social Development** establishing an optimally developed and empowered society in harmony with its environment.
7. **Conservation** of natural habitats worthy to be consolidated into continuous tracts of conservation land, protecting natural biodiversity and providing community-supporting ecosystem services.
8. **Natural resources** as fundamental requirements for sustainable development in Dawid Kruiper Municipality.

The project site is located in Ward 11 of the Dawid Kruiper LM, while the portion of the grid connection which occurs outside of the project site is located in Ward 13 of the Dawid Kruiper LM. According to the Dawid Kruiper LM SDF the area under investigation is located within the C.a.2 Agriculture (Ward 11) and G.a.3 Vacant Land within Urban Edge (Ward 13) Spatial Planning Category (SPC) (refer to **Figure 3.1** and **Figure 3.2** respectively). These SPCs are described in more detail below:

<b>C.a.2</b>	<p><b><u>Agriculture:</u></b> The breeding of animals on natural veld, land and pasture, stock or auction pens, the processing of products produced on the farm, the cultivation of crops and at most one single residential house and other buildings that is reasonably relevant to the main agricultural activity on the farm, including bona-fide staff housing.</p> <p><b><u>Decision Making:</u></b> This SPC covers the largest part of the DKLM area and contributes to the agricultural economy of the municipality. The protection of intensive agricultural areas, as is found on the banks of the Orange River, should enjoy critical protection from the pressures of urban development. Urban development on any area indicated as C.a.2. should immediately prompt the decision-making authority to request the inputs from the following departments or parastatals, namely:</p> <ol style="list-style-type: none"> <li>a) Department of Agriculture Forestry and Fisheries (DAFF), except where it may be proven that the involved land unit for development has been excluded from the provisions of Act No. 70 of 1970.</li> <li>b) Department of Environmental Affairs (DEA) to indicate if the development triggered a listed activity in accordance with NEMA.</li> <li>c) Department of Roads and Public Works (DRPW) stipulation 'No-Objection' regarding the development, access and prescribed building lines, if the property borders or makes use of a road in the jurisdiction of the said department.</li> <li>d) South African National Road Agency Limited (SANRAL) stipulation 'No-Objection' regarding the development, access and prescribed building lines, if the property borders or makes use of a road in the jurisdiction of the said parastatal.</li> </ol> <p>Urban development on any non-urban SPC should be excluded where such a development is outside of the urban edge, whereas the following SPCs are seen as complementary to Agriculture and the rezoning to being any of the following, can be considered under specific conditions and approvals:</p> <ol style="list-style-type: none"> <li>1) D.f.1, Place of Worship, D.f.2, Place of Instruction and D.f.3 Institution.</li> <li>2) D.g.1 Government Uses and D.g.2 Municipal Uses.</li> <li>3) D.h.3 Accommodation Facilities</li> </ol>
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	<p>4) D.h.9 Small Holding                      5) D.n.1 Cemeteries                      6) D.o.1 Sports fields &amp; Related Infrastructure                      7) D.p.1 Airport and Related Infrastructure                      8) D.q.1 Resort &amp; Tourism Related Areas                      9) E.a.1. Agricultural Industry                      10) E.e.1 Extractive industry                      11) SPC F. Surface Infrastructure                      12) SPC G: Other, including Special Uses not clearly described in the LUMS and Vacant land within Urban Edge.</p> <p>C.a.2. May also be transformed to any land use within the A. to C's, subject to correct land use procedures being followed</p>
G.a.3	<p><b><u>Vacant land within Urban Edge:</u></b>                      Vacant land inside the Urban Edge which may form part of the future expansion of Urban Related developments, but may include agriculture and other public amenities.</p> <p><b><u>Decision-Making:</u></b>                      This SPC was indicated in and around the existing towns and settlements within the Urban Edge and in most cases include the commonage of the mentioned settlements and towns. This SPC may be rezoned to any of the SPCs included in this SDF document, specifically pertaining to the Policies included in this document.</p>

The implementation of Allepad PV One is not considered to be in contrast with the Dawid Kruiper LM SDF and the SPCs within which the project area is located. In addition, while application is being made to DEA for EA in terms of NEMA, DAFF, DRPW, and SANRAL are registered I&APs on the project.

The implementation of Allepad PV One would contribute towards addressing the Dawid Kruiper LM's key issue regarding high levels of poverty and unemployment, skills shortage, and inequalities, through the creation of employment opportunities, the provision of skills training opportunities, and local economic growth, including growth in personal income levels of those community members who would be employed on the project. In addition, the REIPPP Programme requires preferred bidders to make contributions towards local economic development and social upliftment, to be focused on benefitting local communities within the vicinity of the project site.

### 3.4. Conclusion

The review of relevant legislation, policies and documentation pertaining to the energy sector indicate that renewable or green energy (i.e. energy generated by naturally occurring renewable resources), and therefore the establishment of Allepad PV One, is supported at a national, provincial, and local level, and that the proposed project will contribute positively towards a number of targets and policy aims. Specifically those relating to employment creation, social and economic development and upliftment, and an increase in RE and electricity supply which has the potential to further improve individuals' standard of living.

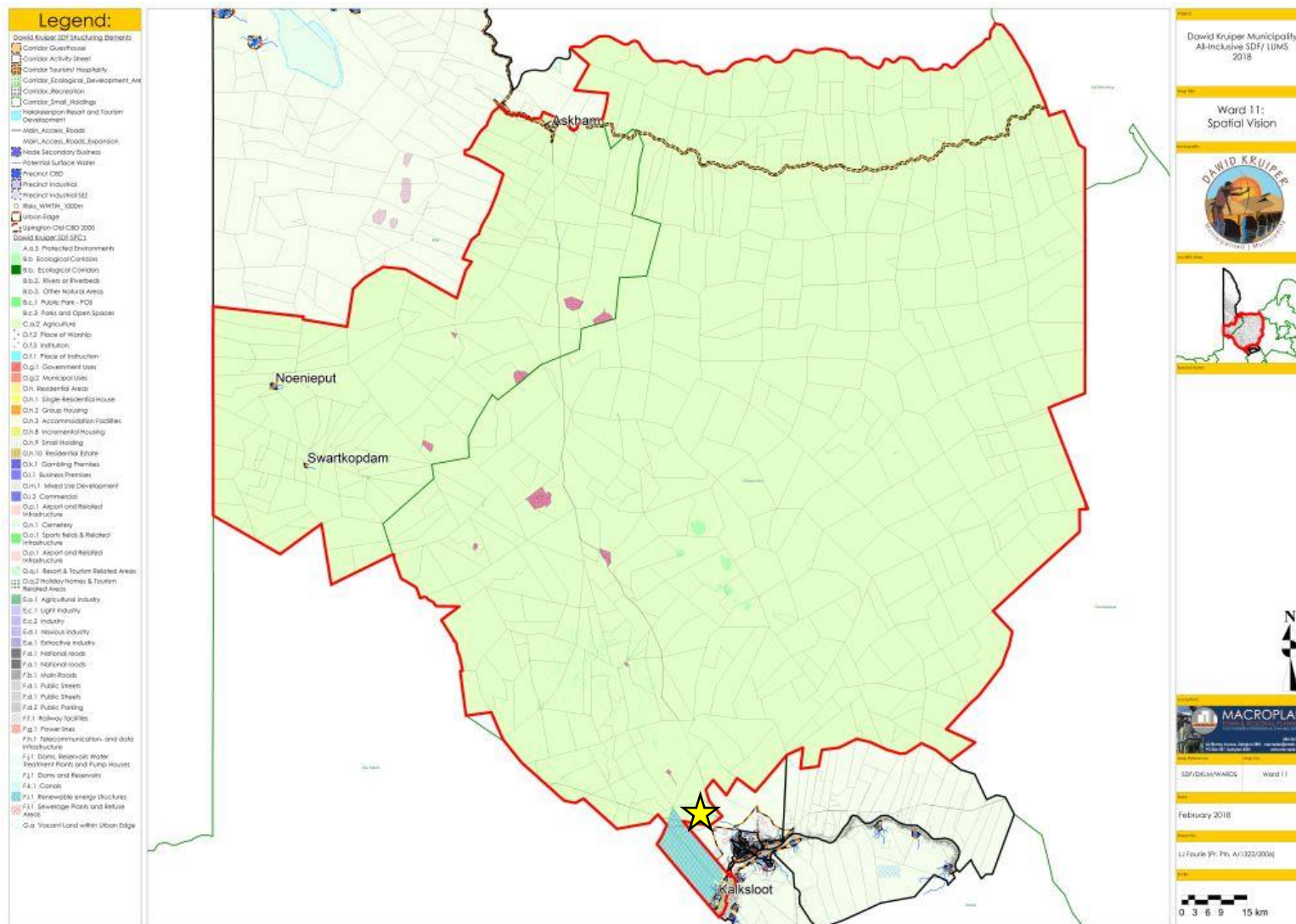


Figure 3.1: Dawid Kruijer LM SDF for Ward 11 (the location of the project site within the Ward 11 is indicated by the yellow star).

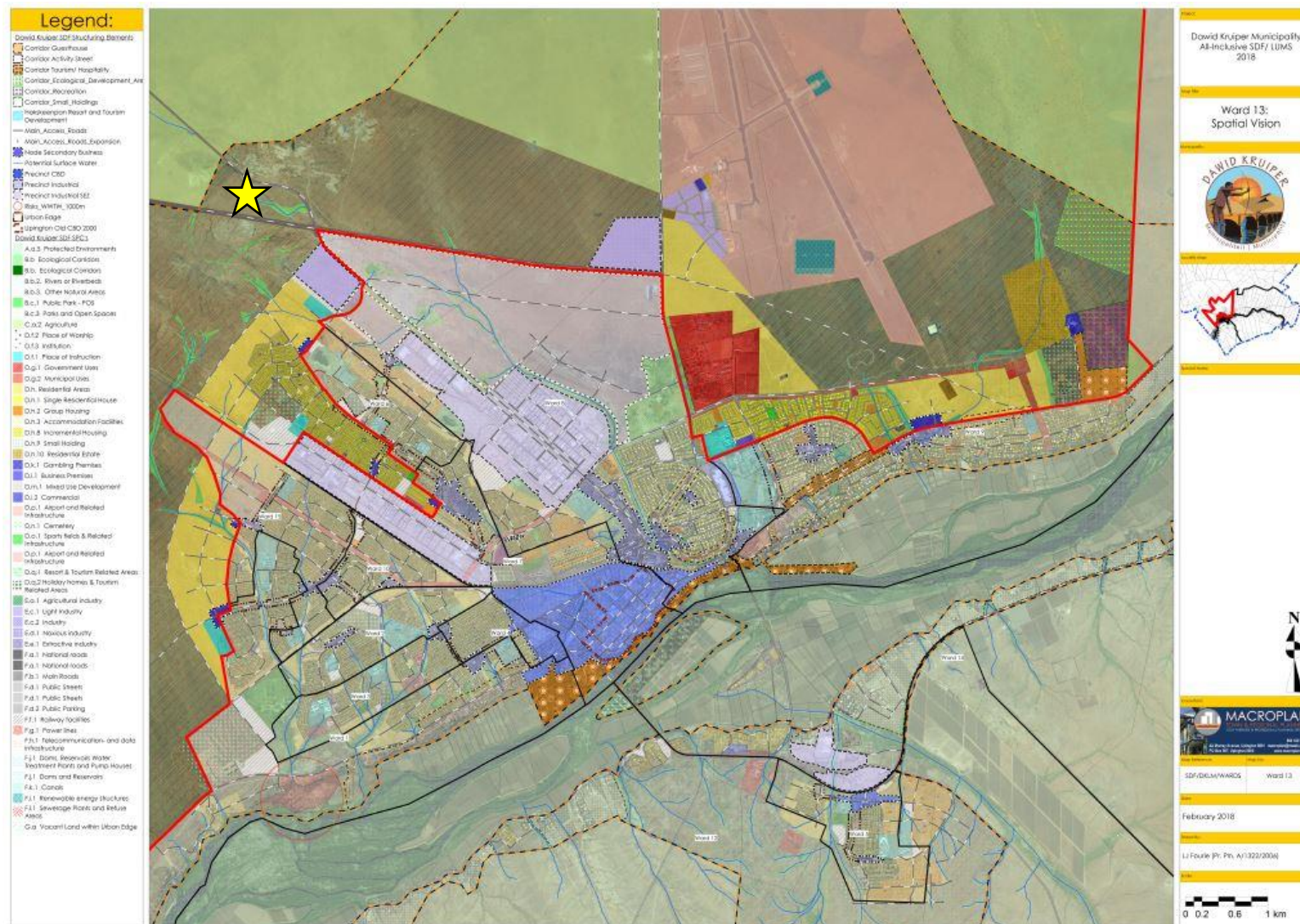


Figure 3.2: Dawid Kruijer LM SDF for Ward 13 (the location of the project site within the Ward 11 is indicated by a yellow star).

## 4. SOCIO-ECONOMIC PROFILE

Allepad PV One is proposed on the Remaining Extent of Erf 5315 Upington, in the Dawid Kruiper LM of the ZF Mgcawu DM in the Northern Cape Province (refer to **Table 4.1**).

**Table 4.1: Spatial Context of the Proposed Project Site.**

<b>Province</b>	Northern Cape Province
<b>District Municipality</b>	ZF Mgcawu DM
<b>Local Municipality</b>	Dawid Kruiper LM
<b>Ward Number(s)</b>	Wards 11 and 13
<b>Nearest Town(s)</b>	Upington (approximately 11km south-east of the project site)
<b>Farm Portion(s), Name(s) and Number(s)</b>	<p><b>Allepad PV One:</b></p> <ul style="list-style-type: none"> <li>» Remaining Extent of Erf 5315 Upington</li> </ul> <p><b>Proposed grid connection:</b></p> <ul style="list-style-type: none"> <li>» Remaining Extent of Erf 5315 Upington</li> <li>» Erf 01 Upington</li> </ul>
<b>SG 21 Digit Code (s)</b>	<p><b>Allepad PV One:</b></p> <ul style="list-style-type: none"> <li>» C02800070000531500000</li> </ul> <p><b>Proposed grid connection:</b></p> <ul style="list-style-type: none"> <li>» C02800070000531500000</li> <li>» C02800070000000100000</li> </ul>
<b>Current Zoning</b>	Agriculture
<b>Current land use</b>	Agriculture (i.e. Cattle grazing)
<b>Site Extent</b>	<p><b>Allepad PV One:</b></p> <p>3 889ha</p>

This Chapter provides an overview of the socio-economic environment of the Province, DM, and LM within which Allepad PV One is proposed for development, and provides the socio-economic basis against which potential issues can be identified.

### 4.1. Northern Cape Province

The Northern Cape Province is located in the north-western extent of South Africa and constitutes South Africa's largest province; occupying an area 372 889km<sup>2</sup> in extent, equivalent to nearly a third (30.5%) of the country's total land mass. It is also South Africa's most sparsely populated province with a population of 1 145 861, and a population density of 3.1/km<sup>2</sup>. It is bordered by the Western Cape, and Eastern Cape Provinces to the south, and south-east; Free State, and North West Provinces to the east; Botswana and Namibia, to the north; and the Atlantic Ocean to the west. The Northern Cape is the only South African province which borders Namibia, and therefore plays an important role in terms of providing linkages between Namibia and the rest of South Africa. The Orange River is a significant feature, and is also the main source of water in the Province, while also constituting the international border between the Northern Cape and Namibia.

The Northern Cape offers unique tourism opportunities including wildlife conservation destinations, natural features, historic sites, festivals, cultural sites, stars gazing, adventure tourism, agricultural tourism, ecotourism, game farms, and hunting areas, etc. The Province is home to the Richtersveld Botanical and Landscape

World Heritage Site, which comprises a United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Site under the World Heritage Convention. The Northern Cape is also home to 2 Transfrontier National Parks, namely the Kgalagadi Transfrontier Park, and the Richtersveld /Ai-Ais Transfrontier Park, as well as 5 national parks, and 6 provincial reserves.

The Northern Cape also plays a significant role in South Africa's science and technology sector, as it is home to the Square Kilometre Array (SKA), the Southern African Large Telescope (SALT), and the Karoo Array Telescope (MeerKAT).

The Northern Cape makes the smallest contribution to South Africa's economy (contributing only 2% to South Africa's Gross Domestic Product per region (GDP-R) in 2007). At 26%, the mining sector is the largest contributor to the provincial GDP. The Northern Cape's mining industry is of national and international importance, as it produces approximately 37% of South Africa's diamond output, 44% of its zinc, 70% of its silver, 84% of its iron-ore, 93% of its lead and 99% of its manganese.

In 2007 the agricultural sector contributed 5.8% to the Northern Cape GDP per region which was equivalent to approximately R1.3 billion. The agricultural sector also employs approximately 19.5% of the total formally employed individuals (LED Strategy). The sector is experiencing significant growth in value-added activities, including game-farming, while food production and processing for the local and export market is also growing significantly (PGDS, July 2011). Approximately 96% of the land is used for stock farming, including beef cattle and sheep or goats, as well as game farming, while approximately 2% of the province is used for crop farming, mainly under irrigation in the Orange River Valley and Vaalharts Irrigation Scheme (LED Strategy).

The Northern Cape comprises 5 Districts, namely Frances Baard, Johan Taolo Gaetsewe, Namakwa, Pixley ka Seme, and ZF Mgcawu (refer to **Figure 4.1**).

## **4.2. ZF Mgcawu DM**

The ZF Mgcawu DM (previously known as the Siyanda DM) is situated in the north-central extent of Northern Cape Province, and is bordered by the Namakwa DM to the south-west and south, the Pixley ka Seme DM to the south and south-east, the Frances Baard and John Taolo Gaetsewe DM to the east, Botswana to the north, and Namibia to the west. The ZF Mgcawu DM occupies an area of land approximately 102 484km<sup>2</sup> in extent which is equivalent to over one quarter (approximately 27%) of the Northern Cape Province. Approximately 65 000km<sup>2</sup> of the DM's land mass comprises the Kalahari Desert, Kgalagadi Transfrontier Park, and the former Bushman Land.

The ZF Mgcawu DM is home to Upington, which is the capital of the DM, and is also where the DM's government is located. Other prominent cities and towns located within the DM include Beeshoek, Brandboom, Danielskuil, Eksteenskuil, Groblershoop, Kakamas, Keimoes, Kenhardt, Lime Acres, Mier, Postmasburg, and Rieffontein. The main economic sectors within the DM include agriculture, mining, and tourism.

The ZF Mgcawu DM comprises 5 LMs, namely Dawid Kruiper, Kai! Garib, Tsantsabane, Kheis and Kgatelopele (refer to **Figure 4.2**).

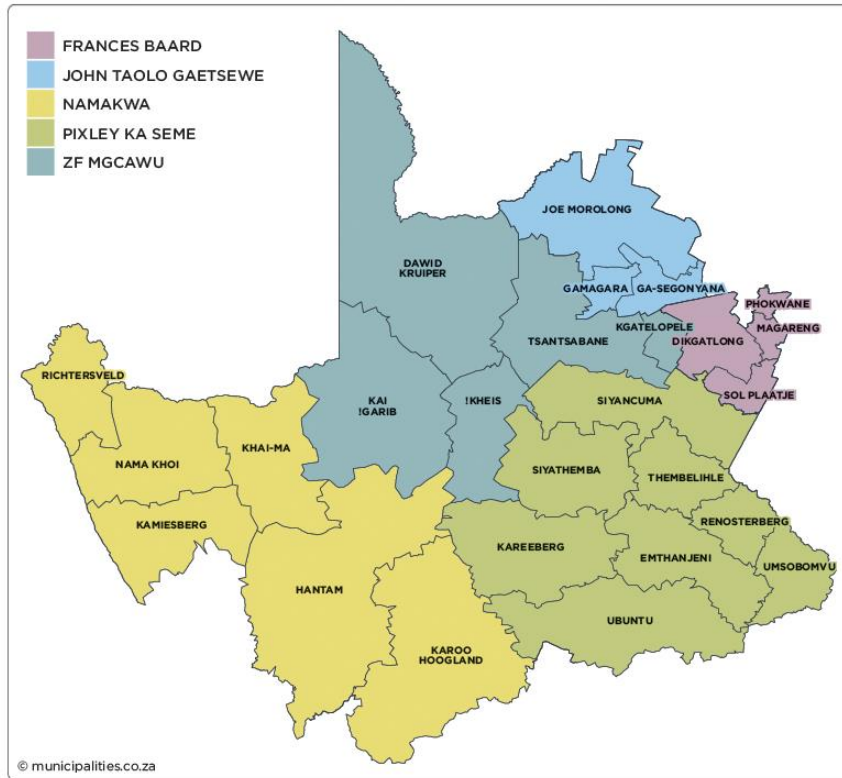


Figure 4.1: Map showing the municipalities of the Northern Cape (Source: [www.municipalities.co.za](http://www.municipalities.co.za)).

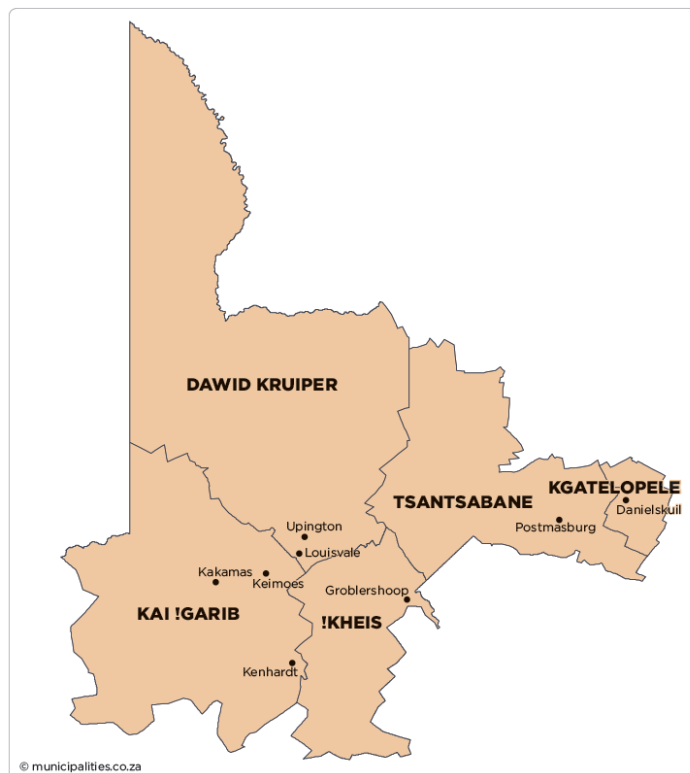


Figure 4.2: Map showing the municipalities of the ZF Mgcawu DM (Source: [www.municipalities.co.za](http://www.municipalities.co.za)).



### **4.3. Dawid Kruiper LM**

The Dawid Kruiper LM was established by the amalgamation of the Mier LM and //Khara Hais LM on 3 August 2016, and is located in the northern extent of the ZF Mgcawu DM. The Dawid Kruiper LM is bordered by the Kai !Garib and !Kheis LMs to the south, the Tsantsabane LM to the south-east, Botswana to the north-east and north, and Namibia to the west. The LM occupies an area of land approximately 44 231km<sup>2</sup> in extent and is the largest of the five LMs which make up the ZF Mgcawu DM, occupying an area equivalent to approximately 43% of the ZF Mgcawu DM. The Dawid Kruiper LM is also formally the largest LM in South Africa, and makes up approximately 12% of the Northern Cape Province, and approximately 4% of the total South African land mass. The LM is twice the size of Gauteng, one third the size of the Free State- and Limpopo Provinces, and almost half the size of KwaZulu-Natal Province.

The Kgalagadi Transfrontier Park is located in the northern extent of the LM. The LM is also home to the ‡Khomani San community, who are descended from several original San groups, and are indigenous people of Southern Africa.

The Dawid Kruiper LM is the commercial, educational, military, agricultural, medical, transport and tourism centre of the area. Upington comprises the administrative and economic centre of the LM, and is also the largest town within the LM. Other prominent cities and towns located within the LM include Mier and Rietfontein. The main economic sectors within the LM include agriculture, business services, game farming, tourism and hospitality, manufacturing, transport, community services, social and personal services.

### **4.4. Project Site**

Allepad PV One is proposed on the Remaining Extent of Erf 5315 Upington, located approximately 11km north-west of Upington. Other towns in proximity of the project site include Louisvale, Raaswater, Keimoes, and Leerkans. The site comprises a single agricultural property which is utilised for livestock grazing. No significant infrastructure could be observed from aerial photography as occurring on the site.

The project site is easily accessible from the N10 national road which forms the southern boundary of the project site, while the R360 regional road provides additional access and forms the north-eastern boundary of the project site. The R360 also provides access to Twee Rivieren the South African main entrance to the Kgalagadi Transfrontier Park, located approximately 265km north of Upington.

The Kalahari Monate Game Lodge is located adjacent to the project site (in the north-eastern extent). The Kalahari Monate Game Lodge comprises 6 self-catering chalets (which sleep 3 persons each), and 43 camping / caravan sites.

### **4.5. Baseline Description of the Social Environment**

The following subsections provide an overview of the socio-economic profile of the Dawid Kruiper LM within which Allepad PV One is proposed. In order to provide context against which the Local Municipality's socio-economic profile can be compared, the socio-economic profiles of the John Taolo Gaetsewe District, Northern Cape Province, and South Africa as a whole have also been provided where applicable. The data presented in this section have been derived from the 2011 Census, the Local Government Handbook South Africa 2018, the Northern Cape Provincial Spatial Development Framework (PSDF), and the ZF Mgcawu DM

and Dawid Kruiper LM IDPs.<sup>2</sup> As mentioned previously, the Dawid Kruiper LM was established by the amalgamation of the Mier LM and //Khara Hais LM on 3 August 2016. Census 2011 data for the Dawid Kruiper LM was therefore derived by merging and where applicably averaging figures for the Mier LM and //Khara Hais LM.

#### 4.5.1. Population Size

Understanding the population dynamics of an area is important as it provides an overview of the human capital present within an area. It therefore provides an insight into the potential labour pool, from which workers may be sourced; as well as the local communities which may either be impacted on, or benefit from, a particular project. Population trends within an area also affect economic growth, and the demand for goods and services.

In 2011 the Dawid Kruiper LM had a population of 100 495, equivalent to almost half (48.7%) of the DM population, 8.8% of the provincial population, and only 0.2% of the national population. The Dawid Kruiper LM also has a population density of 2.3/km<sup>2</sup>, which is equal to that of the DM.

Between 2001 and 2011 the Mier LM and //Khara Hais LM experienced population growth rates of -0.3% and 1.8% respectively. Given the difference in population sizes and population growth rates between the two LMs, the population growth rate of the area which now comprises the Dawid Kruiper LM could be averaged to be approximately 1.8% per year. This correlated with the DM, Province, and South Africa as a whole, which all experienced positive population growth rates in the region of 1.4% to 1.7% per year.

**Table 4.2: Overview of general statistics of South Africa, Northern Cape, ZF Mgcauwu DM, and Dawid Kruiper LM (Source: Census 2011).**

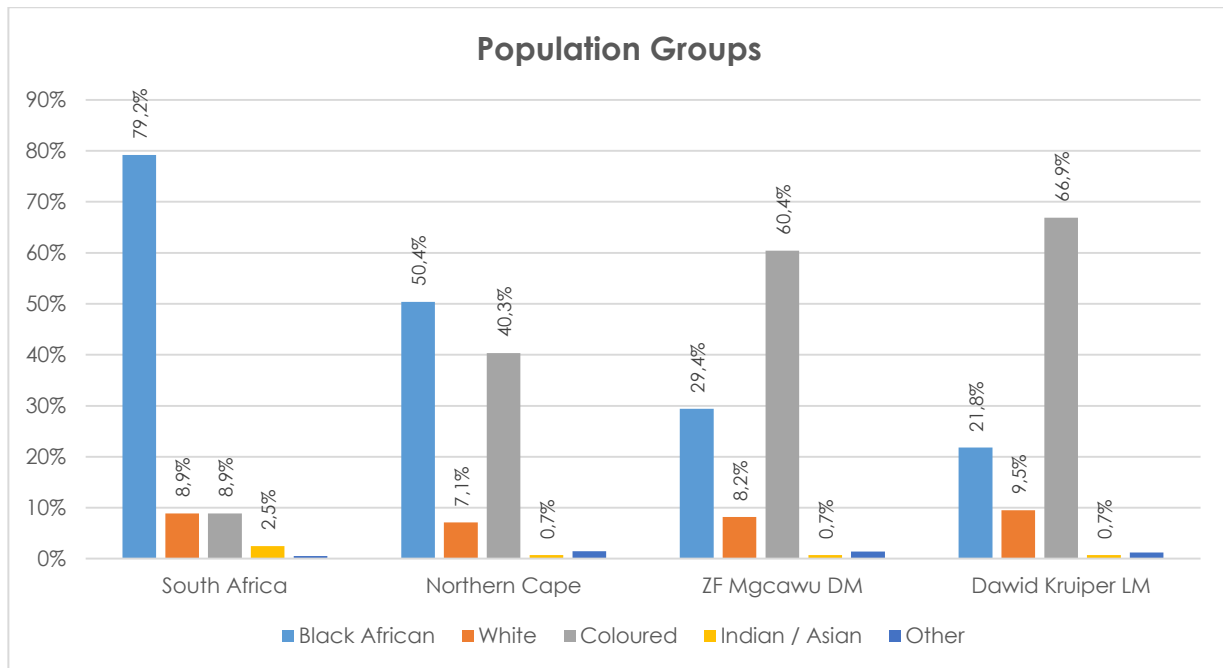
Census 2011	Area (km <sup>2</sup> )	Population total	Male	Female	Population density/km <sup>2</sup>	Population growth rate (2001 – 2011)
South Africa	1 220 813	51 770 560	25 188 791	26 581 769	42.4	1.5%
Northern Cape	372 889	1 145 861	564 972	580 889	3.1	1.4%
ZF Mgcauwu DM	102 484	206 465	120 173	86 292	2.3	1.7%
Dawid Kruiper LM	44 248	100 495	49 646	50 849	2.3	1.8%

#### 4.5.2. Population Group

Information on population group dynamics provides a better understanding of the cultural dynamics which may be prevalent within the area. This is important in terms of determining the potential for community support, the likely community structure and appropriate / most-suited consultation practises to utilise when engaging with the local communities (and whether different communication strategies should be adopted for different community groups).

<sup>2</sup> While information was derived from the Local Government Handbook South Africa 2018, Northern Cape PSDF, and ZF Mgcauwu DM and Dawid Kruiper LM IDPs, these sources largely made use of statistical information derived from the Census 2011. The information presented in this Chapter may therefore be somewhat outdated, but is considered sufficient for the purposes of this assessment (i.e. to provide an overview of the socio-economic characteristics against which impacts can be identified and their significance assessed).

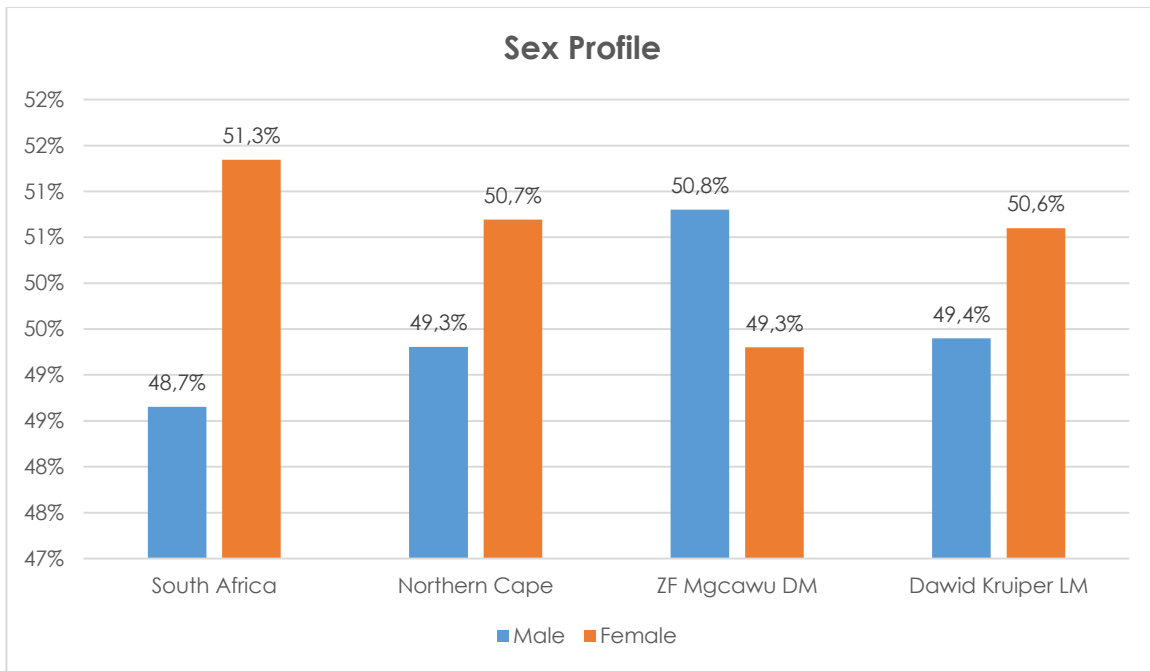
According to Census 2011, the majority of 66.9% of the Dawid Kruiper LM population are Coloured, followed secondly by 21.8% which are Black African, 9.5% which are White, and 0.7% which are Indian / Asian. This population structure is similar to that of the ZF Mgcawu DM which is also characterised by a majority of 60.4% comprising Coloured, followed by 29.4% which are Black African, 8.2% which are White, and 0.7% which are Indian / Asian. The population group structure of the Dawid Kruiper LM and ZF Mgcawu DM differ from that of the Northern Cape and South Africa as a whole, which are both characterised as having higher proportions of Black Africans which make up the majority of the population (i.e. 50.4% and 79.2% respectively).



**Figure 4.3: Population groups of South Africa, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).**

**4.5.3. Gender Profile**

The gender profile of a population has significance in terms of gender distribution, and understanding the gender roles prevalent within the area. The Dawid Kruiper LM is female dominated with females making up 50.6% of the population, and males the remaining 49.4%. This correlates with the Provincial and National populations, which are all female dominated, but differs from the ZF Mgcawu DM which is male dominated, with males comprising 50.8% of the population.



**Figure 4.4: Gender profile within South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).**

**4.5.4. Age Profile**

The age structure of a population is important for planning purposes, as it provides insight into what services may be required, and the level to which such services are required. For example, populations which are youth dominated (between 0 and 14 years of age) indicate a large school going population, and highlight the need for youth care and education (i.e. crèche, primary, secondary, and tertiary) facilities across different levels. Similarly populations which are dominated by an economically active age group (between 15 and 64 years of age) highlight the need to provide suitable employment and business opportunities, while populations with a predominately aged structure (i.e. over 65 years of age) indicate a high proportion of the population which are of retirement age. Such a portion of the population would no longer be economically active, and would indicate a need for services which cater to the elderly members of society, including the provision of adequate health care and nursing facilities.

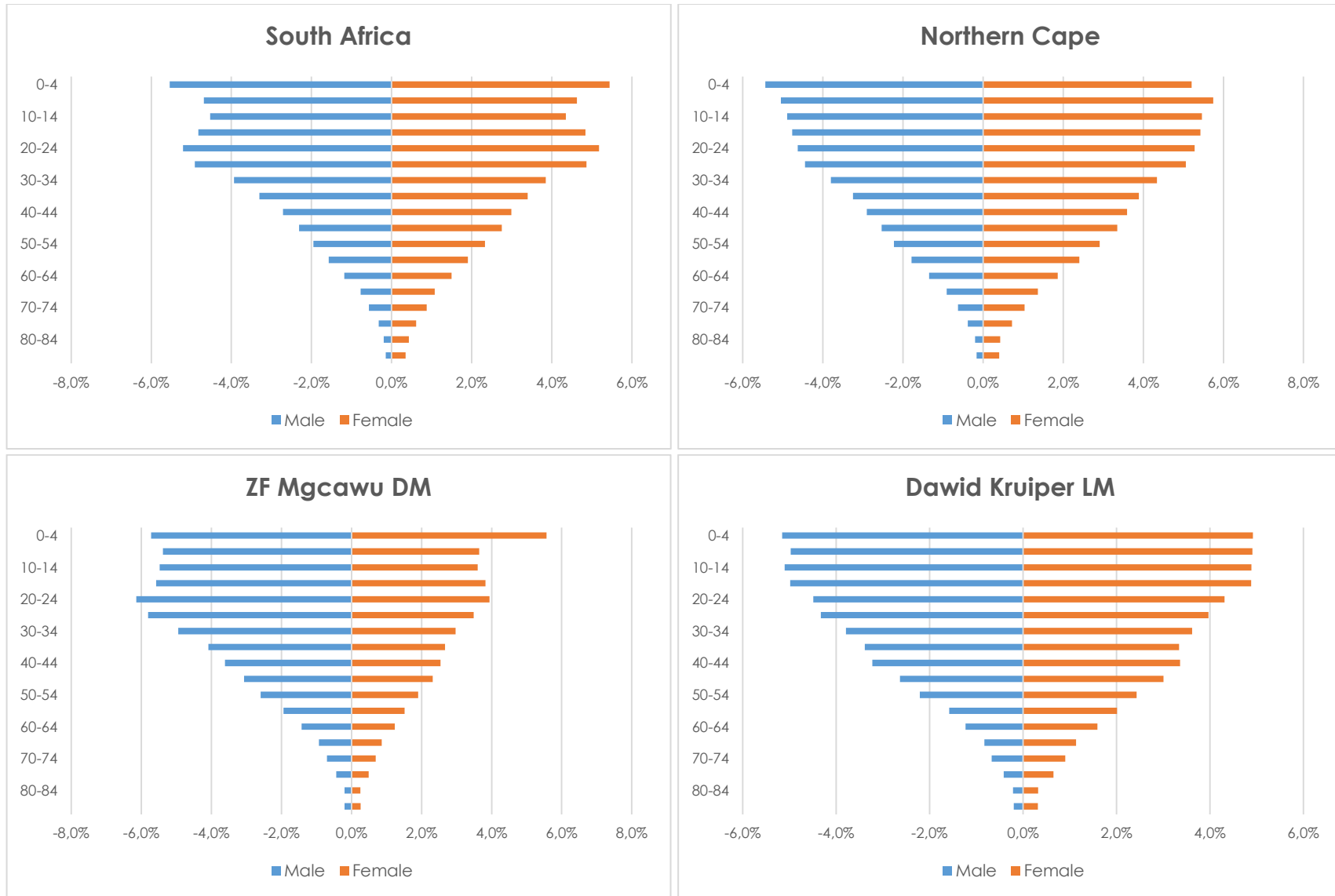
According to **Figure 4.5** the age structure of the Dawid Kruiper LM and Northern Cape Province are somewhat similar to one another, but differ from the age structures of the ZF Mgcawu DM and South African national populations, which are somewhat similar to one another.

Whereas the South African national and ZF Mgcawu DM populations are characterised by large proportions of youth specifically between 0 – 4 years, and 15 – 29 years of age (as represented by the convex shape of the graph), the Northern Cape Provincial and Dawid Kruiper LM populations while also youth dominated are far more uniform in their distribution with no significant outliers in any one population group. The youth represents the largest proportion of the population, which means that focus needs to be placed on youth development.

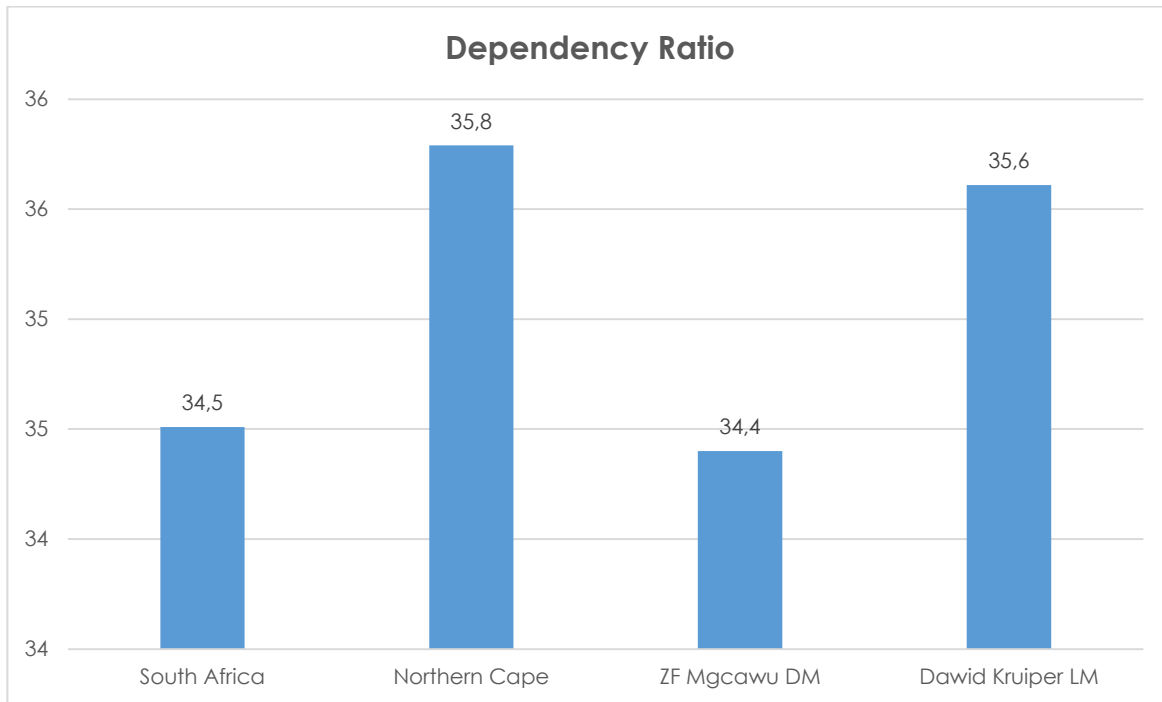
#### **4.5.5. Dependency Ratio**

An area's dependency ratio provides an indication of that portion of the population which is dependent on the economically active portion of the population based on functional age groups. The dependent portion of the population typically comprises youth below 15 years of age which are yet to enter the workforce, and individuals 65 years and older which would typically already have retired from the workforce. In addition to not contributing towards the economy, such individuals are also likely to have additional needs which need to be catered for, such as access to suitable education facilities for the school going population, and access to health care facilities in the case of the aged population. The dependency ratio is calculated by combining the number of children aged under 15 years, and the number of adults aged 65 years and older, and dividing this by the working age population (i.e. those ages between 15 and 64 years of age).

The Dawid Kruiper LM has a dependency ratio of 35.6, implying that for every 100 people within the Dawid Kruiper LM, 35.6 (i.e. over one third) of them are considered dependent. The dependency ratio of the Dawid Kruiper LM correlates closely with the ZF Mgcawu DM (i.e. 34.4), Northern Cape (35.8) and National (34.5) dependency ratios.



**Figure 4.5:** Age profile within South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).



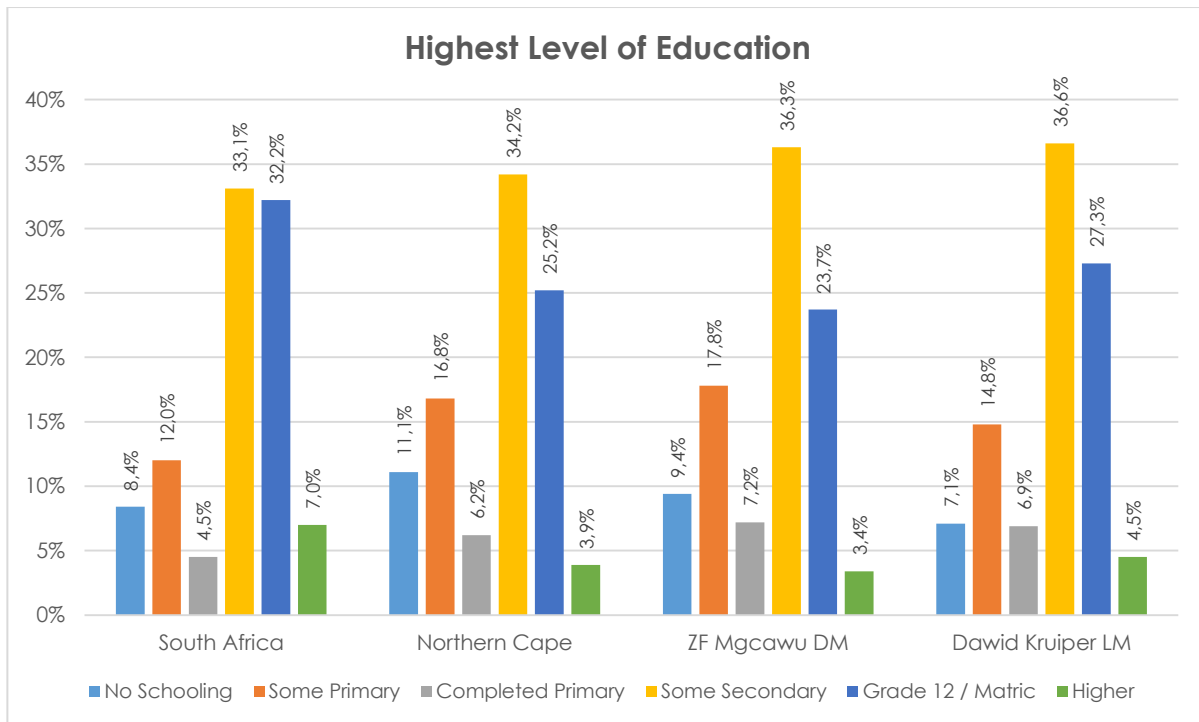
**Figure 4.6:** Dependency ratio of South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).

**4.5.6. Education Levels**

Education plays a pivotal role in community development. The level of education influences growth and economic productivity of a region. There is a positive correlation between a higher level of education and the level of development, and standard of living. Education levels in any given population will influence both economic and human development. While low levels of education typically lead to a low skills base within an area, high levels of education have the opposite effect, resulting in a skilled or highly skilled population. Household and personal income levels are also either positively or adversely affected by education levels.

**Figure 4.7** depicts the highest level of education received by the adult population aged 20 years and older in South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM.

Approximately 7.1% of the Dawid Kruiper LM population aged 20 years and older have received no form of schooling. This figure is lower than the DM (9.4%), Provincial (11.1%), and national (8.4%) averages. The majority of 36.6% of the LM population have received some secondary (which correlates with the DM, Provincial, and national averages), followed by 27.3% which have completed Grade 12 / Matric, which correlates with the DM (23.7%), Provincial (25.2%), and national (32.2%) averages where the second highest proportion of each of these populations citizens aged 20 years and older have also completed Grade 12 / Matric. Approximately 4.5% of the LM population aged 20 years and over have received some form of higher / tertiary education.



**Figure 4.7: Highest Level of Education in South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).**

While the majority of 92.9% of the Dawid Kruiper LM population over 20 years of age have received some form of schooling, 58.3% of the LM population which have received some form of schooling have not completed Grade 12 / Matric. It can therefore be expected that a significant proportion of the population will either be unskilled or have a low-skill level, and would therefore either require employment in non-skilled or low-skill sectors; or alternatively would require skills development opportunities in order to improve the skills, and income levels of the area.

#### 4.5.7. Employment

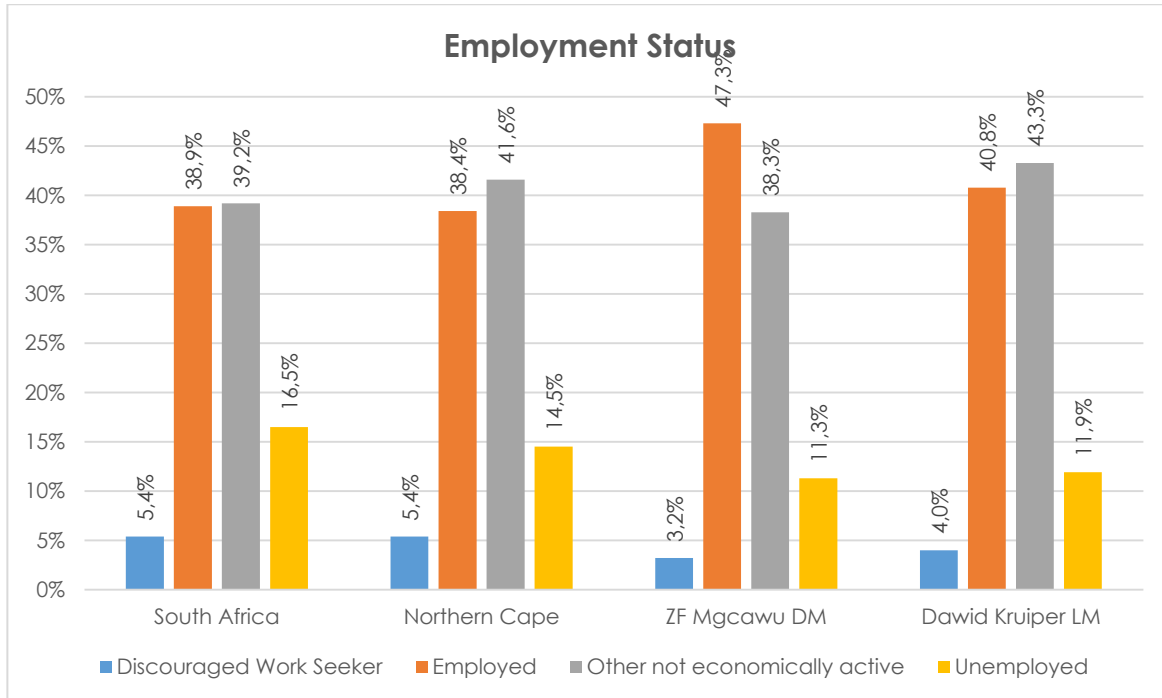
The employment profile of an area is an important indicator of human development, as poverty and unemployment are closely correlated. The quality of labour is reflected, amongst other things, by the educational profile of the economically active population and the availability of training facilities in the region. The term labour force refers to those people who are available for employment in a certain area. According to Statistics South Africa, the definitions of the following employment indicators are:

- » Economically active person: "A person of working age (between 15 and 65 years inclusive) who is available for work, and is either employed, or is unemployed but has taken active steps to find work in the reference period."
- » Employed: "Those who performed work for pay, profit or family gain for at least one hour in the seven days prior to the interview or who were absent from work during these seven days, but did have some form of paid work to return to."
- » Official and expanded definition of unemployment: "The unemployed are those people within the economically active population who: (a) did not work during the seven days prior to the interview, (b) want to work and are available to start work within two weeks of the interview, and (c) have taken active steps to look for work or start some form of self-employment in the four weeks prior to the interview."
- » Labour force: "All employed and unemployed persons of working age".

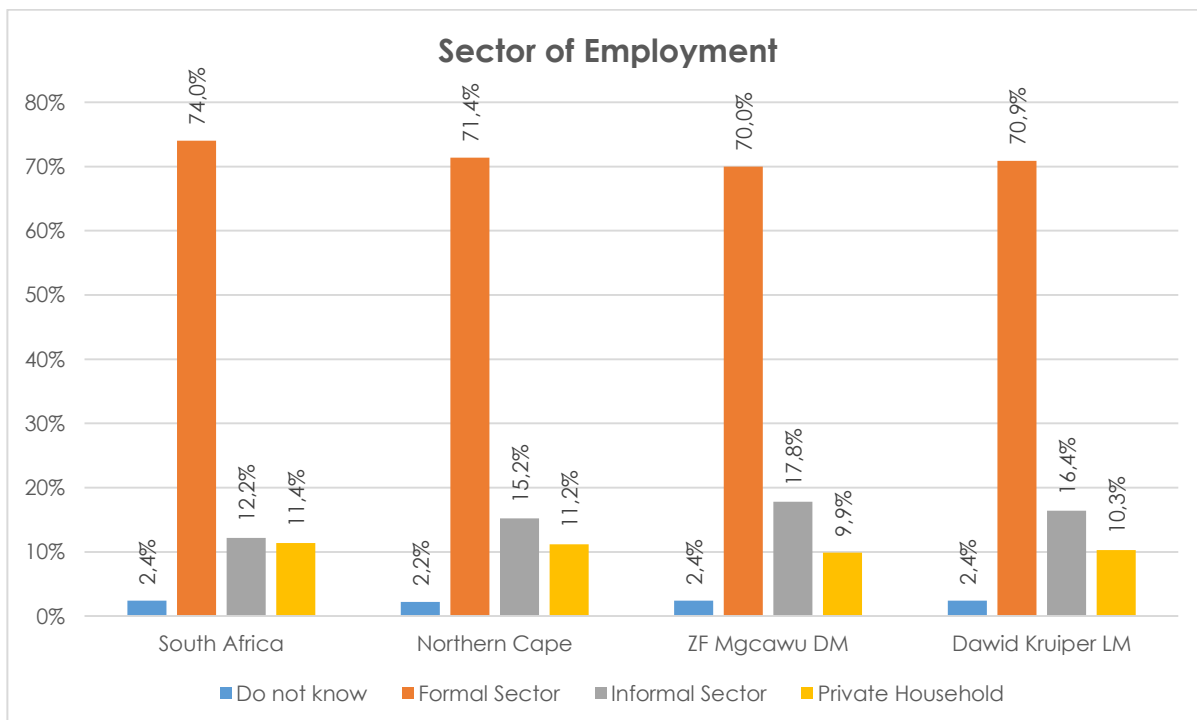


» Unemployment rate: “The percentage of the economically active population that is unemployed.”

The employment profile of an area is also an important indicator of the level of disposable income and subsequently the expenditure capital of the residing population.



**Figure 4.8: Employment Status in South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).**



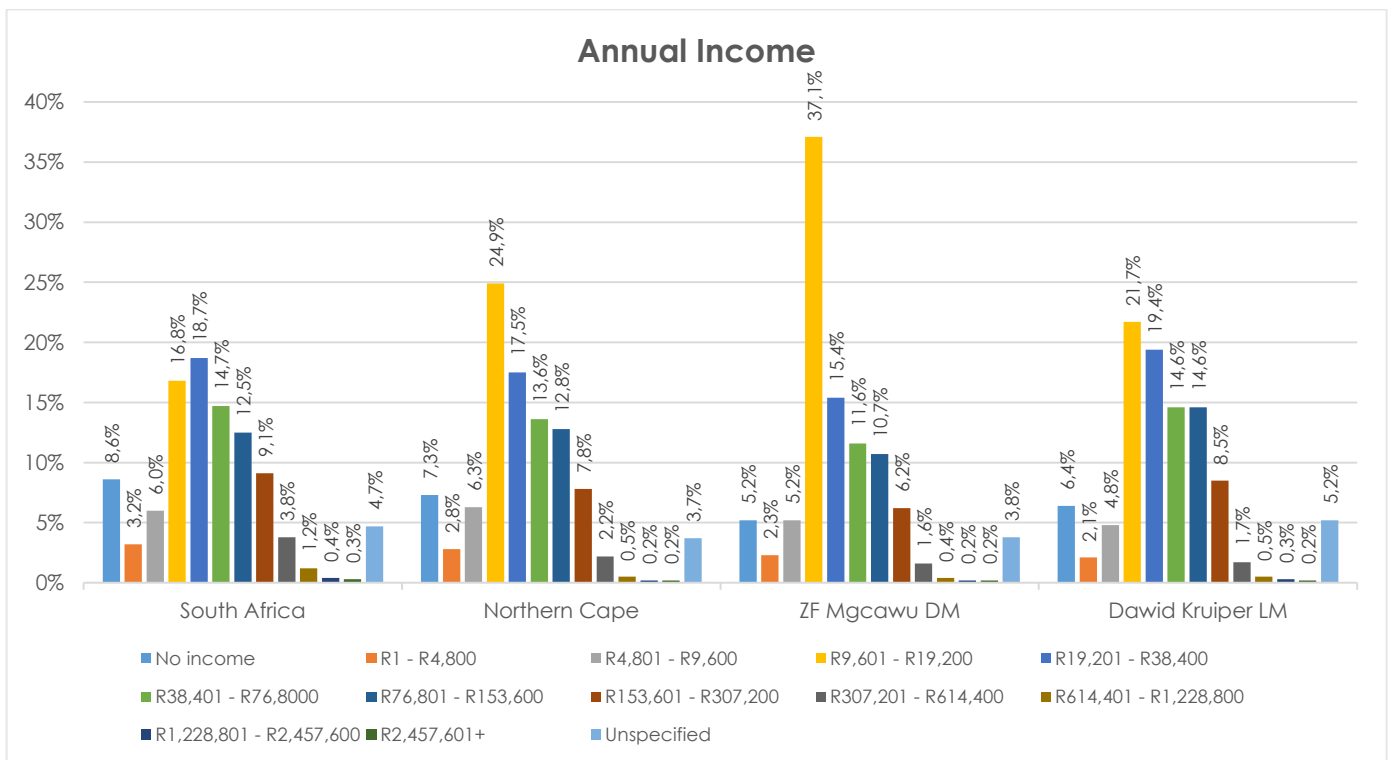
**Figure 4.9: Employment Status in South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).**

Of the Dawid Kruiper LM's labour force (i.e. individuals ages between 15 and 64 years of age) the majority of 43.3% are not economically active. This refers to the economically inactive portion of the population who are able and available to work, but who do not work, and who are not looking for work. Such a figure is of significance as it demonstrates a population's willingness and desire to find employment. The economically inactive proportion of the Dawid Kruiper LM's labour force correlates closely with the DM (38.3%), Provincial (41.6%), and national averages (39.2%).

Approximately 11.9% of the Dawid Kruiper LM's labour force is unemployed. This means that 11.9% of the economically active population within the LM are currently unemployed, but are willing and able to work, and are actively seeking employment. The unemployment rate for the LM is almost equal to that of the DM (11.3%), and lower than the Provincial (14.5%), and national averages (16.5%). This implies that irrespective of the size of the Dawid Kruiper LM's labour force, a smaller proportion would be available to absorb employment opportunities; and the possibility therefore exists that labour may need to be sourced from elsewhere (i.e. beyond the Dawid Kruiper LM). This has significance in terms of the human capital available for any kind of work in the Dawid Kruiper LM, without providing the necessary training and development of young and economically active people in occupations in the relevant fields needed.

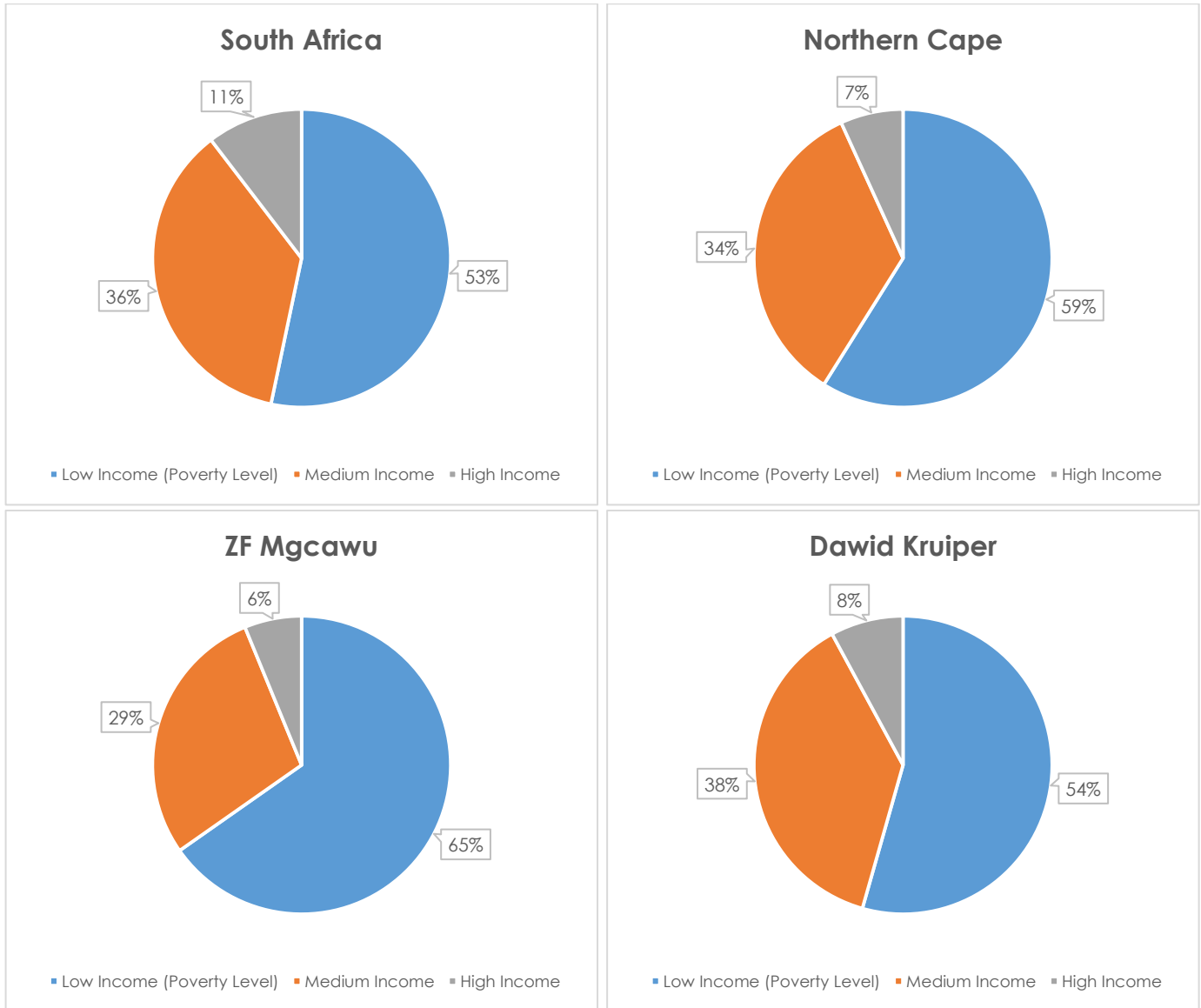
**4.5.8. Annual Household Income levels**

In order to determine the population's standard of living as well as their ability to pay for basic services, the income levels of the employed population are analysed. Household income levels are one avenue for determining poverty levels in a community. Households that have either no income or low income fall within the poverty level (R0 – R38 400 per annum), indicating the difficulty to meet basic need requirements. Middle-income is classified as earning R38 401 – R307 200, and high income is classified as earning R307 201 or more per annum.



**Figure 4.10: Average Annual Income in South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).**

Over half (54%) of households within the Dawid Kruiper LM fall within the low income (poverty level) bracket. This figure is lower than the DM average (65%), but similar to that of the Northern Cape (59%) and national averages (56%). Approximately 38% of households within the LM fall within the medium income bracket, while the remaining 8% fall within the high income bracket.



**Figure 4.11: Average Income Levels in South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).**

The high poverty level prevalent within the LM can be attributed with social consequences such as an inability to pay for basic needs and services, which in turn has influence on an individuals' standard of living.

**4.5.9. Economic Activities**

According to the Dawid Kruiper LM IDP 2017 / 2022 (2018 / 2019) the LM's economy is centred due to its strong tourism and agricultural sectors on the trade and retail sectors, leaving the local economy fairly vulnerable to any significant changes in this industry. The IDP identified the importance for the LM to further diversify its economy into other sectors to counter this vulnerability. The manufacturing sector was identified

as one of the lowest performing sectors of the local economy. The provision of land for the development of the manufacturing sector (i.e. the provision of areas for industrial development and precinct industrial areas) is included in the SDF to allow this sector to grow and diversify the economy to its full extent.

Due to the unique spatial manifestation of the LM, both the first and second economy are mostly located around the CBDs of the towns, and also various farms (intensive and extensive agricultural farming units). Upington has a well-defined business centre with numerous residential areas, with a mixture of densifications already present. Secondary activities in the LM are mainly light industrial, warehousing, processing facilities and light engineering works.

The Agricultural sector is very important to the local economy and therefore represents an emerging strength for the LM, which creates further opportunities for expansion, as well as the development of linkages with other sectors of the economy, creating further opportunities for job creation.

A study done by the Development Bank of Southern Africa (DBSA) indicated that several minerals can be found in Rietfontein area, with different potential levels for mining. Diamonds were already recovered from the Kimberlite-pipe, approximately 1km east of Rietfontein and the study indicated that the pipe and subsequent mine development holds major economic potential for the area with a lifespan of more than 20 years. Another potential which has not yet been investigated is the economic spinoffs from current, as well as future salt mining on the salt pans in the LM.

Given the good agricultural base, opportunities for the expansion of the manufacturing industry exists through agro-processing and other activities. The inclusion of the RDP identification of an Agri-Park in the ZF Mgcauw DM will also be an opportunity for emerging farmers to be part of the agri-manufacturing industry. The inclusion of agricultural industries and the handling of these applications in rural area, are included in the SDF. The National Centre for Manufacturing Science (NCMS) has identified Upington as one of the pockets of manufacturing capability in the Northern Cape, and suggests that the LM and other stakeholders focus on the development of the local manufacturing sector.

The establishment of an Industrial Development Zone (IDZ) at Upington International Airport has been included in the SDF, to further enhance the strategic importance of the airport for the local, regional and provincial economy. The establishment of a Special Economic Zone (SEZ) is also included in the SDF and the combination and inclusion of the Green Energy Zone as part of the SEZ forms an important factor in the SDF.

#### **4.5.10. Health**

South Africa's health sector is most concerned with communicable, non-communicable, pre-natal and maternal, and injury-related conditions. According to the Dawid Kruiper LM IDP 2017 / 2022 (2018 / 2019) the LM currently has 2 hospitals (one public and one private hospital), 2 Community Healthcare Centres (CHC) and 6 Fixed Primary Healthcare Clinics (CHC), operating 5 days per week, and 5 Satellite Healthcare Clinics, operating less than 5 days per week.

The need for healthcare services has been identified as an ever-growing demand. The ideal is to have fixed health care facility structures in all communities. The following challenges have been identified:

- » Attraction and retention of highly qualified professionals becomes difficult due to the rural nature of the area, and the fact that rural allowance has not been approved for Upington, the absence of English

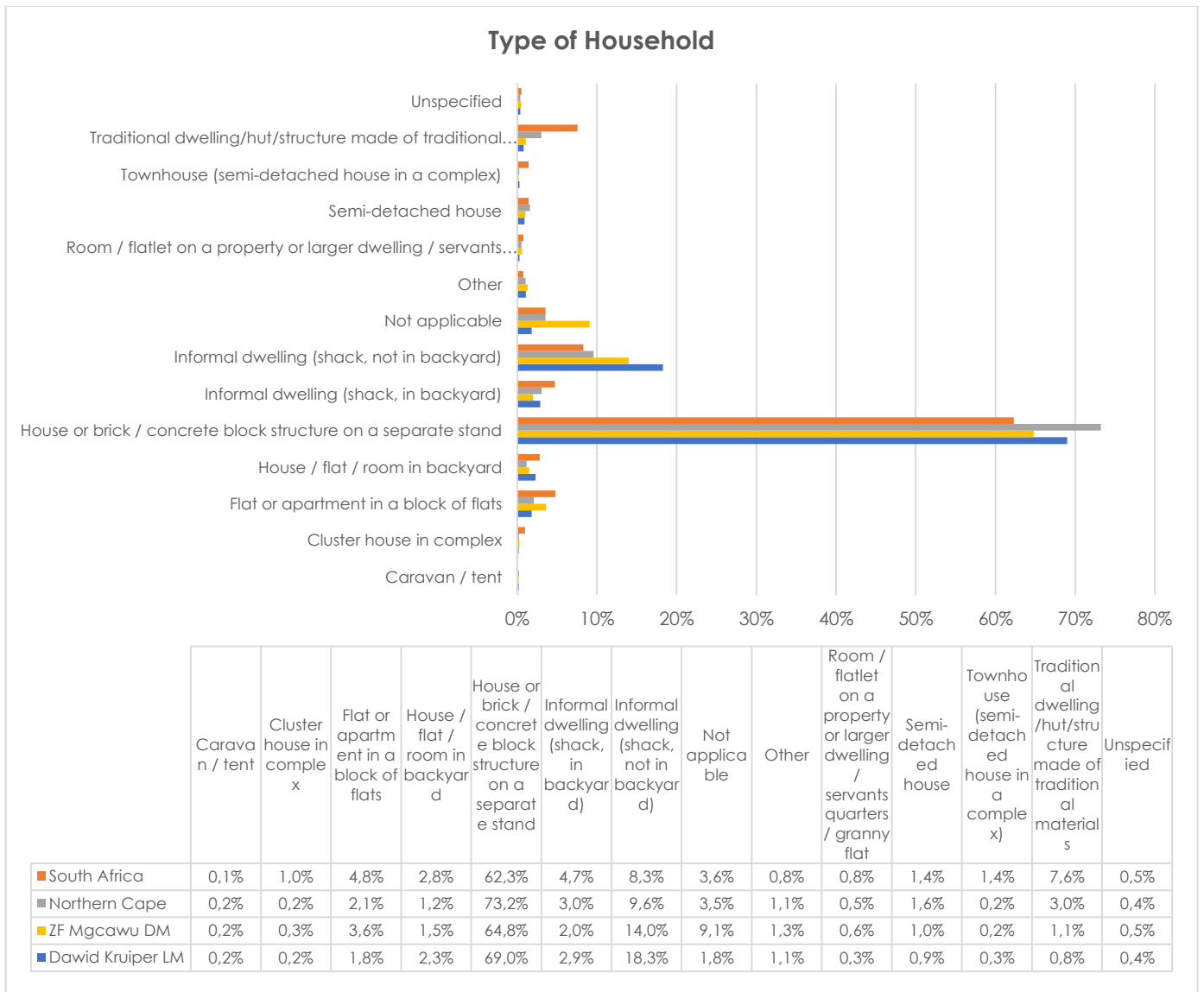
medium schools, and limited Professional Development opportunities. As a consequence, staff shortages are experienced, including support staff (mainly due to limited funding).

- » Although the interventions of Ideal Clinic is having a positive impact, most PHC facilities have reached occupancy capacity, leading to undesirable consequences to patients, including, limited seating, long waiting times, exposure to the element, etc.
- » Although the long-term ideal is to limit the utilisation of mobile vehicles to render services, the reality is that most of the current vehicles employed to visiting points are not suitable for this purpose. Elements of human dignity, privacy and quality healthcare are compromised under these circumstances.
- » A dire shortage of ambulances is experienced. This situation is compounded by the huge distances between, especially the Mier area and Upington, but also the referral of emergency cases to Kimberley Hospital.

#### **4.5.11. Households**

As of 2011 there were a total of 25 029 households within the Dawid Kruiper LM. This is equivalent to 37.9% of the total number of households within the ZF Mgcawu DM (67 468), 8.2% of the total number of households within Northern Cape Province (313 402), and 0.2% of the total number of households within South Africa (15 054 254). Of the total number of households within the Dawid Kruiper LM the majority of 69% comprise houses (i.e. house or brick / concrete block structure on a separate stand or yard or on a farm), followed by almost a fifth (18.3%) which comprise informal dwellings (i.e. shack not in a backyard). Less than 1% (0.8%) of households within the Dawid Kruiper LM comprise traditional dwellings.

The housing profile of the Dawid Kruiper LM is similar to that of the ZF Mgcawu DM which is also characterised by a majority of 64.8% of households comprising house or brick structures, followed by 14% comprising informal dwellings / shacks not in a backyard. The proportion of informal dwellings / shacks not in a backyard is higher in the Dawid Kruiper LM and ZF Mgcawu DM than in the Northern Cape Province and South Africa as a whole, however the proportion of traditional dwellings is lower in the Dawid Kruiper LM and ZF Mgcawu DM than in the Northern Cape Province and South Africa as a whole.



**Figure 4.12: Households by Type of Dwelling within South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).**

#### 4.5.12. Access to Basic Services

Basic services such as electricity, water and sanitation, and refuse and waste removal are considered critical for the improvement of people's quality of life, and adequate supplies of basic services are also necessary to ensure life, well-being, and human dignity (Stats SA, 2017). Individuals' rights to basic services is largely enshrined in Section 24 of the Constitution which states that everyone has the right to an environment that is not harmful to their health or well-being. The accessibility of basic services is closely related to social inclusion and social capital, and the failure of municipalities to deliver services can have a detrimental impact on social and economic development (IDASA, 2010 in Stats SA, 2017). In terms of Section 73 of the Local Government Municipal Systems Act (No. 32 of 2000), municipalities have a general duty to give effect to the provisions of the Constitution and give priority to the basic needs of the local community; promote the development of the local community; and ensure that all members of the local community have access to at least the minimum level of basic municipal services. In addition, municipal services must be equitable and accessible; be provided in a manner that is conducive to the prudent, economic, efficient and effective use of available resources, and the improvement of standards of quality over time; be financially

sustainable; be environmentally sustainable; and be regularly reviewed with a view to upgrading, extension and improvement. **Table 4.3** provides the classification of infrastructure quality and different levels of service provision developed by Statistics South Africa following World Bank studies (Stats SA, 2017).

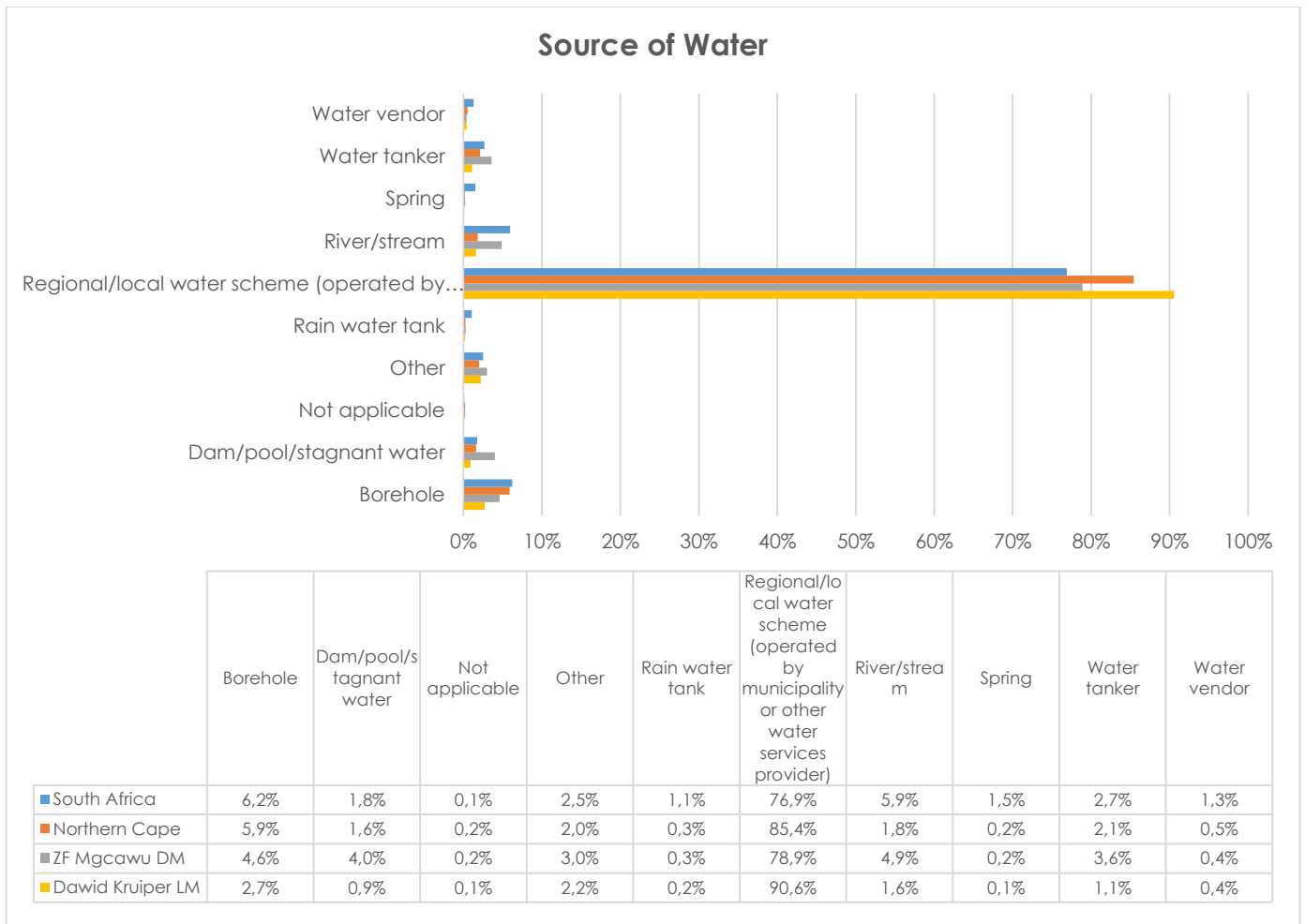
**Table 4.3: Classification of infrastructure quality (Stats SA, 2017).**

Service Level	Water	Sanitation	Solid Waste	Electricity
None	No access to piped water.	No sanitation.	No facilities / dump anywhere	No access to electricity
Minimal	Communal standpipe > 200m.	Bucket toilets.	Communal / own refuse dump	Generator / solar
Basic	Communal standpipe < 200m	Pit toilet without ventilation pipe.	Communal container / collection point	Access to electricity don't pay for
Intermediate	Piped water in the yard.	VIP, Chemical, or ecological toilets.	Removed less than once per week	Connected to source and paid for
Full	Piped water in dwelling	Conventional waterborne	Removed once per week	In-house pre- and post-paid meters.

Access to basic services is assessed at a household level. An overview of households within the Dawid Kruiper LM, ZF Mgcawu DM, Northern Cape Province and South Africa's access to basic services is described in the following sub-sections.

#### 4.5.12.1. Access to Water

The majority of 90.6% of households within the Dawid Kruiper LM receive their water from a regional / local water scheme (operated by the municipality or other water services provider), which is considered to be above basic level service provision. Such a profile correlates with that of the ZF Mgcawu DM (78.9%), Northern Cape Province (85.4%) and South Africa (76.9%) as a whole which all reflect high levels of access to water above the minimum service level.



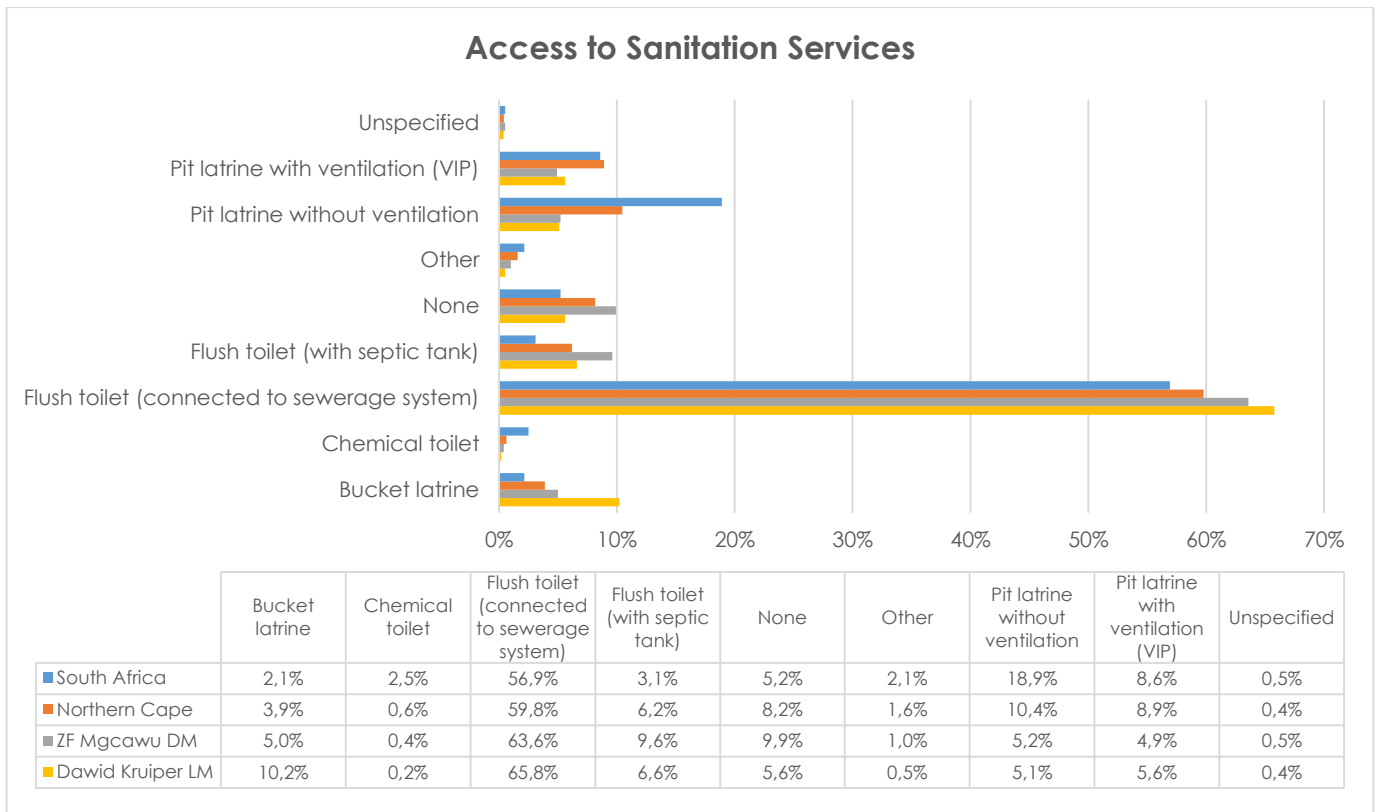
**Figure 4.13: Access to Water within South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).**

4.5.12.2. Access to Sanitation

Almost two thirds (65.8%) of households within the Dawid Kruiper LM have access to a flush toilet connected to a sewerage system while 6.6% have access to a flush toilet connected to a septic tank, which is equivalent to full service level provision. Approximately 10.2% of households make use of bucket latrines (equivalent to minimal service level provision), 5.6% of households have access to a pit latrine with ventilation (intermediate service level provision), and 5.1% of households have access to a pit latrine without ventilation (basic service level provision).

The profile of the Dawid Kruiper LM correlates fairly closely with that of the ZF Mgcawu DM which is characterised by the majority of 63.6% of households which have access to a flush toilet connected to a sewerage system, however the proportion of household which utilise bucket latrines in the DM (5%) is half of that in the LM (10.2%), while the proportion of households without access to sanitation services in the DM (9.9%) is almost double that in the LM (5.6%).



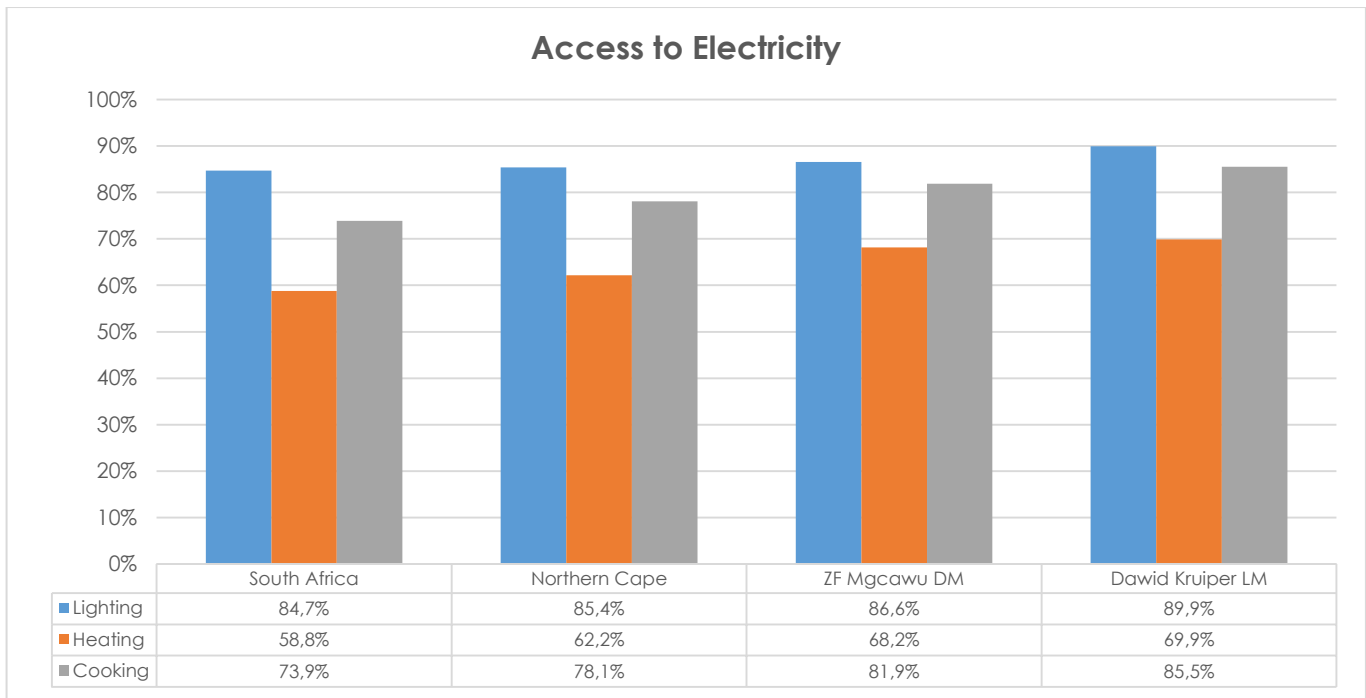


**Figure 4.14: Access to Sanitation Services within South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).**

4.5.12.3. Access to Electricity

Energy is required for cooking, heating, and lighting purposes. Individuals' access to different energy sources for cooking, heating, and lighting purposes is significant; as the burning of fuel sources such as wood, coal, and / or animal dung over extensive periods of time could result in negative health impacts for household members. Health impacts would be most significantly experienced by those vulnerable members of society, such as young children, pregnant women, and the elderly.

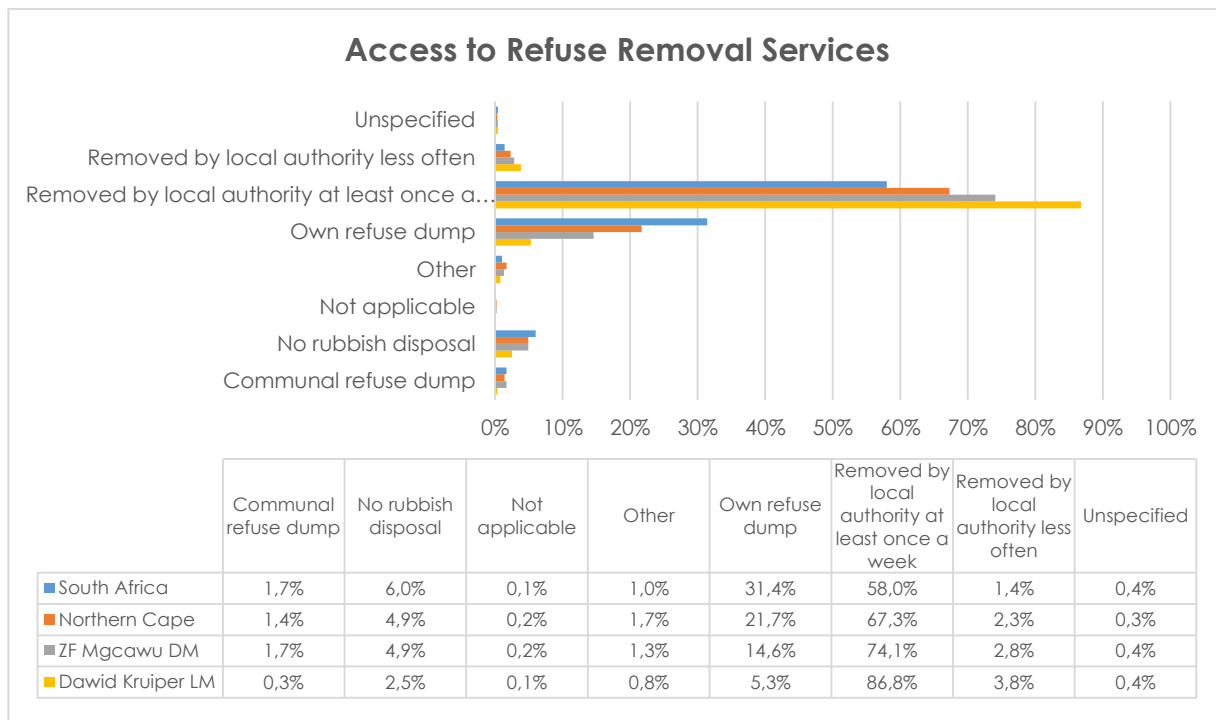
The majority of 89.9%, 69.9%, and 85.5% of households within the Dawid Kruiper LM have access to electricity for lighting, heating, and cooking purposes respectively. The level of service provision within the Dawid Kruiper is considered to be good, with households in the LM reflecting slightly higher levels of service provision of electricity for lighting, heating, and cooking purposes than the ZF Mgcawu, Northern Cape Province and South Africa as a whole.



**Figure 4.15: Access to Electricity within South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).**

4.5.12.4. Access to Refuse Removal

The majority of 86.6% of households within the Dawid Kruiper LM have their refuse removed by the local authority at least once a week which is considered full service level provision. This figure is significantly higher than the profiles for the ZF Mgcawu DM (74.1%), Northern Cape Province (67.3%), and South Africa (58%).



**Figure 4.16: Access to Refuse Removal Services within South Africa, Northern Cape, ZF Mgcawu DM, and Dawid Kruiper LM (Source: Census 2011).**

#### **4.5.13. Baseline summary**

In summary, the area was found to have the following socio-economic characteristics:

- » The project is proposed within the Northern Cape Province, which is South Africa's largest, but least populated Province.
- » The project is proposed within the Dawid Kruiper LM of the ZF Mgcawu DM.
- » The Dawid Kruiper LM was established by the amalgamation of the Mier LM and //Khara Hais LM on 3 August 2016, and covers an area of land 44 231km<sup>2</sup> in extent, formally making it the largest LM in South Africa.
- » Between 2001 and 2011 the Dawid Kruiper LM experienced a population growth rate of -1.8% per year.
- » The Dawid Kruiper LM is female dominated, with females comprising approximately 50.6% of the LM population, while the ZF Mgcawu DM is male dominated, with males comprising approximately 50.8% of the DM population.
- » Coloureds comprise the predominant population group within the Dawid Kruiper LM and ZF Mgcawu DM.
- » The Dawid Kruiper LM, ZF Mgcawu DM, and Northern Cape Provincial population age structures are youth dominated. A considerable proportion of the respective populations therefore comprise individuals of the economically active population between the ages of 15 – 64.
- » The Dawid Kruiper LM has a dependency ratio of 35.6, which correlates closely with the ZF Mgcawu DM (34.4), Northern Cape Province (35.8), and South Africa (34.5).
- » Education levels within the Dawid Kruiper LM are low with approximately 58.3% of the population over 20 years of age not having completed Grade 12 / Matric. This means that the majority of the population can be expected to have a relatively low-skill level and would either require employment in low-skill sectors, or skills development opportunities in order to improve the skills level of the area.
- » The unemployment rate of the Dawid Kruiper LM is only fractionally lower than that of the ZF Mgcawu DM (i.e. 11.9% for the LM and 11.3% for the DM), and the percentage of economically inactive individuals within the Dawid Kruiper LM is higher than in the ZF Mgcawu DM (i.e. 43.3% in the LM and 38.3% in the DM). This could have a negative impact in terms of the local human capital available for employment.
- » Household income levels are low within the area, with over half (54%) of falling within the poverty level (i.e. R0 – R38 400 per annum). The area can therefore be expected to have a high poverty level with associated social consequences such as not being able to pay for basic needs and services and poor living conditions.
- » The primary economic activities within the Dawid Kruiper LM comprise trade and retail as a result of the strong tourism and agricultural sectors.
- » The Dawid Kruiper LM is poorly serviced in terms of public sector health facilities with 2 hospitals (one public and one private hospital), 2 Community Healthcare Centres (CHC) and 6 Fixed Primary Healthcare Clinics (CHC), and 5 Satellite Healthcare Clinics.
- » The majority of households within the Dawid Kruiper LM comprise formal brick dwellings, with only a very small proportion (0.8%) comprising traditional dwellings.
- » The majority of households within the Dawid Kruiper LM are well serviced with regards to water, sanitation, electricity, and refuse removal, with the LM often exhibiting higher levels of service provision than the ZF Mgcawu, Northern Cape Province, and South Africa.

## 5. IDENTIFICATION OF POTENTIAL SOCIAL IMPACTS

This Chapter provides an overview of the potential social impacts that have been identified, which may be associated with the development of Allepad PV One and its associated infrastructure. Potential impacts have been identified based on the current understanding of the project and the socio-economic environment within which it is proposed. The potential social impacts identified for the project will be investigated further during the EIA phase.

### 5.1. Detailed Design and Construction Phase

Potential impacts associated with the detailed design and construction phase of a project are usually of a short duration (i.e. 10 to 12 months, equivalent to the length of the construction phase) and temporary in nature, but could have long-term effects on the social environment if not planned or managed appropriately. It is necessary, for example, that the detailed design phase be conducted in such a manner so as not to result in permanent impacts associated with the inappropriate placement of project components or associated infrastructure.

#### 5.1.1. Construction Phase Impacts

<b>Impact</b> Creation of direct and indirect employment opportunities and skills development.			
<b>Desktop Sensitivity Analysis of the Site:</b> No sensitivity identified.			
<b>Issue</b>	<b>Nature of Impact</b>	<b>Extent of Impact</b>	<b>No-Go Areas</b>
Construction of the project will result in the creation of a number of direct and indirect employment opportunities, which will contribute towards lessening the unemployment levels within the area and aid in skills development of communities in the area.	Positive – The creation of employment opportunities will assist to an extent in alleviating unemployment levels within the area.	The impact will occur at a local, regional, and national level.	None identified.
<b>Description of expected significance of impact</b> At its peak, the construction is likely to result in the creation of approximately 300 direct employment opportunities. Of those direct employment opportunities likely to be generated, approximately 60% will comprise opportunities for low skilled or non-skilled workers, 25% for semi-skilled workers, and 15% for skilled workers. Skills developed through experience in the construction of the facility will be retained by the community members involved. The impact is likely to be positive, local to national in extent, short-term, and of medium significance			
<b>Gaps in knowledge and recommendations for further study</b> » Information on the exact direct and indirect employment opportunities and skills development opportunities likely to be created during construction.			

<b>Impact</b> Economic multiplier effects.			
<b>Desktop Sensitivity Analysis of the Site:</b> No sensitivity identified.			
<b>Issue</b>	<b>Nature of Impact</b>	<b>Extent of Impact</b>	<b>No-Go Areas</b>
Economic multiplier effects from the use of local goods and services during the construction phase.	Positive – There are likely to be opportunities for local businesses to provide goods and services during the construction phase of development.	The impact will occur at a local, and regional level.	None identified.
<b>Description of expected significance of impact</b> Economic multiplier effects from the use of local goods and services opportunities include, but are not limited to, the provision of construction materials and equipment, provision of workforce essentials such as services, safety equipment, ablution, accommodation, transportation and other goods. The increase in demand for goods and services may stimulate local business and local economic development (however locally sourced materials and services may be limited due to availability). There is likely to be a direct increase in industry and indirect increase in secondary businesses. The impact is likely to be positive, local to regional in extent, short-term, and of medium significance.			
<b>Gaps in knowledge and recommendations for further study</b> » Information on capital expenditure to be spent on local goods and services.			

<b>Impact</b> In-migration of people (non-local workforce and jobseekers).			
<b>Desktop Sensitivity Analysis of the Site:</b> No sensitivity identified.			
<b>Issue</b>	<b>Nature of Impact</b>	<b>Extent of Impact</b>	<b>No-Go Areas</b>
Increased pressure on infrastructure and basic services, and social conflicts during construction as a result of in-migration of people.	Negative – The in-migration of job seekers to the area could result in increased pressure being placed on infrastructure and basic services, and a rise in social conflicts.	The impact will occur at a local level.	None identified.
<b>Description of expected significance of impact</b> The in-migration of people to the area as either non-local workforce and / or jobseekers could result in increased pressure being placed on infrastructure and basic services on the local population (rise in social conflicts). An influx of people into the area, could lead to a temporary increase in crime levels, cause social disruption, and put pressure on basic services. An influx of people looking for economic opportunities could result in pressure on the local population such as rise in social conflicts and change in social dynamics, increase in HIV, pregnancies and drug abuse. Adverse impacts could occur if a large in-migrant workforce, which is culturally different from the local population, is brought in during construction. The impact is likely to be negative, local in extent, short-term <sup>3</sup> , and of medium significance due to the number of jobs expected to be created, and the proportion of which would accrue to the non-local workforce.			

<sup>3</sup> While the extent of the impact may be short-term (i.e. people are only likely to move into the area in search of employment prior to and possibly during the construction period), the implications thereof may be long-term, as people are likely to have settled in the area, and are unlikely to leave immediately following the completion of construction.

**Gaps in knowledge and recommendations for further study**

- » Information on the exact number of employment opportunities likely to accrue to the local labour force, versus the number of employment opportunities likely to accrue to the non-local workforce and jobseekers.
- » Mechanisms for employment of local labour and minimisation of in-migration.

**Impact**

Safety and security impacts.

**Desktop Sensitivity Analysis of the Site:**

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Temporary increase in safety and security concerns associated with the influx of people during the construction phase.	Negative – The in-migration of job seekers to the area could be perceived to result in increased criminal activity.	The impact will occur at a local level.	None identified. No workers should be allowed to reside on-site during construction.

**Description of expected significance of impact**

The perception exists that an influx of jobseekers, and / or construction workers to an area is a contributor to increased criminal activities in an area, such as increased safety and security risk for neighbouring properties and damage to property, increased risk of veld fire, stock theft, and crime etc. The impact is likely to be negative, local in extent, short-term, and of medium significance due to the number of jobs expected to accrue to the non-local workforce.

**Gaps in knowledge and recommendations for further study**

- » Information on existing crime levels within the area.
- » Mechanisms for employment of local labour and minimisation of in-migration.

**Impact**

Impacts on daily living and movement patterns.

**Desktop Sensitivity Analysis of the Site:**

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Temporary increase in traffic disruptions and movement patterns during construction.	Negative – An increase in traffic due to construction vehicles and heavy vehicles could create short-term disruptions and safety hazards for current road users.	The impact will occur at a local level.	None identified.

**Description of expected significance of impact**

Increased traffic due to construction vehicles and heavy vehicles could cause disruptions to road users and increase safety hazards. The use of local roads and transport systems may cause road deterioration and congestion. The impact is likely to be negative, local in extent, short-term, and of medium significance given the proximity of the site to the N10 national road.

**Gaps in knowledge and recommendations for further study**

- » Number of vehicle trips anticipated during construction.

**Impact**

Nuisance impacts (noise and dust).

**Desktop Sensitivity Analysis of the Site:**

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Nuisance impacts in terms of temporary increase in noise and dust, and wear and tear on access roads to the site.	Negative – The impact will negatively impact sensitive receptors, and could cause disruptions for neighbouring properties.	The impact will occur at a local level.	None identified.
<b>Description of expected significance of impact</b>			
Impacts associated with construction related activities include noise, dust and disruption or damage to adjacent properties. Site clearing activities increase the risk of dust and noise being generated, which can in turn negatively impact on adjacent properties. The impact is likely to be negative, local in extent, short-term, and of low significance.			
<b>Gaps in knowledge and recommendations for further study</b>			
» Impact of noise and dust on surrounding landowners.			

<b>Impact</b>			
Visual and sense of place impacts.			
<b>Desktop Sensitivity Analysis of the Site:</b>			
No sensitivity identified.			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Intrusion impacts from construction activities will have an impact on the area's "sense of place".	Negative – The project could alter the area's sense of place which could negatively impact on sensitive receptors.	The impact will occur at a local level.	None identified.
<b>Description of expected significance of impact</b>			
Intrusion impacts such as aesthetic pollution (i.e. building materials, construction vehicles, etc.), noise and light pollution, and other impacts could impact the "sense of place" for the local community. The impact is likely to be negative, local in extent, short-term, and of low significance.			
<b>Gaps in knowledge and recommendations for further study</b>			
» Potential sensitive visual receptors need to be identified.			
» Visual impact assessment to inform impact on sense of place.			

### 5.1.2. Operation Phase Impacts

Potential impacts associated with the operation phase are anticipated to be of a long-term duration (i.e. 20 years equivalent to the operational lifespan of the project).

<b>Impact</b>			
Direct and indirect employment opportunities and skills development.			
<b>Desktop Sensitivity Analysis of the Site:</b>			
No sensitivity identified.			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Creation of direct and indirect employment, and skills development opportunities and skills development as a result of the operation of the project.	Positive – The creation of employment opportunities and skills development will assist to an extent in alleviating unemployment levels within the area.	The impact will occur at local, regional, and national levels.	None identified.

**Description of expected significance of impact**

During operation a maximum of approximately 25 direct employment opportunities will be created. Of those direct employment opportunities likely to be generated by the project approximately 40% will comprise opportunities for low-skilled / unskilled workers, and 60% will comprise opportunities for skilled workers. Employment opportunities include safety and security staff, operation and monitoring; and maintenance crew. Maintenance activities will be carried out throughout the lifespan of the project, and include washing of solar panels, vegetation control, and general maintenance around the solar energy facility. The impact is likely to be positive, local-to-national in extent, long-term, and of medium significance.

**Gaps in knowledge and recommendations for further study**

» Information on exact direct and indirect employment opportunities and skills development programmes likely to be created during operation.

**Impact**

Development of non-polluting, renewable energy infrastructure.

**Desktop Sensitivity Analysis of the Site:**

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Development of non-polluting, renewable energy infrastructure.	Positive – Increasing the contribution of the RE sector to the local economy would contribute to the diversification of the local economy and provide greater economic stability.	The impact will occur at local, regional, and national levels.	None identified.

**Description of expected significance of impact**

The generation of renewable energy will contribute to South Africa's electricity market, and may contribute to the diversification of the local economy. The growth in the RE sector as a whole could introduce new skills and development into the area. The impact is likely to be positive, local-to-national in extent, long-term, and of medium significance.

**Gaps in knowledge and recommendations for further study**

» Information on the proposed project's contribution towards diversifying the local economy.

**Impact**

Contribution to local economic development and social upliftment.

**Desktop Sensitivity Analysis of the Site:**

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Benefits to the local area from Socio-Economic Development (SED) / Enterprise Development (ED) programmes and community trusts from REIPPP Programme social responsibilities.	Positive – The creation of employment opportunities, skills development, and the proposed projects contributions to local economic development will assist to an extent in both alleviating unemployment levels within the area, and improving the quality of life.	The impact will occur at local, regional, and national levels.	None identified.



<p><b>Description of expected significance of impact</b></p> <p>Under the REIPPP Programme renewable energy projects are required to contribute to local economic development in the area. Awarded projects are required to spend a certain amount of their generated revenue (as defined in the agreement with DoE) on Socio-Economic Development (SED) and Enterprise Development (ED) and share ownership in the project company with local communities. The impact is likely to be positive, local-to-national in extent, long-term, and of high significance.</p>
<p><b>Gaps in knowledge and recommendations for further study</b></p> <p>» Information on the project's proposed contributions.</p>

<p><b>Impact</b></p> <p>Visual and sense of place impacts.</p>			
<p><b>Desktop Sensitivity Analysis of the Site:</b></p> <p>No sensitivity identified.</p>			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Sense of place impacts from a social perspective associated with the operation phase of the solar energy facility and associated infrastructure.	Negative – The project could alter the areas sense of place which could negatively impact on sensitive receptors.	The impact will occur at a local level.	None identified.
<p><b>Description of expected significance of impact</b></p> <p>The presence of the solar energy facility could impact the “sense of place” for the local community. The impact is likely to be negative, local in extent, long-term, and of low significance.</p>			
<p><b>Gaps in knowledge and recommendations for further study</b></p> <p>» Potential sensitive visual receptors need to be identified.</p> <p>» Visual impact assessment to inform impact on sense of place.</p>			

<p><b>Impact</b></p> <p>Impacts associated with the loss of agricultural land.</p>			
<p><b>Desktop Sensitivity Analysis of the Site:</b></p> <p>No sensitivity identified.</p>			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
The development footprint on which the solar energy facility will be developed will be removed from agricultural production.	Negative – Impacts associated with loss of agricultural land due to occupation of land by the solar energy facility.	The impact will occur at a local level.	None identified.
<p><b>Description of expected significance of impact</b></p> <p>The development of the proposed project on an agricultural property would result in an area of land required to support the development footprint being removed from potential agricultural production. In the event that the land on which the project is proposed is being productively utilised for agricultural purposes this could have negative implications in terms of food production and security, and could also threaten jobs of workers employed in agricultural activities. The Soils and Agricultural Potential impact assessment undertaken as part of the Scoping Phase determined that the major impact on the natural resources of the study area would be the loss of arable land due to the construction of the various types of infrastructure, however this impact would in all probability be of very limited significance and would be local in extent. The impact is likely to be negative, local in extent, medium-term, and of low significance.</p>			

**Gaps in knowledge and recommendations for further study**

- » The current land use and agricultural potential of the area likely to be removed from agricultural production needs to be determined.

## 6. CONCLUSION AND RECOMMENDATIONS

This SIA Scoping Report focused on the collection of available secondary information in order to provide a social baseline against which potential social impacts which may be associated with the development of Allepad PV One could be identified. A summary of the potential positive and negative impacts identified for the detailed design and construction, and operation phase are presented in **Table 6.1** and **Table 6.2**.

**Table 6.1: Summary of potential social impacts identified for the detailed design and construction phase.**

Impact	Status	Significance
Creation of direct and indirect employment and skills development opportunities.	Positive	Medium
Economic multiplier effects	Positive	Medium
In-migration of people (non-local workforce and jobseekers).	Negative	Medium
Safety and security impacts	Negative	Medium
Impacts on daily living and movement patterns	Negative	Medium
Nuisance impact (noise and dust)	Negative	Low
Visual and sense of place impacts	Negative	Low

**Table 6.2: Summary of potential social impacts identified for the operation phase.**

Impact	Status	Significance
Direct and indirect employment and skills development opportunities	Positive	Medium
Development of non-polluting, renewable energy infrastructure	Positive	Medium
Contribution to Local Economic Development and Social Upliftment	Positive	High
Visual and sense of place impacts	Negative	Low
Impacts associated with the loss of agricultural land.	Negative	Low

The potential social impacts identified for the project and listed within **Table 6.1** and **Table 6.2** have been identified based on an assessment of available information and the current understanding of the proposed project, and are not exhaustive. The possibility therefore exists that additional impacts may be identified as part of the public review period, or during the collection of primary data as part of the EIA level SIA. All potential social impacts identified as part of the SIA process will be assessed in detail during the EIA Phase.

### 6.1. Conclusion

A number of potential positive and negative social impacts have been identified for the project, which require further investigation as part of the EIA phase. Based on the findings of this SIA Scoping Report, no red flags or fatal flaws have been identified from a social perspective which could preclude the development of Allepad PV One and associated infrastructure on the Remaining Extent of Erf 5315 Upington, in the Dawid Kruiper LM, of the ZF Mgcawu DM, in the Northern Cape Province, pending the successful completion of the EIA and the receipt of EA from DEA.

### **6.1.1. Recommendations for Further Study (Plan of Study for EIA)**

It is recommended that a full EIA level SIA be conducted as part of the EIA phase. The following activities should be undertaken as part of this process:

- » Review comments pertaining to social impacts received from members of the public, key stakeholders, and any organ of state during the public review of the Scoping Report. Where applicable, comments received from DEA on the Final Scoping Report, which may pertain to social impacts or have relevance to the SIA, will also be reviewed.
- » Collect primary data during a site visit. Interview directly affected and adjacent landowners, and key stakeholders to obtain primary information related to the project site, social environment, and to gain their inputs on the proposed project and its perceived social impact (positive and /or negative).
- » Update the baseline information with information received during the site visit, as well as any additional information received from the client, or updates to the project description.
- » Assess impacts identified for the project in terms of their nature, extent, duration, magnitude, probability, status, and significance; as well as the degree to which the impact can be reversed, may cause irreplaceable loss of resources, and can be mitigated.
- » Identify mitigation measures with which to reduce negative impacts, and enhance positive impacts for inclusion in the Environmental Management Programme (EMPr). As far as possible the mitigation hierarchy of "avoid, minimise, and reduce" will be followed in the mitigation of potential negative impacts.
- » Identify any conditions for inclusion in the EA.
- » Identify any monitoring requirements for inclusion in the EMPr or EA.
- » Provide a reasoned opinion regarding the acceptability of the project, and whether the proposed project should be authorised.
- » Prepare a SIA Report for inclusion in the EIA Report to be prepared for the project.
- » Subject the SIA Report prepared for the project for inclusion in the EIA Report to external peer review.

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