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GENERAL NOTICES • ALGEMENE KENNISGEWINGS

DEPARTMENT OF AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT**NOTICE 2042 OF 2023****NOTICE OF THE APPROVED KAROO REGIONAL SPATIAL DEVELOPMENT FRAMEWORK IN TERMS OF SECTION 18 (1) OF THE SPATIAL PLANNING AND LAND USE MANAGEMENT ACT (ACT NO 16 OF 2013)**

I, Angela Thoko Didiza, the Minister of Agriculture Land Reform and Rural Development give notice in terms of Section 18(1) of the SPLUMA of the approval of the Karoo Regional Spatial Development Framework after consulting with the Premiers and Municipal Councils responsible for the Karoo Region.

The approved Karoo Regional Spatial Development Framework can be accessed on the Department website through the following address: <http://www.dalrrd.gov.za>.


MRS AT DIDIZA (MP)**MINISTER: AGRICULTURE, LAND REFORM & RURAL DEVELOPMENT****DATE: 12/09/2023**

KAROO

Regional Spatial Development Framework



ADDRESS BY MS THOKO DIDIZA (MP), MINISTER OF AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT AT THE FIFTH KAROO SMALL TOWN REGENERATION CONFERENCE

18 March 2021

Chairperson,
Executive Mayors,
Government Officials,
Ladies and Gentlemen,

Good morning

Pre-1994 planning in South Africa served a different political ideal: segregation, differentiation, and privilege; multiple laws, multiple institutions, and parallel processes instituted by the pre-1994 pieces of legislation. In 1994, South Africa inherited complex and disjointed planning systems, manifested in unequal, incoherent and inefficient settlement patterns. The Development Facilitation Act, 1995 (Act No. 67 of 1995) (the "DFA") was the first post-apartheid legislation promulgated as an interim measure to deal with the apartheid spatial legacy. The Spatial Planning and Land Use Management Act ("SPLUMA") emerged through the Green Paper and White Paper processes to replace the DFA as the legislative instrument to regulate spatial planning and land use management.

The Act seeks to bridge the racial divide in spatial terms and transform the country's settlement patterns to give effect to the fundamental constitutional provisions. The Act allows municipalities to play their developmental role effectively by applying directive principles, norms and standards, spatial planning tools, and land use management instruments. The SPLUMA places Spatial Planning at the centre of driving Spatial transformation through Spatial Development Frameworks as long-term planning instruments at various levels. Today we can stand tall and celebrate the Proclamation of the Karoo as the first Region in terms of the SPLUMA; emphasising the Karoo Region as a priority area with strategic spatial importance.

I understand that the South African Local Government Association (SALGA), working with municipalities in aid of the Karoo Small Town regeneration, have made great strides to date. This included a series of four Small Town Regeneration Conferences to date. Through this body of work, the concept of a Karoo Regional Spatial Development Framework was initiated, born and promoted. I want to take this opportunity to appreciate the invaluable work that was done at the previous conferences, with municipalities taking the lead towards the sustainable development of their respective areas of jurisdiction.

The utilisation of the Regional Spatial Development in the Karoo Region as a tool to guide the development of the area will ensure that the key objectives of the Small-Town Regeneration Programme are realised. This will also ensure that over time there is a regeneration, restoration, and fulfilling of

the economic potential of underperforming small towns in the area and embracing the critical role that these towns play in our Space Economic.

Under my signature, the Karoo Region was proclaimed by a Notice in the Government Gazette using a description and map delineating the Region on 19 October 2020. This notice, therefore, made public the geographic area for which a Regional Spatial Development Framework would be compiled after careful consultation with the Premiers and Municipal Councils concerned.

This framework aims to guide spatial planning, land development, and land use management in terms of the SPLUMA. The proclaimed Karoo Region, the first in terms of this Act, is situated in the western part of South Africa and comprises just more than 40% of the total national land area.

It includes:

- thirty-six Local Municipalities;
- within thirteen District Municipalities;
- one Metropolitan Municipality;
- and is spread across four provinces, namely Eastern Cape, Free State, Northern Cape and the Western Cape.

The Karoo Region's population is small and was totalling just over 2.8 million people back in 2019 and is dispersed throughout the Region with people settled in:

- small towns;

- rural settlements; and
- on farms.

Furthermore, the Karoo Region is a unique and awe-inspiring ecological, physical, social, cultural and economic phenomenon in the South African landscape. It is an arid region of wide-open picturesque spaces and unique animal and plant life. The people of the Karoo are diverse, with strong social bonds, strong traditions and rich cultural and archaeological history.

The current and potential contribution of the Karoo Region to "Brand South-Africa" stretches far beyond quantitative measures. Although only responsible for around 4% of the national Gross Domestic Product and housing roughly the same percentage of the national population, the Region is home to a range of very recognisable and typically South African features and products. These internationally renowned unique assets range from the annual display of 'Namaqualand Daisies', its sought-after agricultural products, its rare vastness and pristine open spaces, to its contributions to the global scientific community through the Square Kilometre Array (SKA) telescope project.

This seemingly sparse Region has the potential to make a considerable contribution to the well-being of not only its local communities but also to the national economy in a wide range of sectors, including:

- mining;
- niche agriculture;
- renewable energy generation;
- local and international eco-tourism;

- indigenous medicines; and
- science and technology development.

The Karoo region is known for its small towns, which are dispersed throughout the Region. Small rural towns and larger rural towns, which function as development anchors, are essential not only as service nodes for local communities but also as points of connection, distribution, and value addition in the rural economy. These towns form a critical component of an integrated rural system recognised in both National and Provincial spatial frameworks and plans.

However, the Karoo Region faces serious challenges such as deep and persistent inter-generational poverty, inequality, and climate change-threats that must be addressed for its people's well-being and the continued qualitative and quantitative contribution to South Africa. The significance of the Karoo Region is duly recognised in national policy.

South Africa's first National Spatial Development Framework (NSDF) is being finalised. Although it has not yet adopted by the Cabinet, the Draft NSDF explicitly recognises the Karoo Region as an area of national significance and includes it as one of the National Spatial Action Areas, namely the Arid Innovation Region.

Despite the current 'draft status' of the said National Spatial Development Framework, the National Spatial Action Areas were included in the government's Medium-Term Strategic Framework (MTSF) 2019-2024, which is also regarded as the five-year implementation programme of the National Development Plan (NDP), which Cabinet adopted in 2012 as a long-term vision for South Africa. The implication of the Karoo Region being part of

Karoo Regional Spatial Development Framework

the identified National Spatial Action Areas is far-reaching: It elevates and aligns the Karoo Region's focus and its development to a national priority, which could see it being mainstreamed in national strategic planning and expenditure for the next few decades, given the National Spatial Development Framework's time-horizon of 2050.

I am confident that through collaboration and cooperation between municipalities and other spheres of government, there will be increased opportunities through cross-boundary collaboration, cooperative spatial governance and a 'joined-up planning approach rather than a 'going at it alone' approach. The SPLUMA advocates for municipalities to be deciding on their matters when it comes to spatial planning, land development and land use management.

Karoo's Spatial Development Framework's governance is being championed through a partnership with the National Department of Agriculture, Land Reform and Rural Development, SALGA, the affected municipalities and key role-players of the Small-Town Regeneration Conference. This partnership must enable the development of the Karoo Region and ensure the development of the area favouring all the people who live in it, with a particular focus on the vulnerable communities that reside in this unique area of South Africa.

As you embark on your deliberations and discussion, I would like to wish you all the best. I want to take this opportunity also to confirm my support for this critical initiative.

I thank you.

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ABBREVIATIONS AND ACRONYMS

ADS	Akanya Development Solutions	GFC	Global Financial Crisis
AGA	Astronomy Geographic Advantage Act of 2007	GIS	Geographic Information Systems
ASEAN	Association of Southeast Asian Nations	GVA	Gross Value Added
CAP	Common Agricultural Policy	ICT	Information and Communications Technology
CBA	Critical Biodiversity Areas	IDP	Integrated Development Plan
CBA	Critical Biodiversity Areas	IDZ	Industrial Development Zone
CSIR	Council for Scientific and Industrial Research	IGRFA	Intergovernmental Relations Framework Act, 2005
DALRRD	Department of Agriculture, Land Reform and Rural Development	IPAP	Industrial Policy Action Plan
DCoGTA	Department of Cooperative Governance and Traditional Affairs	IUDF	Integrated Urban Development Framework
DDM	District Development Model	KRSDF	Karoo Regional Spatial Development Framework
DFFE	Department of Forestry, Fisheries and the Environmental	LM	Local Municipality
DHS	Department of Human Settlements	LUMS	Land Use Management Scheme
DMR	Department of Mineral Resources	MPCC	Multi-purpose Community Centre
DoE	Department of Energy	MPRDA	Mining and Petroleum Resources Development Act, 2004
DPME	Department of Planning, Monitoring and Evaluation	MTSF	Medium Term Strategic Framework
DPW&I	Department of Public Works and Infrastructure	NAFTA	Northern American Free Trade Association
DWS	Department of Water and Sanitation	NC	Northern Cape
(the) dtic	Department of Trade, Industry and Commerce	NDP	National Development Plan
IPP	Independent Power Producer	NEDP	National Exporter Development Programme
EC	Eastern Cape	NEIS	National Ecological Infrastructure System
EGI	Electrical Grid Expansion	NEMA	National Environmental Management Act (Act 107 of 1998)
EIA	Environmental Impact Assessment	NEMBA	National Environmental Management: Biodiversity Act (Act 10 of 2004)
ESA	Ecological Support Areas	NEPAD	New Partnership for Africa's Development
ETDP	Electricity Transmission Development Plan 2019-2018	NGO	Non-Governmental Organisation
EU	European Union	NHRA	National Heritage Resources Act (Act 25 of 1999)
EUP	Enterprises University of Pretoria	NIPF	National Industrial Policy Framework
FPSU	Farmer Production Support Unit	NPAES	National Protected Areas Expansion Strategy
FS	Free State	NSAA	National Spatial Action Area
		NSDF	National Spatial Development Framework
		NT	National Treasury
		NUN	National Urban Network
		NWRS	National Water Resource Strategy 2024

OPT	Office of the Premier	USA	United States of America
PSDF	Provincial Spatial Development Framework	WC	Western Cape
RDA	Regional Development Anchors	WCSDF	Western Cape Spatial Development Framework
REDZ	Renewable Energy Development Zones		
RES	Renewable Energy Sources		
RRDM	Regional-Rural Development Model		
RSC	Rural Service Centres		
RSDF	Regional Spatial Development Framework		
SAAO	South African Astronomical Observatory		
SANBI	South African National Biodiversity Institute		
SADC	Southern African Development Community		
SALGA	South African Local Government Association		
SANIP	South African National Infrastructure Plan 2032		
SAPS	South African Police Service		
SARAO	South African Radio Astronomy Observatory		
SASSA	South African Social Security Agency		
SDF	Spatial Development Framework		
SEZ	Special Economic Zone		
SIP	Strategic Infrastructure Plan		
SKA	Square Kilometre Array		
SMME	Small, Micro and Medium Enterprises		
SOE	State Owned Enterprise		
SPC	Spatial Planning Concept		
SPLUMA	Spatial Planning and Land Use Management Act, Act 16 of 2013		
SSPM	Social Service Provisioning Model		
STR	Small Town Regeneration		
SWSA	Strategic Water Source Area		
TVA	Tennessee Valley Authority		
TVET	Technical and Vocational Education and Training		
UK	United Kingdom		
UNESCO	The United Nations Educational, Scientific and Cultural Organization		

GLOSSARY

BIODIVERSITY

The diversity of genes, species, and ecosystems on Earth, and the ecological and evolutionary processes that maintain this diversity.

CONSERVATION

Refers to management for explicit biodiversity conservation objectives. May or may not include formal protection.

CONSERVATION AREA

An area of land or sea that is not formally protected in terms of the Protected Areas Act but is nevertheless managed as least partly for biodiversity conservation. Because there is no long-term security associated with conservation areas, they are not considered a strong form of protection. Conservation areas contribute towards the conservation estate but not the protected area estate.

CLIMATE CHANGE ADAPTATION

The process of adjustment to actual or expected climate change and its effects.

CLIMATE CHANGE MITIGATION

The use of new technologies and renewable energies, (1) making older equipment more energy-efficient and/or (2) changing management practices or consumer behaviour to reduce emission of greenhouse gasses.

CONCENTRATION

Concentration of people and activities refers to (1) a higher density of people, and (2) a higher intensity and mix of activities in a specific place, area or region. Generally, such concentration supports the development and sustenance of 'agglomeration economies'. This can take the form of 'urbanisation economies' (where cost decreases as total output of an urban area increases) or 'localisation economies' (where costs decrease as firms in a specific industry increase output).

CRITICAL BIODIVERSITY AREAS (CBA)

An area that must be maintained in a good ecological condition (natural or near-natural state) to meet biodiversity targets. CBAs collectively meet biodiversity targets for all ecosystem types as well as for species and ecological processes that depend on natural or near natural habitat, that have not already been met in the protected area network.

DENSIFICATION

The process of increasing the number of people living in a specific area or place, to ensure that (1) better use is made of movement infrastructure, services, ICT networks and amenities by a greater number of people, and (2) the need for expansion of existing settlements, grids, networks and services is reduced.

DIVERSIFICATION

The process of introducing and/or allowing a greater mix of land-uses in an area, to: (1) boost local people-to-people service economies; (2) stimulate co-production of knowledge, innovation and job-creation; (3) reduce the need for motorised travel and shorten travel distances; (4) bring more vibrancy and life to an area; (5) enhance social interaction and cohesion; and (6) make better use of land.

ECOLOGICAL SUPPORT AREA (ESA)	An area that must be maintained in at least fair ecological condition (semi-natural/moderately modified state) in order to support the ecological functioning of a CBA or protected area, or to generate or deliver ecosystem services, or to meet remaining biodiversity targets for ecosystem types or species when it is not possible or no necessary to meet them in natural or near-natural areas.	ECOSYSTEM SERVICES	Ecosystem services are typically grouped into four broad categories: (1) provisioning, including the production of food and water; (2) regulating, including the control of climate and disease; (3) supporting, including nutrient cycles and oxygen production; and (4) cultural, including spiritual and recreational benefits.
ECONOMIC SECTORS	A description of (1) the type/kind of economic activities in a country or region, or (2) the kinds/types of activities in which the population of a country or region are active/employed. The following five categories/ sectors of economic activity are generally used in such descriptions: (1) the 'primary sector', which includes agriculture, mining and other natural resource-based industries; (2) the 'secondary sector', which entails manufacturing, engineering and construction; (3) the 'tertiary sector', meaning service industries; (4) the 'quaternary sector', which refers to intellectual activities involving education and research; and (5) the 'quinary sector', which refers to high-level decision-making in government and industry. In some instances, including this document, the last two sectors are included in the definition of the tertiary sector.	HUMAN SETTLEMENT	A place where people live, work, study and relax. A settlement can range in size from a small number of dwellings grouped together, to a large city or groups/conglomerations of cities tied together through dense transport and communication networks.
ECOSYSTEM	The dynamic and complex interplay of animal, plant, and microorganism communities and their non-living environment (soil, water, climate, and atmosphere) as a functional unit.	INFRASTRUCTURE	The basic equipment, utilities, productive enterprises, installations, and services essential for the development, operation, growth, sustenance and continued viability of human settlements and economic activities. Infrastructure includes items such as roads, utility lines for water, sanitation and electricity, drainage structures and communication technology. A distinction is often made between: (1) 'engineering infrastructure', such as roads, electricity, sewerage and water services; and (2) 'social infrastructure', which can broadly be defined as the construction and maintenance of facilities that support social services, such as health, education, community, welfare support, citizen registration, and cultural facilities.
		LAND-USE PATTERN	The land-use pattern is a general description of how (1) land is used in a specific geographic area, or (2) one or more types of land-use are distributed across a specific geographic area.

LAND REFORM	The process of correcting the historical imbalances in (1) ownership of, and (2) access to land. It entails three types of intervention by the State: (1) 'land restitution', meaning the redress of wrongs committed during the colonial and Apartheid eras; (2) 'land redistribution', meaning the provision of land for residential and economic purposes to those who do not have the means to access land; and (3) 'tenure reform', meaning the provision of security of tenure to those who do not have it due to historical or other reasons.	STRATEGIC WATER SOURCE AREA (SWSA)	Strategic Water Source Areas (SWSAs) can be described as 'water factories' that support growth and development needs that are often a long distance away from the SWSAs themselves. These areas contribute significantly to the overall surface and ground water supply of the country. While Strategic Water Source Areas have been identified by the Water Research Commission (2015), they are not formally protected.
PROTECTED AREA	An area of land or sea that is formally protected in terms of the Protected Areas Act and managed mainly for biodiversity conservation. Includes state-owned protected areas and contract protected areas.	SUSTAINABLE DEVELOPMENT	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The definition of sustainable development usually refers to social, economic, and institutional components.
RURAL EDGE	A line that is used to delineate a systemically integrated area/region that has distinct rural qualities, often related to natural resources and unique ecosystems, that need to be protected from 'intruding' uses that may disrupt or destroy these qualities and/or systems. Typically, the delineation would be accompanied by (1) a description of the kinds of activities that are permitted within the area/region, and (2) the procedures to apply for uses that are not specified as such. The line may (1) be hard and statutory, meaning it has 'binding legal power' in terms of a/the municipality's land use management system, or (2) be seen as 'soft' or 'fuzzy', meaning that it is not seen as a hard impenetrable line, but is considered when planning for, or assessing proposals for development in the area.		

PART 1: BACKGROUND AND INTRODUCTION



1.1. THE KAROO REGIONAL SPATIAL DEVELOPMENT FRAMEWORK

The Karoo Regional Spatial Development Framework is an instrument to align spatial planning, government spending, government operational decisions and direct investment to support integrated regional development. The focus of the framework is spatial issues of regional interest or regional significance and provides the context for more detailed local scale planning. It is a long-term strategic framework that should form the basis for cross-boundary cooperation and mutual adjustment of spatial planning, spending and direct investment by government stakeholders in the Region, complemented by regional scale private sector initiatives.

1.1.1. INTRODUCTION

The Department of Agriculture, Land Reform and Rural Development (DALRRD), (1) in partnership with the South African Local Government Association (SALGA), and (2) with the support of a consortium of expert service providers headed by Akanya Development Solutions (ADS), embarked on the preparation of the *Karoo Regional Spatial Development Framework* (KRSDF) in June 2020. Per the preamble and the guiding principles of the Spatial Planning and Land Use Management Act, Act 16 of 2013 (SPLUMA), the objectives of the 2030-National Development Plan (NDP), and the directives of the National Spatial Development Framework (NSDF), the *core focus* of the KRSDF is to ensure (1) equitable basic service provision and social development, (2) sustainable and inclusive economic growth including job creation, and (3) decisive spatial transformation, in accordance with a *shared spatial, social and economic development vision* for the region.

In more detail, the DALRRD's key objectives with the preparation of the KRSDF are to:

- Address the *spatial, social and economic imbalances* created by the past colonial and apartheid systems in the Region, and ensure that it can play a meaningful role in the national economy;
- Through strategic analysis of the regional space economy, *identify, nurture, support and strengthen key economic sectors* and broaden participation in such sectors;
- Ensure, sustain and deepen *buy-in to the idea of the Karoo as 'Region' with a series of interconnected settlements*, as already reflected in the cooperation and commitment of a wide range of regional stakeholders; and
- Align and coordinate the *plans, policies, strategies and frameworks* of (1) different spheres and sectors of government and (2) those of the private sector to ensure maximum benefit from the limited and shrinking national fiscus.

In its conceptualisation of the project, the DALRRD recognised the hard work already done by several passionate regional actors and organisations, through which the foundation for the KRSDF was laid.

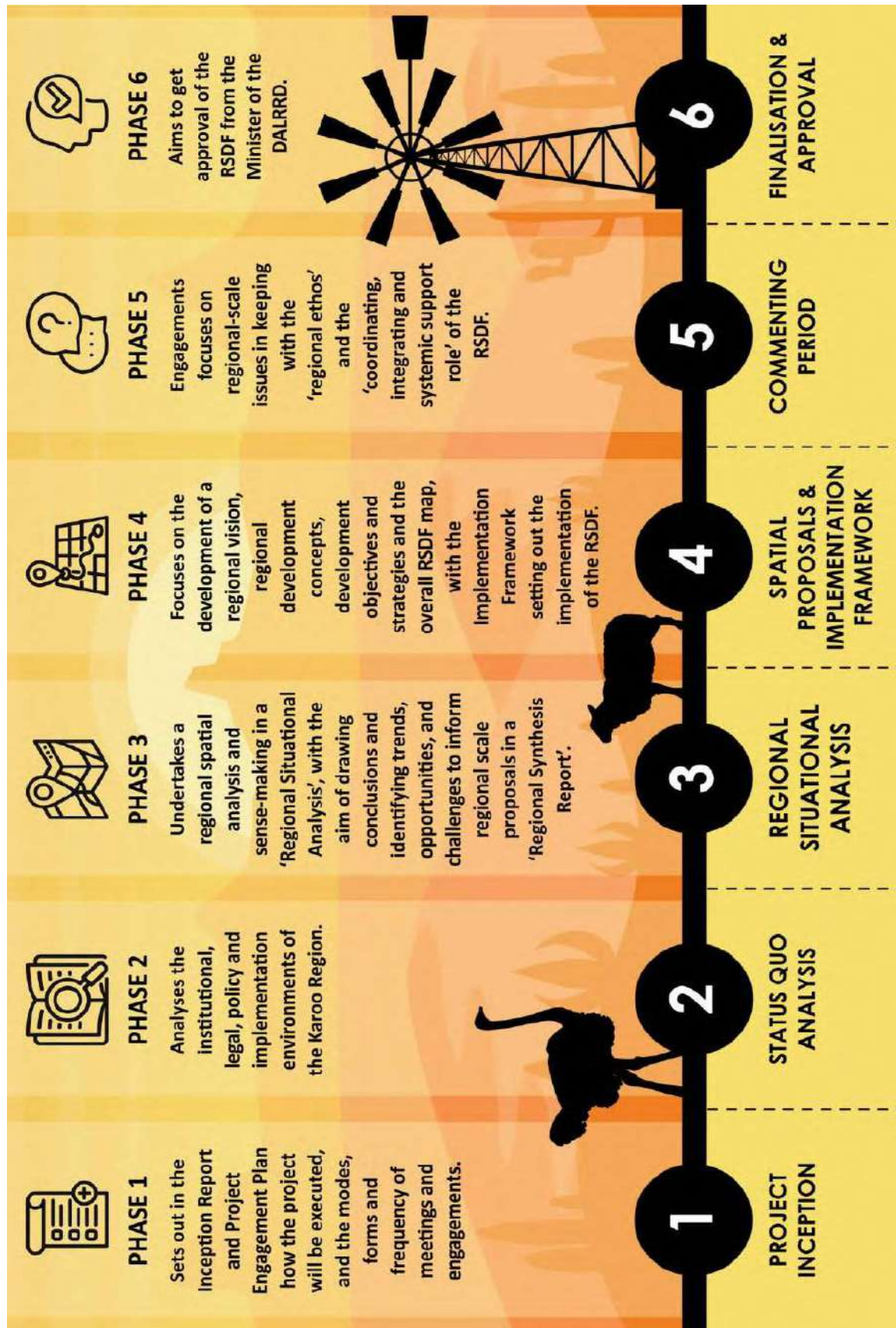
Please refer to Figure 1 below for an outline of the Project Phases.

1.1.2. THE KAROO REGION

The Karoo Region, as proclaimed on 19 October 2020 by the Minister of Agriculture, Land Reform and Rural Development, is situated in the western part of South Africa. It comprises just more than 40% of the total national land area.

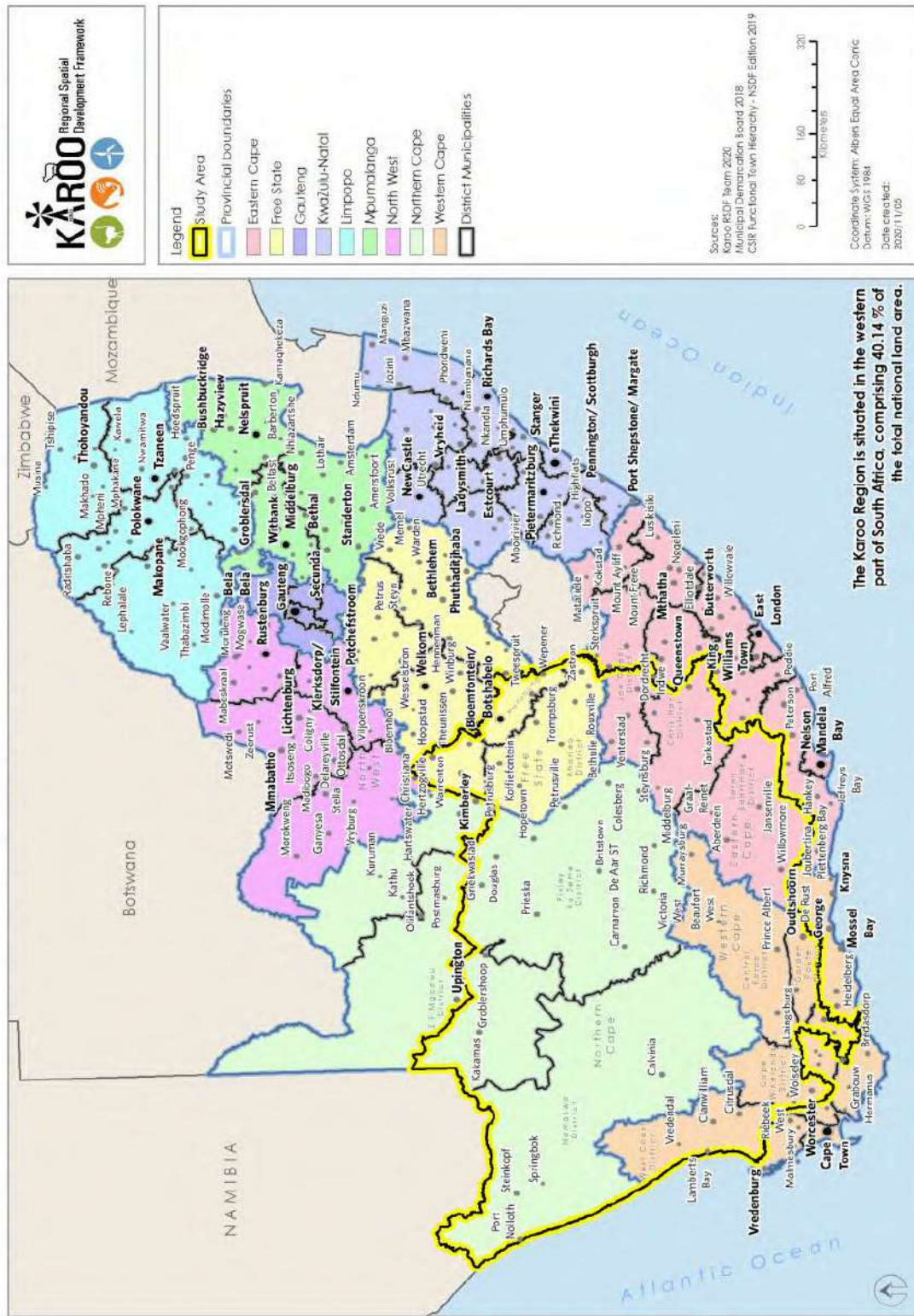
It includes (1) thirty-six Local Municipalities, (2) thirteen District Municipalities, and (3) one Metropolitan Municipality, and is spread across four provinces, i.e. the Eastern, Northern and the Western Cape Provinces and the Free State Province. Please see Map 1 and 2 and Table 1 for an outline of the Karoo Region and a list of municipalities.

Figure 1: Karoo RSDF Project Phases



Map 1: Karoo Study Area in the South African Context

Karoo RSDF: Study Area in context of South Africa



Map 2: Karoo Study Area

Karoo RSDF: Study Area

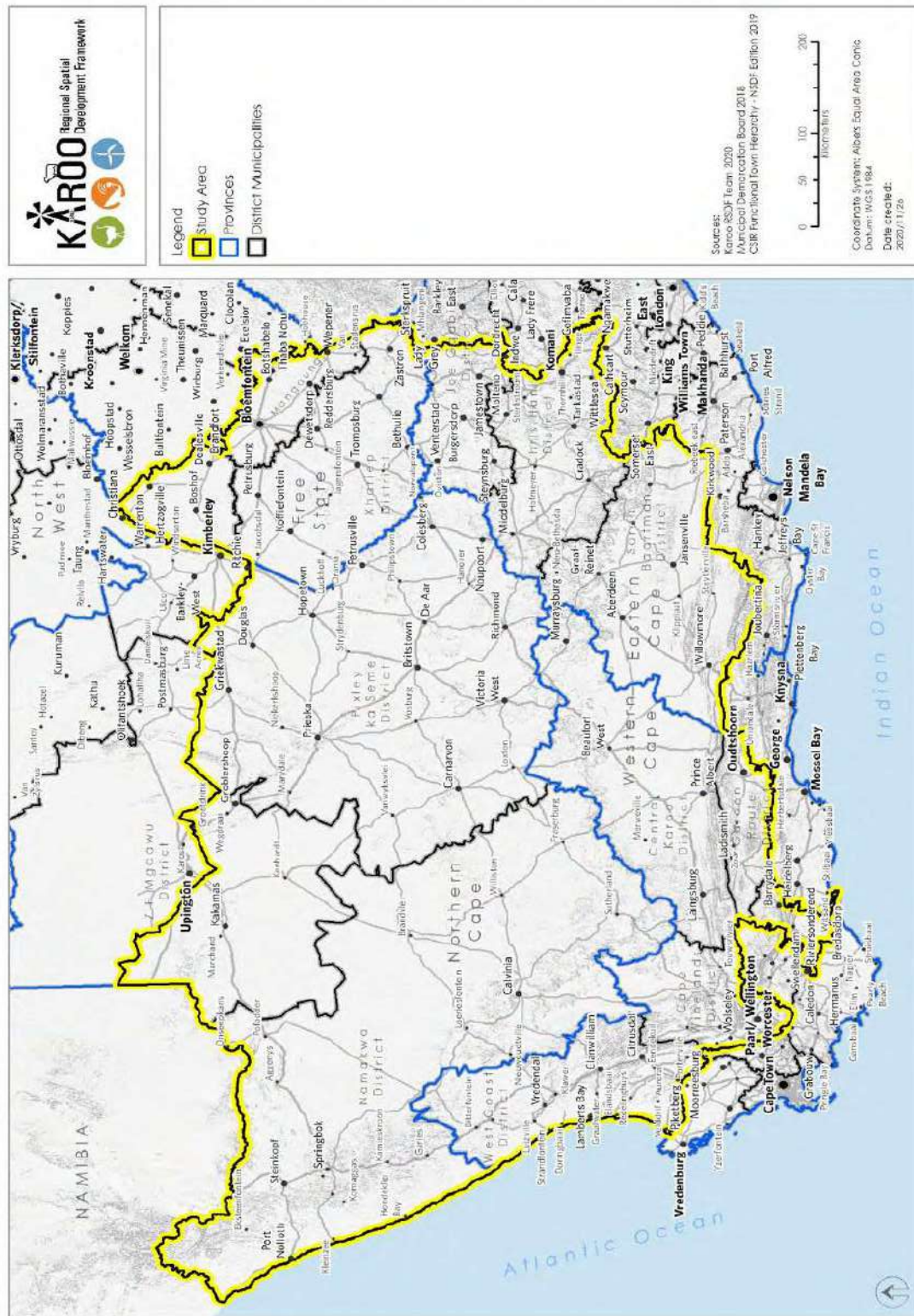


Table 1: Study Area Municipalities¹

PROVINCE	DISTRICT/METRO MUNICIPALITY	LOCAL MUNICIPALITY
Eastern Cape Province 	Sarah Baartman District Municipality	Blue Crane Route Local Municipality
	Chris Hani District Municipality	Dr Beyers Naude Local Municipality
		Inxuba Yethemba Local Municipality
		Enoch Mgijima Local Municipality
	Joe Gqabi District Municipality	Walter Sisulu Local Municipality
Free State Province 	Xhariep District Municipality	Mohokare Local Municipality
	Lejweleputswa DM	Kopanong Local Municipality
		Letsemeng Local Municipality
		Tokologo Local Municipality
	Mangaung Metropolitan Municipality	N/A
Northern Cape Province 	Namakwa District Municipality	Richtersveld Local Municipality
		Nama Khoi Local Municipality
		Kamiesberg Local Municipality
		Hantam Local Municipality
		Karoo Hoogland Local Municipality
	Pixley ka Seme District Municipality	Khai-Mai Local Municipality
		Kareeberg Local Municipality

¹ The District Municipalities with only one or two Local Municipalities forming part of the Region were not required to have a Council Resolution. All Districts were however continuously informed of the process and the progress made in getting to the KRSDF.

PROVINCE	DISTRICT/METRO MUNICIPALITY	LOCAL MUNICIPALITY
Western Cape Province 		Emthanjeni Local Municipality
		Ubuntu Local Municipality
		Siyathemba Local Municipality
		Siyancuma Local Municipality
		Thembelihle Local Municipality
		Renosterberg Local Municipality
		Umsobomvu Local Municipality
		Kai !Garib Local Municipality
	Z.F Mgcawu (formerly Siyanda) District Municipality	!Kheis Local Municipality
	Central Karoo District Municipality	Beaufort West Local Municipality
		Laingsburg Local Municipality
		Prince Albert Local Municipality
	West Coast District Municipality	Cederberg Local Municipality
		Matzikama Local Municipality
		Bergrivier Local Municipality
	Garden Route District Municipality	Kannaland Local Municipality
		Oudtshoorn Local Municipality
	Cape Winelands District Municipality	Witzenberg Local Municipality
		Breede Valley Local Municipality
	Overberg District Municipality	Swellendam Local Municipality

1.1.3. THE INCEPTION YEARS

The Karoo has long been recognised as a distinct geographic and environmental region with (1) a diverse cultural heritage, including being home to groups of South Africa's First People, (2) having a rich archaeological history, and (3) hosting a unique and wide array of animal and plant life, all within a majestic, semi-arid landscape. The region is renowned internationally for a series of unique assets ranging from the annual display of 'Namaqualand daisies' to its sought-after agricultural products and its contributions to the global scientific community through the Square Kilometre Array (SKA) telescope project.

Over the last few decades, recognising both the (1) intrinsic, irreplaceable value and (2) significant development potential of the region, a number of private sector actors embarked on a series of initiatives aimed at the collaborative marketing and development of the region's agricultural and tourism sector – in the process 'crossing' administrative boundaries of municipalities and provinces. The lifting of the moratorium on shale gas extraction by hydrological fracking in 2011 provided a major boost to the development of a regional identity. It also led to a renewed sense of urgency amongst those (1) interested in protecting the region's unique qualities, and (2) regarding its unique natural vegetation, human resources, majestic landscapes and history as more than adequate regional development economic assets, and worthy of shielding from the potentially devastating effects of fracking.

At around the same time, SALGA entered the Karoo Region through its *Small Towns Regeneration (STR) Programme*, which was initiated in 2013 and officially launched in 2015. SALGA and its member municipalities in the region soon realised the value of an integrated, regional approach to small town development and regeneration and the contribution such an approach could make to (1) achieving economies of scale and (2) sharing the costs and

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responsibilities of marketing and lobbying. In terms of this approach, small towns are regarded as part of a system of human settlements that provide economic opportunities, livelihoods and social services to communities living within a systemically connected 'functional region'.

A key component of SALGA's involvement in the region was the hosting of a series of *STR Conferences*, the first of which took place in Beaufort West in April 2016. This event led to the *2016-Karoo Region Declaration* provided in **Box 1** on the next page. The *second Karoo STR Conference*, which was held in July 2017 in De Aar, supported the formulation of an RSDF to further the objectives of the Karoo STR Programme and Region. The 2017-Conference Declaration included measures to **formalise regional cooperation** and again expressed support for the **development of a regional spatial planning and economic development framework**.

The *third Karoo STR Conference*, which was held in October 2018 in Graaff-Reinet, led to the further 'institutional cementing' of the Karoo Region, while the *fourth Karoo STR Conference*, held in November 2019 at the Gariep Dam, led to the resolution that the DALRRD make a submission to the Minister of the Department to officially **proclaim the Karoo Region** within the 2019/2020 financial year. The declaration of the region was endorsed by the Premiers of the Eastern Cape, Free State, Northern Cape and Western Cape and supported by the municipalities in the through formal Council Resolutions. The Karoo Region was demarcated primarily by making use of (1) natural biomes and (2) the jurisdictional boundaries of the participating municipalities. The *fifth Karoo STR Conference* in March 2021 was the first since the declaration of the Region. This milestone was celebrated by the Minister of Agriculture, Land Reform and Rural Development in her opening address.

The Conference Declaration of the *sixth Karoo STR Conference* in May 2022 supported the KRSDF (see Box 1 on next page).

Box 1: From 2016 to 2022: The Karoo Small Town Regeneration Conference**2016 CONFERENCE DECLARATION**

We, the representatives of municipalities, provincial and national stakeholders and private sector gathered in Beaufort West Municipality, on the occasion of a Regional Conference on Small Town Regeneration and Regional Economic Development, appreciate the efforts of SALGA for initiating the process and convening this Karoo Regional Conference to discuss matters affecting the Karoo area and initiatives of the Karoo region.

We commit ourselves to the objectives of the Conference programme as outlined on Day 1 and hereby adopt this Declaration in the firm belief that it paves the way towards coordinated cooperation of all stakeholders from the Karoo and those with interest in the Karoo.

RECOGNISING:

- The need for **cooperation and coordination of municipalities** in the Karoo Region through an inter-municipal cooperation mechanism;
- The need for **supporting and capacitating municipalities** to fulfil regional cooperation commitments;
- That, while progress has been made to date by other stakeholders in collaborating in the Karoo Region, the need for an **institutional arrangement to coordinate the work done and plan future work** is important;
- The **imperative for intergovernmental planning and cooperation** in order to enhance regional spatial planning, regional economic development, regional infrastructure planning, regional investment initiatives and regional priorities;
- The **role of a number of organizations** that have done work, drafted research papers, developed plans for the Karoo region;
- The need for national and provincial government, State-Owned Enterprises and agencies to participate and **support the initiatives of the Karoo Region**; and
- The **socio-economic status of communities** within small towns and the need for **job creation, skills development and entrepreneurship development** in the plans of the Municipalities of the Karoo Region is imperative.

2022 CONFERENCE DECLARATION

We the two hundred and thirty nine (239) delegates at this 6TH Karoo Small Town Regeneration Conference, drawn, from 47 karoo region municipalities from the Eastern Cape, Free State, Northern Cape and Western Cape in the Republic of South Africa, gathered here at the Survival Boutique Olive Estate at Buffelsdrift in Oudtshoorn Local Municipality, from the 16th – 17th of May 2022 accept, of our own free will, to note with pride the significant strides and the substantial progress that the Karoo Small Town Initiative has made over the past 06 years. Re-energized by the shared aspiration to accelerate progress and leapfrog the initiative to concrete programmes that will yield tangible benefits for the peoples of the Karoo region and collectively commit to working towards formal declaration of a single Spatial Development Framework for the Karoo Small Towns Regeneration Region, Insertion of Karoo STR region as a formal recipient of ringfenced budgetary allocation for the next medium term expenditure framework, to do more to facilitate inclusivity in the initiative and encourage active citizenry.

APPRECIATING the support and participation of all key stakeholders, including civic Organisations, the media, and various National and Provincial Government Departments and Entities as well as the private sector and the collective sense of commitment to provide all the required support to ensure the success of the Karoo STR regional initiative.

WE ACKNOWLEDGE That the development outcomes for the Karoo STR must align to national priorities and policy objectives of the NDP, NSDP and IUDF, however reflect regional and town specific conditions, developmental challenges and opportunities.

The strategic goals should respond to the problems identified, remain informed by the rationale for intervention and reflect the key elements of the regional conceptual approach of this initiative.

NOTING

- a) The efforts of SALGA together with its partners in the implementation of the Karoo Small Town Regeneration Programme since its inception in 2016
- b) The finalisation of the National STR Strategy and Implementation Plan by COGTA
- c) That COGTA will work with municipalities, provincial and national departments and stakeholders to implement the National STR strategy on a town and also at the regional level
- d) The approval of the Karoo Regional Spatial Development Framework (RSDF) by the Department of Agriculture, Land Reform and Rural Development (DALRRD)
- e) The importance of the Karoo Regional Spatial Development Framework for municipalities in the Karoo to foster improved alignment and coordination between the three spheres of government

FURTHER NOTING

- f) The detailed overview of the Karoo Regional Spatial Development Framework as approved
- g) Overview of the Changemaker Town Network undertaken the Western Cape Economic Development Partnership
- h) The need for cross-sectoral partnerships to support improved service delivery & local economic development across the Karoo as well build the capacity of municipalities, stakeholders and local communities.
- i) Further noting the need to be deliberate in using public procurement to prioritize Karoo regional based companies to enhance economies of scale and scope.
- j) The progress with the Department with Public Works and Infrastructure Precinct Development programme within the declared Karoo region.
- k) The Phase 1 of the Innovation Mapping exercise undertaken by Dept of Science and Innovation through HSRC and the roll out of Phase 2 in the remaining Municipalities in the Karoo Region (specific focus in the Free State municipalities)
- l) Encourage and support efforts towards the prioritise of SMMEs and cooperatives in the Localisation Policy Framework by the National Department of Small Business Development, to gain market share in the manufacturing and agro-processing sectors.

THE CONFERENCE RECOMMENDS

- a) That SALGA urgently writes to all Karoo STR Region municipalities to obtain their inputs on the preferred governance and institutional arrangements as proposed by DALRRD and COGTA
- b) Once the Karoo Regional Spatial Development Framework has been approved, the various municipalities will need to align their respective spatial development frameworks to the Karoo RSDF

AND THEREFORE DECLARE together with all our partners and stakeholders as all municipalities that constitute part of the Karoo Small Town Regeneration Region, to the work that still needs to be done towards implementation of the Karoo Small Town Regeneration Initiative.

1.1.4. SUPPORTIVE NATIONAL POLICY LANDSCAPE

In parallel with the community-based, private sector and STR-processes, two important developments occurred at national policy level that provided further support to the development of the Karoo Region and elevated this pursuit to the level of a national spatial priority. The first of these was the **Integrated Urban Development Framework (IUDF)**, which was adopted in 2016. As part of the process of implementing the IUDF, the Department of Cooperative Governance and Traditional Affairs (CoGTA) agreed to collaborate with National Treasury (NT) and SALGA as key IUDF implementation partners. SALGA is continuing the implementation of the STR Programme in small towns and rural areas, which, although conceptualised prior to the official adoption of the IUDF, is aligned with the core principles of the IUDF. Notably, the STR programmatically responds to the *Urban-Rural Developmental Agenda* and *Continuum* of the IUDF.

South Africa's first **National Spatial Development Framework (NSDF)** was adopted by Cabinet in 2022. The NSDF (1) explicitly recognises the Karoo Region as an area of national significance, and (2) includes it as one of the *National Spatial Action Areas (NSAAs)*, i.e. the *Arid Innovation Region NSAA*, the boundaries of which are aligned with those of the Karoo Region. The NSAAs were included in the **Medium Term Strategic Framework (MTSF) 2019-2024**, which is regarded as the five-year implementation programme of the NDP. The implication of NSAA-status for the Karoo Region is far-reaching. It (1) *elevates the focus on and (2) development of the region to a national priority*, which should and could see it being mainstreamed in national strategic

² At the time of writing this report, the exact strategic implications of the NSAAs and their implementation and funding mechanisms were not yet finalised, awaiting the official approval of the NSDF and the formulation of the NSDF Implementation Charter. It is, however, safe to assume that the recognition of the Karoo Region as

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planning and expenditure for the next few decades, given the NSDF's time-horizon of 2050.²

While the KRSDF focuses on a regional scale, its proposals are supplemented and complemented by the **Small Town Regeneration Strategy and Implementation Plan of 2021** flowing from the IUDF, which has a more specific and more local focus on the development and regeneration of small towns in a regional context. The focus on innovation in the Karoo Region is supported by the **National Framework for Local Economic Development (NFLED) of 2018-2028**, by bringing to the foreground innovation as a driver of development in local economies.

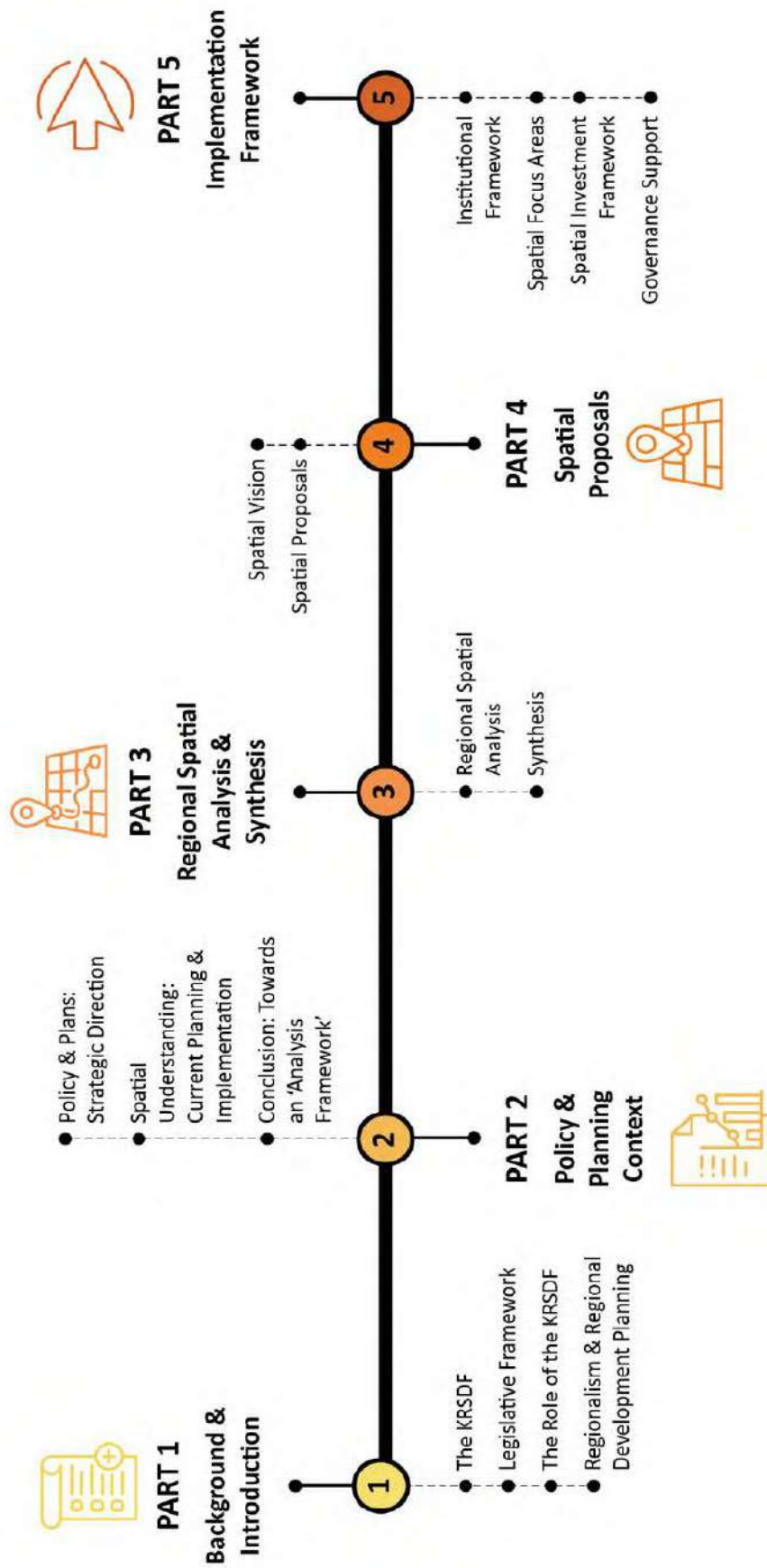
NSAA will go a long way towards ensuring that regional challenges and development priorities in the Karoo will be attended to at the national level. [This section will be updated as new information becomes available over the course of the project.]

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1.1.5. DOCUMENT OUTLINE

The document comprises five parts. Part 3 represents a high-level summary of the details spatial analysis that has been conducted; the full analysis is available online at www.krsdf.co.za.

Figure 2: Document Outline



1.2. LEGISLATIVE MANDATE

The KRSDF will be the first RSDF prepared in terms of Section 18 of SPLUMA. The approach followed in undertaking this task will set a precedent for others to follow, and as such, requires careful consideration.

The starting point for the formulation of an RSDF is the definition and understanding of the concept of 'a region'. SPLUMA defines a region as follows:

"A circumscribed geographical area characterised by distinctive economic, social or natural features which may or may not correspond to the administrative boundary of a province or provinces or a municipality or municipalities".

SPLUMA also gives the Minister the right, after consultation with the Premier/s and the Municipal Councils responsible for that geographic area, to proclaim a region. The purpose of such declaration would be "... to give effect to national land use policies or priorities in any specific geographic area".

The purpose of an RSDF is indicated in SPLUMA as guiding "... spatial planning, land development and land use management in any region of the Republic" (Section 18(1)). Section 19 of SPLUMA prescribes the contents of an RSDF. In terms of this section, an RSDF must:

- "Give effect³ to the development principles in Chapter 2 and any applicable norms and standards that have been drawn up in terms of Section 8 (Section 19(a)).
- Give effect to national and provincial policies, priorities, plans and planning legislation (Section 19(b)).⁴

³ This means it must 'put into practice' or 'make operative'.

⁴ Comment by Prof Jeannie van Wyk, KRSDF Colloquium One, 21 August 2020, "Municipal policies, priorities, plans and planning legislation are not included in this provision. I question this because the declaration of the region requires the inputs of the relevant municipal councils.

- Reflect the current state of affairs in the area from a spatial and land use perspective of the region (Section 19(c)).
- Indicate desired patterns of land use in the area (Section 19(d)).
- Provide basic guidelines for spatial planning, land development and land use management (Section 19(e)).
- Comply with environmental legislation (Section 19(g))."

An important provision (Section 19(f)) is that an RSDF must make proposals as to how the framework will be (1) implemented and (2) funded. Important to note is that the RSDF is the only framework in SPLUMA for which it is specified that proposals must be made as to how it will be funded, (1) emphasising its focus on implementation, but also clearly (2) recognising its unique position as not being tied to any specific sphere of government and hence budget, as in the case of the National, Provincial and Municipal SDFs, also provided for in SPLUMA (Chapter 4).

As a strategic planning instrument, an RSDF does not confer on any person the right to use or develop land. To ensure alignment and facilitate implementation, the relevant guidance will have to be included in Municipal SDFs that have a more direct link to land use management at a local scale.

1.3. THE ROLE OF THE KRSDF

An RSDF is regarded as an action-oriented document designed to (1) align and focus resources to support the development of the unique strengths of the region it is prepared for and (2) address the unique challenges it faces. Drawing from (1) the legal directives in SPLUMA, (2) the guidance in the NSDF, (3) the

In any event, the hierarchical nature of SDFs would result in these being reflected in the national and provincial SDFs. Moreover, in the case of the Karoo Regional SDF it would be an enormous task to give effect to all the policies, priorities, plans and by-laws of all the municipalities".

Terms of Reference of the KRSDF-project, (4) the intent and content of the STR Programme, and (5) the initiatives by the NGOs in the region, a *five-point KRSDF Development Agenda* is proposed:

**(1) VISION AND IDENTITY – (2) TRANSFORMATION GUIDANCE – (3)
HERITAGE AND CONSERVATION – (4) GROWTH, INNOVATION AND
CHANGE – (5) COLLABORATIVE ACTION**



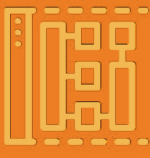
See **Table 2** on the next page for a more detailed unpacking of the five-point KRSDF Development Agenda.

Given this regional development agenda, the KRSDF will:

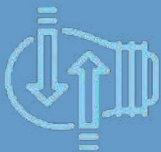
- Focus on issues of '*regional significance, importance, concern and interest*', which will be defined during the course of the project; and specifically maintain a strategic focus on the most critical *regional development opportunities and development drivers*, as well the key regional challenges that need to be addressed to realise the regional opportunities;
- *Not focus on local-scale land use planning*, being the function of local government and provided for in SPLUMA through Municipal SDFs, but provide *regionally-focused strategic guidance* on important considerations for settlement development and land use planning, to be incorporated in municipal planning in the form of direct guidance for each municipality in the Karoo Region;

- Have a *clear implementation, action and resourcing focus*, and seek to utilise all other plans, strategies, policies, frameworks, programmes and funding instruments that can assist in this regard;
- *Avoid duplication of existing Provincial SDFs*, and instead seek to further strengthen and support the establishment of a unique regional identity and wise use of regional development drivers in the Karoo Region; and
- Seek to identify niche opportunities that may be insignificant on their own, but that together may constitute a cluster that becomes a regional-scale asset, which entails that:
 - Links and functional connections between the region and economic nodes surrounding the region will be sought, mapped and optimised as far as possible;
 - Given the far lower intensity of nodes and functional in the Karoo Region *vis-à-vis* those of surrounding nodes and functional regions, *the appropriate regional scale* for the identification of regional (1) opportunities, (2) development drivers, and (3) spatial structuring elements in the Karoo Region will be established and used; and
 - The Karoo Region will be the core focus of the KRSDF and *will not be treated* as the hinterland of other regions and nodes in the four provinces.

Table 2: KRSDF Development Agenda

THE KRSDF DEVELOPMENT AGENDA				
	SPLUMA REQUIREMENTS	NSDF GUIDANCE	KAROO NGO- GROUNDSWELL & STR KAROO REGION	PROJECT TERMS OF REFERENCE
1. VISION AND IDENTITY 	Give effect to national land use policies or priorities. Give effect to the development principles. Reflect the current state of affairs in the area from a spatial and land use perspective.	Strong regional growth and development compacts.	Regional identity.	Common spatial and economic vision.
2. TRANSFORMATION GUIDANCE 	Desired patterns of land use. Provide basic guidelines for spatial planning, land development and land use management.	Compact settlement development around social service provision nodes. Limit expansion and development of new settlements in arid areas. Discourage temporary settlement formation for mining and infrastructure construction, upgrading and maintenance projects.		
3. HERITAGE AND CONSERVATION 	Environmental protection.	Resource management and protection.	Conservation, heritage focus.	

THE KRSDF DEVELOPMENT AGENDA

	SPLUMA REQUIREMENTS	NSDF GUIDANCE	KAROO NGO- GROUNDSWELL & STR KAROO REGION	PROJECT TERMS OF REFERENCE
4. GROWTH, INNOVATION AND CHANGE 	Economic clusters and clustering.	Regional adaptation, economic diversification and agro-innovation at scale. Encourage and support 'going off the grid'. Enhance ICT linkages to support long-distance learning. Spatial transformation and land reform.	Marketing, job creation, skills development and entrepreneurship development.	Job creation, economic growth and spatial transformation.
5. COLLABORATIVE ACTION 	Implementation linked to funding.	Action agenda and urgent interventions. Enhance cross-jurisdictional boundary collaboration A systemic view of rural areas.	Action agenda, project and initiative focused Cooperation Collaboration and joint action. Rural-urban continuum and interlinked regionalism.	Coordination of socio-economic infrastructure investments.

1.4. REGIONALISM & REGIONAL DEVELOPMENT PLANNING

1.4.1. BACKGROUND

Rapid changes in global, national, regional and local economies over the last few decades have resulted in the development of *two highly unequal and widely divergent spaces*, i.e.:

- Large, densely populated, globally connected and economically strong, vibrant and robust predominantly *metropolitan areas*; and
- Distressed, spatially dispersed, economically fragile, sparsely populated and *peripheral, mostly rural, but also smaller non-metropolitan urban areas*.

Often those areas falling in the latter group were *once dynamic mining and industrial regions that lost their economic vigour* due to:

- Changing technologies and consumer tastes and preferences;
- The commodities that once gave the places their reason for existence (1) having been depleted, (2) being available at a lower price elsewhere, (3) no longer being sought after, or (4) being required in a much smaller number of form; and
- The migration of youth from these areas to the economically vibrant urban areas, both on a national and an international scale.

While this spatial-economic dualism is not new, it has become ever-more stark over the last decade with the near-universal adoption of neo-liberal economic policies, (1) even in countries with left-leaning social democratic parties in power, and (2) despite the stark and clearly visible dangers of such an approach, as so deeply and damagingly demonstrated by the Global Financial Crisis (GFC) of 2007-2009.

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Internationally, the daily hardship, growing disquiet and destabilising threat posed by those living in these distressed areas, coupled with ever-graver predictions of far more pain to come with the fully-fledged unfurling of the 4th Industrial Revolution, has seen governments in a number of countries introduce a range of support packages (e.g. financial incentives, grants and job creation programmes) to attend to this deeply disturbing challenge.

In the case of the *United States of America (USA)*, the *United Kingdom (UK)* and *Continental Europe*, a key reason for this surge in focus has been the backlash of voters in such places who:

- See themselves as 'forgotten' and 'left behind' by 'far away, distant, disinterested elites' in urban-based economic heartlands; and
- Have (1) loudly voiced their support and (2) voted-in populist leaders offering dangerous brews of economic revival, a glorious return to 'better times' and 'patriotism', laced with xenophobia, racism, sexism and machismo.

In similar-such 'forgotten parts' of *South America, Africa and Asia*, it has seen a surge in desperate and dangerous survivalist activities, including:

- The clearing of indigenous forests;
- The introduction and intensification of environmentally destructive (often illegal) mining and farming practices;
- The hunting and trafficking of threatened animal species; and
- The instalment of regional-based drug/crime cartels/gangs, often on the back of dubious extremist religious premises, as alternative governments.

While this does not suggest that the economic and social hardships and spatial isolation and exclusion faced by many of the communities living in such spaces have not played a role, the growing threat that these places and their

populations pose to even mature democracies has definitely been a major contributor to the renewed attention.

In *South Africa*, the last twenty-five years of democracy has been no stranger to a serious and consistent (1) popular, (2) political, and (3) legislative and policy concern with *distressed and economically struggling regions*, many of which were *intentionally, systematically and forcefully underdeveloped* for decades during colonial and apartheid times, i.e. the former Bantustans in rural South Africa and townships in urban and rural parts of the country. Included in this group are also:

- *Erstwhile vibrant industrial areas in metropolitan heartlands, large towns and rural-based apartheid decentralisation points* that were established and built up from the 1960s to the early 1990s behind the wall of sanctions during the apartheid era with very generous government support, and exposed with a shock to the hard realities of the global economy in the mid-1990s; and
- *Former booming mining areas* that have entered an era of economic distress, either through (1) the commodities that once were there all being extracted, (2) inertia, (3) a failure to invest in, or take on board new mining technologies, and/or (4) an unwillingness to adopt colonial mining models built on the back of highly exploitative labour practices to radically changed times and/or new trends in global commodity appetites and prices.

1.4.2. DEFINITION

Regionalism is a process that entails the recognition and delineation of (1) a space as 'a region', or (2) a series of spaces as 'regions', in accordance with a real or imagined set of:

- Social, economic, natural, topographical, climatic, cultural or political characteristics, or series of such characteristics; and/or
- Systemically related connections/flows between people and places that have led, or could lead to the creation and sustenance of a 'functional ecological unit/system'.

1.4.3. RATIONALE/S

There are many reasons for identifying, delineating and classifying space into 'regions', such as:

- *Scientific-analytical purposes*, i.e. to research (1) a specific natural or human-made feature or characteristic of an area/place, or (2) the people who live in and made, and make their lives in that area/place;
- *Socio-spiritual-cultural purposes*, i.e. to (1) connect/tie a particular group of people and their ancestors to an area/place/space, (2) remind future generations of these ties, and (3) sustain these connections;
- *Economic purposes*, i.e. to (1) develop a 'new place' around a new resource or service from scratch, such as Silicon Valley in the USA, (2) redevelop a place that has lost the original or erstwhile economic reason for its existence, and (3) manage the growth, and strengthen an already economically burgeoning area by ensuring coordination, integration and alignment of public and private sector investment and spending;
- *Ecological/Environmental purposes*, i.e. to (1) manage the use of natural resource and ecosystem services, (2) ensure conservation, and (3) prevent pollution in a specific biome, or series of related natural regions/biomes; and
- *Political-administrative purposes*, i.e. often tied to one or more of the other rationales as listed above, to (1) legally act upon, (2) control, (3)

incentivise certain activities, and/or (4) provide specific services in a delineated space.

In the case of the latter, this desire is in most cases benevolent, with the intent being to *change the social, economic, living and/or environmental conditions in a region, or set of regions, for the better*. In some cases, this may entail the privileging of a region or set of (similar such) regions above one or a series of others, to enable a weaker/struggling region or set of such regions to 'catch up'. In others, a *less benign objective* may be at play, with the intention being to territorially protect privilege or prosperity in one region or a series of such regions, which may entail the introduction of a range of measures to control/regulate the actions, interactions and movements of people and/or the flows of goods and services in, into, or from such a region, or set of regions.

As recent experience has shown, such less benevolent regionalist objectives may very readily morph into a *more-imagined-than-real 'regional identity* and be used to mobilise people behind a war cry for secession from (1) an existing larger entity, such as the nation-state, or (2) an even larger, supra-national regional grouping, such as the European Union (EU).

1.4.4. ORIGINS, EVOLUTION AND RECENT DEVELOPMENTS

The arrival and use of the term "*region*" in the fields of town and city planning, spatial planning and economic development lie in the first few decades of the twentieth century, and the birth of the new discipline of (1) "*town and country planning*" in the United Kingdom (UK) and (2) "*city and regional planning*" in the United States of America (USA). Despite their differences in name, both these traditions held the same view, i.e. (1) that places (i.e. towns and cities)

were *connected in networks* of movement of people, resources/raw products, manufactured goods and an expanding range of services, and (2) no place (i.e. 'region') was an island. Notably in this regard is the work of *Patrick Geddes*, a Scottish biologist, sociologist and philosopher⁵, who saw the city as *being part of an organic system, called "the region"*, in which there was a symbiotic relationship between the city/town and its hinterland, i.e.:

- The *city/town* provided opportunities for trade, education, manufacturing entertainment and religious activities to its surrounding rural areas while
- The *hinterland*, in turn, provided the city/town with raw products (these days referred to "*ecosystem services*") and access to nature.

This *systemic conception* of the region and its relation to cities/towns in it featured strongly in the ideas around town/city planning in the decades that followed, so much so that it became a cardinal part of the name of the discipline that would arise over the course of the 20th Century, i.e. "*Town/City and Regional Planning*".

While "the region" was for much of the first few decades of the arrival of the new discipline seen as *the setting for, or understudy of the actual area of focus*, i.e. 'the town/city', it would during the 1930s rise to prominence in its own right and in a new light, with the advent of regional planning for large geographical areas with very specific political-economic objectives, notably:

- The planning for the Tennessee Valley (river-basin) and the creation of the *Tennessee Valley Authority (TVA)* as regional planning entity, as part of the *New Deal* programme in the 1930s Depression-wrecked USA; and

⁵ Patrick Geddes is also credited as being the author of the phrase "*Think Global, Act Local*".

- Regional planning in the *Soviet Union* during the same period, as part of the collectivist development of large geographical entities from a systems perspective.

This connection of regional planning to the larger objectives of national governments would continue, and during the Second World War be used by the UK War Government to distribute the manufacture of munitions and processing of agricultural products over a wider area than just the primary cities, to spread the UK's exposure and vulnerability to German bombing raids. It subsequently became part of the UK government's planning for the rebuilding of Britain after the war and featured prominently – following the UK's example – in South Africa's then Prime Minister, Christiaan Smuts' Social and Economic Planning Council's proposals for the development of the country in the decades to follow. As such, it made its way into the regional (1) survey of and (2) plan for the *Tugela River Basin* in the then Natal Province during the late 1940s and 1950.

While not much came of the thoroughly researched and carefully considered Tugela River Basin regional survey and plan, it would, however, resurface in a very malign form, in the planning for the Bantustans, with the Apartheid government (1) conceiving of these imposed geographical and political constructs as 'self-sufficient regions', and (2) using the regional planning model to prepare a series of top-down regional and sub-regional plans in and for these territories. It would, at the same time, make its way into proposals by the Apartheid government for the development of South Africa during the 1970s and 1980s, notably in (1) a series of centrally prepared and policed statutory *Guide Plans*, and (2) the development of a racially and ethnically segregated South Africa as "*a constellation of states*" with regions, including the Bantustans, as building blocks, and not provinces.

During the early 1990s, with the negotiation for a democratic South Africa strongly underway, regions would feature in the "discussion and policy

documents" of a number of political parties, including the ANC's 1992-policy document "*Ready to Govern*". However, at the conclusion of these negotiations, "*provinces*" (and not '*regions*') would emerge as the key administrative and organisational component of sub-national space, with "District Municipalities" (DMs), in accordance with the later *1998-White Paper on Local Government*, expected to take on what could be seen as 'regional development and balancing-out-of-regional-inequalities roles'.

Since then, "the region" has also manifest in a *supra-national form*, finding expression in amongst others, the thinking around the New Partnership for Africa's Development (NEPAD) and the rebranding, recrafting and development of the Southern African Development Community (SADC). In sub-national space, the last two decades since the introduction of DMs have, however, taught that (1) there is a definite need for regional planning of functional regions, (2) DM boundaries do not always create the best spatial containers for such planning, and (3) there is a need for multiple municipal and provincial 'boundary crossings' in undertaking such planning. It is this understanding which has, amongst others, led to the introduction of the '*regional-rural development model*' in the NSDF (see also **Section 5.1.2** below). Internationally, "the region" has risen and ebbed in significance over the last roughly 120 years in accordance with a variety of social, economic and political drivers. Key amongst these drivers has been a concern with the *growing divergence in the economic fortunes, life chances and living conditions* between:

- Rapidly growing metropolitan complexes with an ever-more global influence and significance, including (1) massive primate cities and/or (2) series of burgeoning secondary cities with especially universities and high-tech industries at their core; and
- A series of (1) economically devastated former industrial and mining regions, (2) rural areas with large segments of their population of

working age having left for job opportunities in urban areas in their own countries, or in cities or on massive farms and in agro-and-aqua-businesses in other countries, and (3) increasingly more mechanised, and ever-larger-scale agricultural areas with ever-fewer opportunities for small-scale farmers.

It is especially the global shift of manufacturing jobs from the USA, the UK and Western Europe to East and Southeast Asia starting in the 1970s that led to factory/plant closures and relocations and massive job losses in 'former manufacturing regions' in the heartland of these spaces in the 1st and 2nd Industrial Revolutions. In more recent years, the advent of the 4th Industrial Revolution has fuelled further concerns about the devastating impact that this transition is (1) already having, and (2) set to have, through automation, on especially more manual, lower-skilled jobs in rural areas.

These global transitions in manufacturing and technology over the last four to five decades, in turn, have (1) given rise to major geopolitical tensions between countries and played a role in the creation of *supra-national entities*, such as the European Union (EU), the Association of Southeast Asian Nations (ASEAN) and the former North American Free Trade Association (NAFTA), and (2) also fuelled tensions within countries, such as between:

- The fast-growing south-eastern provinces of China with their global economic powerhouse-cities and its western, rural and economically struggling provinces;
- The former industrial heartlands in the 'middle' and northern regions of the UK and the former coal mining regions of Wales and the southeast of England, with London as the core;
- The dynamic and bustling north-eastern and western coastal metropolitan regions in the USA and the former industrial cities and struggling, rural interior parts (the so-called the "Flyover States") of the country;

- The metropolitan region of Paris (France) and large swaths of the more rural regions of the country;
- The economically globally connected region of Flanders in Belgium and the more rural and former coal mining region of Wallonia; and
- The by and large, economically far stronger states in the "former West Germany" and the by and large, economically far weaker states in the "former East Germany".

In all these cases, accusations – that have found their way into *mainstream political processes* and often had effects on voting patterns and the outcomes of popular votes/elections – have been made of:

- Urban elitism and snobbery, often perceived to extend into a callous disregard and lack of care for those left behind by globalisation;
- A failure to invest in and maintain infrastructure in rural areas, especially the infrastructure of the 4th Industrial Revolution, i.e. Wi-Fi/broadband; and
- Youth being 'sucked out' of already struggling rural regions, notably to predominantly urban-based universities and staying on in these or other urban areas within the country, or emigrating, further reducing the chances of economies growing in these left-behind places.

Likewise, there is a strong discourse, not necessarily admitted to, but evident especially in the comments on newspaper reports and journal articles regarding the futility of spending money in in-any-case depopulating rural areas. In terms of the factual correctness of these accusations, there are many studies that validate the perceptions regarding (1) rural youth's migration to urban and metropolitan areas and (2) the difference in connectivity and internet speeds between urban and rural places. Of late, some of those accused of urban snobbery and lack of care – notably so in the UK and the USA – have also begun to question their opinions and, in some cases, have

admitted to the validity of these views – albeit maybe, as in the most recent national UK election, to add elected members from such regions to national decision-making structures, such as the House of Commons. However, whether it is possible to turn the tide on the urbanisation of especially youth, and whether (1) massive infrastructure investment in rural areas, or (2) a more caring view on the side of urban elites of lagging former industrial/mining and rural regions and the people who live in them, will result in an economic revival in these regions, is not necessarily clear.

Over the last few months, the onset of (1) the *COVID-19 pandemic* and (2) the *resultant restrictions on movement, social interaction and economic activities*, both locally and internationally, has raised several interesting discussions of importance to the field of regional development, notably so:

- The benefits of having a strong manufacturing and services sector within the borders of a country and a region, given the disturbances in international and national movements and flows of goods and services, opening up an opportunity for the reshoring of economic activities/sectors 'lost' to other countries and regions;
- The rapidly diminishing attractiveness of densely populated urban areas during times of pandemics that spread much more rapidly in areas with greater numbers of daily human contacts, and of which COVID-19 is surely not the last;
- The possibility of settling in and working in 'the countryside' and enjoying a far more relaxed and pristine quality of life for those who can work from home;
- The importance of having a peaceful home, far-less-stressed lifestyle and attractive and tranquil surrounding area, with small towns and rural areas offering far more value and space in this regard than far pricier and far more cramped urban dwellings and settings; and

- A movement towards (1) 'eating at home', (2) growing one's own produce, which lends itself to a house with garden, and (3) consuming far healthier produce from farmers close-by, in the process also shortening food miles and creating economic opportunities in rural areas and small towns.

1.4.5. REGIONAL DEVELOPMENT STRATEGIES AND TOOLS

Government in countries and supra-national regions facing the challenge of existing and ever-widening regional imbalances have made several attempts aimed at attending to and addressing the (1) *spatial-economic chasm* and (2) growing inequality and simmering threat to social cohesion and stability that has accompanied it. These attempts included spending on and investment in:

- *People*, in the form of skills development, retraining, school feeding schemes, decentralisation of government offices, job creation programmes and grants; and/or
- *Places*, in the form of infrastructure construction, maintenance and expansion, the roll-out of Wi-Fi/broadband, the making available of land and buildings at no/low rates, marketing and provision of market access/space for products from rural areas.

There has, however, been a pattern to (1) the *prevalence* of these kinds of spending/investment, (2) the *seriousness* with which they are approached and undertaken, (3) their *specific type* and *mix* (i.e. directed at either people or places, or both), (4) their *size, scale and duration*, and (5) their *spatial focus*. In general, this pattern has been closely related to the *political home* of the governing party or parties in coalition governments, with:

- More *left-leaning, social democratic/socialist parties* being far more (1) vocal in their manifestos about the need for such interventions,

- The building of *completely new capital cities* outside existing major urban areas, such as in Nigeria, Brazil, Indonesia, Malawi, Turkey and Egypt.

At *sub-national scale*, there have been numerous attempts at achieving balance and convergence between economically strong and growing areas/regions and lagging/struggling areas/regions, such as:

- The massive reconstruction and redevelopment programme undertaken by the *German Federal Government* in the 'former East German states' in the country, with the aim of achieving convergence between this and the 'former West German states';
- The *Republic of China's* massive regional development programme aimed at ensuring balance between the struggling, more rural western half of the country and the fast-growing eastern half;
- The numerous attempts by successive governments in the *UK* to support the spreading of economic activities beyond the dominant Southeast region into the English Midlands and Northern Regions, Scotland and Wales;
- The plans by the *Rwandan government* for the development of six secondary cities (Rusizi, Rubavu, Musanze, Nyagatare, Muhanga and Huye) outside the capital Kigali;
- The myriad of programmes and initiatives in the *USA* with the aim of rebuilding small towns and former industrial and mining regions in the country; and
- The attempts in *Australia* to ensure the development of the country beyond the coastal areas and large cities.

While most of these kinds of initiatives are long-term and sometimes even do not have definite timeframes, they often include time-bound programmes with *three to five-year time horizons*. While these shorter timeframes do make

and (2) interested and invested in putting State resources to the task; and

- More *right-leaning, neo-liberal/free market-focused parties* at times recognising, but in practice generally paying very little policy or monetary attention to such interventions, essentially seeing spatial-economic imbalances as '*part and parcel of the working of the market mechanism*'.

In those countries and regions where attempts have been made to attend to these imbalances, a huge body of material has been generated that provides a valuable store-room of possible interventions for use in the Karoo Region, to which the discussion now turns.

Regionalist tools have been deployed in attempting to generate and/or spur on spatial and economic development at several scales, ranging from the supra-national scale down to provinces/states, districts and municipalities. At *supra-national scale*, these included programmes focused on regions spanning national boundaries and including sizeable segments of nation-states, such as the EU's:

- *Structural Funds* with its massive transfer of funds for the development of lagging and struggling regions in the pursuit of territorial balance and social cohesion; and
- *Common Agricultural Policy (CAP)* with its associated enormous subsidies in support of farming and related activities, notably tourism, in rural areas.

At a *national scale*, it has been marked by attempts to restructure the spatial and economic footprints of countries through:

- The development of regions/areas outside capital cities, by amongst others, the *decentralisation of government functions to secondary cities and towns*, such as in the Republic of Ireland and Mexico; and

for focus and urgency, they do not necessarily assist in the realisation of the outcomes in such regions within their limited periods of investment and/or spending. Nor do these most-often point-based, piecemeal projects and programmes assist in the *'larger far more comprehensive regionalist project'* that requires a far longer period of focus and attention, starting with:

- The building of *'soft platforms'* of solidarity and support between stakeholders, key role-players and communities;
- The *gathering* of regional data, statistics, stories and experiences;
- The *reaching of shared, high-level agreements* on the needs, objectives and desired future for the region;
- The (1) preparation of *multi-year and multi-level programmes* for the development of the region, and (2) the *allocation of the responsibility* for giving effect to the programmes; and
- The *implementation and outcomes based-performance measurement and management* of the programmes.

While this does not suggest that there is no point in isolated programmes with short-term time horizons, it does require those thinking about such programmes to consider (1) *the impacts* that they hope to achieve/make with their programmes, and (2) how these can be *expanded upon and 'carried forward'* into other ventures and programmes once they come to an end.

1.4.6. INSTITUTIONAL LANDSCAPE

The institutional landscape of the Karoo Region at the time of writing the KRSDF was characterised by a *multitude of institutions* that operate at a wide range of levels, each with its own mandate, sometimes under a shared umbrella. These include:

- Formal government institutions/organs of State in all three spheres of government;
- Formal intergovernmental structures in and between the three spheres of government;
- A formal government-related programme and relates set of institutions in the form of SALGA's STR Programme, which also has small national town, rural development and cross-border regional planning matters at heart;
- A 'formalised' NGO structure organised around Karoo-wide, as well as specific issue/concern, sector, place and community issues and causes;
- Traditional leadership structures, some of which are disputed; and
- A range of smaller interest groups and associations that are generally very 'local place-bound' and not well documented, e.g. an interest group supporting development in one specific town.

The *main characteristics* of this wide-ranging institutional set of arrangements and structure are:

- **Multiple points of authority (powers and functions), decision-making and accountability:** This includes the constitutional split in power and functions between national, provincial and local government. This already multi-focal system includes parastatals, government agencies and government associations, such as SALGA. Interest groups in the NGO, academic and private sector further add to the complexity.
- **Multiple 'levels' of authority, decision-making and accountability:** Institutions range from (1) fully mandated and accountable institutions, such as municipal councils and national and provincial government departments, to (2) intergovernmental coordinating forums without implementing powers or accountability, and (3) NGOs with internal and

external stakeholder support, but no formal accountability (with the possible exception of accountability to donors). Fully accountable institutions are bound by official strategy, performance monitoring and budgeting processes, but these (1) in most instances do not have a specific spatial focus on the Karoo Region, and (2) allow a great deal of flexibility in income generation and expenditure.

- **‘Different’ spatial focus areas:** Most of the institutions and intergovernmental forums are bound to official administrative boundaries. Organisations that focus specifically on the Karoo Region are limited to (1) SALGA’s STR Programme, which has been significantly strengthened by the formal declaration of the Karoo as a Region in terms of SPLUMA, and (2) a number of NGOs. The Karoo Region is, in many cases, the ‘sparsely populated hinterland’ of provincial and national spaces/areas of focus/attention.

- **Non-regional prioritisation of government resource allocation:** The national and local fiscus is allocated according to national, provincial and municipal priorities. These do not (1) necessarily align with each other or (2) correspond with specific regional priorities. Where ‘allocation criteria’ are quantity or scale-based, the sparsely populated Karoo Region, due to its relatively small and spatially distributed population, often does not feature as a priority. The NGO sector is reliant on its own income and donations, with each entity having its own specific area of focus, which essentially is also the reason for its existence and base for its funding, and as such does not necessarily lead to coordination with other such entities. Limited budgets, long travelling distances, and focus on specific, often very localised issues also do not foster such coordination.

- **Short to medium-term political mandates:** All three spheres of government are tied to the political terms of office of elected representatives, which generally leads to (1) a five-year change in leadership, and related (2) shifts in national and provincial policy focus, and in many instances, (3) shifts in the focus of planning attention and resource allocation to specific issues and/or areas/regions, districts, towns and wards.
- **Complex processes with limited regional input and authority:** Programmes and processes with a direct implication for the Karoo Region are often highly complex and leave little final decision-making power and control to institutions that are ‘closer to the ground’, despite the impact of many initiatives taken ‘further away from the ground’ having far-reaching implications at the regional and local scales. Examples include (1) the granting of mining rights, (2) the SKA, and (3) the permitting and authorisation processes related to the Renewable Energy Independent Power Producer Procurement Programme and the massive solar panels and wind turbines that they have brought and bring to the region.
- **Lack of institutional capacity:** In a sparsely populated, arid region marked by a few isolated points and thinly-spread corridors of high economic output, such as the Karoo, natural and financial resources are not the only items in short supply: Many of the institutions in the region suffer from a lack of both (1) finances and (2) human resource capacity. This further erodes the decision-making and implementing power of local institutions, leading to the under-representation of regional issues in provincial and national forums. Added to this is (1) the small size and hence negotiation power of the institutions in the region, and (2) their distance away from the large metropolitan areas of the country in which most decisions are taken.

Within this context the need has been identified to put in place an overarching spatial governance mechanism for the Karoo Region to drive initiatives of regional interest. Proposals for spatial governance is contained in Part 5.

PART 2: POLICY AND PLANNING CONTEXT



2.1. POLICY AND PLANS: STRATEGIC DIRECTION

In this section, the strategic direction provided by existing plans and spatial policy with an impact at regional scale will be considered.

2.1.1. VISION AND IDENTITY

As a starting point toward defining the strategic direction of the KRSDF, the key themes presented in national and provincial policies and plans were considered as direction-giving elements.

The *vision* for a future South Africa, as set out in the NSDF, emphasises:

- Sharing and transformation;
- Inclusivity, sustainability and competitiveness; and
- Unity and collaborative action.

The *mission statement* of “*making our common space together*” further entrenches the concept of ‘shared space’. In this context, the Karoo Region must find its own identity and development vision as (1) a distinct yet (2) integrated part of the ‘national shared space’.

A summary of key themes and elements in national and provincial vision and mission statements are presented in **Table 3** below.

Figure 3: NSDF Vision



“All our People Living in Shared and Transformed Places in an Integrated, Inclusive, Sustainable and Competitive National Space Economy”

The accompanying **Mission Statement** reads as follows:

“Making our Community Desired Spatial Future Together Through Better Planning, Investment, Delivery and Monitoring”

Table 3: Vision Elements: Current Planning

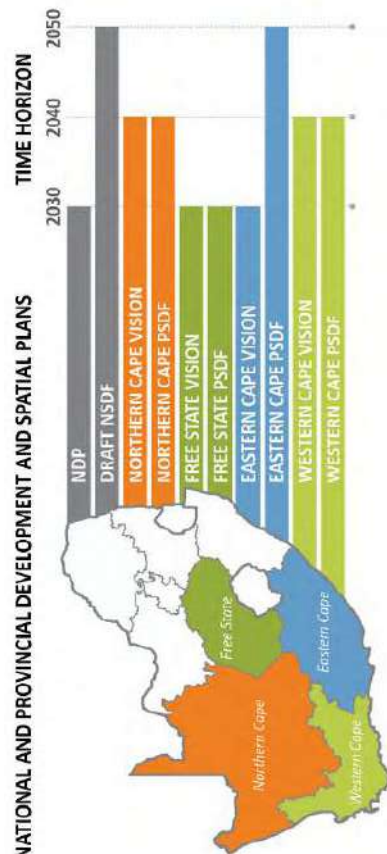
Theme	National	Eastern Cape	Free State	Northern Cape	Western Cape
Innovation, connectivity, productivity	Facilitate diversification beyond current reliance on traditional commodities and non-tradable services. Intensification of industrialisation. Knowledge economy. Export growth. Beneficiation and value-addition: minerals and other natural resources. Low carbon economy. Job creation.	Innovation. Industry. Productive agricultural precincts. Global, provincial and local economy.	Transformed economic ownership and control patterns. Inclusive economic growth and development.	Modern space economy. Development and prosperity.	Innovation-driven. Connected. High opportunity.
Collaboration, participation	Shared spaces, common desired future. Higher levels of participation of historically disadvantaged people and marginalised regions in the mainstream of the industrial economy.	Participatory local development action.		Key concepts: Integration and cooperation. Transparent government.	Collaborative society.
Human capital, social justice	Labour absorption capacity of the economy. Labour-absorbing industrialisation.	Children and youth as the cornerstone for the future. Capable citizens. Conscientious institutional agents.		Social justice and equity. Skilled and capable workforce.	Highly skilled society.

Theme	National	Eastern Cape	Free State	Northern Cape	Western Cape
Consolidation, clustering, connection,	 Strengthening linkages between primary agriculture, mining and manufacturing sectors	 Urban and rural human settlements clustered in urban settlement regions and corridors. Network of strategic transportation corridors.	 Coherently structured matrix of sustainable land uses. Equitable access to basic services.	 More inclusive development. Integrated provincial and national infrastructure network.	 Capitalise, connect, consolidate and cluster.
	Beneficiation of natural resources. Conservation. Sustainability. Protection and management of the National Ecological Infrastructure Network	Managed ecological natural resource areas.	Protected environment. Lasting responses to climate changes.	Responsible use of natural resources. Resilient environmental infrastructure.	Resource-efficient.

The elements captured in these vision statements provided key inputs in the process of defining the vision of the KRSDF.

The second consideration is the *time horizon* of the KRSDF. Existing national and provincial development plans and spatial plans have different planning horizons, ranging from 2030 to 2050.

Figure 4: Current Planning Horizons



For the planning horizon of the KRSDF, a 'phased planning horizon' was used that (1) serve both purposes of being a 'visionary' and 'implementation-focused instrument' and (2) enable alignment with the existing planning instruments. As such, has different time horizons for each of the following:

- Long term vision and regional identity: 2050; and
- Spatial strategies catalytic interventions targets toward the short, medium and long term (2023 – 2050)

Vision & Identity: Guiding Concepts for Inclusion in the KRSDF

Although there is a high level of alignment between the concepts captured in the various vision statements, due to the different spatial area of focus in the respective plans, these are not necessarily tailored to emphasise the uniqueness and identity of the Karoo Region.

The key elements emerging from the development visions are centred on a range of issues that are relevant to the Karoo Region, but will have to be differentiated to be more specific to the characteristics, potential and issues of the Karoo:

- Innovation, connectivity, productivity;
- Collaboration and participation;
- Human capital and social justice;
- Consolidation, clustering, connection and accessibility; and
- Conservation, natural resource use and climate.

2.1.2. TRANSFORMATION GUIDANCE

The NDP provides overall direction to national policy, including spatial policy direction as contained in the NSDF. It focuses on 'three levers' to support development which are all directly applicable to the Karoo Region, i.e. (1) ensuring inclusive growth, (2) developing the capacity of people, and (3) a capable state.

The NSDF (1) interprets the development direction set in the NDP spatially, and (2) sets spatial priorities for the long term transformation of the South African spatial landscape. The national spatial concept as provided in the NSDF recognises the Karoo Region as a sparse, arid agricultural region traversed by key national movement lines and served by regional development anchors.

At the same time, the Karoo Region is recognised as a national priority, and as such forms part of the strategic implementation focus area of the NSDF i.e. the "Arid Innovation Region" NSAA. A section on the northern boundary of the Karoo Region, including Boegoebaai, Springbok and Aggeneys, is also included in the "Northwestern Transition and Economic Transformation Region" NSAA and a section in the southwest of the Karoo Region is included in the "Berg/Breede National Resource Risk Area" NSAA. This implies that the Region will be the focus on national scale implementation prioritisation in respect of all three the NSAAs.

Figure 5: NDP Targets and Levers (NSDF)

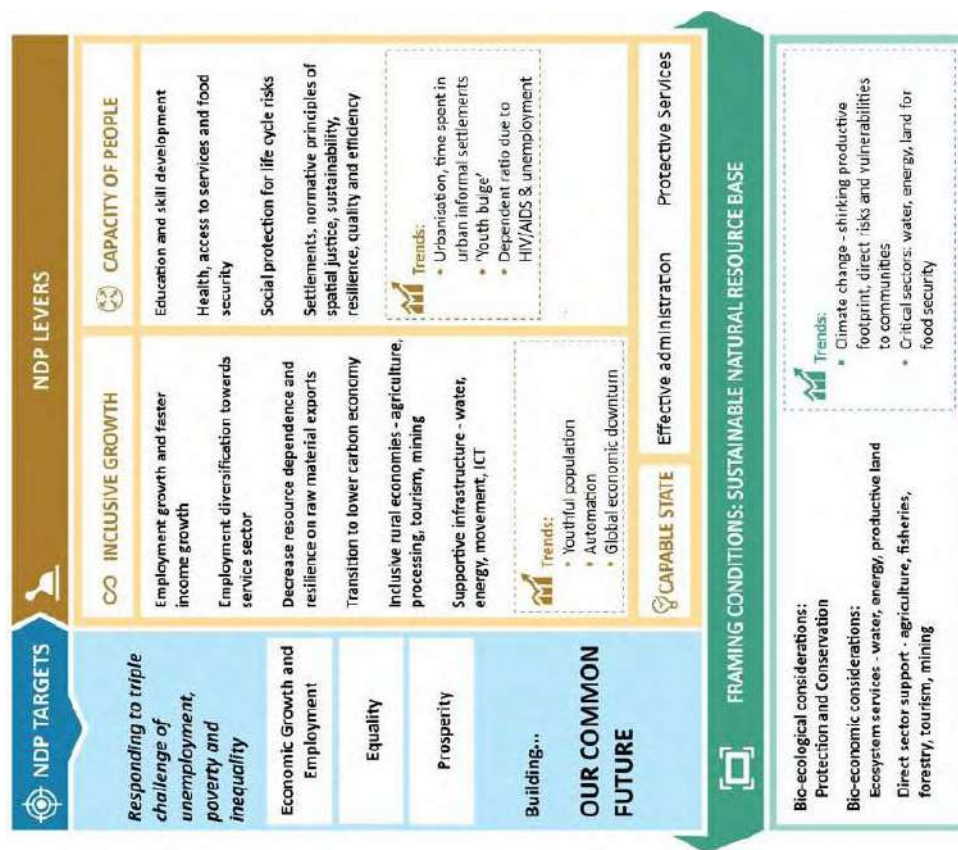


Figure 6: NSDF Spatial Development Pattern



Figure 7: NSDF Arid Innovation Region

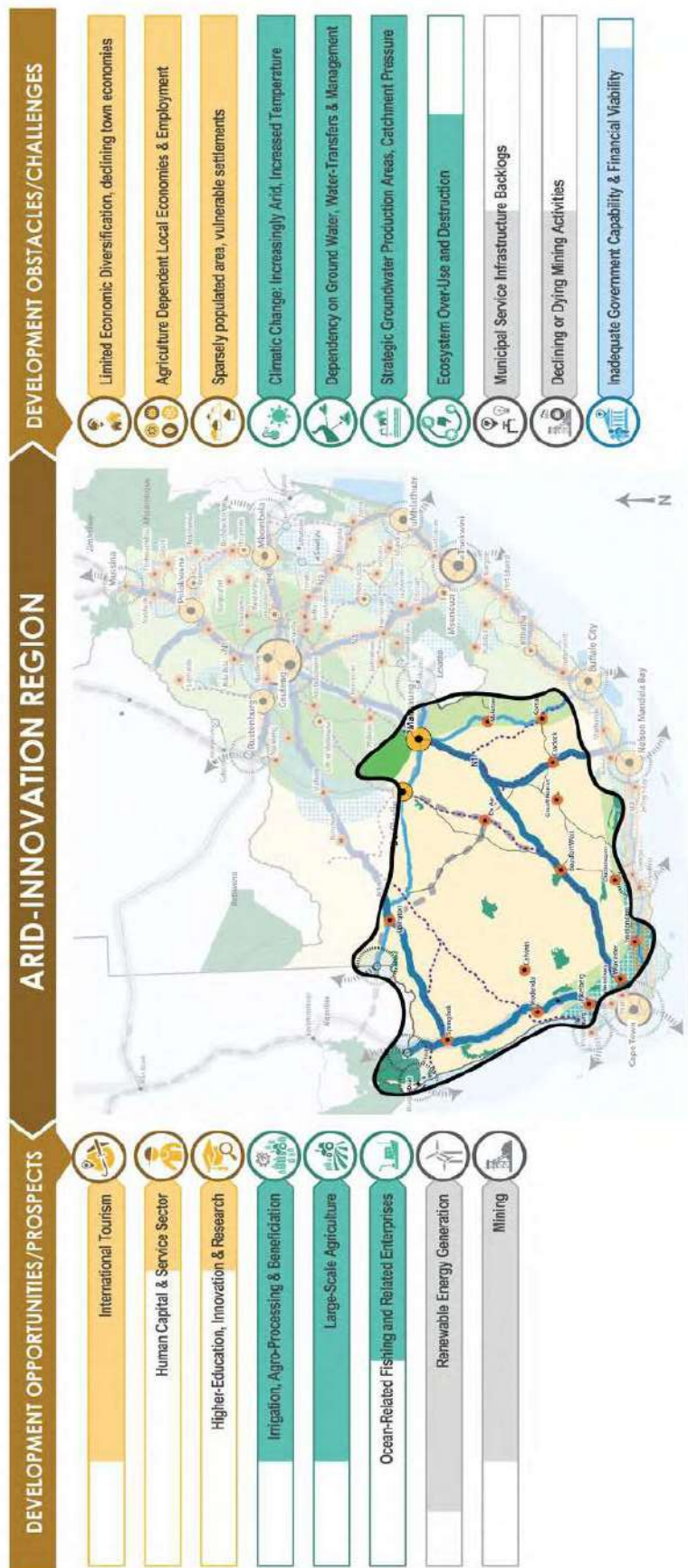


Figure 8: Berg and Breede River Catchment NSAA

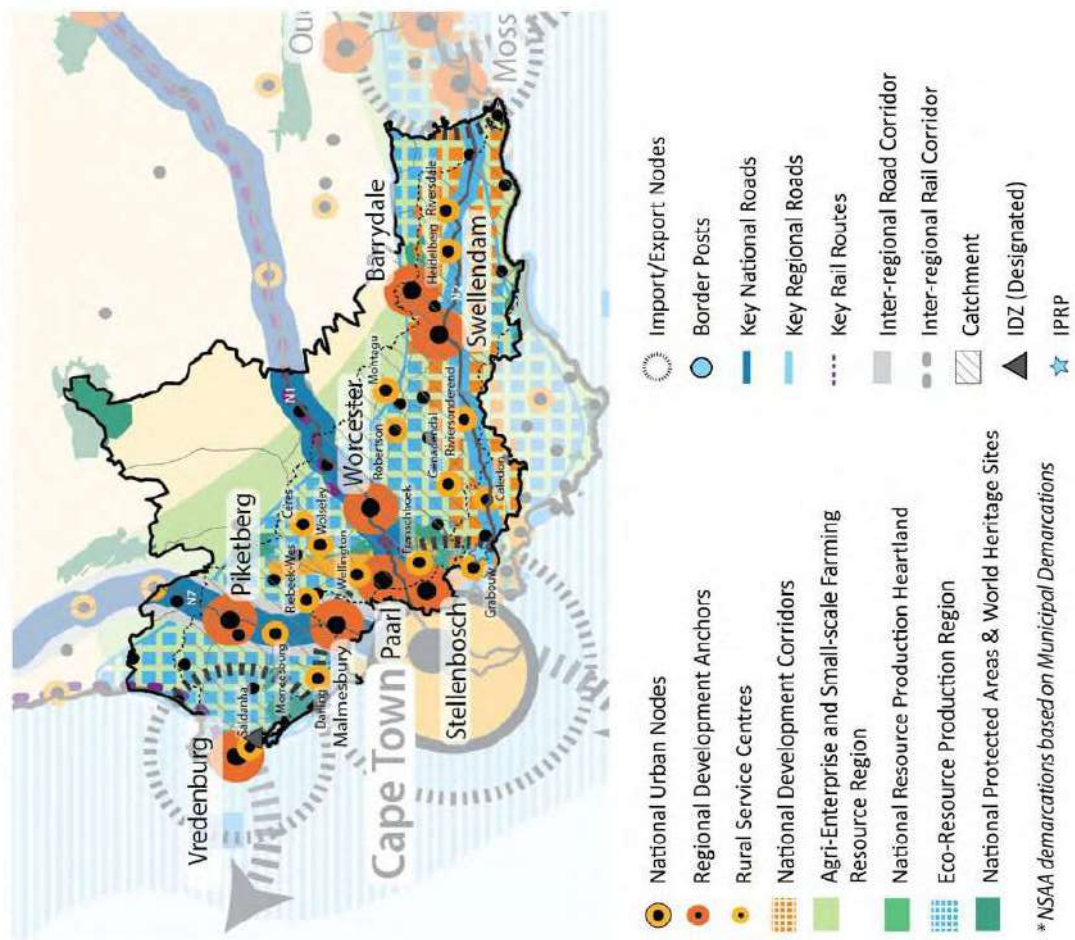
BERG AND BREEDE RIVER CATCHMENT

Table 4: Provincial Transformation Guidance

Eastern Cape 	Regions including metropolitan regions in the current rural landscape should also serve as gateways into the province. Connectivity between places is prioritised. A specific focus is placed on land availability, tenure and demand for land, which do not emerge strongly in the spatial plans of the other three provinces. The Eastern Cape's approach to rural development is guided by the objective of growing small towns to limit migration to big cities. Small town decline in the western part of the province (i.e. the area in which the Karoo Region is located) is recognised as an issue. The need for small town regeneration and focus on a peoples' economy is emphasised.
Free State 	The <i>Free State PSDF</i> has an approach to spatial transformation which corresponds very closely to the Regional-Rural Development Model as put forward in the NSDF. In the Free State context, the concept is more formally structured according to a series of Spatial Planning Concept (SPC) areas derived from UNESCO's biosphere reserve zoning model, including: (A) core, (B) buffer, (C) agricultural areas, (D) urban related, (E) industrial areas, and (F) surface infrastructure and buildings. Key concepts underlying this model include: • Natural Resources areas, connected through a network of functional ecological corridors; • Productive agricultural regions pivoting around the core agricultural resources; • Sustainable human settlements developed in accordance with set priorities; and Primary economic development corridors and nodes supported by sustainable and adequate bulk services and transportation network linking the Free State globally, nationally and provincially.
Northern Cape	The <i>Northern Cape PSDF</i> is based on the same set of Spatial Planning Concept Areas as the Free State PSDF and a similarly integrated and connected approach to rural development. This province, which includes a large part of the Karoo Region, is a sparsely populated, arid rural area.

	In this context, the focus is on the development and reinforcement of a system of varied growth centres. The <i>Provincial Growth and Development Plan</i> supports the importance of small towns, stating that small towns and rural communities must become Economic Transformation, Growth and Development drivers through diversification, skills development, infrastructure development, optimised resource utilisation, the empowerment of vulnerable groups, and investment attraction.
Western Cape 	Similar to the Free State and Northern Cape, although not based on the same land use model, the <i>Western Cape PSDF</i> supports the following settlement strategies: • Invest in regional service centre towns to support and integrate with the rural hinterlands, prioritising investment in housing, health and education in these towns, rather than dispersing investment to villages and hamlets; • Develop regional rural development frameworks to align settlement planning with large scale infrastructure investments (oil and gas, dams, regional movement routes, etc.); • Use Information and Communication Technology (ICT) and periodic social services to reduce the need for rural dwellers to travel to services; and • Support investment of provincial resources and finance in existing settlements in line with a clear understanding of their regional role and potential, and limit unproductive or potentially abortive investment in poorly located, isolated new developments.  The Western Cape Rural Areas Guideline uses an SPC system similar to the Free State and Northern Cape, with the Core and Buffer areas aligning to CBAs and CSAs.

2.1.3. HERITAGE AND CONSERVATION

The conservation, use and management of the natural environment in the form of resources for the primary economic sector and ecosystem services in support of human activity are well entrenched in national and provincial planning. A strong legislative framework exists, and both national and provincial spatial plans include detailed spatial references to (1) different classes of protected and sensitive areas and (2) strategic natural resources, e.g. strategic water sources, agricultural land and mineral resources. Key aspects include:

- **The protection of the natural environment:** This is supported by various pieces of legislation and related resource planning and management tools, including the National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA), provincial scale conservations plans identifying Critical Biodiversity Areas and Environmental Support Areas, the work and tools of the South African National Biodiversity Institute (SANBI), including the national list of threatened ecosystems, national vegetation map, etc.
- **Natural resources for human development:** The NSDF recognised the National Ecological Infrastructure System as one of the National Spatial Development Levers. Similarly, the National Water Resource Strategy 2024 focuses on equitable and sustainable access and use of water by all South Africans while sustaining the national water resource.
- **Climate change threats and considerations:** The Karoo Region is being, and will be, heavily affected by climate change. It is an area that will experience and is already experiencing (1) an increase in temperature, (2) a decrease in rainfall in some parts, mostly in the periphery of the region, and (3) an increase in extreme rainfall events

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The Guideline also provides land reform guidance in respect of issues such as agricultural projects, small scale farming and security of tenure, which could serve as input into the KRSDF where relevant.

Transformation Guidance: Guiding Concepts for Inclusion in the KRSDF



National and provincial development and spatial planning documents recognise the rural region as an integrated system of towns, settlements and productive rural areas. The importance of small towns and the connectivity between the parts of the system is recognised in all cases. As guidance for the KRSDF, the following concepts are important:

- The importance of *small rural towns*, as well as *larger rural towns/development anchors*, not only as service nodes for local communities, but also as points of connection, distribution and value addition in the rural economy;
- *Rural economic transformation* requires more focus than what is provided for it in the existing planning documents. For the specific context of the Karoo Region, more exploration is required of the economic/developmental role of different rural settlements, as opposed to just focusing on a hierarchical service typology. Settlement development and social service provision should be linked to functional rural regions/rural production regions; and
- Access to land and land reform within a rural development context, such as in the Karoo Region, requires more focus than it has received in the existing planning documents.

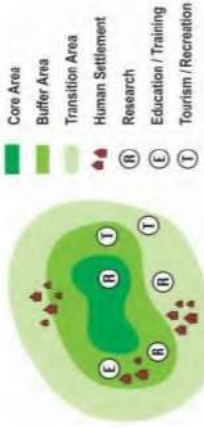
Karoo Regional Spatial Development Framework

in central parts of the region, which has severe implications for infrastructure planning, water availability and flooding.

- **Move towards a low carbon economy:** The NDP's focus on a low carbon economy is of great significance for the Karoo Region as a region with high potential for alternative/Green energy generation.
- **Cultural and historical heritage:** This is an important consideration in the Karoo Region, ranging from archaeological assets to more recent human history and unique cultural identity. The provisions of the National Heritage Resources Act (Act 25 of 1999) should be considered in the region.
- **Specific regional threats:** Mining activities, such as Hydraulic Fracturing and Coal Bed Methane Extraction, are addressed in national policy. In terms of the national water resources strategy, it is stated that the Department of Human Settlements and Water Affairs and Sanitation will expand the regulatory framework to ensure that the limited available water sources in arid/dry areas, such as the Karoo, are protected from exploitation and pollution.

All four provinces recognise the importance and potential role of the natural environment in their planning, as set out in **Table 5**.

Table 5: Provincial Environmental/Heritage Considerations

Eastern Cape 	The PSDF recognises the potential implications of climate change, which will be worse for the dry western part of the Province, which forms part of the Karoo Region. Its approach is to ensure the protection of existing resources to ensure sustainability and growth of sectors. It also delineates specific agricultural corridors.
Free State and Northern Cape 	Both these provinces recognise environmental capital in support of human development. Natural resource and environmental considerations are an integral part of provincial spatial planning in both provinces, with the land use classification model used in both PSDFs based on UNESCO's biosphere reserve zoning model as advocated by the MaB Programme. 
Western Cape 	The Western Cape PSDF places a very strong focus on the natural environment, with the following themes addressed in detail: (1) Biodiversity and ecosystem services; (2) inland water, oceans and coasts; (3) soils, agricultural and mineral resources; (4) resource consumption and disposal; and (5) landscape and scenic assets. Heritage and historical resources are also recognised and planned for.

	The Western Cape Rural Areas Guideline is strongly environmentally based in its provision for core and buffer areas, with a similar approach to the Free State and Northern Cape PSDFs.
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Heritage & Conservation: Guiding Concepts for Inclusion in the KRSDF

Environmental considerations emerge strongly as a key issue for the Karoo Region, with the following requiring further exploration in the KRSDF:

- Climate change modelling and its implications for the natural environment, human activity and resilient settlements in the region;
- The application of the UNESCO model as a practical tool to consider natural assets and services in spatial planning;
- The role and protection of heritage and historical resources, both culturally, politically and economically;
- The promotion of sustainable economic activities and opportunities for contributing carbon credits in the national economic context; and
- Mapping and consideration of implications for other regional potentials and local communities of activities that may have an 'active negative impact' (e.g. fracking) or a 'passive negative impact' (e.g. the SKA area).

2.1.4. GROWTH, INNOVATION AND CHANGE

The NDP aims to address the triple challenge of poverty, inequality and unemployment through inclusive economic growth. The challenge to be addressed by the KRSDF will be translating the objective of inclusive growth into a tangible spatial strategy based on the Karoo's unique set of potentials, resources and competitive advantages, as set within the context of poverty and small, isolated communities spread over a vast, largely arid landscape.

Table 6: National Policy Focus: Growth Sectors

Integrated National Export Strategy 2030 (INES)	Industrial Policy Action Plan 2018/19 – 2020/21	Common Priority Sectors: INES / IPAP
Priority export sectors: • Advanced manufacturing; • Aerospace and defence; • Agro-processing (including food, beverages and furniture); • Automotive related; • Boatbuilding and associated services; • Clothing, textiles, leather and footwear; • Cultural and creative industries; • Green industries;	Priority sectors: • Advanced Manufacturing; • Aerospace and Defence; • Agro-Processing; • Automotive; • Business Process Services; • Clothing, Textiles, Leather and Footwear; • Green industries; • Metal Fabrication, Capital & Rail, Transport Equipment; • Plastics, Pharmaceuticals,	Priority Sectors: • Advanced Manufacturing; • Aerospace and Defence; • Agro-Processing; • Automotive; • Clothing, Textiles, Leather and Footwear; • Electro-Technical; • Green Industries; and • Metal Fabrication, Capital & Rail, Transport Equipment.

previously disadvantaged while still considering the needs of larger potential and established exporters.

The *National Industrial Policy Framework (NIPF)* has four strategic industrialisation objectives:

- Restructuring the economy and reversing the prospect of deindustrialisation;
- Moving to a more value-adding, labour-intensive and environmentally sustainable growth path – especially in globally competitive, non-traditional tradable goods and services;
- Shifting the focus of economic activity towards historically disadvantaged people and regions; and
- Contributing to comprehensive industrial development in Africa (primarily through infrastructure development, increased industrial productive capacity and greater regional integration).

The *Industrial Policy Action Plan 2018/19 – 2020/21 (IPAP)* recognises that the labour absorption capacity of the economy must be taken very seriously and tackled with great urgency, beginning with a concentrated focus on sectors like agro-processing and, amongst others, the components value chain. Furthermore, it states that these initiatives must be consciously and creatively aligned with finding new areas of employment directly opened by the Digital Industrial Revolution. Priorities are in the fields of:

- Beneficiation (minerals);
- Infrastructure development – rail transport equipment and renewable energy sectors;
- Supranational Regional (SADC) industrial integration;
- New export markets – with a particular focus on boosting value-added, processed agricultural exports to net food-importing countries in the Near and the Far East and the Gulf States;

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Integrated National Export Strategy 2030 (INES)	Industrial Policy Action Plan 2018/19 – 2020/21	Common Priority Sectors: INES / IPAP
• Electro-technical (including software and goods); • Metal fabrication, capital and rail transport equipment; • Plastics, pharmaceuticals, chemicals and cosmetics; and • Services.	• Chemicals and Cosmetics; • Boatbuilding and Associated Service Industry; • Forestry, Timber, Paper, Pulp and Furniture; • Mineral Beneficiation (Upstream and Downstream); • Advanced Materials; • Aquaculture; • Electro-technical industry; and • White Goods.	

Of special significance to the Karoo are the following:

- While it is predominantly the major players (i.e. the so-called “super-exporters”) that are responsible for a significant share of a country’s exports, it is essential for the Karoo Region to strike the right balance in terms of catering for the needs of the major exporters, while also *assisting the development of new and upcoming incumbents*; and
- The *National Exporter Development Programme* of 2013 is implemented with the aim to expand the exporter base in South Africa and increase exports in general, but especially of those products and services that add value and contribute to employment and the green economy. The target group is small, micro and medium enterprises (SMMEs), both (1) generally and (2) drawn from the ranks of the

Karoo Regional Spatial Development Framework

- Localisation and supplier development (where “local” means “national” as opposed to international); and
- BRICS – trade, cooperation and funding.

The first priority revolves around sectors that have been identified as strategic sectors to grow from a low base, including (1) *high-employment sectors*, such

as business process services and agro-processing, and (2) *high-tech sectors*, like Green industries and advanced manufacturing.

An overview of priority IPAP sectors since 2010 reveals the persistence of twelve key sectors:

Table 7: IPAP Priority Sectors

Sectors	2018/19-2020/21	2015/16-2017/18	2014/15-2016/17	2013/14-2015/16	2012/13-2014/15	2011/12-2013/14	2010/11-2012/13
Advanced Manufacturing							
Aerospace and Defense							
Agro-Processing							
Automotive							
Business Process Services							
Clothing, Textiles, Leather and Footwear							
Green Industries							
Metal Fabrication, Capital & Rail, Transport Equipment							
Plastics, Pharmaceuticals, Chemicals and Cosmetics							
Boatbuilding and Associated Service Industry							
Forestry, Timber, Paper, Pulp and Furniture							
Mineral Beneficiation (Upstream and Downstream)							
Upstream and Midstream Oil and Gas							
Advanced Materials							
Aquaculture							
Biofuels							
Cultural and Creative Industries							
Nuclear Energy							
Electro-technical industry							
The South African software industry							
Tourism (and links to cultural industries)							
Metering Systems							
Electrical and Telecoms Cable Industry							
IT Equipment							
Public Residential Electrification Programme							
Set-Top Box							

Sectors	2018/19-2020/21	2015/16-2017/18	2014/15-2016/17	2013/14-2015/16	2012/13-2014/15	2011/12-2013/14	2010/11-2012/13
White goods							

Provincial sectoral focus in spatial and development planning is as follows:

Table 8: Provincial Sectoral Focus

Eastern Cape	Free State	Northern Cape	Western Cape
 • Agriculture. • Tourism. (Applicable to the western rural area that is part of the Karoo Region. This province has substantial other economic sectors that do not reach into the arid rural areas, e.g. the automotive industry.)	 • Mining: Reuse of infrastructure, small scale mining and rehabilitation. • Agriculture: Niche products, irrigation/more intensive vs dry/extensive, agriculture-related industrial development, e.g. silos, wine cellars, packing facilities. • Energy/Fuel: Solar, hydro-power, carbon credits and bio-ethanol. • Tourism: Entrepreneurial opportunities, scenic tourism. • Corridors: Focus on the northern/eastern Free State). • Transport and distribution.	 • Agriculture and agro-processing. • Mining and mineral beneficiation. • Tourism market development (focus on eco-tourism). • Development of the energy sector. • Manufacturing and trade. • Competitive infrastructure development. • Innovation and the knowledge economy (including the astronomy sector). • The maritime economy. The importance of skills development is also highlighted. The PGDP highlights the beneficiation of primary products and the industrialisation of natural resources.	 • Agriculture: Commercial agriculture, focused primarily in the existing intensively farmed areas and small farmer development in proximity to settlements. • Agri-processing and agri-tourism. • Niche manufacturing: Primarily settlement based. • Natural gas and renewable energy • ICT and broadband: Coverage extends across urban and rural areas. • Tourism: In both urban and rural areas, based on regional tour routes, themed and focused on outdoor activities. • Financial infrastructure. • Green jobs (rehabilitation of natural assets, responsible tourism and the waste sector).



Growth, Innovation & Change: Guiding Concepts for Inclusion in the KRSDF

Key economic sectors for further exploration:

- Agriculture: Niche export products, irrigation and large scale farming, agri-industries and agro-processing;
- Energy: Renewable energy (solar, wind, hydro), bio-fuels (e.g. bio-ethanol), carbon credits;
- Tourism: International and local, niche eco-tourism, cultural/archaeological/historical tourism, and adventure tourism;
- Mining and beneficiation of mineral products;
- Higher education and research;
- Ocean economy: Fishing and related enterprises; and
- Approach to traditional sectors to be viewed from the perspective of the Green Economy and the Fourth Industrial Revolution, including the concept of Green Jobs.

Supportive infrastructure considerations:

- Expansion of ICT network and access to communication technology;
- Water resource planning and alternative water sources;
- Alternative energy generation, for example, the Electricity Transmission Development Plan (2019 – 2028): states that “the traditionally weak radial transmission network, high demand growth together with the high potential for the development of generation from Renewable Energy Sources (RES) makes the Northern Cape the centre of network development within activities within this planning horizon”; and

- Supportive economic infrastructure including roads and rail: The provisions of the South African National Infrastructure Plan 2032.

Important issues to address in considering the development and growth of the regional economy of the Karoo include:

- Issues of scale;
- Matching of supply and demand-side players to ensure long-term sustainability;
- Ensuring access to information and guidance for regional exporters;
- Strengthening inter-governmental coordination and capability: Coordination and alignment are crucial to ensure industrial policy’s successful implementation, especially when economic growth and development are dependent on multiple factors and actors, including specifically the dialogue and interface between the private sector and the government;
- Aligning economic policies, e.g. trade facilitation, competition policy, small business development, investment promotion and facilitation, higher education, infrastructure development and macroeconomic policy, amongst others, become critical, especially as some of these policies are driven and implemented by different agencies and government departments;
- Strengthening developmental compact with social partners: To some extent, the contestations in economic policy have restricted the collaborative spirit and trust between especially government and business. For an industrialisation agenda to be truly effective and transformative, all stakeholders must agree on the objectives of economic development and the roles and requirements of each to achieve these, i.e. a developmental compact; and

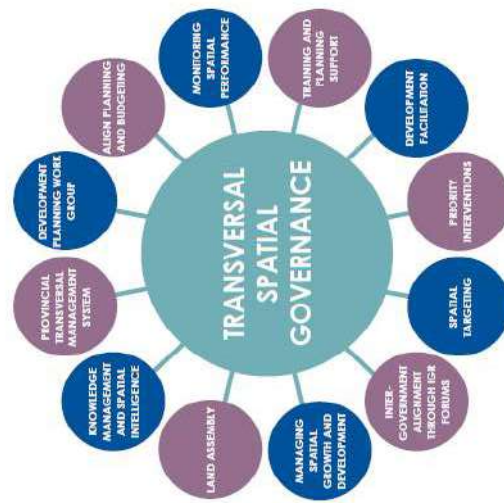
- Prioritising sectoral interventions and objectives in the Karoo Region: South Africa's industrial policy takes place in a highly fiscally contested space with multiple pressing concerns (e.g. education, health, etc.), a tightly constrained budget, and divisions within government about the scale and allocation of spending, industrial policy cannot be used to transform every aspect of the economy all at once. A complicated process of sectoral targeting and prioritisation will be needed. While this is well established through the IPAP, hard questions still need to be faced on how much commitment is needed to see real change. As a first step, Government needs to strengthen the differentiation between the objectives of different interventions, in particular between those that are meant to overcome strategic blockages in sectors and those that are trying to transform them or make them more inclusive structurally.

All of the above implies that both a bottom-up and a top-down approach are needed to (1) marry national policy with regional realities and (2) determine what push and pull factors should be focussed on to ensure sustainable growth and upliftment of the region.

2.1.5. COLLABORATIVE ACTION

This concept is at the heart of key initiatives in the development of the Karoo Region, i.e. (1) its proclamation as a region, (2) the development of the RSDF, (3) the regional approach to small town regeneration, and (4) the organisation of its non-governmental sector around specific burning issues. Collaborative concepts similarly feature very strongly in national development and spatial policy, starting with the NDP plotting the path for “our common future”.

This drive is also reflected in *provincial planning*. In the *Northern Cape and Free State*, the Spatial Planning Concept Areas were designed to facilitate cross-boundary co-operation and co-ordination between district and local municipalities, adjoining provinces and foreign territories as it relates to issues that are of mutual



interest for their respective areas of jurisdiction (e.g. land-use, biodiversity conservation, and resource utilisation). It is stated that the “SPCs provide a framework to guide decision-making regarding land-use at all levels of planning, and they have been articulated in a spirit of creating and fostering an organised process that enables people to work together to achieve sustainable development in a coherent manner.”

The Eastern Cape promotes a collaborative development ethos with an emphasis on participatory local development action.

The *Western Cape* promotes a transversal spatial governance system, facilitating partnership-based development (see figure above).

2.1.6. SUMMARY OF GUIDING CONCEPTS

The next page provides a summary of the Guiding Concepts.

**Collaborative Action: Guiding Concepts for Inclusion in the KRSDF**

In terms of collaboration, the following are important considerations for the KRSDF:

- Shared spatial planning concepts and structuring elements to enhance cross-border collaboration (the Free State /Northern Cape approach as an example);
- The importance of institutional structures to facilitate collaboration within the reality of the complexity of transversal governance concepts; and
- The inclusion of the NGO sector as an important driver of developmental and regional initiatives.

Figure 10: Guiding Concepts Summary



2.1.7. CONCLUSION: REGIONAL ISSUES AND INTERDEPENDENCIES

The following specific issues were identified as emerging from the four provincial SDFs. While some of these issues are also indicated in the spatial analysis, these are considered as important in the regional analysis phase:

Eastern Cape:

A portion of the western part of the Eastern Cape identified in the Provincial SDF is included in the RSDF. The following issues highlighted in the Provincial SDF should be considered:

- Utilising the **agricultural base** to support international markets
- Capitalising on **renewable energy** as an economic sector
- Building a **broader tourism base**
- Understanding the opportunities in **game farms**;
- Understanding the opportunities in **fracking**;
- Understanding and expanding existing **dairy activities**; and
- **Small towns** in the Sarah Baartman DM losing population.

Free State:

The following are specific issues emerging from the Free State PSDF:

- The **N1** route and the implications of this route on spatial development in the province;
- **The growth potential of towns** linked to their regional hinterlands.
- **Tourism links** with Eastern and Northern Free State, Lake Gariep tourism node and game farms/reserves. Tourism Routes: Active N8 Route, Battlefields Route, Bloemfontein, Botshabelo and Thaba 'Nchu Heritage Route, Diamond Route. Friendly N6 Route, Maluti Route, Mangaung Cultural Route, N5 Route, Riemland Wine Route;
- **Biodiversity** and protected areas;
- National and regional **energy transfers**, Northern Cape solar corridor extension, carbon credits, renewable energy. Xhariep Solar Region, Hydropower Corridor (this corridor corresponds with the border between

- the Free State and Northern Cape Province). Hydro Power Corridor (Vanderkloof and Gariep Dams);
- **Water scarcity/arid region**, irrigation schemes (e.g. Vaalharts), and the Upper Orange Water Management Area; and
- **Agricultural markets** (national and international).

Northern Cape:

The following are specific issues emerging from the Northern Cape PSDF:

- The important role of the **Orange and Vaal River systems** and their dependent economies;
- The suitability of the NC for **solar energy**, which also includes proposed sites in the Western Cape bordering the Northern Cape;
- The identification of **functional regions** (from the Northern Cape province perspective) is a positive feature as it indicates intent to consider cross-boundary infrastructure planning. It also considers big infrastructure build programmes, SEZs, IDZs and SIPs;
- The PSDF indicates that in order for the province's high growth scenario to become a reality, it requires the successful implementation of **infrastructure projects**, which also implies those in regions adjacent to the Province;
- **Skills shortages** in government (provincial and municipal) is seen as a key issue – measures required to retain and attract expertise, especially in less attractive nodes;
- The strategic planning of the province does indicate **key road/rail connections** that extend to neighbouring provinces;
- Expansion/improvement of **manganese lines** which connects Hotazel, Kimberley and Gqubhera via rail and Bloemfontein to East London via road;
- Building of dams and expansion of water pipelines to support **inter-regional water transfer**;
- Impact of SKA advantage area, need to protect and manage **SKA and SAROA** areas;
- **Mining issues**: Declines in mining should trigger diversification, mining towns are not to be expanded; future mining, radio-active waste;

- Protect/manage **biodiversity, water and agriculture resources**; expansion of or new protected areas could be cross-regional issues. Similarly, there are buffer areas that also have a wider regional expanse.
 - **Economic development connectivity** in the form of the proposed Boegoebaai Harbour and a proposed rail link between Upington and Boegoebaai.
- Western Cape:**
- With the exception of some coastal areas, most of the Western Cape is included in the RSDF. This implies that there are several large cross-regional issues, i.e. shared issues that need to be addressed:
- **Critical biodiversity areas and protected areas** adjacent to the Northern Cape have special significance for smaller towns in this region to serve as assets considering conservation tourism (attracting tourists to them);
 - **Water** is also a shared resource and a determining factor in towns located in the more arid Karoo; this includes ground water;
 - Pressure for **coastal development** along the west coast must be considered a regional issue extending all the way to the Namibian border. Approaches must align to protect the coastal region from unwanted development while protecting these assets for its tourism potential. This also applies where aquaculture options are considered as possible economic opportunities along the coast where protection is required – sustainable asset use;
 - **Extraction of mineral resources** a concern given water constraints – an issue in the Shale Gas Area in Karoo Basin;
 - Another resource item relates to the **West Coast Gas opportunity** – this is a key economic opportunity along the western part of the Karoo RSDF and could one of the few opportunities open to the small towns in this region;
 - **Landscape and scenic assets** area not restricted to provinces but are regional features – they are mostly road-based attractors that also benefit the more isolated municipalities/towns bringing visitors. This places a
- requirement of aligning road infrastructure maintenance at the RSDF that needs to consider responsibilities regarding shared assets;
- Most of the main **space economy interventions** will occur in the Western Cape outside the Karoo RSDF area – some of the strategies will affect more isolated and rural municipalities; This includes green energy initiatives and improving the connectedness (ICT) of areas through broadband infrastructure. A transforming agriculture sector is also critical to accommodate climate change impacts;
 - **Energy systems:** The SDF does not mention the potential gas pipeline from the northern west coast. A large cluster of Windfarms near is indicated near Laingsburg; the possibility to sustain the towns in the vicinity should be investigated. Wireless mesh networks should be considered in smaller towns. Rural development nodes near Beaufort-West and Laingsburg are remote and need to be **connected with ICT** and have appropriate road connections/conditions. This is also an issue in the southern Karoo region. Off-farm settlement will impact on small towns;
 - Some **town and settlement nodes** featured in the NSDF types do not feature in the WCSDF – affecting fringe areas near the Northern Cape border;
 - **Accessibility challenges** significant in central and southern Karoo regions – need for coordinates social service delivery – an issue of coordination between Northern Cape and Western Cape, especially in areas defined as agricultural centres/or secondary centres;
 - **Housing:** Isolated housing projects (sites) carries a risk of creating trapped spaces – should be addressed to create more integrated settlement housing (consider growth/decline trends); and
 - **Growth potential of towns:** Reflects that most towns in the southern part of the Karoo RSDF (in the Western Cape Province) do not have large growth prospects; some might even decline further in future.

Figure 11: Summary of Regional Issues and Interdependencies from the PSDFs



2.2. SPATIAL UNDERSTANDING: CURRENT PLANNING AND IMPLEMENTATION

A compilation of spatial information representing provincial and national spatial planning and implementation was done to identify *issues* and *trends* at a regional scale. Due to the magnitude of information and the complexity of issues, the spatial compilation was structured according to the themes used in the Free State and Northern Cape Provincial SDFs. The themes were found to also be representative of provincial planning issues and approaches in the other two provinces comprising the Region (Eastern and Western Cape), and it was practical to align regional with national-scale initiatives.

The following trends and issues were identified for consideration in the KRSDf:

- There is **no common 'spatial language'** to describe issues, concepts and proposals. Although there is no serious lack of alignment among planning documents (i.e. differences in nodal hierarchy, misalignment of major routes or misalignment in rural development direction), it is difficult to form a coherent understanding of strategic spatial planning for the region.
- The above also implies difficulty in providing **coherent guidance for implementation** for the region as a geographic unit.
- Analysis and planning proposals are presented at **different levels of detail, and according to different structuring elements**, for example, agricultural nodes and corridors vs focus on specific agricultural production areas.
- The **basis for decision-making** and proposal selection seem to differ, which may also have been influenced by the planning horizons of respective plans. For example, the identification of the long term metropolitan regions in the Eastern Cape do not seem to have the same planning horizon or scenario model as, for example, the focus on specific small towns with economic potential in the Free State.

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- The Karoo Region represents the **sparse, arid rural 'hinterland'** of the provinces (to a lesser extent true for the Northern Cape due to its more homogenous nature overall). The main concentrations of human settlement and economic activities occur outside the Karoo Region, and as such these areas also become the focus for planning and project interventions.

- There is **little differentiation between small rural towns and settlements**. With the exception of a few towns highlighted as having economic potential, being IUDF priorities, small towns are not linked to specific typologies based on growth/decline, economic role, climate threat, link to functional rural areas, or other possible criteria.

A synthesis of key findings and issues are presented in **Table 9** below. The graphic summaries that follow (Figures 12-15) provide an overview of current projects and plans.

Table 9: Spatial Implications for the KRSDF

THEME	IMPLICATIONS FOR THE KRSDF
Natural and Conservation - Planning	The natural environment is a critical base resource in the Karoo Region. Virtually the entire region is environmentally sensitive and significant, ranging from biodiversity and sensitive ecosystem (terrestrial, aquatic and marine) to stressed water source areas. Current planning documents and national and provincial environmental management instruments are very comprehensive and will serve as a solid information input into further planning stages. Compatible categorisation and approaches are used in provincial and national planning, e.g. the concepts of Critical Biodiversity Areas (CBAs), Ecological Support Areas (ESAs) and different classes of formally protected areas. KRSDF considerations are: • Protection of sensitive areas and conservation of biodiversity and ecosystems – due to the high sensitivity and high importance of these elements in the Karoo region, it is proposed that a weighted sensitivity layer be used as a base layer in all other sectoral / issue base analysis conducted for the KRSDF. • Exploration of the potential of the biodiversity economy, which encompasses businesses and other economic activities that either directly depend on biodiversity for their core business or that contribute to the conservation of biodiversity through their activities, as a sustainable means to improve the regional economy and livelihoods communities. • Sustainable use of water resources, especially in view of climate change threat • Transversal issues, e.g.: ○ Role of the natural environment in tourism; ○ The impact of agriculture, mining and human settlement; and

THEME	IMPLICATIONS FOR THE KRSDF
Agriculture - Planning	○ Competition for resources, e.g. eco-tourism and unsightly sustainable energy solutions; agriculture, mining and industries. The approaches to categorising, mapping and planning agricultural activities differ between the four provinces. The Northern Cape followed an approach of nodes, agricultural zones and linkages (e.g. agricultural routes and buffers areas around Agri Hubs / Parks) while the Free State included more spatial detail about agricultural typologies. The Western Cape focused on a rural development corridor and nodal approach. The Eastern Cape mapped existing agricultural areas as the areas of focus. Nationally, the Agri Park programme creates a system of linked nodes supported by surrounding production areas. KRSDF considerations are: • Framing a more compatible approach to planning for agriculture across the national and provincial spheres, in the form of key structuring elements such as agricultural nodes (Agri Parks could be a key component) and specific typologies for agricultural production areas linked to nodes. • Adding more detail to the overall frame in terms of specific product focus areas (including input from District Rural Development Plans and other agricultural studies). • Considering the value chain and linkages to markets in the surrounding influence area.
Agriculture - Projects	Agricultural projects are scattered across the regional landscape. The distribution of projects is not, in all cases, clearly linked to the spatial patterns contained in spatial planning. This is one of the few areas where land reform came to the fore as a spatial theme in planning documents. KRSDF considerations are:

THEME	IMPLICATIONS FOR THE KRSDF
Human Settlement - Projects	Regional/National scale projects on which information was available are few and far between. Mega-housing projects and priority township development projects occur mostly outside the Karoo Region following the pattern of urbanisation in provinces (with the exception of Mangaung, which is included in the study area). <i>[Note: more data may have to be included in this section of analysis if available, e.g. the number of units provided through small subsidised housing projects per LM. Provincial data sets will have to be investigated.]</i> KRSDF Considerations: • A region-wide human settlements development approach will have to be developed as part of an integrated, more nuanced human settlements typology as discussed above. • Planning for human settlements expansion should be guided by the role of towns and climate change considerations and risks pertaining to resilience and sustainability (e.g. by referring to local scale risks and population projections as contained in the Green Book www.greenbook.co.za).
Industrial - Planning	Due to the sparse and rural nature of the Karoo Region, the expected pattern of industrial development emerges with a focus on the larger nodes surrounding the region in terms of both agglomeration and scale. The exception is mining as a specific sector, where clusters do occur in the Region. KRSDF Considerations: • As in the case of agriculture, a more integrated programmatic approach to economic development should be developed for the Karoo. The types of industries and inter-and intra-regional linkages should be explored. • Value chains should be considered, e.g. minerals beneficiation and agri-processing.

THEME	IMPLICATIONS FOR THE KRSDF
	• Development of a programmatic approach to agriculture implementation, directly linked to more detailed agricultural spatial planning as described above. • The programmatic approach should be linked to agricultural potential and markets, stretching across administrative boundaries.
Human Settlement - Planning	While there is general alignment regarding the hierarchy of towns, the approaches to settlement role and typology differ between provinces in terms of concepts and terminology and also do not align exactly with the typologies in NSDF (as some of the planning pre-dated the NSDF). The Eastern Cape and Western Cape identify future metropolitan areas. In the Eastern Cape, these are complemented by strategic investment areas, and in the Western Cape by rural development corridors. In the Free State, in addition to the settlement hierarchy, towns with economic potential and restructuring zones are highlighted. In the Northern Cape, the IUDF priorities are taken into account and urban clusters are highlighted. KRSDF considerations are: • As a major structuring element, a consolidated regional settlement typology should be developed. • Terminology, concepts and terms should be aligned. • The typology should focus on a more detailed exposition of the roles of towns, e.g. economic sector focus, service focus, link to productive rural areas, etc. This especially applies to the small towns that are currently not differentiated to a great extent in planning documents (e.g. a specific focus may be needed to describe small town roles in terms of the type of agriculture, type of tourism, etc.).

THEME	IMPLICATIONS FOR THE KRSDF
	KRSDF Considerations: In most need of alignment are two aspects: • The roles of different links that are addressed in planning for aspects such as tourism and agriculture and how the links would support a more nuanced settlement typology. • The roles of different links in supporting a more nuanced view of economic potential in the Region / linking economic clusters.
Infrastructure: Water & Sanitation - Planning	Water is recognised as a critical issue in both provincial and national planning. As is the case with agriculture, the information contained in provincial planning differs in approach and typologies. Different aspects are included in planning, e.g. irrigation areas, hydro-electrical schemes and water scheme areas. KRSDF Considerations: • Due to the nature of catchment areas and related water schemes, all aspects of water planning are intrinsically cross-boundary and should be treated as such. • The challenges of water availability and climate change threats mean that water should be elevated to a key priority issue in the KRSDF.
Infrastructure: Energy - Planning	The region is a focus area for sustainable energy planning. The Free State included specific energy zones in their provincial planning. Solar energy areas are included in the Northern Cape and Western Cape planning, as well as in the Eastern Cape (solar / wind). There are also a high number of wind farm applications in the Region, as well as Renewable Energy Development Zones (REDZ) emanating from national scale planning. KRSDF Considerations:

THEME	IMPLICATIONS FOR THE KRSDF
Industrial - Projects	• Clustering is an approach that may have to be considered to elevate smaller enterprises to a regional scale (e.g. clusters of agri-processing) Large projects in the industrial, mining and related fields are recognised in current planning and have two dominant characteristics: • Projects affecting large areas of the region, with potential impact negatively affecting other potential economic sectors of the region, e.g. shale gas exploration/mining; and • Projects crossing the region without direct regional or local community benefit (and also with the potential to 'sterilise' areas for other development), e.g. gas pipelines.
Infrastructure: Communication & Technology - Planning	Information and focus in planning documents regarding ICT vary greatly. This is an area that required further exploration and more coordinated planning across the region, with a focus on the role of ICT connectivity in supporting economic development as part of the programmatic approaches alluded to above. The sparsely of, for example, cell towers as compared to the area surrounding the Region is an example of how communication technology is not well established in the Region and could be a 'quick win' in terms of economic infrastructure interventions. The SKA site stands out in this theme as an example of a nationally and internationally significant project with little benefit and high impact on local communities and regional economic development.
Infrastructure: Transportation - Planning	Alignment exists between key road and rail linkages among provincial plans. Many of the more substantial transport links are mobility-focused regional connectors passing through the region.

THEME	IMPLICATIONS FOR THE KRSDF
	more cohesive, structured approach to tourism planning and implementation in the region.

THEME	IMPLICATIONS FOR THE KRSDF
	• Similar to water, the drive for renewable and sustainable energy is a major cross-cutting issue affecting the Region and should be elevated to a key planning issue in the KRSDF. • The links between renewable energy and other development types, including complementary and competing uses, should be considered. • The issue of shale gas exploration should be considered as an important part of energy planning in the Region, with its cost and benefits weighed against the cost and benefits of sustainable energy options.
Infrastructure Projects	Infrastructure projects focus on energy and water, both critical issues in the Region and nationally. The few proposed energy and water line extensions appear to be mining-related but will have to be investigated in more detail. Transport infrastructure (indicated on the map with industrial projects) seem to hold more potential for the Region itself, including rail extensions/revitalisations and high-speed rail towards Beaufort West, small harbour town revitalisation and planned Namaqualand Airport. Other projects, e.g. the gas pipelines, merely pass through the Region.
Tourism - Planning	Tourism routes traverse the entire Region, and synergy seems to exist between the planning of structuring elements such as the routes and nodes between the different provinces. A more nuanced, Region-wide approach to tourism zones/tourism typologies would add value, building on the existing framework provided by provincial planning.
Tourism - Projects	While overall linkages, e.g. tourism routes, appear to align between provinces, it is difficult to pick up a distinct pattern in tourism-related projects. This is additional motivation for a

Figure 12: Agriculture and Conservation Planning and Projects Summary

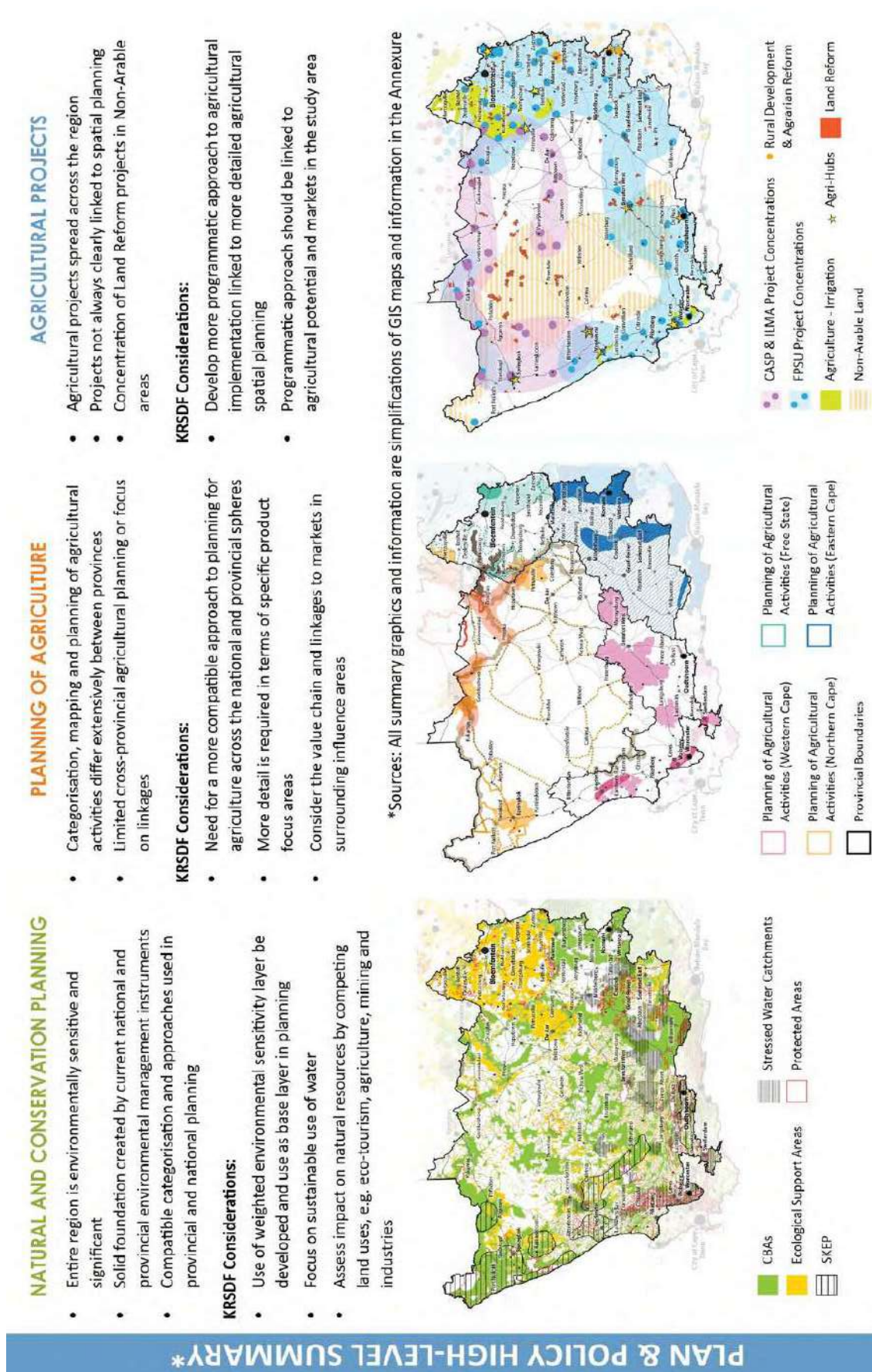


Figure 13: Human Settlement Planning and Projects Summary

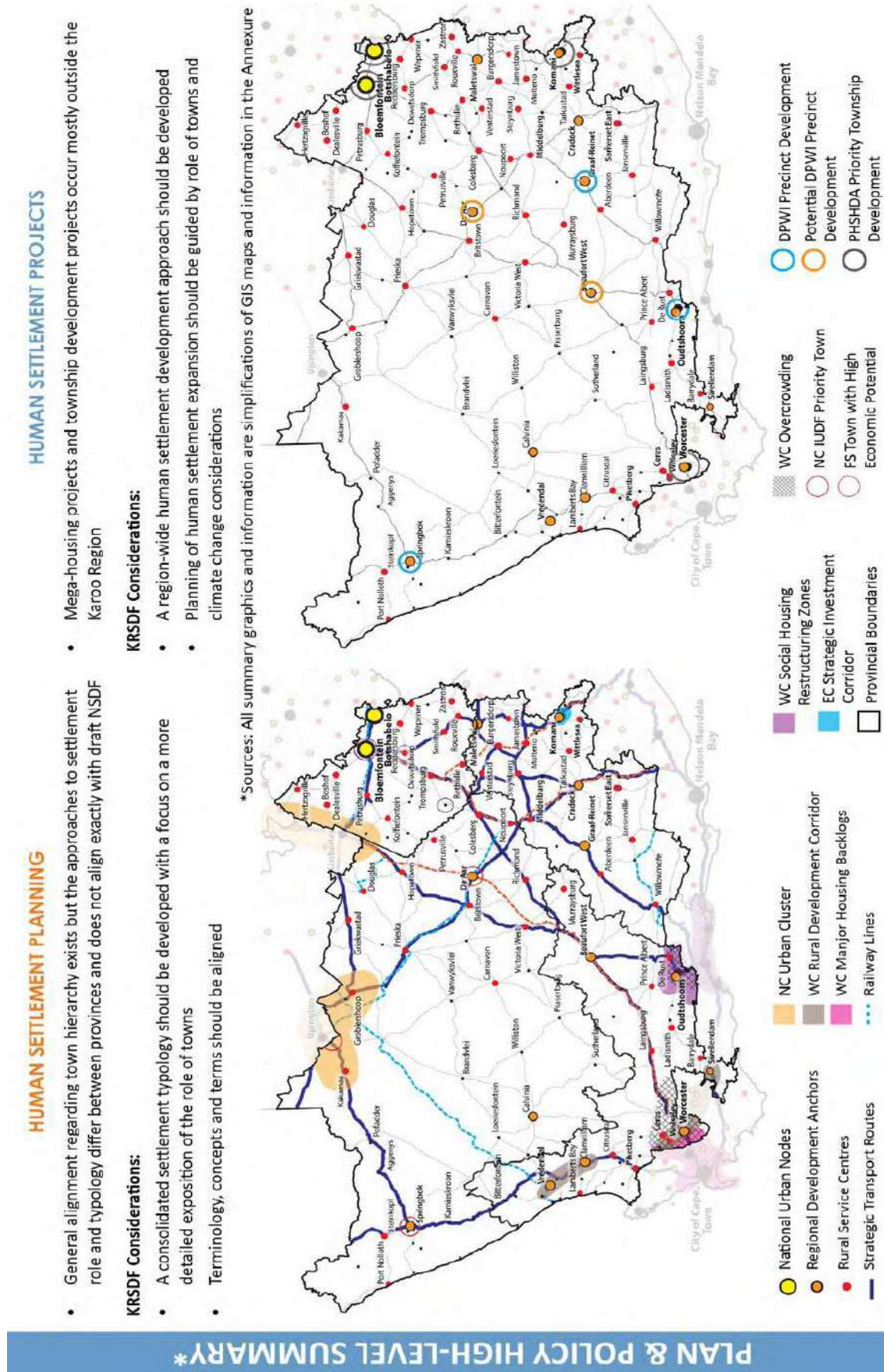


Figure 14: Infrastructure Planning and Projects Summary

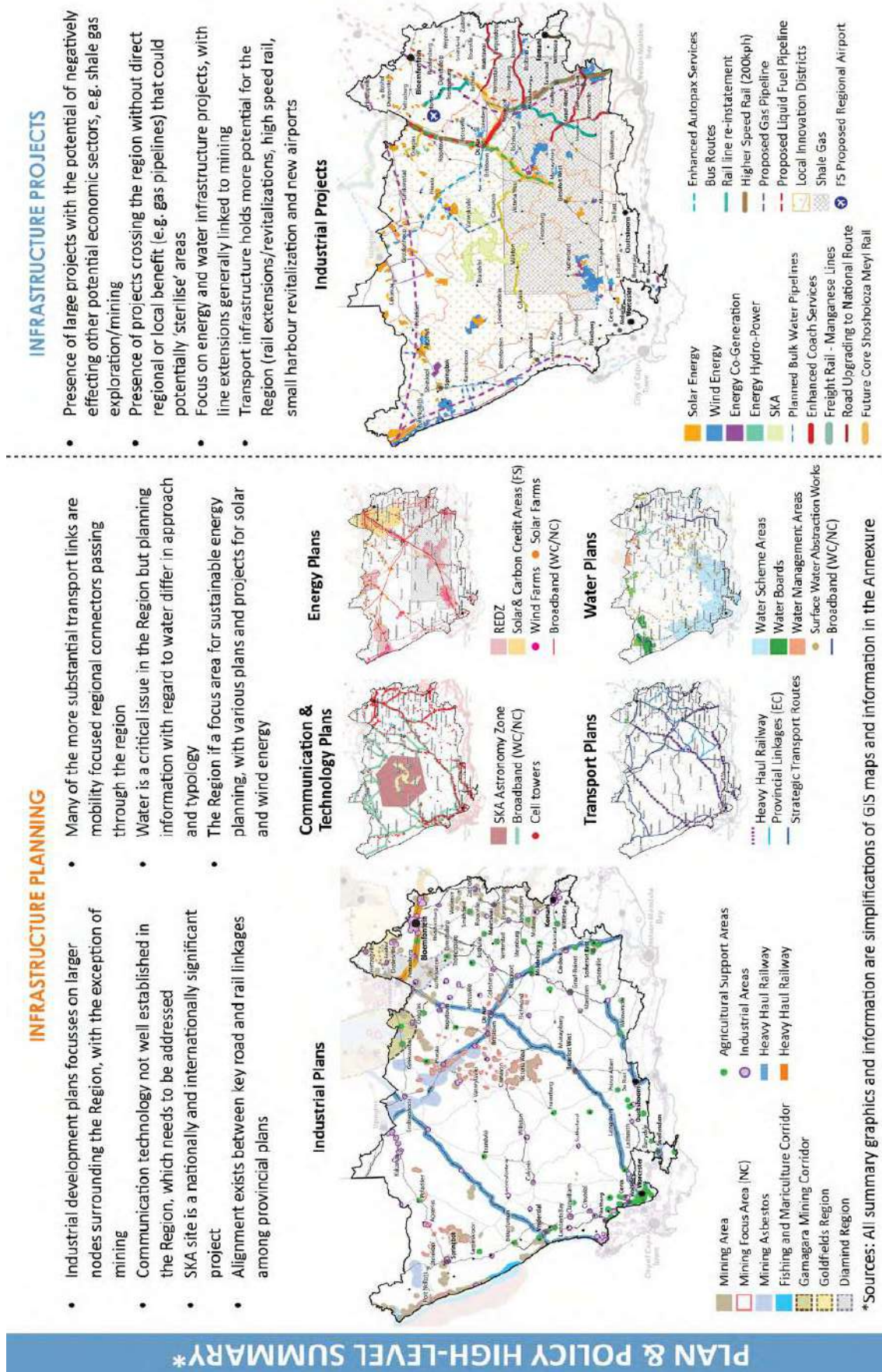
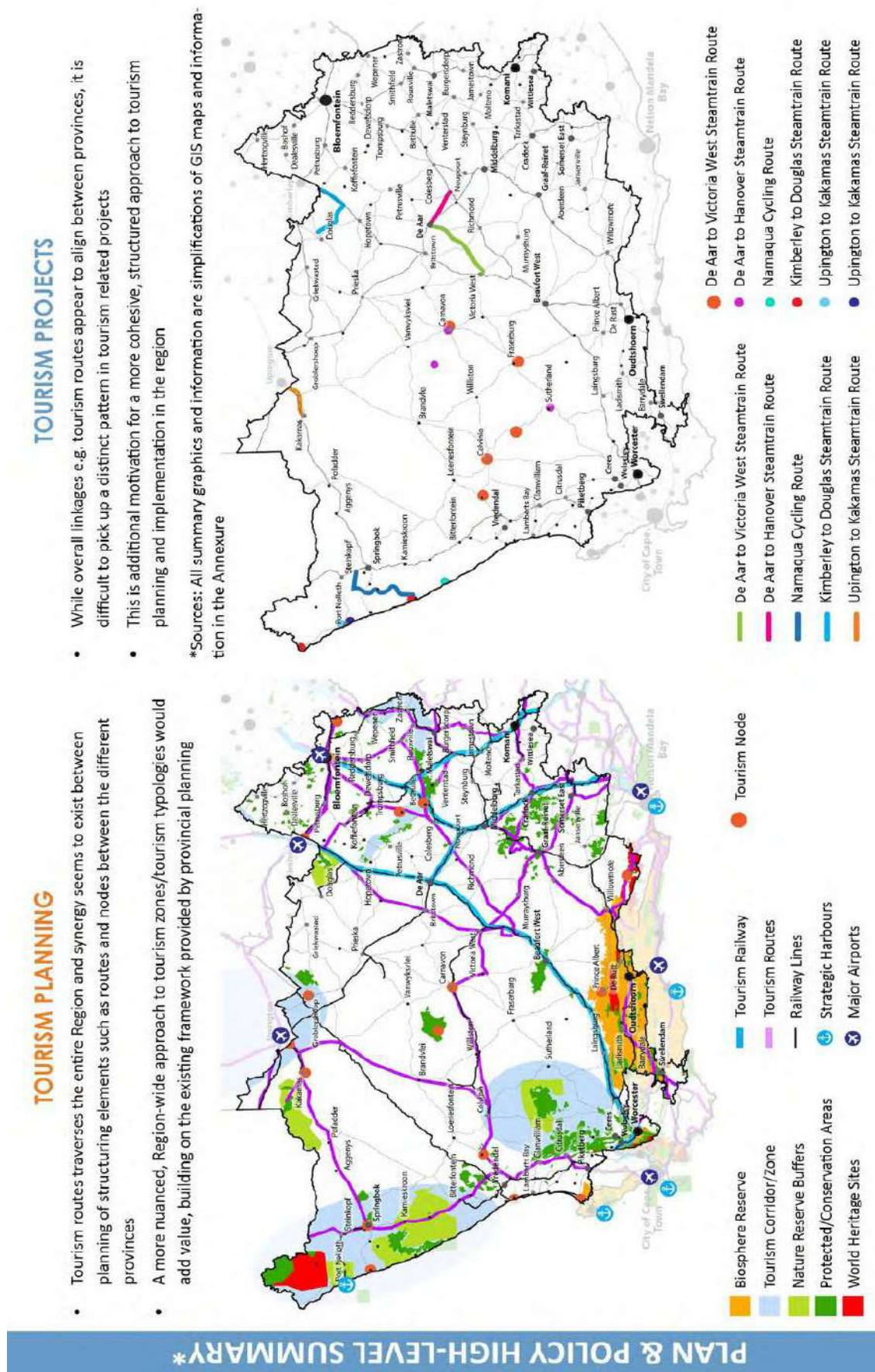


Figure 15: Tourism Planning and Projects Summary



2.3. CONCLUSION

The priority spatial issues emerging from the analysis of current planning and policy context are the following:

- The establishment of a connected rural human settlement network, including a more nuanced settlement typology linked to the role of small settlements in the regional economy and the potential clustering of value-adding activities in and around specific settlements;
- The scarcity of water in the context of an already arid region further threatened by climate change: alternative technologies and water sources, water transfers, water conservation and reuse, the role of water in economic development;
- The potential of the region to play a nationally significant role in alternative energy generation;
- A more in-depth exploration of agricultural potential and niche products, including beneficiation, geographic product branding, local and export markets, clustering of agricultural enterprises;
- The establishment of a more cohesive understanding of regional tourism potential and connections; and
- The need to explore the spatial dimensions and opportunities towards economic diversification of the region, including the diversification of mining towns and potential of the 4th Industrial Revolution.

In the next section, the regional spatial dynamics of the Karoo will be explored.

PART 3: REGIONAL SPATIAL ANALYSIS AND SYNTHESIS

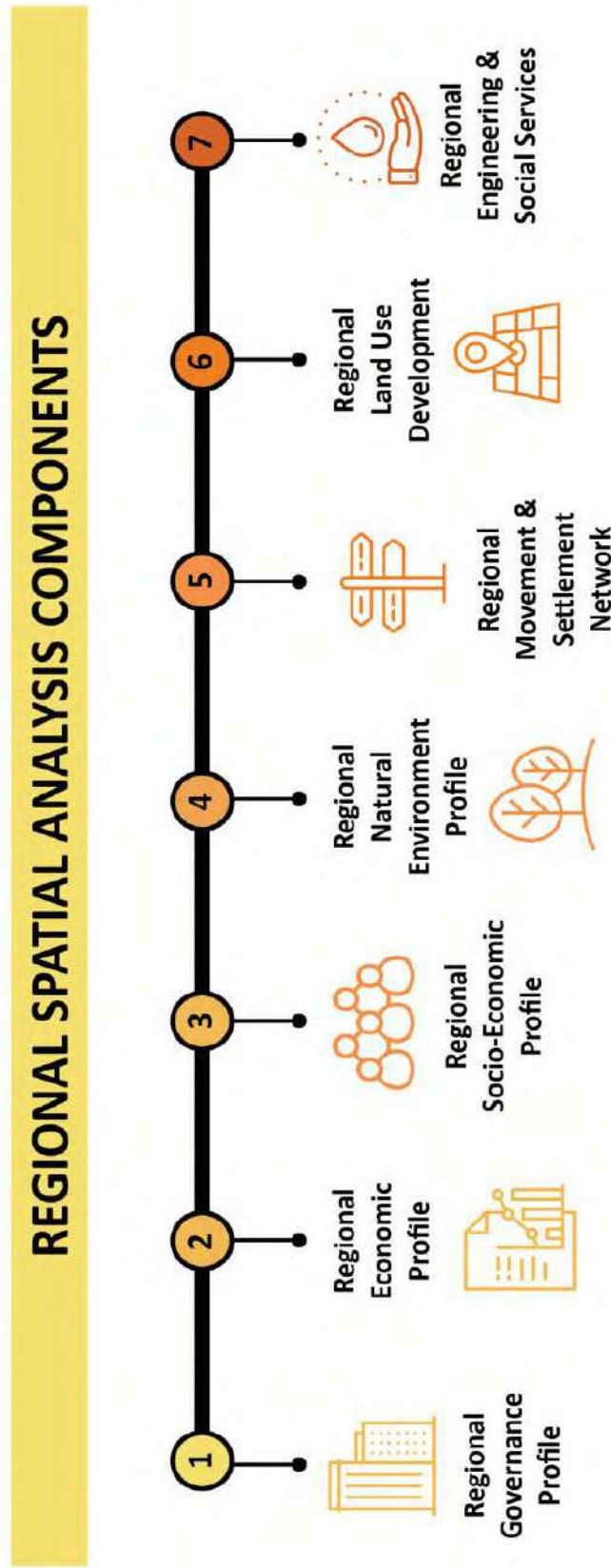


3.1. REGIONAL SPATIAL ANALYSIS

3.1.1. INTRODUCTION

This section is a summary of previous, more in-depth deliverables developed during the formulation of the KRSDF. The full analysis is available at www.karoor sdf.co.za.

Figure 16: Components of the *Regional Spatial Analysis*



3.1.2. REGIONAL GOVERNANCE PROFILE SUMMARY

36 Local Municipalities

13 District Municipalities

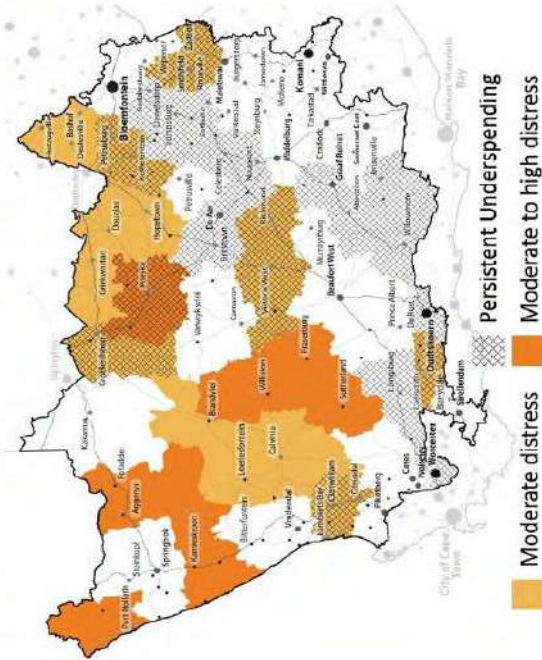
1 Metropolitan Municipality



FINANCIAL PERFORMANCE:

- Municipalities that have been in **persistent financial distress** are predominantly located in the **western and northern parts** of the Region
- Municipalities that have been **persistently underspending financially** are predominantly located in the **eastern and southern parts** of the Region
- Municipalities with **persistent financial distress and underspending** **predominantly overlap in northern central parts** of the Region

PERSISTENT MUNICIPAL DISTRESS & UNDERSPENDING



*Sources: All summary graphics and information are simplifications of GIS maps and information in this chapter

Karoo Regional Spatial Development Framework



EDUCATION LEVELS:

- **Low levels** of staff with **post-Matric qualifications across Region**
- **Very high levels of vacancies** especially in the **planning and accounting** roles
- Only **6 municipalities** (3 of which are District Municipalities) with **all four critical competencies** (planners, engineers, accountants and environmental officers)



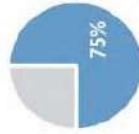
0-10% Post-Matric Education



No Qualified Engineers/Technicians

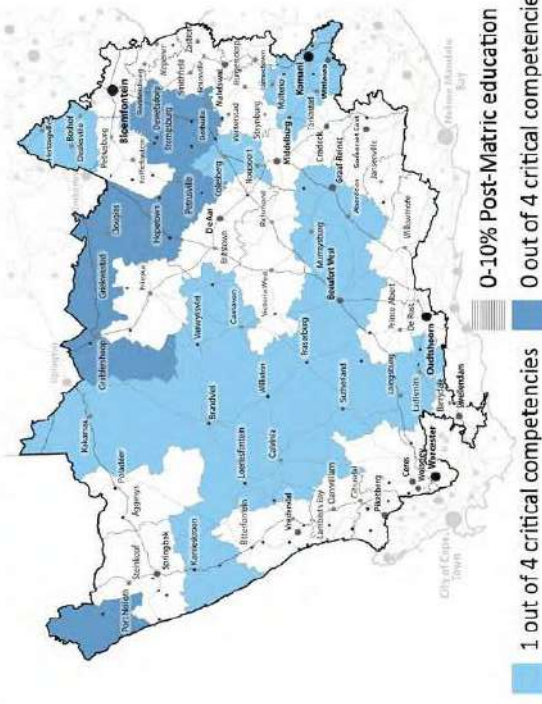


No Qualified Planners/Technicians



No Qualified Accountants

LACK OF QUALIFIED PROFESSIONALS AND POST-MATRIC EDUCATION



3.1.2.1 Organisational Capacity and Financial Profiles

As mentioned in the previous section, the Karoo Region is made up of numerous Local and District Municipalities in addition to being spread across four provinces. This introduces a sense of complexity to the dynamic of the Karoo Region due to the juridical overlap. In addition to this, there are two key factors that influence municipalities' ability to fulfil their developmental mandates: (1) **Organisational Capacity**, which refers to the human resource capacity of the municipalities, such as the appropriate number of staff, qualified staff and staff in appropriate positions to drive service delivery and land development; and (2) **Financial Capacity**, which refers to the financial viability and the financial management profiles of the municipality.

Organisational Capacity

The organisational capacity of the municipalities within the Karoo Region is characterised by: (1) low levels of staff with post-matric qualifications, (2) high levels of vacancies in the planning and accounting roles, and (3) a low percentage of staff with tertiary qualifications (please see graphic summaries on the previous page). In addition to this, research from the Municipal Demarcation Board Capacity Assessment of 2018 revealed the following findings on the municipalities which fall within the Karoo Region:

- In 58% of the municipalities within the region, 0 - 10% of the staff have post-matric qualifications.
- 27% of municipalities have no qualified engineers/technicians
- 65% of municipalities have no qualified planners/technicians.
- 75% of municipalities have no qualified accountants.
- Only 12.5% of municipalities have all critical competencies filled.

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The findings above paint a very dim picture of the existing organisational capacity within the Karoo Region. The vast majority of municipalities lack the capacity to fill all of the key staff positions required to ensure optimal functionality within the municipality. The lack of appropriately qualified professionals/technicians within the municipality may prove to be a significant challenge for the implementation of strategic plans and frameworks within the region.

Financial Profile

The majority of municipalities within the Karoo Region are experiencing a degree of financial distress. This has resulted in a situation where these municipalities are unable to fund the delivery of basic public goods for the residents. The forms and causes of financial distress are explained below:

- **Structural/Fixed Factors:** Primarily caused by external factors which are beyond the control of the municipality, e.g. erosion of tax base, decrease in population size, government resource allocation and loss of financial independence.
- **Organisational Factors:** Primarily caused by mismanagement, transparency, political factors and labour unions power in public administration.
- **Hybrid Factors:** Factors related to intergovernmental relations and coordination.

In addition to the list above, municipalities face the following related challenges: (1) Underspending of Capital Budgets; and (2) Rising outstanding consumer debtors.

The graphic summaries on the previous page confirm the dire financial state of the municipalities within the Karoo Region. More than 40% of municipalities are classified as undergoing moderate to high levels of financial distress, with a number of these municipalities also persistently underspending.

3.1.3. REGIONAL ECONOMIC PROFILE SUMMARY

R132.8 Billion⁽²⁰¹⁹⁾

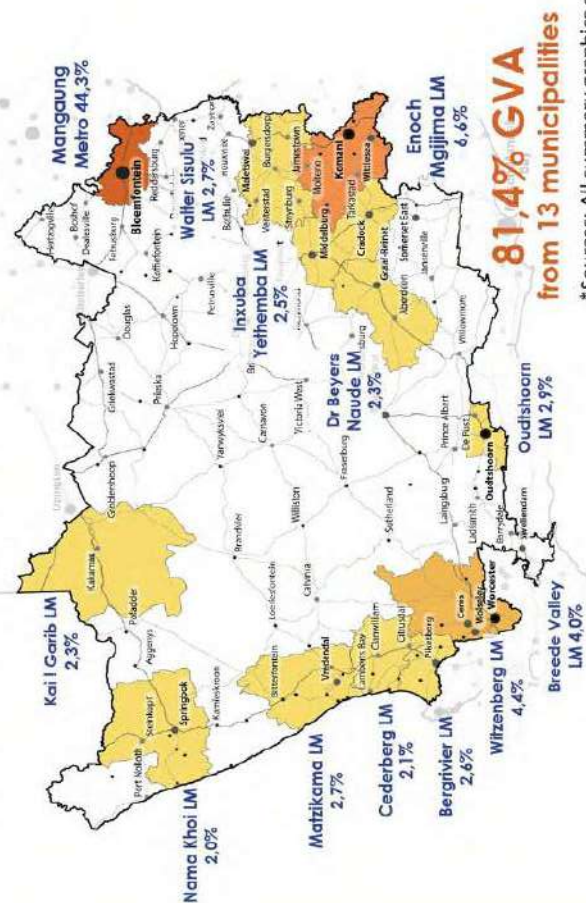
Economic Output $\rightarrow$ only 4,5% of SA
Total Production

→ **R39 591** → Below SA Average
GVA per Capita

→ Karoo Region smallest contributor to SA National Economy based on GVA

→ Below-average growth 2015 - 2019

ECONOMIC SIZE (GVA) SHARE OF LOCAL MUNICIPALITIES

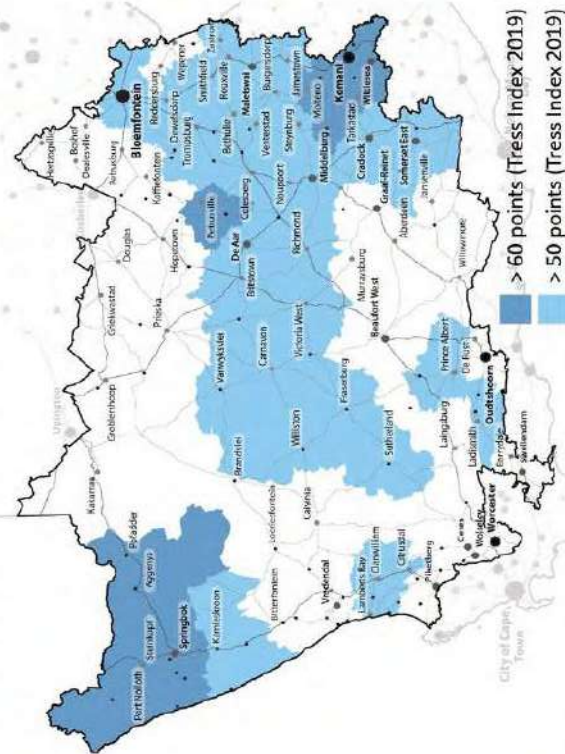


*Sources: All summary graphics are

ECONOMIC SECTORS

- In most municipalities **Government (Community Services)** is the **biggest economic sector** - High dependence on government to survive
- In addition to Government, **Agriculture, Mining and Manufacturing** (to a lesser extent) are at the center of the economy
- **Just over 50% of the municipalities have 'concentrated' economies**, which mean that they are less diversified and **more vulnerable to changes** that impact the foundation of their economy

ECONOMIC CONCENTRATION (LACK OF DIVERSITY)



ation are simplifications of GIS maps and information in the Annexures

* HIGH-LEVEL SUMMARY

AGRICULTURE IN THE KAROO REGION



90,4% Mohair Production in SA



57,3% of Wool Production in SA

53,3% of Mutton and Lamb Production in SA

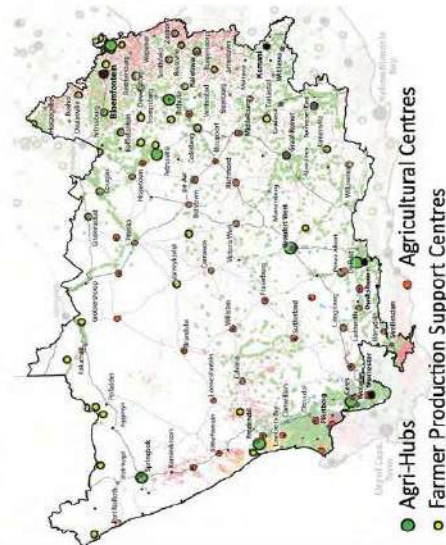


48% of all Extensive Grazing in SA



VAT Registered Farms
- 6% Arable Land
- 94% Grazing land

AGRICULTURAL ACTIVITIES & FACILITIES



TOURISM IN THE KAROO REGION

1 310

Accommodation Establishments



History & Heritage: Various historical sites (archaeological, rock art), museums, art and cultural festivals and unique indigenous cultures such as the San communities, the Korana, the Griquas, and the Nama

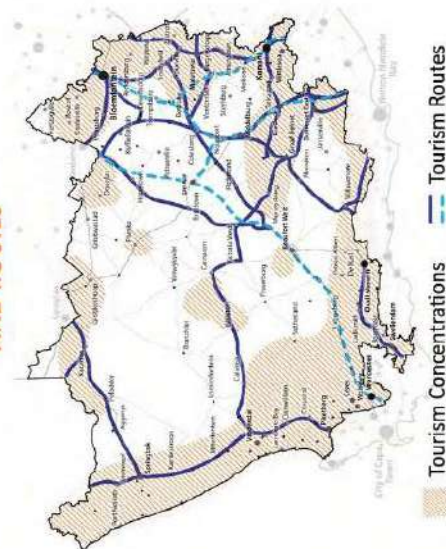


Ecology: Five out of seven biomes in South Africa are located in the Region, numerous provincial, national and private parks, game reserves and conservancies, offering abundant wildlife and floral diversity



Cuisine: Distinctive Karoo cuisine (Karoo Lamb, vetkoek, venison, olives, prickly pears, pomegranates etc) which helps to promote the Karoo "brand"

TOURISM ACTIVITY CONCENTRATIONS AND ROUTES



SUSTAINABLE ENERGY IN THE KAROO REGION

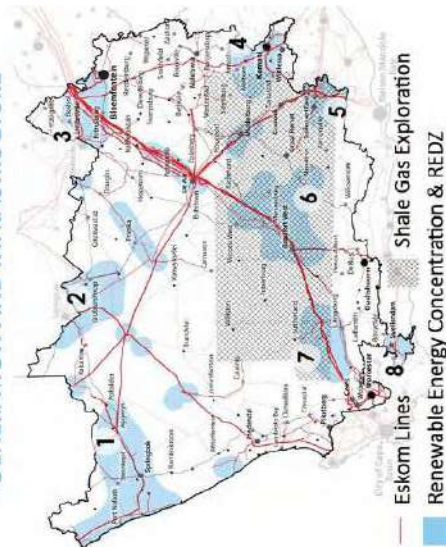
Sustainable energy seen as high potential sector in the Karoo Region

- ↳ Compete with tourism and agriculture for land
- ↳ Limited benefit for local communities in terms of power supply
- ↳ Limited job creation

8 Renewable Energy Development Zones

Wind or PV projects in the REDZ areas are not subject to a full EIA process & have shorter processing times for Environmental Authorization

CONCENTRATION OF SUSTAINABLE ENERGY GENERATION AND INFRASTRUCTURE



3.1.3.1. Economic Overview

The Karoo Region is the smallest contributor to South Africa's National Economy and has achieved below-average growth in the period of 2015-2019.

In 2019, the total economic output of the Karoo Region amounted to R132.8 billion, making up 4.5% of the total production of South Africa. During this time, the Gross Value Added (GVA) per Capita for the Karoo Region was R39 591, which was below the South African Average.

Approximately 81.4% of the Gross Value Added for the Karoo Region is made up of the GVA from 13 of the 37 municipalities within the region. This is an early indicator of the economic dynamics within the region, which seem to indicate that there are 13 strong municipalities within the region and 24 financially weaker municipalities with much smaller economies.

The primary **Economic Sectors** of the Karoo Region are:

- **Government (Community Services)** is the biggest economic sectors, indicating a high dependence on the government to stimulate the economy.
- The **Agriculture, Mining and Manufacturing** sectors are key sectors within the region and, in some instances, the centre of the economy.

According to the Tress Index, as indicated in the graphic summaries on the previous pages, more than 50% of the municipalities within the Region have concentrated economies. This means that they are less diversified and thus more vulnerable to changes and unexpected economic events.

3.1.3.2. Key Economic Sectors Recommendations

After applying the economic base and network analyses and product space analysis, the following strategic industries/sectors for the Karoo Region emerge (1) Basic chemicals [334]; (2) Business activities n.e.c. [889]; (3)

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Catering and accommodation services [64]; (4) Construction [5]; (5) Education (Private) [92]; (6) Agriculture [11]; (7) Electrical machinery [361-366]; (8) Food [301-304]; (9) Furniture [391]; (10) Machinery and equipment [356-359]; (11) Non-metallic mineral products [342]; (12) Other chemical products [335-336]; (13) Other fabricated metal products [355]; (14) Other transport equipment [384-387]; (15) Plastic products [338]; (16) Professional business services [831-883]; (17) Professional equipment [374-376]; (18) Transport and storage [71-74]; (19) Water [42] (20) Wholesale and retail trade [61-63]. Each of these identified sectors/industries includes several specific products, which either already have a strong presence in the Karoo Region (i.e. the region's core competencies) and could continue to support export and wage growth (the intensive margin) or would be likely to succeed in Karoo Region given their relatedness to existing capabilities and know-how (the extensive margin).

The identified sectors that have the potential to diversify the regional economy and drive income and employment growth in the Karoo Region can be categorised into two groups: (1) Key sectors and (2) niche or emerging sectors. These two groups will be discussed in more detail below:

(1) Key Sectors

These are sectors that ranked highly on several of the criteria, that is, they are of significant scale, are reasonably concentrated in the Karoo Region, have demonstrated employment growth, have large flow-on impacts to other sectors, and have further potential for growth based on what is known about resource availability, national and/or offshore market demand. Key sectors are:

- **Non-metallic mineral products [342] and related processing** (Furniture [391]; Plastic products [338]; Basic chemicals [334]; Professional equipment [374-376]);
- **Metal products and related processing** (Electrical machinery [361-366]; Machinery and equipment [356-359]; Other fabricated metal

products [355]; Other transport equipment [384-387]; Professional equipment [374-376]);

- **Agriculture [11] and related processing** (Food [301-304]);
- **Construction [5] and related services** (Professional business services [831-883]; Transport and storage [71-74]; Wholesale and retail trade [61-63]); and
- **Tourism-related services** (e.g. Catering and accommodation services [64], Transport and storage [71-74]; Wholesale and retail trade [61-63] etc.);
- **Financial, insurance and business-related services** (Business activities n.e.c. [889]; Professional business services [831-883]).

(2) *Niche or Emerging Sectors (Including "New" Opportunities)*

These are sectors that meet some of the criteria, e.g., they may be currently small scale but are concentrated in the region, they may have exhibited limited trend growth but are expected to grow more significantly in future, or they are 'new' opportunities that are possible based on the regions existing core competencies. Niche or emerging sectors are:

- Food (agro) processing, beverages and tobacco (e.g. livestock and animal products; Vegetables, fruits and grains; Prepared foodstuffs, beverages and tobacco);
- Clothing, footwear, leather and related processing;
- Forestry and wood-processing (Wood pulp, paper and articles thereof);
- Mineral and metal products and related processing (e.g. Mineral products; Base metals and articles thereof; and Machinery, appliances and electronic equipment); and
- Tourism/Art (e.g. Works of arts and antiques).

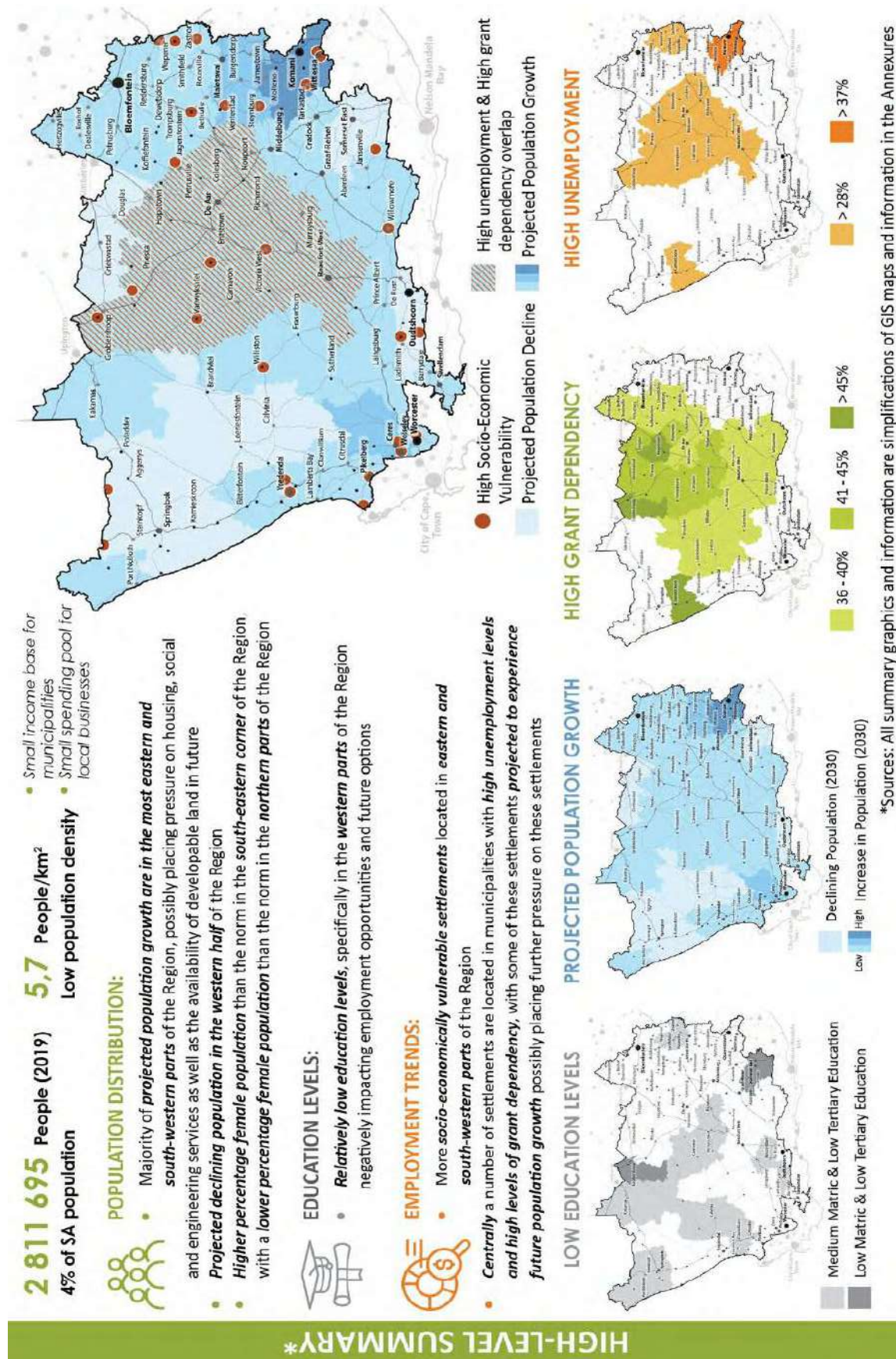
The strategic opportunities that emerged from the economic base and network analysis and the product space analysis show a striking similarity on

Karoo Regional Spatial Development Framework

the export theme-level to several past strategic exercises that employed different methodologies. The **downstream metals-processing industries** and some **specific opportunities in agriculture and food-processing** are two areas of great opportunity that show up in the economic base and network analysis. In contrast, the product space analysis suggests several new diversification opportunities in these industries. For the rest of the identified opportunities, the product space analysis provides an added level of specificity within each industry/sector to help policymakers of the Karoo Region focus its limited state capacity and efforts. Given current administrative and budgetary challenges in implementing strategies, this analysis could be used to introduce a "prioritization scheme" that the government and other stakeholders could use or further adapt to act on these opportunities.

The Karoo Region's ability to achieve sustainable and inclusive growth will depend on its ability to capitalise on opportunities on both the intensive and extensive margins. This cannot be a passive process. Instead, it requires government ownership of strategies, openness to iteration and experimentation in their implementation, and active leadership from the highest level of government to fully coordinate efforts and drive change. For opportunities on the intensive margin, it is crucial that the Local Government within the Karoo Region work jointly with the private sector and communities to understand and iteratively solve industry- and community-specific constraints. Without improved public-public and public-private coordination, solvable problems will linger, keeping promising industries small and costing the region many good jobs. For opportunities on the extensive margin, the Karoo Region's Local Government must treat targeted investment promotion and facilitation of foreign direct investment as a national and regional priority, scaling efforts to address bottlenecks in the system. Attracting and facilitating FDI is also an area where donor support and collaboration can be powerful, as donors can bolster government efforts to reach and coordinate with companies in the Karoo Region.

3.1.4. REGIONAL SOCIO-ECONOMIC PROFILE SUMMARY



3.1.4.1 Demographic Trends

The latest statistics from 2019 indicate that the estimated total population of the Karoo Region was 2 811 695 people, approximately 4% of the total population of South Africa. The population of the Karoo is characterised by a low average population density of only 5.7 people/km².

The low population density creates a challenge for municipalities as this translates to a smaller income base for the respective municipalities. In addition to this, local businesses must face the challenge of a smaller customer and income base, which will negatively influence the profitability of business within the region.

The following demographic trends are visible in the study area:

- Gender Distribution: South-eastern parts of the region are characterised by female-dominant populations, while areas wherein intense mining activity takes place feature male-dominant populations.
- Education Levels: The areas with the highest education levels within the region are Beaufort West, Mangaung and a part of the rural Namakwaland District. In contrast, the lowest education levels were recorded in Groblershoop, Somerset East, Springbok, Kakemas, Carnavon, Victoria West and Prince Albert.
- Ethnic Distribution: A number of trends are visible in the study area, with higher concentrations of Black residents in the eastern parts, while coloured residents tend to be more prominent in the western part of the study area. Larger towns tend to have a more balanced ethnic distribution.

⁶ The CSIR's Socio-Economic Vulnerability Index is determined by the following factors: (1) Household composition - household size, age, dependency, female/child headed
Karoo Regional Spatial Development Framework

- Unemployment: While unemployment levels are high throughout the region, they are especially high in the central parts of the region.

3.1.4.2 Socio-Economic Vulnerability

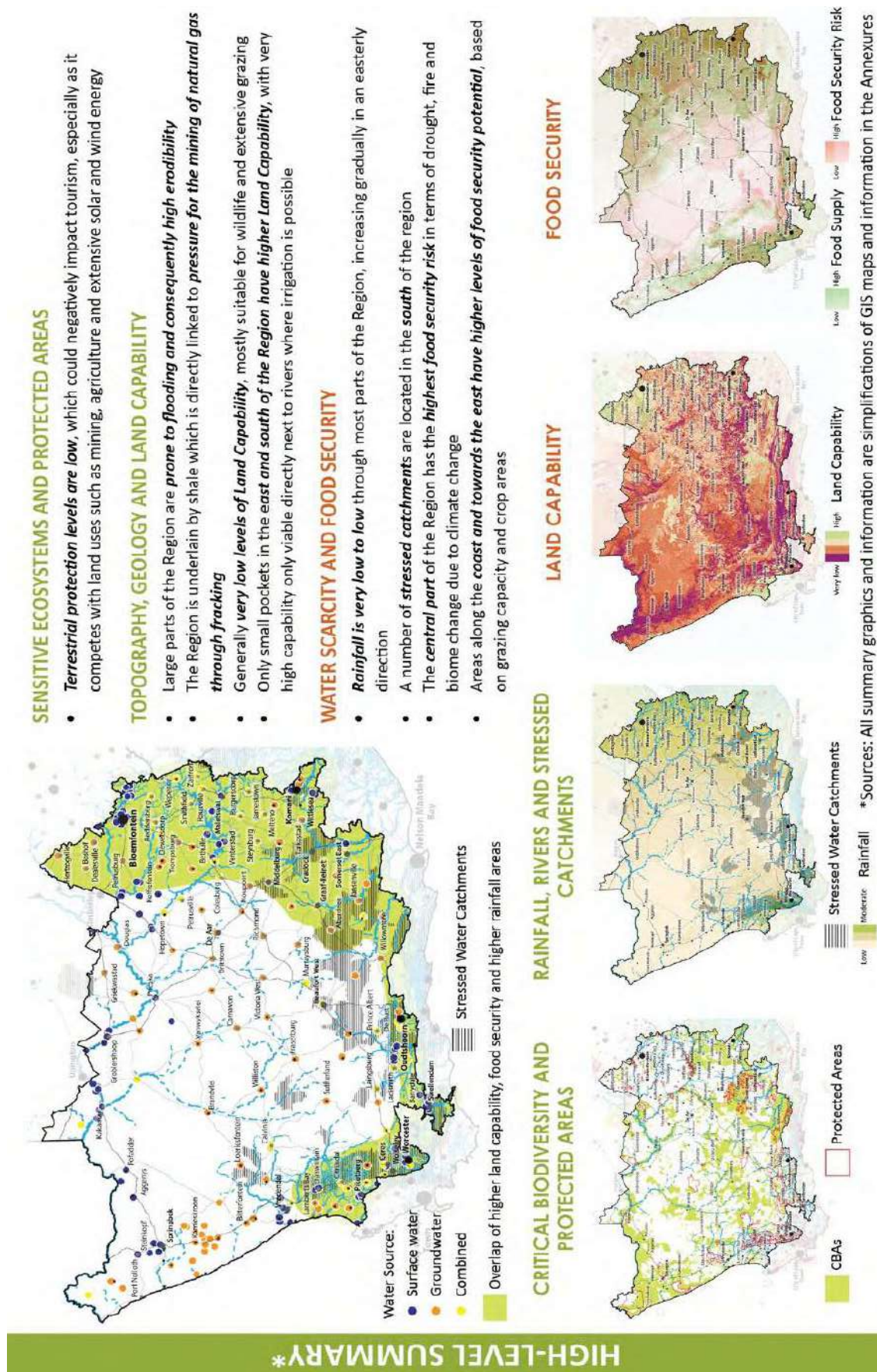
According to the CSIR's Socio-Economic Vulnerability Index⁶, settlements isolated from the spatial economy of the region tend to be highly vulnerable. An example of this can be seen in towns like Vanwyksvlei, Williston, Victoria West and Vosburg, which are located in the central part of the region. These settlements, along with others located in the centre of the region, display high levels of grant dependency.

3.1.4.3 Population Projections

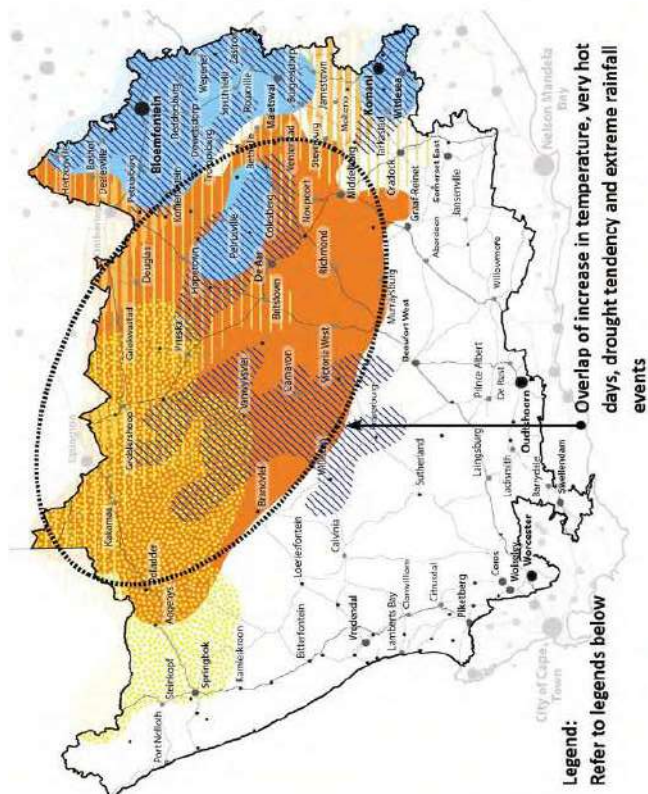
Projections indicate that the general long-term population growth of the region will be moderate. However, Mangaung, Maletswai and Cradock will achieve higher population growth rates.

households, (2) Income composition – poverty levels, unemployment and grand dependency; and (3) Education – literacy rate and education levels

3.1.5. REGIONAL NATURAL ENVIRONMENT SUMMARY



HIGH-LEVEL SUMMARY*



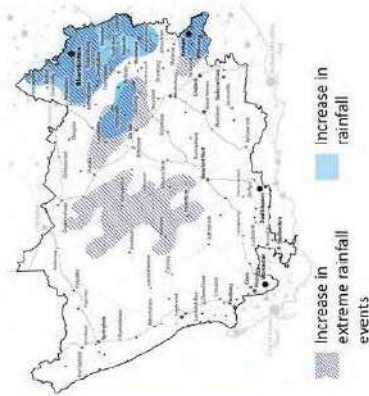
CLIMATE CHANGE: RAINFALL CHANGE

- **200-300ml increase in rainfall in the eastern parts of the Region** - assist in rain agriculture, grazing and game farms
- **Increase in extreme rainfall** days resulting in increased risk of flooding and more erosion in the eastern parts of the Region

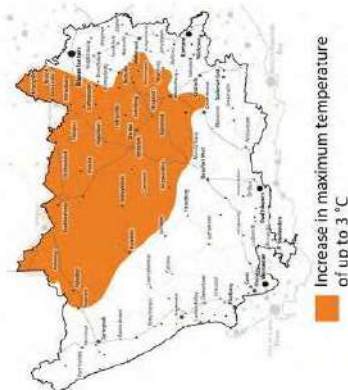
CLIMATE CHANGE: CHANGE IN TEMPERATURE

- The whole Region is predicted to have **50 days more very hot days per year**, with the northern part predicted to see up to an increase of 100 days per year
- Impact on agriculture and housing provision, fire prevention, invasive species
- **Maximum temperature increase of up to 3 to 3,5 degrees in the north of the Region** - placing pressure of water availability and more water required to compensate for higher temperatures. Biodiversity (insects, plants and vertebrates) habitat loss
- Drought tendency is predicted to increase in the east and south of the region impacting both agriculture and animal husbandry
- **Increase in drought tendency overlaps with increase in max temperature** which is a threat to agriculture and exacerbates water scarcity

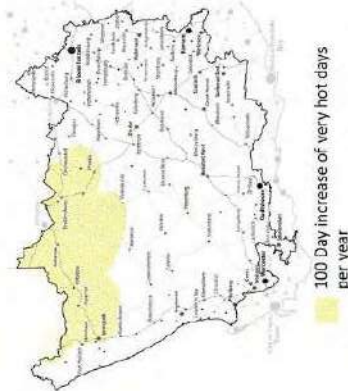
INCREASE IN RAINFALL & EXTREME RAINFALL EVENTS



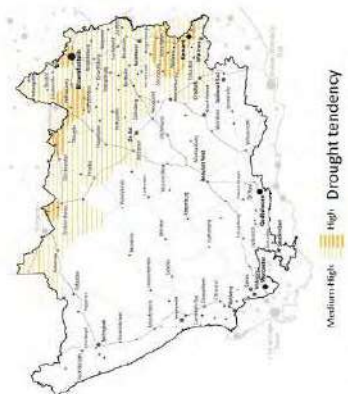
3 °C INCREASE IN MAX TEMPERATURE (2050)



100 DAY INCREASE IN VERY HOT DAYS (2050)



DROUGHT TENDENCY



*Sources: All summary graphics and information are simplifications of GIS maps and information in the Annexures

3.1.5.1. *Sensitive Ecosystems and Protected Areas*

The Karoo Region is made up of a number of sensitive ecosystems and key environmental areas which cover a significant portion of the region. An example of this is the natural flora which has become a trademark characteristic of the Karoo Region. The low levels of terrestrial protections for the natural environment of the Karoo Region have been a cause of concern due to the economic tourism potential of these natural features and any competing land-uses.

3.1.5.2. *Geology, Soil Conditions and Land Capability*

Large portions of the study area are greatly affected by flooding and high erosion; therefore, flood mitigation methods should be prioritized within the region. In contrast to the vast plains within the region, there are also spectacular hills and escarpment ranges which could be key tourism features.

The **Geology** of the site indicates that the region is predominantly underlain by shale and consists of other sedimentary geological types around the edges of the Region. The presence of shale has sparked debates regarding the prospects of natural gas reserve mining through fracking. This has raised concerns due to the potential damage which this could cause to the community and environment.

The **Land Capability** is influenced by the soil conditions, climate, terrain characteristics and slope and determines the suitability of land for wildlife, crop cultivation and grazing. The Land Capability through the majority of the Karoo Region is very low-low, meaning it is suitable for local wildlife and grazing. Moderate-High Land Capability can be observed in small pockets within the region but are usually concentrated directly along major rivers in the North-Eastern corner of the Region.

3.1.5.3. *Water Scarcity and Food Security*

The Region is characterised by its arid nature and low to very low rainfall patterns. This has resulted in the development of many stressed water catchment areas, particularly in the southern parts of the Region. These factors create a set of unique challenges and dependencies which will significantly affect the functionality of the region.

The arid nature of the Karoo Region has resulted in serious challenges for the local food security, specifically in the central part of the region, due to independent factors such as drought, fire and biome changes due to climate change. While areas along the coast and towards the east have higher levels of food security, overall – the region is dependent on food imports, and the situation is likely to worsen in future.

3.1.5.4. *Climate Change*

Climate change trends and events predicted by the CSIR Greenbook⁷ have the potential to significantly disrupt economic activity, increase social vulnerability, and undo the hard-earned “development gains”. The following climate trends are predicted for the Karoo Region:

- The central parts of the Region will experience an increase in extreme rainfall days ranging between two and three days. This also extends to the southern Free State and areas in the vicinity of Tarkastad and Komani. The remainder of the Region does not reflect predicted increases. Extreme rainfall brings with it an increased risk of flooding. Areas most at risk need to consider appropriate adaptation measures.
- Most parts of the central, southern and eastern regions will experience an increase in rainfall. The increase ranges up to 100mm, increasing towards

⁷ CSIR. 2019. Green Book: Adapting South African settlements to climate change. Available at: www.greenbook.co.za

the east with a predicted increase of up to more than 200mm. (As noted earlier, this will include an increase in extreme rainfall events)

- No rainfall increases are predicted along the western and coastal areas. Increased rainfall will assist rain-fed agriculture as well as sheep and game farming. Areas of higher increased rainfall could also consider crops not previously grown due to the lower rainfall.
- The increased rainfall might, however, be offset against the increased temperatures the region is also predicted to experience.
- Climate modelling predicts an increase in very hot days for the whole region extending to 50 days. The northern parts are predicted to experience even more very hot (days 50–100 days). This places more strain on settlements in this region. Future housing and development projects would need to consider increasing temperature (extremes) and incorporate appropriate adaptation measures, for example, in the design and construction of structures. Agricultural practices along areas of cultivation would also require measures to cope with increased temperatures.
- Fires, extreme weather and invasive species — predictions are that risks from forest fires, extreme weather events and invasive species are higher at 2 degrees warming than at 1.5 degrees warming (BUIS, 2019).
- Maximum temperatures are predicted to increase by 2050 for the whole region. Increases will be lowest along the western (coastal) and southern regions. Temperatures are predicted to increase between 1.8 to 3.5 degrees. The northern half of the region will experience an increase in maximum temperatures of 3 degrees C and more. Although the area is also predicted to receive higher rainfall, this might be negatively influenced by higher maximum temperatures. Increased temperatures will also add to water stress, and more water would be required for agriculture to compensate.
- Increased temperatures would also affect biodiversity - At 1.5 degrees Celsius warming, 6 percent of the insects, 8 percent of the plants and 4

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percent of the vertebrates will see their climatically determined geographic range reduced by more than half. Those numbers will increase with higher temperature increases (BUIS, 2019).

- Drought is a serious concern for the Region, especially in parts of the Region where agriculture is a key activity. For the northeastern part of the Region, a decrease in drought tendency can be expected (areas in blue), while in the southern and western parts of the region, it is likely that drought tendency will increase. This will impact both intensive agriculture as well as animal husbandry (including game farming). The Region needs to ensure its development programmes (such as establishing emerging farmers also incorporates the risk of drought (as supportive programmes are often not long term).
- Droughts would also add to the issue of water scarcity. Horticulture and viticulture practices prominent in the southern part of the region need to consider these predicted temperature changes and increased drought tendencies.

3.1.6. REGIONAL SETTLEMENT AND MOVEMENT NETWORK PROFILE SUMMARY



NSDF SETTLEMENT TYPES:

- The NSDF takes a systemic view of rural areas, and proposes the 'soft delineation' of 'polycentric functional rural regions' that have (1) at least one well-connected **regional development anchor**, both within the region on the national transport network to 'anchor' the region in the national space economy, (2) **social, cultural, historical, economic and cultural characteristics and attributes** that would make the development of a 'functional rural region' possible over time, and (3) the **potential for intraregional trade** between towns and villages in the region



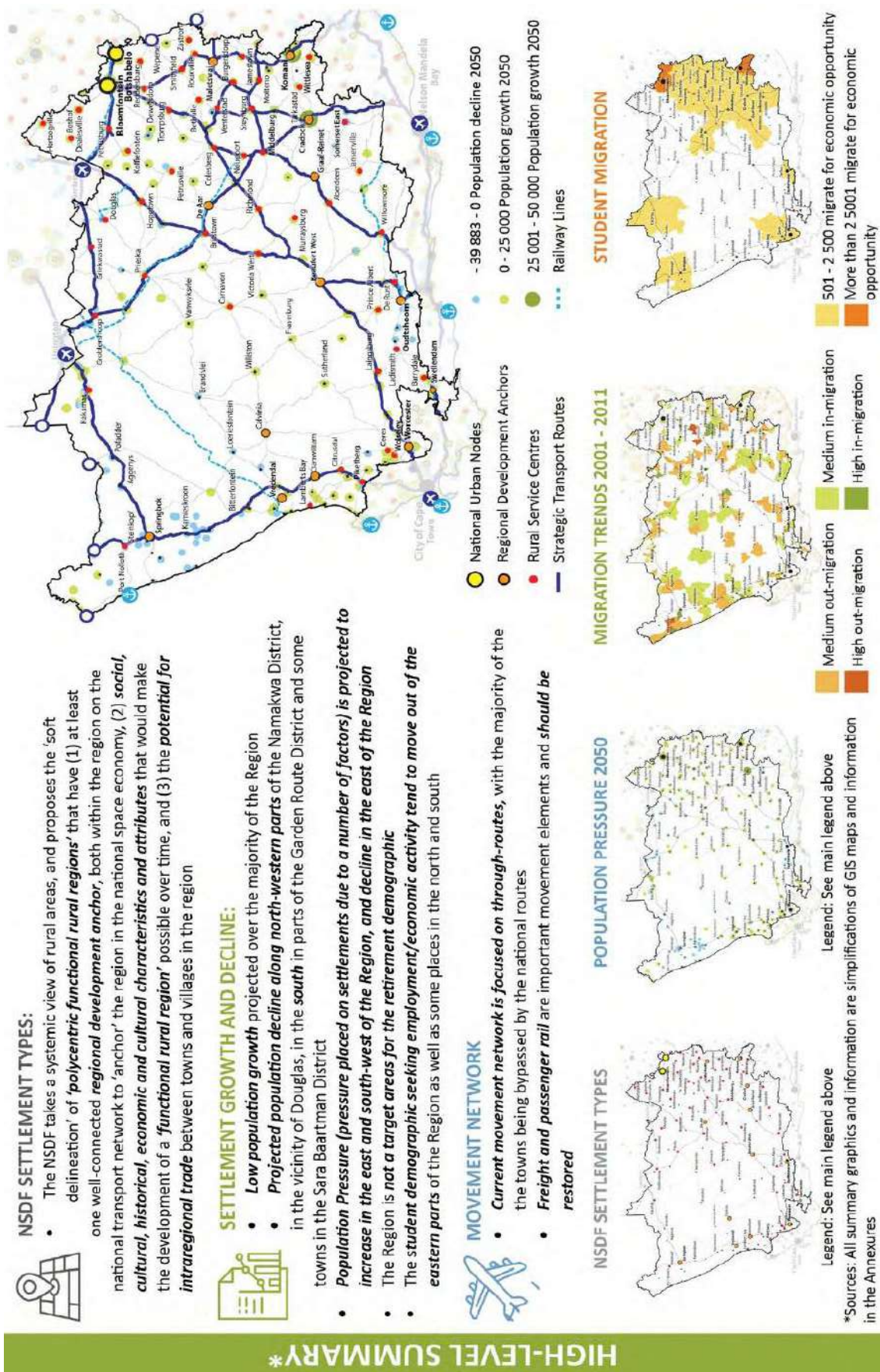
SETTLEMENT GROWTH AND DECLINE:

- Low population growth** projected over the majority of the Region
- Projected population decline along north-western parts** of the Namakwa District, in the vicinity of Douglas, in the **south** in parts of the Garden Route District and some towns in the Sara Baartman District
- Population Pressure (pressure placed on settlements due to a number of factors) is projected to increase in the east and south-west of the Region, and decline in the east of the Region**
- The Region is **not a target area for the retirement demographic**
- The student demographic seeking employment/economic activity tend to move out of the eastern parts** of the Region as well as some places in the north and south



MOVEMENT NETWORK

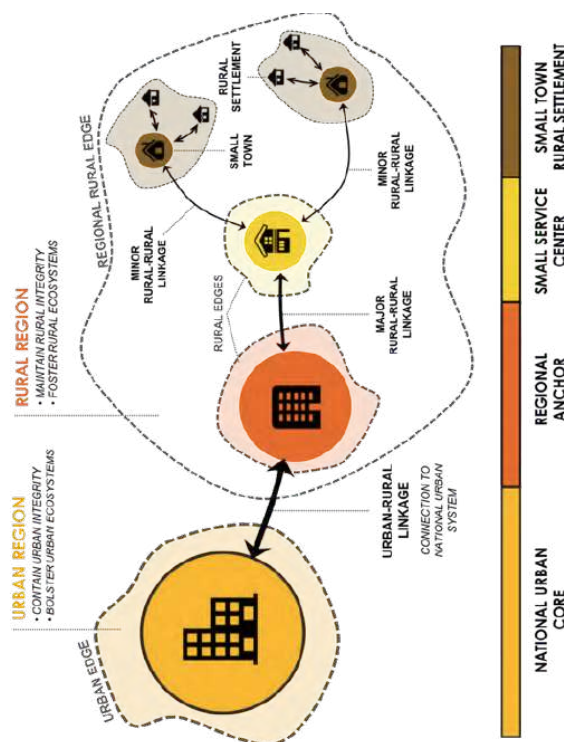
- Current movement network is focused on through-routes**, with the majority of the the towns being bypassed by the national routes
- Freight and passenger rail** are important movement elements and **should be restored**



a wide range of higher-order medical, education, government, safety and security services and housing typologies. To be effective, this model requires (at least) one regional anchor, which will be the service hub for the rest of the region. This will allow for the creation of the regional economy and promote inclusive economic growth.

The NSDF uses the **Regional-Rural Development Model** (Rural Service Centre concept) as a key spatial strategy to support regional economic development, focus spatial development and improve service delivery through urban-rural and rural-rural linkages. The projected benefits of focused nodal development include a reduction in transport operating costs and limiting urban and rural sprawl. However, these outcomes can only be achieved through the successful implementation of the Regional-Rural Development Model approach, which will depend heavily on the spatial alignment of government infrastructure investment and the private sector.

Figure 17: NSDF Regional-Rural Development Model



3.1.6.1 Role of Towns in Regions

Towns play a crucial role in acting as **urban service anchors** in urban and rural South Africa as they provide goods and service to the citizens of the town and communities living in the surrounding rural areas. The provision of goods and services (water, sanitation, infrastructure, etc.) can be made more efficient through the concentrated development of towns in order to increase densities and achieve economies of scale. This densification will allow for the introduction of key public facilities related to health care and education.

The role of small towns in the development of regions cannot be understated as these towns are crucial in establishing rural-urban linkages which reflect bottom-up urbanisation and serve as a gateway to wider markets.

In addition to the primary function of acting as an urban-rural linkage, small towns serve as centres of demand/markets or logistics hubs for products from rural regions (e.g. agricultural produce). This key function will allow access to the trade markets, which is beneficial for the rural region as it will increase rural agriculture production and rural incomes as a whole. In addition to this, proximity to local, small and intermediate centres of agricultural and service centred production areas is considered as a key factor in promoting rural development.

In playing the role of centres for the production and distribution of goods and services to their surrounding rural regions, a degree of development concentration is created. It is projected that this sense of concentration will reduce overall costs and improve access to key services for the public & private sector as well as rural households and enterprises.

3.1.6.2 The NSDF Regional-Rural Development Model

As discussed in Section 2.1.2, the NSDF has called for the support of a functioning **polycentric system** of well-connected nodes in regions that offer

is expected in parts of the Namakwa District, Douglas, the Garden Route District and the Sara Baartman District.

Migration is considered an important component of demographic analysis as it indicates the extent and nature of the movement of people to and from settlements. In terms of migration, Springbok, Port Nolloth and the southern Free State indicated a strong “net out” migration, whereas the rest of the region indicates a slight net-in migration. In addition to this, the region has experienced out-migration from people within the **retirement** and **student** demographics. This is an indication that the region may not be a desirable retirement location for the retired/elderly and does not offer enough economic opportunity to retain young residents.

3.1.6.4. Movement Network

The Karoo Region’s existing movement network indicates that the primary focus is on through-routes. At present, national routes are configured in a manner that prioritises mobility. This has resulted in most of the towns within the Karoo being bypassed by the routes. This trend is also seen in the configuration of the rail networks which run through the Region, and as a result, some stations have been closed and vandalised.

Considering the bad state of the railway operations within the region, there is an opportunity for TRANSNET to re-instate the railway lines in a way that will focus on heavy-freight and introduce more diverse uses, which could include the towns of the Karoo Region. Railways played a critical role in the establishment of economic activity in the Region and could continue to do so.

In addition to this, there is an opportunity to reconfigure the movement networks in a manner that will ensure local connectedness and access to markets, social services and promote greater circulation of local tourism.

In short, the details relating to the model are as follows:

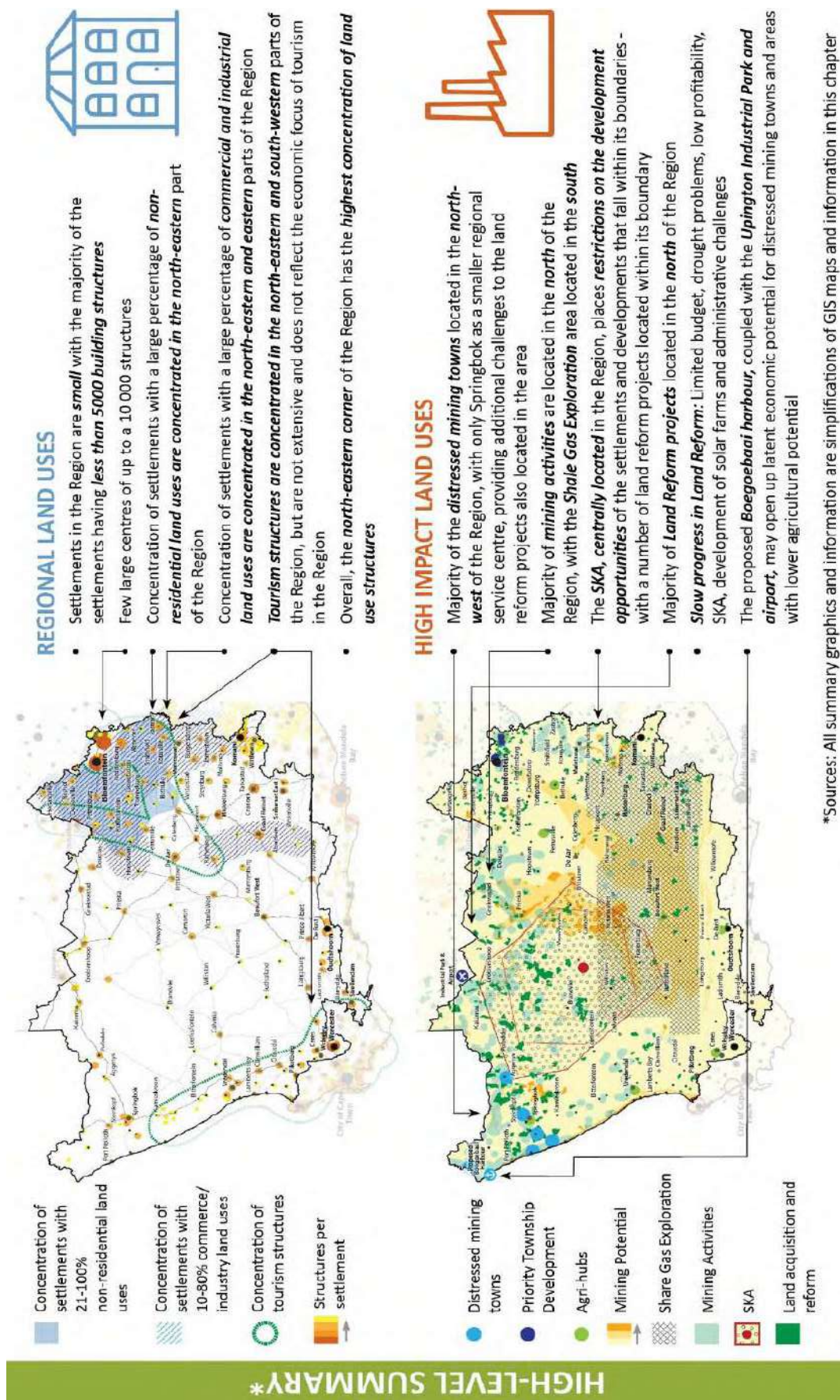
- (1) The model adopts a **systemic view** of rural areas, which propose the “soft delineation” of *polycentric rural regions*, which will embody the following characteristics:
 - At least one well-connected regional development corridor on the national transport network
 - Social, cultural, historical and economic characteristics and attributes to make the development of a functional region possible.
 - Reveal the potential for intraregional trade between the settlements of the region.
 - The arid nature of the Karoo Region requires efficient use, management and protection of natural resources.
 - The use of the **Social Service Provisioning Model** (see Section 3.1.8.2), which will enable the provision of social services in villages, towns and regional development anchors as well as ensure the creation of at least one regional development anchor to attract and retain human resources.
- (2) In addition to this, the NSDF proposes a **National Urban Network**, which will be used to guide spatial development and investment. It identifies the following aspects to promote and drive rural development:
 - **Regional Development Anchors**, which will allow targeted settlement planning/development, infrastructure provision, support to economic development.
 - **Rural Service Centers**, which will facilitate rural development and provide key services.

3.1.6.3. Growth and Decline in Settlements

Regional Planning is heavily influenced by the future growth and decline in the population size of settlements. The projections indicate that low population growth is expected throughout the region, and a decline in the population size

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3.1.7. REGIONAL LAND USE DEVELOPMENT PROFILE SUMMARY



3.1.7.3. Regional-Scale Land Use and Land Development

The South African Radio Astronomy Observatories' Square Kilometre Array telescope (SKA) is a ground-breaking project which is located in the most arid part of the region. The introduction of this development into the Karoo landscape and the promulgation of the Astronomy Geographic Advantage (AGA) Act of 2007, which restricts the use of radiofrequency spectrum and radio transmission within a certain range of the SKA. This has had a significant impact on the development proposals of towns such as Carnarvon, Calvinia, Kenhardt and Williston, which has hindered their economic development and growth. The SKA has also limited the future of space and technology tourism as there are concerns around the possible impact on eco and other recreational tourism forms.

The proposed Boegoebaai harbour, coupled with the Uppington Industrial Park and airport, may further open the latent economic potential of distressed mining towns and areas with lower agricultural potential.

3.1.7.4. Land Reform

The process of land reform in the Karoo Region, much like in the rest of South Africa, has been restricted by slow progress and a limited reform budget. In addition to this, several administrative aspects have further hindered the process, such as the Subdivision Act (Act 70 of 1970), which has drawn criticism due to the fact that it has impeded the process of subdivision by making it cumbersome, bureaucratic and expensive.

The removal of some of the conditions surrounding the subdivision process would result in greater efficiency in land reform efforts and result in the achievement of regional and national land reform.

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3.1.7.1. Land Use in the Context of Settlements

Understanding the land-use distribution on a regional scale will be key in identifying development patterns and trends. The following settlement-driven regional scale land-use patterns were identified:

- The majority of settlements within the region are small and consist of less than 5000 building structures; however, there are settlements that are expected to have less than 1000 structures due to population decline. A few larger settlements consisting of up to 10 000 structures are also present.
- The scarcity of residential-land use could be an indicator of the variety of services and functions within the settlement; however, it could also indicate that there is a non-residential activity dominating the settlement, e.g. a mining town.
- Towns in the eastern part of the region are dominated by commercial and industrial land uses.
- The lack of tourism facilities is a concern when considering the emphasis placed on tourism as a key economic activity in the region.

3.1.7.2. High Impact Land Uses

High impact land-uses are considered as uses that significantly influence the growth direction of settlements and the region. In some cases, these land-uses can be the original reason for the formation of the settlement.

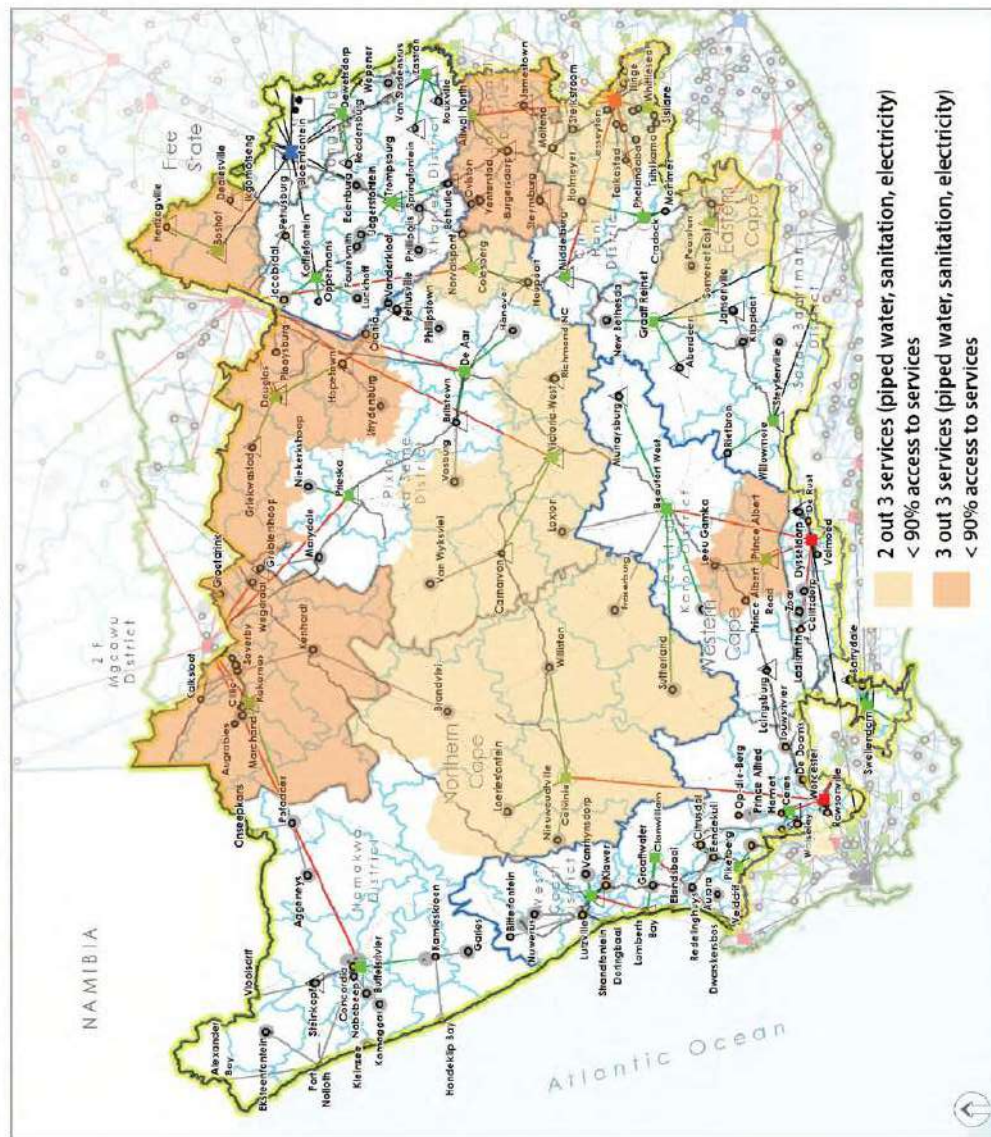
The Karoo Region consists of two primary high-impact land uses, namely Housing provision and Mining. The housing developments are concentrated in larger centres such as Kimberley, De Aar, Uppington or Beaufort West. In contrast, the mining activities are limited throughout the site and occur mainly in the North-West of the Region.

Karoo Regional Spatial Development Framework

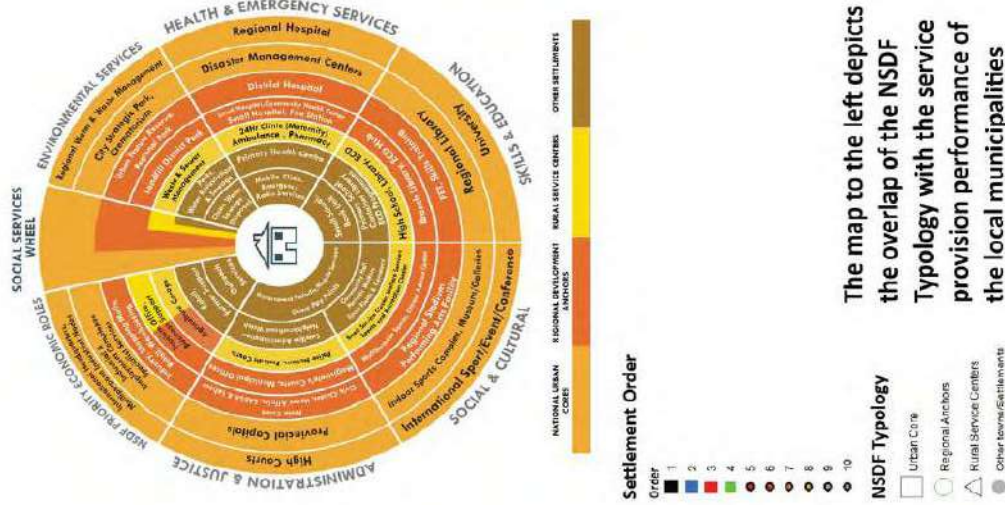
3.1.8. REGIONAL ENGINEERING AND SOCIAL SERVICES PROFILE SUMMARY



SOCIAL FACILITY HIERARCHY AND SERVICE PROVISION PERFORMANCE



*Sources: All summary graphics and information are simplifications of GIS maps and information in the Annexures



3.1.8.1 Service Delivery Performance

Access to Water: Approximately 75% of municipalities within the region have more than 90% access to potable water, while 25% of municipalities have less than 90% access. Water demand is far greater than water supply due to a variety of factors, including:

- A dry, arid climate that threatens water supply sustainability
- Overuse of surface water sources
- Limited water resources.
- Water loss due to infrastructure failure.

Access to Electricity: Approximately 61% of municipalities within the region have more than 90% access to electricity for lighting, while 39% of municipalities have less than 90% access. The following challenges are experienced:

- Despite the potential for renewable solar energy due to the favourable conditions, little use of solar energy is seen in settlements.
- Electricity demand outweighs supply.
- Electricity interruption caused by non-payment of debts to Eskom

Access to Sanitation: Approximately 39% of municipalities within the region have more than 90% of access to a “flushing toilet”, while 61% of municipalities have less than 90% access. Additionally, approximately 14% of households make use of pit-toilets, and roughly 4% of households have no formalized sanitation and use the “bucket system”.

The most serious backlog of services has been identified in the northern, south-east and central parts of the Region. One of the pressing concerns in the Region is the inadequate storm-water drainage systems which could be problematic in the event of heavy rainfall. In addition to this, less than 50% of households have access to the internet through their phones.

Karoo Regional Spatial Development Framework

3.1.8.2 National Spatial Social Service Provisioning Model

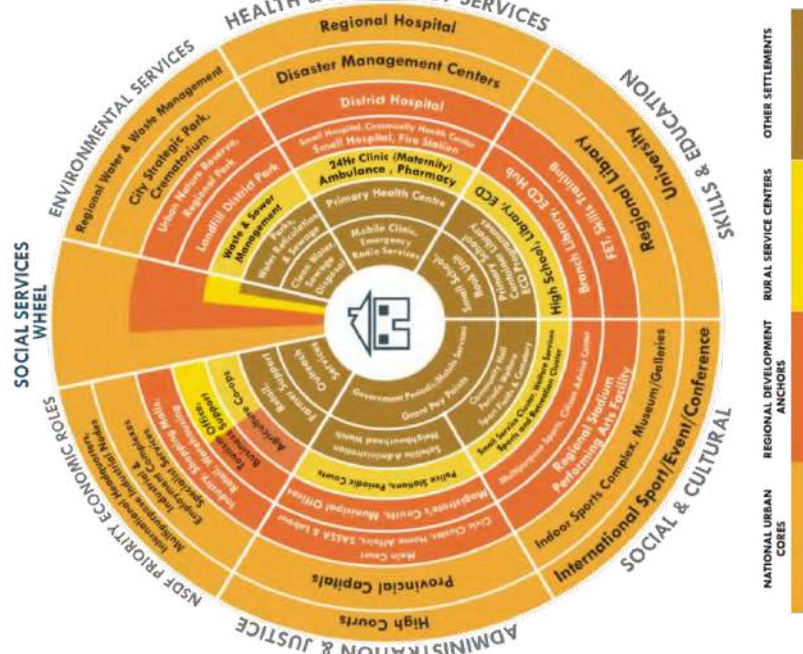
The Rural-Regional Development model of the NSDF (referenced earlier in this document) focuses on the development of a well-linked hierarchy of towns that is directly linked to the Social Service Provisioning model or Service Wheel.

The application of a National Spatial Social Service Provisioning Model is advocated as a key supporting model to provide spatially specific guidance to the Regional-Rural Development Model. The Social Service Provisioning Model has a hierarchical structure, with the highest level of services with the largest spatial reach (e.g. hospitals) being placed in the highest-ranked towns and settlements with smaller services (e.g. clinics) located in smaller places, and so on. The Model makes provision for each level of place to be provided with an appropriate range and capacity of services in line with the role, location, service reach, and population size of each settlement, including those within its service hinterland. This is done in a manner that is effective, sustainable and affordable. While rather rigid in appearance, the model does not propose a rigid spatial investment model but instead envisages a situation by which municipalities and national and provincial sector departments would use the ‘national and regional settlement and service network’ – the ‘Social Services Wheel’ (see Figure 18 on the next page) – as a strong indicator and guide to assist in the spatial allocation of facilities across space.

The NSDF identified a number of strategic regional nodes, including several for the Karoo region (a subset of the former) as critical in supporting future spatial development. These Regional Anchors in the Karoo are (in alphabetical order):

- Beaufort West;
- Calvinia;
- Cradock;

Figure 18: National Spatial Social Service Provisioning Model



- De Aar;
- Graaff Reinet;
- Komani;
- Maletswai
- Oudtshoorn;
- Piketberg
- Springbok;
- Swellendam;
- Vredendal; and
- Worcester.

The identification of Regional Anchors and the Regional Rural Development Model linked to the Service Provisioning Wheel serves to identify the regional and national contribution that selected regional centres will need to play, to support regional development as part of national development and transformation.

The application of the above model in the Karoo Region is shown in the graphic summaries at the beginning of this section. It should be noted that the network includes larger centres outside the Karoo Region for the highest order services, including Kimberley, Upington, Nelson Mandela Bay, Makhanda (Grahamstown) and Cape Town.

3.2. SYNTHESIS

3.2.1. INTRODUCTION

The preceding sections provided an (1) in-depth, (2) wide-ranging, and (3) holistic overview of the Karoo Region. Such an analysis, compiled from (1) the most up-to-date, reliable, and regionally relevant social, economic, environmental, transport, connectivity and institutional spatially referenced data and information, and (2) credible specialist inputs, is imperative in the process of *crafting an RSDF that is able to perform the functions of such frameworks*, as set out in SPLUMA.

However, before moving into the plan-making phase, '*strategic regional spatial development sense*' must be made of the contents of (1) *the analytical framework* and (2) *the engagements with stakeholders to date*. Such a '*regional spatial development synthesis*' is not only a legal requirement in terms of SPLUMA, but also of crucial importance:

- *From a technical perspective*, to ensure that the KRSDF is based on a wide and deep, yet succinct, strategic understanding and appreciation of the region; and
- *From a collaborative planning perspective*, to facilitate and enable the crucial process of reaching a high-level (1) *shared understanding* amongst all State and non-State stakeholders of the regional spatial development prospects, opportunities, challenges, constraints, risks and threats, and (2) *agreement* on what needs to be done, where in the region, by whom, when, how and for how long.

In this section, such a high-level '*regional spatial development synthesis*' is provided with these two purposes as a guide.

3.2.2. THE 'KAROO STRATEGIC REGIONAL DEVELOPMENT BASE'

The contents of the preceding work on the preparation of the KRSDF provided the material to:

- *Develop a credible, well-informed and holistic appreciation of the fundamental nature* of the Karoo Region; and
- *Enable the identification of the core components* (1) without which life would not be possible in the Karoo Region, and (2) the region as a '*functioning functional geographically defined*' and legally proclaimed entity, in terms of SPLUMA, *could not function and flourish*.

With regards to the former, the Region's unique, unsurpassed and majestic splendour and beauty, together with (1) the harshness of the elements, (2) the fragility of animal, plant and human life, (3) the sparseness of human settlement and the vast distances between settlements, and (4) the ceaseless ingenuity and adaptation required to make and sustain a life in the region, was duly recognised. In the case of the latter, a '*Karoo Strategic Regional Development Base*' was developed, consisting of four interrelated '*Regional Development Pillars*' that are of (1) core and (2) equal importance in enabling and sustaining all life in the Region (see **Figure 19** below). These four *Regional Development Pillars* are the following:

- *The Natural Resource Base*, including (1) the soil, (2) the air, (3) the water, (4) the animal and plant life, and (5) the minerals, metals, gemstones and carbons, such as shale gas, below the surface of the Region;
- *The Human Resource Base*, including (1) indigenous, local and formal knowledge, and related informally and formally acquired and transferred skills sets, and (2) the values, norms and practices, and social networks and bonds between people and amongst communities and related informal institutions in the Region;

- *The Movement, Infrastructure and Connectivity Base*, including the (1) road, rail and air networks, pipelines and cables and related facilities, (2) the dams, irrigation canals and water distribution networks, (3) the municipal service-based water, electricity and sewerage systems, and (4) the cellular, wi-fi and fibre information and communication networks in the Region; and

- *The Institutional and Government Services Base*, including (1) the municipal, provincial and national government structures and the provision of social, policing, law and order, and economic development services and related facilities, and (2) the conservation, protection, management and rehabilitation of the natural resource base of the Region.

In a region where these four *Regional Development Pillars* are healthy, functional, and well-managed, they (1) mutually reinforce each other, and (2) collectively sustain, enable, lead to, produce, provide and/or create the following three '*Regional Development Outcomes*', which are also aligned with the five SPLUMA principles:

- A series of safe, secure and life-giving and life-enhancing human settlements, ranging from individual and cooperative farms, small villages, towns, cities and metropolitan regions (1) that are functionally connected, integrated in terms of race, age and income, and provide quality, life-enhancing and affordable services, and (2) in which people live productive and enjoyable lives, and add meaning to the lives of others;
- A robust, viable and inclusive economy (1) that is focused on the well-being of those who live in the Region and based on wise and sustainable utilisation of the region's natural resource base, (2) in which there is equal access to opportunity for all who live in the region, and redress for those who were excluded from the economy in the past, or relegated to a second-rate place, and (3) that is not detrimental to other regions' economies, environments and communities; and

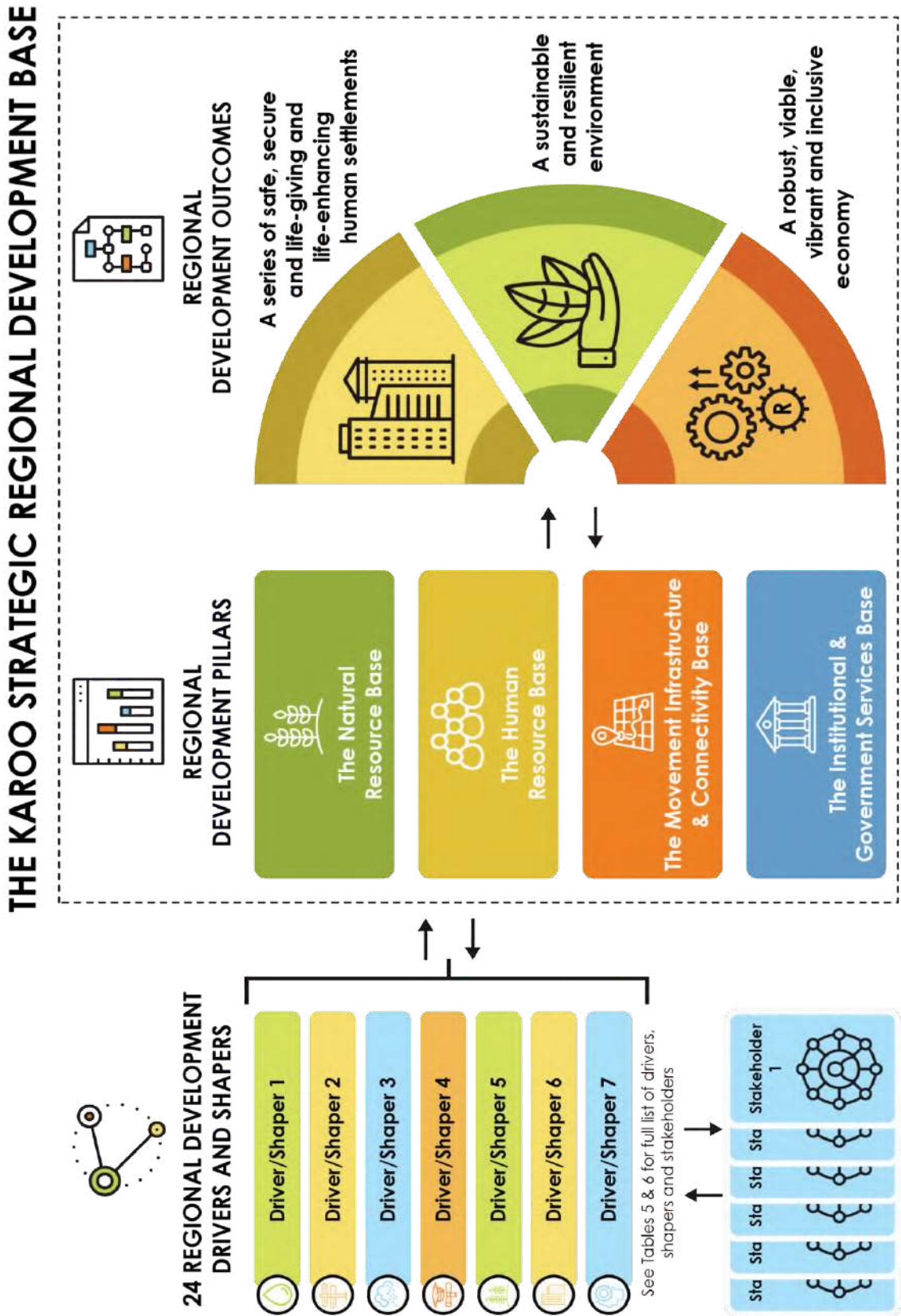
- A sustainable and resilient environment (1) in which animal and plant life is respected and protected, and human life is meaningful, dignified and fulfilling, and (2) that is, as far as possible, able to replenish its offerings.

Being a complex, integrated and adaptive system, these outcomes, in turn, feed back into the *Regional Development Pillars* of the foundation, either (1) sustaining and/or strengthening, or (2) disrupting and/or weakening it. This system and its constituting processes are of course 'open' to intervention in a variety of ways – some to a very large and others to a lesser, and even a very small degree – and hence the interest in the system when preparing an RSDF, which is meant to provide a spatially-structured framework for (1) making holistic sense of a region, and (2) 'intervening in it', as and where required for 'the collective good of the region', based on a solid understanding of its systemic qualities and dynamics.

In the following three sections, the *Karoo Strategic Regional Development Base* is analysed using (1) the contents of the 'Status Quo' and '*Regional Situational Analysis*', and (2) the engagements with key stakeholders in the region to date:

- The (1) state of the four *Regional Development Pillars*, and (2) the impact of 'this state' on the achievement of the three *Regional Development Outcomes*;
- The key '*Regional Development Drivers and Shapers*' and their '*Regional Development Significance*' in terms of their power/ability to (1) sustain and/or strengthen, or (2) disrupt and/or weaken the Karoo Strategic Regional Development Base; and
- The power/capability of different stakeholders in the region to influence, impact upon or change the drivers and shapers through innovative, targeted, sustained and collective action.

Figure 19: The Karoo Strategic Regional Development Base



3.2.3. THE KEY REGIONAL DEVELOPMENT DRIVERS AND SHAPERS

Strategic Regional Development Base were extracted from the analysis as set out the KRSDF Regional Synthesis. **Table 10** below provides a summative overview of the *relative strength* of each of these drivers and shapers in (1) sustaining and/or strengthening or (2) disrupting and/or weakening the base.

The key *Regional Development Drivers and Shapers* involved/active in (1) sustaining and/or strengthening, or (2) disrupting and/or weakening the Karoo

Table 10: Regional Development Drivers and Shapers

[illegible]

Key Regional Development Drivers and Shapers involved/active in (1) Sustaining and/or Strengthening, or (2) Disrupting and/or Weakening the Karoo Strategic Regional Development Base										
REGIONAL DEVELOPMENT DRIVER/SHAPER										Relative Strength of the Driver/Shaper in Sustaining or Strengthening the Base
Relative Strength of the Driver/Shaper in Disrupting or Weakening the Base	1	2	3	4	5	6	7	8	9	10
10										
9										
8										
7										
6										
5										
4										
3										
2										
1										
Shrinking and Ever-More Polluted Water Resources										
Inadequate Maintenance of Dams and Canals for Irrigation										
Air and Soil Pollution										
Weak Levels of Municipal Service Delivery (Water, Electricity & Sewerage), Lack of Municipal (Own) Funding										
The Conservation, Protection, Management and Rehabilitation of the Region's Natural Resource Base										
Shrinking Government Finances										
Municipal Capacity Gaps and Constraints										
Sparsely Populated, Low-Density Settlements										
Dispersed Regional Settlement Pattern with Associated Huge Travelling Distances										
Inadequate Funding for the Roll-out, Maintenance and Upgrading of Intra- and Inter-Regional Road and Rail Networks										
Inadequate Use of Local and Indigenous Knowledge										
Shared Values and Strong Social Bonds and Informal Institutions										
Low Levels of Formal Higher Education Amongst the Region's Population										

Key Regional Development Drivers and Shapers involved/active in (1) Sustaining and/or Strengthening, or (2) Disrupting and/or Weakening the Karoo Strategic Regional Development Base										
REGIONAL DEVELOPMENT DRIVER/SHAPER										Relative Strength of the Driver/Shaper in Sustaining or Strengthening the Base
10	9	8	7	6	5	4	3	2	1	

3.2.4. THE POWER/CAPABILITY OF STAKEHOLDERS TO INFLUENCE, IMPACT UPON OR CHANGE THE DRIVERS AND SHAPERS

Table 10 above clearly demonstrates that the key regional development drivers and shapers involved in:

- *Disrupting or Weakening the Karoo Strategic Regional Development Base are:*
 - Climate change;
 - Persisting historical (1) inequalities in income, wealth, and ownership of, and access to agricultural land, and (2) spatial separation;
 - Mining of minerals, metals and gemstones and (possible) shale gas extraction;
 - Shrinking and ever-more polluted water resources;
 - Shrinking government finances for (1) the provision of social services, grants and transfers, and (2) the investment in and maintenance of movement and connectivity networks;
 - Municipal capacity, funding and service delivery constraints; and

- The uneven, patchy and slow roll-out of cellular, Wi-Fi and fibre networks.

- *Sustaining or Strengthening the Karoo Strategic Regional Development Base are:*
 - Mining of minerals, metals, gemstones and (possible) shale gas extraction;
 - Tourism;
 - Agriculture; The Conservation, Protection, Management and Rehabilitation of the Natural Resource Base; and
 - Shared values and strong social bonds, and informal institutions.

It is important to establish what the *power/capability of different stakeholders* active in or with jurisdiction in the region is, to *influence, impact upon or change* the drivers and shapers through *innovative, targeted, sustained and collective action*. **Table 11** on the next page provides a summative overview of these powers/capabilities.

Table 11 clearly indicates the crucial role that the *national government* will have to play in (1) influencing, (2) impacting upon, and/or (3) changing the bulk

of the regional drivers and shapers. It will, of course, not be a singular venture, with the following entities, either (1) with jurisdiction over parts of the region or (2) active in the region, also having to play key roles:

- The four provincial governments;
- The fifty municipalities;
- The private sector;
- The mining companies;
- The farmers; and
- The NGOs active in the region.

What is of concern, though, is that a key element of the required intervention in the Karoo Strategic Regional Development Framework is *funding*, which is a challenge for all the entities as listed. Clearly, now more than ever, *innovation, collaboration and joint action* are required.

Table 11: Stakeholders

Regional Drivers and Shapers	Stakeholders Active in, or with Jurisdiction in the Region to Influence, Impact Upon or Change the Regional Drivers and Shapers (using a five-point scale where five is 'very high' and nought is 'very low/small')											
	Nat Gov	Prov Gov	Mun Gov	SOEs	NGOs	CBOs	Mining Comps	Private Sector*	Farmers	Organ Agric	Traditional Leaders	Individuals
Climate Change	5	4	3	5	4	4	4	4	4	3	3	3
Mining of Minerals, Metals and Gem Stones	5	2	1	1	4	3	5	1	2	2	3	2
Possible Shale Gas Extraction	5	2	2	3	4	4	5	2	2	2	1	2
Persisting Inequality in Income and Wealth	5	3	2	1	2	2	3	3	3	3	1	2
Persisting Spatial Segregation and Separation in Settlements	5	3	4	1	3	3	3	3	1	1	1	1
Persisting Inequality in Ownership of, and Access to Quality Agricultural Land	5	3	3	3	2	2	3	3	5	4	3	1
Intensive Irrigated Agriculture	4	2	1	1	1	1	2	1	4	4	3	0
Niche-Type Regionally-Specific Agriculture (e.g. Karoo Lamb)	5	3	1	0	5	0	0	0	5	5	3	0
Game Farming and Hunting	4	3	2	0	3	3	1	3	5	5	2	1
Tourism	5	5	3	0	5	4	1	5	3	3	3	1
Shrinking and Ever-More Polluted Water Resources	5	4	4	4	3	3	4	3	5	5	3	2
Inadequate Maintenance of Dams and Canals for Irrigation	5	2	1	0	1	0	1	0	3	2	2	0
Air and Soil Pollution	5	2	2	4	2	2	5	4	4	4	3	2
Weak Levels of Municipal Service Delivery (Water, Electricity & Sewerage)	4	3	4	2	2	2	3	2	2	2	2	4
The Conservation, Protection, Management and Rehabilitation of the Region's Natural Resource Base	5	4	4	3	4	3	5	4	5	4	4	3
Shrinking Government Finances	4	2	3	4	2	2	3	3	3	1	1	2

Regional Drivers and Shapers													Stakeholders Active in, or with Jurisdiction in the Region to Influence, Impact Upon or Change the Regional Drivers and Shapers (using a five-point scale where five is 'very high' and nought is 'very low/small')												
													Nat Gov	Prov Gov	Mun Gov	SOEs	NGOs	CBOs	Mining Comps	Private Sector*	Farmers	Organ Agric	Traditional Leaders	Individuals	
Municipal Capacity Gaps and Constraints													4	3	3	1	2	2	2	2	0	0	0	1	
Sparsely Populated, Low-Density Settlements													2	3	4	1	0	0	4	3	0	0	3	2	
Dispersed Regional Settlement Pattern with Associated Huge Travelling Distances													2	2	1	0	0	0	4	3	0	0	0	0	
Inadequate Funding for the Roll-out, Maintenance and Upgrading of Intra- and Inter-Regional Road and Rail Networks													4	2	2	0	0	0	1	0	1	0	0	3	
Inadequate Use of Local and Indigenous Knowledge													4	2	4	1	3	4	2	2	3	3	5	4	
Shared Values and Strong Social Bonds and Informal Institutions													1	1	2	0	4	5	1	2	2	2	3	4	
Low Levels of Formal Higher Education Amongst the Region's Population													4	2	1	0	1	1	2	2	0	0	1	3	
Uneven, Patchy and Slow Roll-out of Cellular, Wi-Fi & Fibre Networks													4	1	1	4	0	0	1	4	0	0	0	0	
Totals													101	63	58	39	57	50	65	59	62	55	50	43	

* The 'Private Sector' in this case excludes Mining Companies and Farmers, which are specified separately in the table.

3.2.5. CONCLUSION: SYNTHESIS

As a guiding construct, the concept of the 'Karoo Strategic Regional Development Base' was used to explore the core development base of the Karoo Region and identify the key Regional Development Drivers and Shapers. The most significant of these were in the case of Drivers and Shapers disrupting or weakening the Karoo Strategic Regional Development Base, the following:

- Climate change;
- Persisting historical (1) inequalities in income, wealth, and ownership of, and access to agricultural land, and (2) spatial separation;
- Mining of minerals, metals, gemstones and (possible) shale gas extraction;
- Shrinking and ever-more polluted water resources;
- Shrinking government finances for (1) the provision of social services, grants and transfers, and (2) the investment in and maintenance of movement and connectivity networks;
- Municipal capacity, funding and service delivery constraints; and
- The uneven, patchy and slow roll-out of cellular, Wi-Fi and fibre networks.

With regards to *sustaining or strengthening the Karoo Strategic Regional Development Base, the identified key Drivers and Shapers were:*

- Mining of minerals, metals, gemstones and shale gas;
- Tourism;
- Agriculture;
- The conservation, protection, management and rehabilitation of the region's natural resource base; and
- Shared values and strong social bonds, and informal institutions.

After having engaged the significance of each of these drivers and shapers in sustaining and/or strengthening, or disrupting and/or weakening the Karoo Strategic Regional Development Base, the power/capability of different stakeholders in the region to influence, impact upon, or change the drivers and shapers through innovative, targeted, sustained and collective action was explored. The most important stakeholders, either (1) with jurisdiction over the whole or parts of the region, or (2) active in the region, in attending to the drivers and shapers, emerged as:

- The national government;
- The four provincial governments;
- The fifty municipalities;
- The private sector;
- The mining companies;
- The farmers; and
- The NGOs active in the region.

PART 4: SPATIAL PROPOSALS



4.1. SPATIAL VISION, OBJECTIVES AND DEVELOPMENT AGENDA

The **Spatial Vision** for the Karoo Region is -

The Karoo Region, where innovation based on unique ecosystems, natural assets, cultural heritage and traditional local knowledge is used to build a sustainable future for local communities that will stand as a global testament to human ingenuity, adaptability and resilience in arid regions.

This vision is supported by the **Development Agenda** for the Karoo Region:



The **Spatial Objectives** in support of the Development Agenda and Spatial Vision are:

- 1- Support the Karoo Vision and Identity:** Unique aspects of the Karoo landscape, ecosystems and culture must be identified and protected. Development proposals for and marketing of the Karoo must focus on these unique aspects.

Karoo Regional Spatial Development Framework

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2- Provide Regional Transformation Guidance: Regional spatial organisation should address (1) historical inequality, (2) lack of access to services and economic opportunities, and (3) climate change threats. For this purpose, the role of specific spatial elements, especially towns and connecting infrastructure, must be clearly identified and strengthened by spatial development proposals.

3- Prioritise Regional Heritage and Conservation: The value inherent in the Karoo's natural and cultural assets must be activated and enhanced to contribute to education, innovation and economic development. The immediate and long-term benefit to local communities of protecting, conserving and sustainably using these assets in value-adding activities must be (1) demonstrated and emphasised, and (2) ensured by meticulously measuring and assessing the long-term benefit of proposals for the short-to-medium term utilisation and valorisation of assets.

4- Enable Regional Growth, Innovation and Change: Specific spatial opportunities and actions to stimulate optimum economic growth based on regional potential must be identified. The focus should be on (1) innovation, (2) the possibility of generating, codifying, packaging and selling knowledge through such activities, and (3) bringing about a rapid transition towards a more just spatial form.

5- Support Regional Collaborative Action: Institutional and other mechanisms should be set up that ensure collaborative spatial targeting in government, non-government and private sector investment and spending.

4.2. SPATIAL PRINCIPLES

Normative guidance to all spatial planning in the country is provided by SPLUMA (Section 7), stipulating the development principles to guide all spatial planning, land development and land use management. The application of the principles in the context of the Karoo Region, which will guide the approach, concept and spatial strategies to follow, are as follows:

Principle 1: Spatial Justice:

- The KRSDF will provide guidance to land reform that ensures that land reform occurs in spatial areas where the necessary social and economic support services can be accessed.
- The KRSDF will provide guidance to ensure that all communities have access to appropriate levels of social services in accessible locations

Principle 2: Spatial Sustainability

- The KRSDF will provide guidance on those areas that must be protected from development, including environmentally sensitive areas, natural resources important for the Regional economy and areas of special interest to the preservation of the Regional identity
- The KRSDF will support a more concentrated form of human development to ensure as much economic viability as is possible in the Regional context and limits encroachment on the natural environment and natural resources.
- The KRSDF will provide guidance on risks to sustainability that has to be managed, e.g. future increases in water scarcity and risks posed by potential land uses on resources that are supporting regionally significant land uses.

Karoo Regional Spatial Development Framework

Principle 3: Efficiency

- The KRSDF will support a more concentrated form of human development to ensure as much efficiency in service delivery as is possible in a sparsely populated Region.
- The KRSDF will provide the framework for spatial investment decisions to ensure better coordination of public investment and spending.

Principle 4: Spatial Resilience

- The KRSDF will provide guidelines on regional scale development that has long term potential, serves to diversify the economic profile of the Region and do not damage resources necessary for long term survival in the Region
- The KRSDF will provide a flexible framework to guide development to enable adaptations at a local level to cater for contextual issues, threats and changes that may occur.
- The KRSDF will recommend focus areas for alternative service provision that are more sustainable over the long term and will address current risks.

Principle 5: Good Administration

- The KRSDF will provide guidelines for spatial governance in the Region, taking into account the multi-dimensional profile of current stakeholders in the Region
- The KRSDF will emphasise integrated Regional governance to make efficient use of available human resources and take integrated decisions on optimal application of available financial resources

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4.3. REGIONAL SPATIAL DEVELOPMENT APPROACH AND CONCEPT

A regional development approach for the Karoo Region has to deal with a very specific spatial context: an expansive, arid and sparsely populated region. In this context, economic development and human activity occur at two very different scales: (1) spatially expansive, low-intensity economic activity such as extensive dry-land farming, sustainable energy installations, scattered mines, and the SKA telescope area, that constitute the 'macro' landscape in which (2) small communities are living in small, scattered and often highly isolated towns and settlements.

While the large scale current and potential future regional economic activities make an important contribution to a sustainable national economy, *the challenge is to ensure greater and more direct benefit to the small and isolated communities at a very local scale.*

To address this dichotomy of scale, a regional development approach was developed that is (1) based on the development pillars identified through regional analysis, and (2) the wise and informed use of the identified regional development drivers and shapers to translate large scale development to local participation and benefit.

This development approach is based on a **Spatial Concept** consisting of the following elements:

The **natural resource base** provides the foundation for sustainable economic development in the region, namely:

- Mineral and fossil fuel deposits;
- Pockets of fertile agricultural land, especially on the southern and eastern boundaries of the region;

- Unique biomes supporting unique ecosystems and natural landscapes, as well as niche agriculture, such as Karoo sheep farming and Rooibos cultivation;
- A significant percentage of sunny days with high levels of UV radiation;
- Sparse human development and settlement, coupled with other natural factors contributing to clear skies and limited light and radio wave interference; and
- A cold water coastline.

1- The **large-scale economic infrastructure base** forms the macro-economic landscape of the Region and (1) delivers economic growth and job opportunities at a regional scale while (2) contributing to the national and the global economy in a number of areas. The large-scale regional economic activities are:

- Extensive, low-intensity livestock and intensive, predominantly irrigation-based crop-based agriculture;
- Mining;
- Solar and wind-energy generation;
- Corridor-focused mineral beneficiation and industrialisation, including the Boegoebaai Harbour and rail link to Upington as export node;
- Technological installations, i.e. the SKA;
- Rural tourism; and
- The Oceans economy (e.g. fisheries).

2- To localise as much economic benefit as possible, and connect smaller towns into the national and global economy, a series of **well-connected towns** on the national transport and ICT networks have been identified as **Regional Development Anchors**. In a Karoo-specific application of the

'Regional-Rural Development Model' proposed in the NSDF, this does not only mean connectivity to large urban centres; it also means very pointedly and directly tapping into, strengthening and sustaining regional economic value-chains. Such localisation of economic benefit will be achieved by establishing downstream economic activities related to the large-scale activities in the Anchors. These include:

- Agricultural processing and beneficiation;
- Agricultural markets;
- Mineral beneficiation and the provision of support services to the mining sector agricultural markets;
- In addition to tourists travelling to the Karoo as a destination, becoming part of the tourist experience for 'en-route tourists' who travel through the Karoo to larger destinations; and
- Other business and technical services in support of large scale activities, e.g. manufacturing, maintenance and repair facilities and services for solar and wind energy generators and related

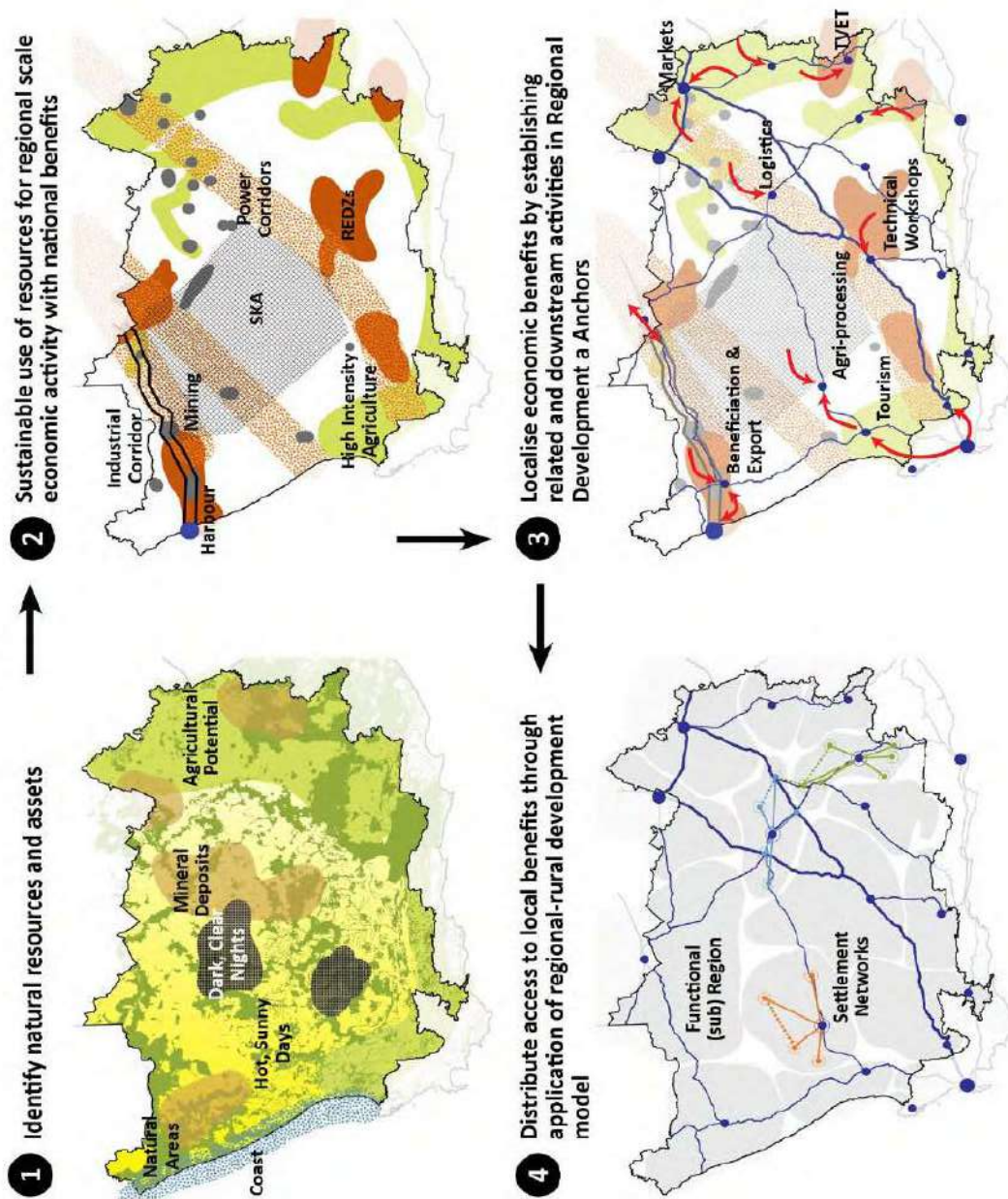
infrastructure, personal, legal and financial services, trade and retail, etc.

- 3- In turn, the Anchors are systemically connected to smaller settlements in **functional economic sub-regions**, serving as (1) markets for input materials and products and (2) conduits to larger urban and global markets. This network is crucial in (1) ensuring access to social services to all and (2) structuring the land reform process from a sustainable settlement creation perspective. The development of the human resource base is dependent on a well-functioning settlement network offering the optimum range and scale of social services. A healthy, secure, and well educated human resource base will, in turn, contribute to regional innovation and development.

The **spatial concept for regional development** based on this approach is illustrated in **Figure 20** below.

Figure 20: Spatial Concept

SPATIAL CONCEPT



4.4.1. KAROO REGION: DEFINING ELEMENTS

Spatial Strategy: Identify and protect the regionally relevant spatial characteristics and assets that lend a unique **Regional Identity** to the Karoo Region.

The Karoo Region's social, cultural and 'natural landscape' identity and locally and globally significant economic sectors rely on its unique and distinguishable regional identity. As such, development strategies and initiatives in the Karoo must be sensitive to its spatial characteristics and assets. Such characteristics and assets should not be compromised for short term gain at the expense of the long-term sustainability of the Karoo.

In accordance with this perspective, provincial and municipal spatial development planning and municipal land-use management should take the following approach regarding the protection of the priority regional identity elements:

- All large-scale economic and development proposals must:
 - Be designed to strengthen and support the unique regional identity as a key sustaining and defining asset of the Karoo, and must be assessed in terms of their impact on the identified priority regional identity elements (whether positive or negative);
 - Include tangible mitigation measures to avoid or limit the impact on priority regional identity elements, with associated measurable indicators; and
 - Be accompanied by 'detailed costed, budgeted for, and time-based rehabilitation plans' that indicate how any impact on priority regional identity elements will be rehabilitated over time, with use of which labour and materials, and at what expense; and

- Where large-scale economic and development proposals will have a substantial and irreparable impact on the priority regional identity elements of the Karoo, such proposals should not be supported.

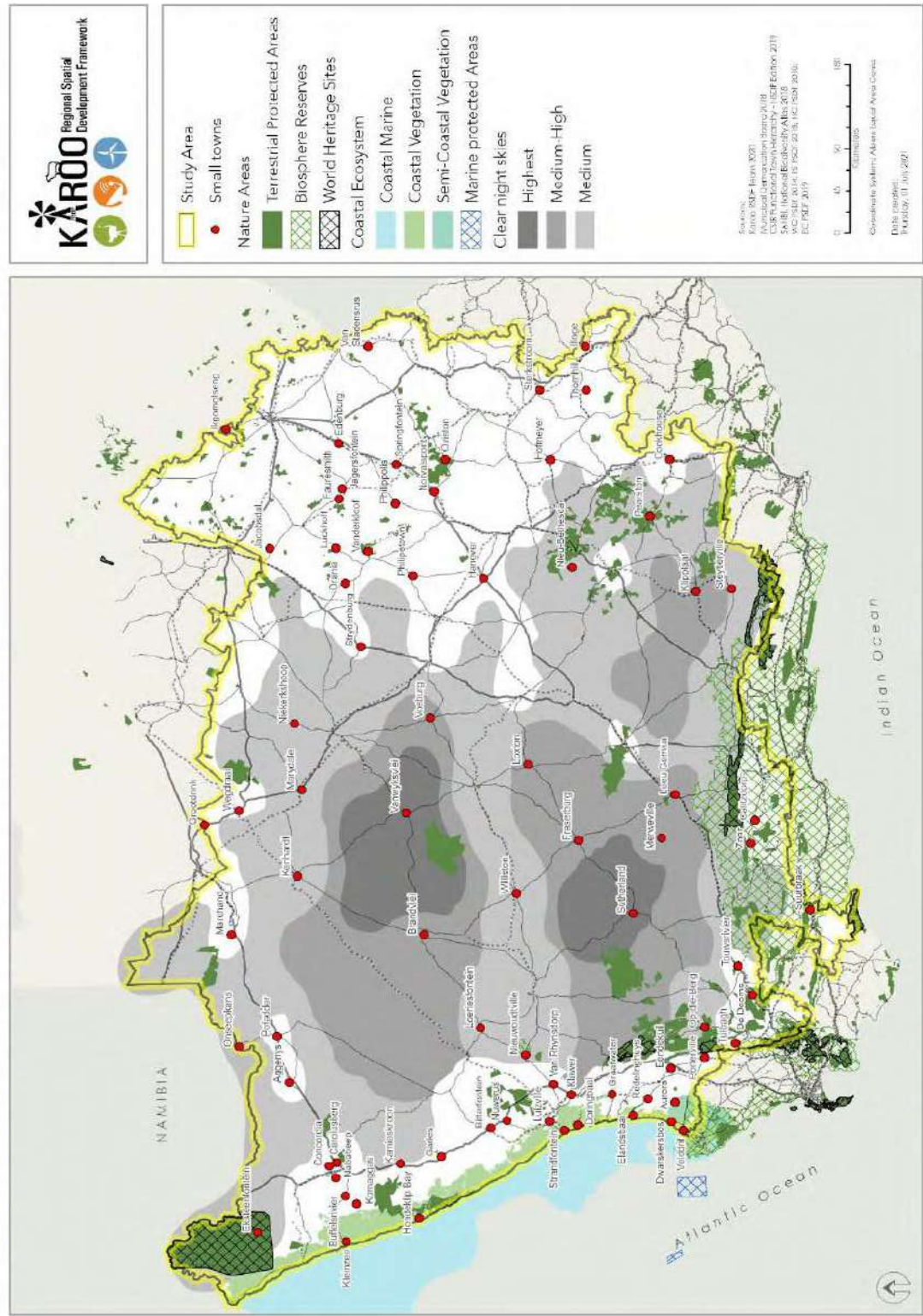
In addition to protection, (1) local-scale planning should focus on enhancing the historical and cultural elements of small towns, and (2) local assets should be identified and included in place-marketing strategies.

The regional-scale characteristics and assets that contribute to the unique regional identity are the following, as also shown on **Map 3**:

Characteristics and Assets	Regional Contribution
Small towns located in a predominantly rural landscape.	• Socio-economic safety-net for rural communities. • Tourism contribution: accommodation; linkage to eco and adventure tourism; cuisine, arts and crafts. • Rural hubs for specialised education and research. • 'Remote working'/urban migrants.
Natural areas, including biodiversity priority areas and arid coastal area.	• Diversity provides environmental resilience against climate shocks. • Education and research; contribution to global knowledge of arid regions. • Eco and adventure tourism.
Open rural landscape with dark nights and clear skies.	• Space observation/Astronomy (SKA and SAAO). • Rural and astronomy tourism and 'rural escapism'.

Map 3: Unique Areas and Characteristics

Karoo RSDF: Unique Areas and Characteristics



4.4.2. SUSTAINABLE RESOURCE USE

Spatial Strategy: Implement a spatially differentiated approach to the protection, use and management of natural resources as one of the critical development pillars of the Karoo, focusing on optimising the use of resource potential while mitigating potential harm and risks in support of the **Heritage and Conservation Agenda** for the Karoo.

The identity and economy of the Karoo Region are strongly based on its natural resources, which include:

- Unique ecosystems of fauna and flora, from both a conservation and tourism perspective;
- Specific environmental conditions in support of niche agriculture, e.g. extensive Karoo Lamb farming, Rooibos cultivation, and irrigated cropping, including vineyards;
- A rich, cold water coastline;
- Mineral and fossil fuel deposits; and
- Climatic conditions and resources that are conducive to wind and solar, and to a more limited extent, hydraulic energy generation.

The Karoo Region has experienced, is experiencing and is set to experience a range of threats to its natural resource base, significantly climate change that is set to result in (1) the worsening of an already severe water scarcity-situation, (2) higher temperatures, and (3) more ‘extremely hot days’. The use of natural resources for economic gain also has an impact on the sustainability of the region, e.g. the potentially negative impact of mining and exploration activities, commercial agriculture, and extensive solar and wind energy installations, unless these developments are approached with care and sensitivity to their long-term impacts and rehabilitation and restoration of impact areas planned, budgeted for and properly undertaken.

To manage the competing interests and pressures on natural resources, a differentiated approach to resource management must be implemented. This approach is based on identifying two types of resources areas, each with a series of sub-categories, with a development approach fitting each of these areas.

(1) Resource Management Areas: These are the most sensitive resource areas, some of which already have been assigned a special protection status. **Limited, very low impact activity** should be permitted in these areas, according to the regulations applicable to each category.

Natural Resource Management Areas		
Area Category	Included Categories	Development Regulations and Permitted Uses
Protected and Sensitive Areas	Protected Areas; Focus areas for Protected Area Expansion	• Preferred use: Conservation. • Uses permitted according to the Management Plan for each Protected Area, prepared in terms of the National Environmental Management: Protected Areas Act 57 of 2003. • Any special use restrictions from national or provincial environmental and conservation legislation, regulations and management plans must take preference over any other

(2) Resource Risk and Restricted Areas: These are areas where development pressure and competing uses are impacting natural resources on a regionally significant scale or may very likely do so in future. For spatial planning and land-use management purposes, risk categories have been identified. In addition to the area of resource use competition, categories were included for 'no-go zones' comprising some of the most sensitive resource management areas described above, as well as the areas around the Square Kilometre Array Telescope installation where conditions to limit light and radio wave pollution already apply.

Natural Resource Management Areas		
Area Category	Included Categories	Development Regulations and Permitted Uses
Sensitive Areas	Critical Biodiversity Areas	- spatial plans or development proposals. - Preferred use: Conservation. - Maintain area in a natural or near-natural ecological condition.
Water Scarce Areas	Stressed Catchments	- No new development or activity will be supported without (1) quantification of water requirements for the duration of the activity and (2) a detailed strategy for water-sourcing and water quality protection that indicates that the development is feasible in terms of its water use and that no negative impact will be incurred on water availability and water quality in the area/s of operation. - The above is in addition to or must form part of any Environmental Impact Assessment that is required in terms of the National Environmental Management Act, 107 of 1998.
	Water Transfer Areas	
	Climate change Stress Areas	

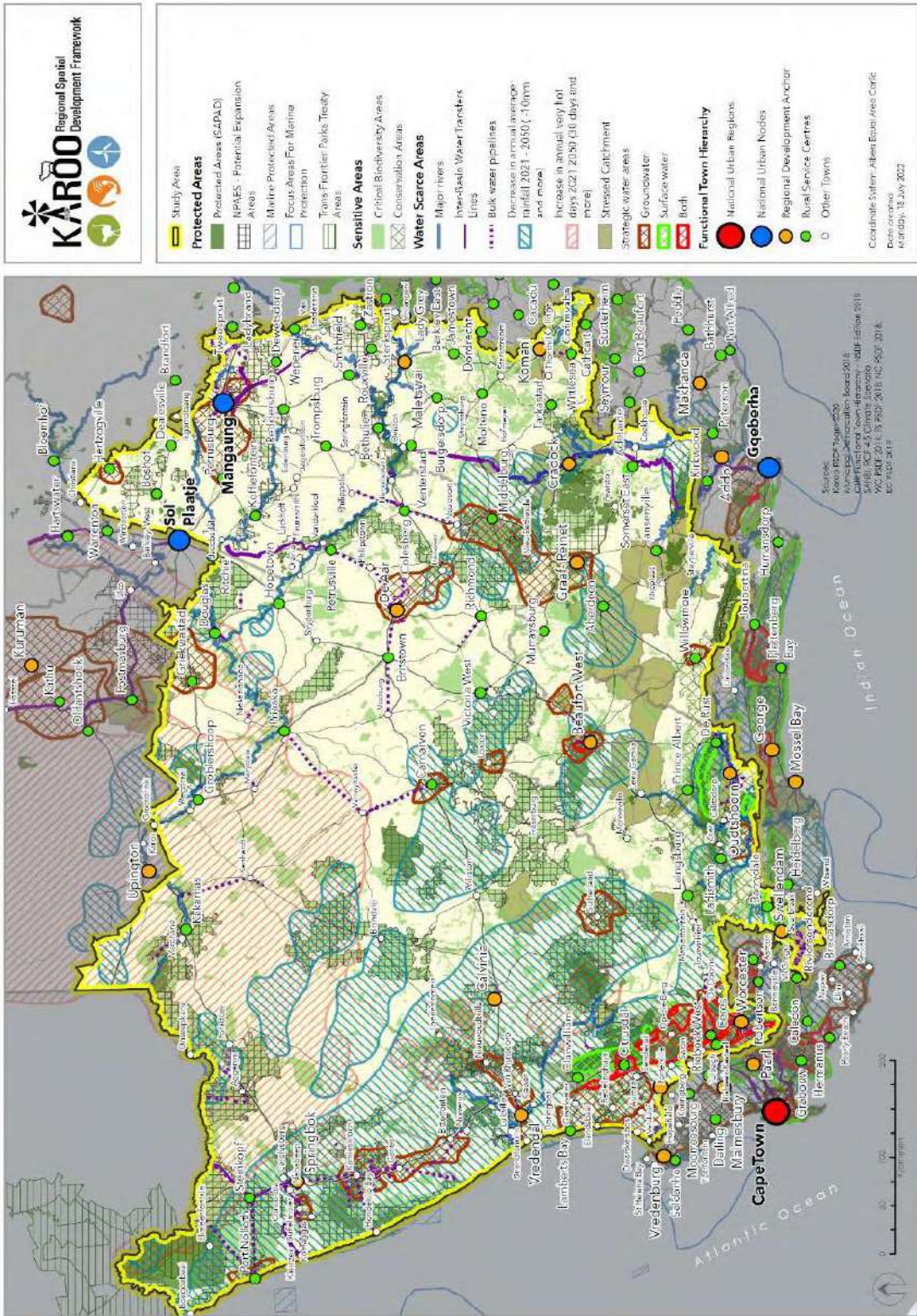
Natural Resource Risk and Restricted Areas		
Area Category	Included Categories	Development Regulations and Permitted Uses
Resource Risk Mitigation Category 1	SKA Advantage Areas	Astronomy Geographic Advantage (AGA) Act of 2007 and its Regulations take precedence.
Resource Risk Mitigation Category 2	Environmental Areas (Protected Areas, CBAs)	Natural Environmental Management: Protected Areas Act 57 of 2003 and its Regulations, Natural Environmental Management Act, 107 of 1998 and its Regulations, as well as any other national and provincial legislation and regulations managing environmental impact, take precedence.
Resource Risk Mitigation Category 3	Tourism areas, agricultural potential areas	- Low intensity uses. - Minimal disruption of the existing landscape.

Natural Resource Risk and Restricted Areas		
Area Category	Included Categories	Development Regulations and Permitted Uses
	areas falling within (1) distressed water catchments, (2) water transfer areas, (3) 'climate change stress areas', and (4) ESAs.	• Environmental impact mitigation measures must be applied. • Disruptive activities must be followed by long-term rehabilitation. • All the new infrastructure required by large-scale mining or industrial developments must be designed with the ultimate goal to accommodate long-term use by permanent local communities and should be cognisant of supporting a connected network of human settlements as per the NSDF's '<i>Regional Rural Development Model</i>'.

Natural Resource Risk and Restricted Areas		
Area Category	Included Categories	Development Regulations and Permitted Uses
	including irrigation and shale gas exploration areas, falling within (1) distressed water catchments, (2) water transfer areas, and (3) SWSAs and (4) 'climate change stress areas'.	• Limitation on visual impact: (1) promote natural building materials, (2) ensure sensitive treatment of public interfaces, e.g. road frontages, and (3) manage the visual impact in topography, e.g. limit altering skyline. • Restrictions on water use (water quantity and quality considerations). • Noxious activities (involving excessive noise; water, air or soil pollution; toxic and hazardous materials) not permitted.
Resource Risk Mitigation Category 4	Existing economic nodes and potential economic development regions, and existing mining	• High-intensity development in designated nodes and areas identified in national, regional, provincial and local spatial planning, subject to any required studies and investigations (e.g. EIAs and feasibility studies).

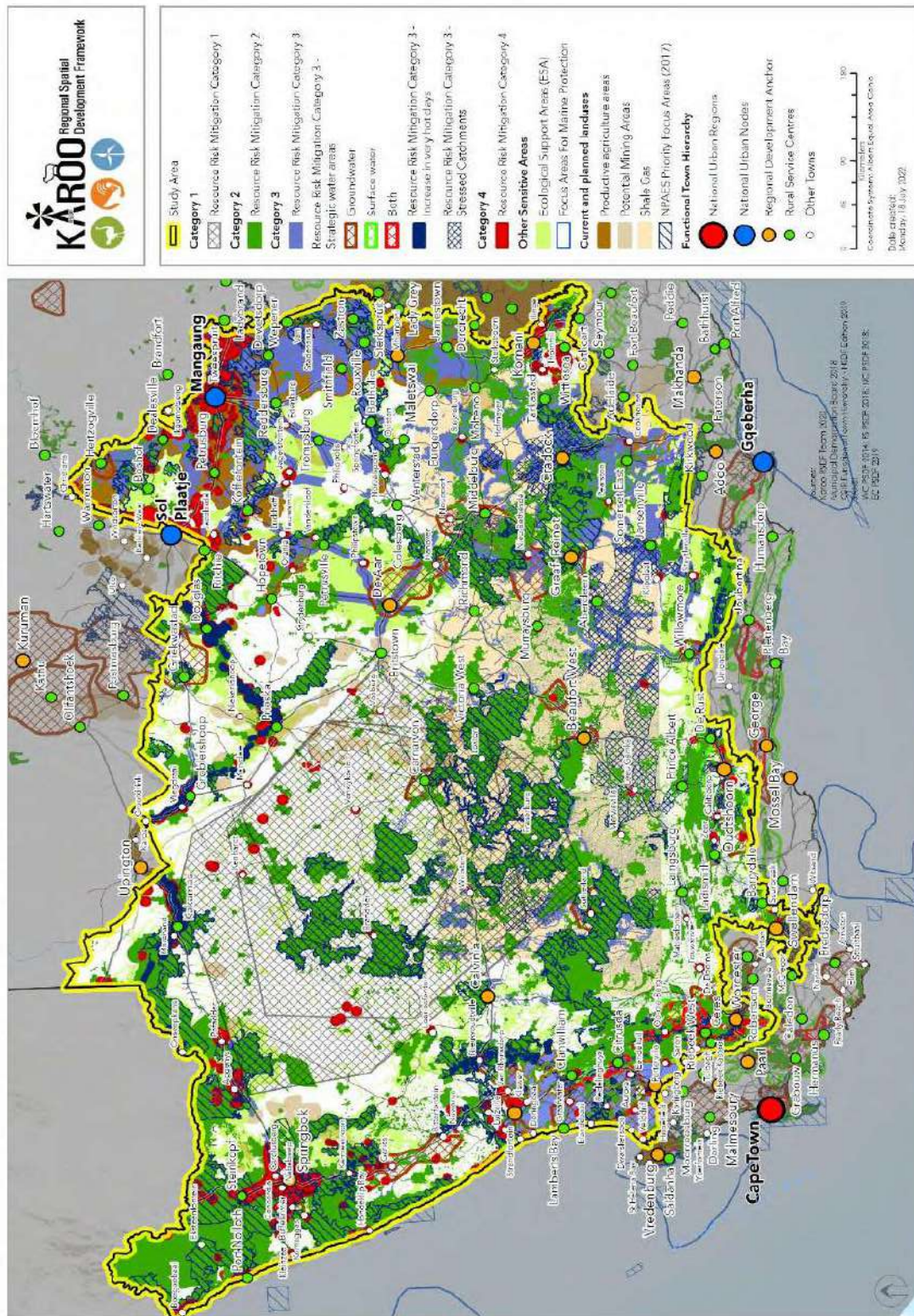
Map 4: Natural Resource Management Areas

Karoo RSDF: Natural Resource Management Areas



Map 5: Resource Risk and Restricted Areas

Karoo RSDF: Natural Resource Risk and Restricted Areas



4.4.3. VIABLE AND INCLUSIVE REGIONAL SPACE ECONOMY

Spatial Strategy: Support the **Economic Growth, Innovation and Change** agenda of the Karoo by guiding, accommodating and supporting economic development at two levels:

- 1- Large scale, nationally significant economic initiatives and infrastructure in support of inclusive growth and economic recovery, focused on diversification through beneficiation as well as economic activities supporting national climate change mitigation and sustainable development commitments.
- 2- Finer grained economic initiatives with a direct impact at a local and community scale, focused on (1) sustainable growth and diversification of existing sectors, (2) strengthening of local involvement in regional and local value-chains, and (3) maximum local job creation in agriculture, tourism, education and social services.

In this section, a layered spatial economic development strategy for the Karoo Region will be presented in order to implement the spatial development concept as illustrated earlier. This spatial strategy will consist of the following elements:

- 1) Delineation of **Economic Functional Regions** based on (1) rural-rural connectivity of networks of settlements as an application of the Regional Rural Development Model of the NSDF, (2) spatial and development characteristics, (3) large innovation and value addition sectors of opportunity, and (4) locally nuanced opportunities for economic diversification and innovation;
- 2) Identification of nodal points in the form of **Regional Development Anchors**, building on the concept put forward in the NSDF, but with a differentiated view of the regional role of each Anchor based on economic diversification opportunities;
- 3) The identification of the **Regional Economic Network** of connectors supporting the Anchors, and connecting the Karoo to Anchors, towns and markets outside the region; and
- 4) For the purpose of coordination of spatial planning and investment across administrative boundaries, the establishment of a more collaborative and integrated view of the spatial elements that need

to be supported and maintained in support of the two key sectors in local level economic development and employment, i.e. **Agriculture and Tourism**.

The physical connections between towns, as well as functional connections based on social service provision and the results of the Town Survey⁸, conducted of use of retail and facilities in different towns, were used to delineate networks of settlements around Regional Development Anchors. These formed the main input into the delineation of the functional regions.

Spatial and Development Characteristics:

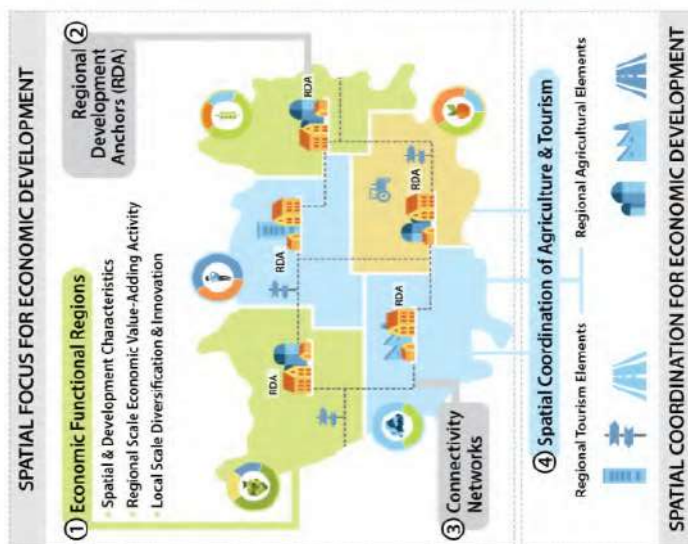
The economic activities and product-focus of different parts of the Karoo Region were differentiated, based on factors such as available natural and human resources, climate conditions, the potential for future activities, government investment patterns, infrastructure and connectivity to major nodes and marketplaces, and restrictive conditions to protect sensitive areas.

Large-scale, Nationally Significant Initiatives:

A significant dimension of the Karoo regional space economy is the existence of activity and potential at different scales. Some of these sectors are major contributors to the regional and national economy, are set to continue doing so in future, and have a 'regionally significant spatial footprint'. These are:

- Mining and related beneficiation activities, e.g. the Aggeneys SEZ also linked to Boegoebaai and the Upington IRZ;
- Space observation e.g. the SKA Advantage Area; and
- The sustainable energy sector (including the REDZs Phase 1 and Phase 2, Corridors).

In spite of risks and local impacts that require management and mitigation, the contribution of these sectors is vast and should be supported through



4.4.3.1. Economic Functional Regions

The economic functional regions of the Karoo Region are shown on **Map 6**. These regions were determined and differentiated taking into account connectivity, spatial characteristics, and economic activity at different scales. The following informed the delineation of regions:

Rural-Rural Connections:

⁸ Online survey of facilities in and connections between small towns in the Karoo Region conducted by project team, 2021.

focused, sustainable investment. Current and potential future activities of these sectors dominate in certain sub-regions.

Local-scale Diversification through Beneficiation and Innovation Opportunities:

The direct benefit to local communities is not always reflective of the scale of the above activities, e.g. the lack of large-scale local employment generation in some instances, combined with potentially harmful impacts on the environment and unique Karoo landscape. As such, more local-specific diversification and innovation opportunities must be explored and strengthened. These opportunities hold the potential to directly impact local economic development, employment and inclusive growth for local communities.

The economic analysis of the Karoo Region indicated that the regional economy has an over-dependence on 'consumption, non-renewable sectors', has a very narrow production base, and has too limited a focus on locally driven innovation or economic diversification.

Both need to be attended to in order to unleash local business, technology, and 'local sector-focused innovation' that will drive growth in the region and to the benefit of all its people. The identified economic diversification opportunities within the Karoo Region have been further classified, prioritised, and developed by focussing on the following three dimensions:⁹

- Growth in global demand (as a driver of local growth);
- Level of innovation; and
- Horizontal and vertical diversification.

Table 12 below provides an overview of the Karoo Region's diversification opportunities that can be regarded as 'realistic', taking into account global

⁹ Please see detailed product space analysis and recommendations in **Annexure A**

demand. A total of **twenty-eight products** have been identified in **seventeen municipalities**. The number of diversification opportunities is relatively low, which is closely related to the region's relatively narrow economic base. The full product space analysis and full description of diversification opportunities in the region, including product codes, will be provided in Annexure A.

in the food processing sector (i.e. secondary agriculture or agro-processing) have a much lower labour intensity. Hence, these diversification opportunities are less favourable for job creation.

Box 2: Note on Reading Table 12:

The 'distance' column in the table ranges between 0-1. The lower the distance value, the better connected the diversification opportunity is to existing core competencies in the Karoo Region. A few opportunities are very 'close' to existing competencies.

The labour intensity index reflects the total number of direct jobs per one million US Dollar of exports per sector. This index was calculated using total exports and the total direct employment of exports for each of the eleven sectors available in the dataset. This ratio was then normalised to create a 0 to 1 index score, with products with a higher labour intensity having a score closer to 1. **Table 12** shows that the opportunities within primary agriculture have the highest labour intensity, while opportunities

CONTINUES ON PAGE 130 OF BOOK 2

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Table 12: Diversification opportunities per Local Municipality

Municipality	Product description	Sector	Distance	Labour intensity index
Bergvriër	Fresh or chilled Cod	Livestock and animal products	0.00	0.36
	Frozen Pacific Salmon	Livestock and animal products	0.40	0.08
	Apricots, fresh	Vegetables, fruits and grains	0.50	0.36
Kopanong	Grape juice, incl. grape must, unfermented	Prepared foodstuffs, beverages and tobacco	0.20	0.08
	Multi-ply paper and paperboard, coated on one or both sides with kaolin	Wood pulp, paper and articles thereof	0.00	0.08
Witzenberg	Olives, provisionally preserved but not suitable for immediate consumption	Vegetables, fruits and grains	0.50	0.08
	Figs, fresh or dried	Vegetables, fruits and grains	0.14	0.36
	Apricots, fresh	Vegetables, fruits and grains	0.50	0.36
	Tomatoes, prepared or preserved other than by vinegar or acetic acid	Prepared foodstuffs, beverages and tobacco	0.50	0.08
	Grapefruit juice, unfermented	Prepared foodstuffs, beverages and tobacco	0.33	0.08
	Orange juice, unfermented and not spirited	Prepared foodstuffs, beverages and tobacco	0.50	0.08
	Grape juice, incl. grape must, unfermented	Prepared foodstuffs, beverages and tobacco	0.20	0.08
Swellendam	Fructose & fructose syrup	Prepared foodstuffs, beverages and tobacco	0.50	0.08
	Undenatured ethyl alcohol <80% alcohol content by volume, spirit, liqueur & spirit beverages	Prepared foodstuffs, beverages and tobacco	0.00	0.08
	Ferro-manganese	Base metals and articles thereof	0.33	0.08
	Olives, provisionally preserved but not suitable for immediate consumption	Vegetables, fruits and grains	0.50	0.08
	Apricots, fresh	Vegetables, fruits and grains	0.50	0.36
Cederberg	Tomatoes, prepared or preserved other than by vinegar or acetic acid	Prepared foodstuffs, beverages and tobacco	0.50	0.08
	Ethyl alcohol and other spirits, denatured, of any strength	Prepared foodstuffs, beverages and tobacco	0.00	0.08
	Figs, fresh or dried	Vegetables, fruits and grains	0.14	0.36

Municipality	Product description	Sector	Distance	Labour intensity index
	Apricots, fresh	Vegetables, fruits and grains	0.50	0.36
	Turmeric (curcuma)	Vegetables, fruits and grains	0.00	0.36
	Single citrus fruit juice, unfermented	Prepared foodstuffs, beverages and tobacco	0.50	0.08
	Orange juice, unfermented & not spirited	Prepared foodstuffs, beverages and tobacco	0.50	0.08
	Grape juice, incl. grape must, unfermented	Prepared foodstuffs, beverages and tobacco	0.20	0.08
	Spirits obtained by distilling grape wine or grape marc	Prepared foodstuffs, beverages and tobacco	0.00	0.08
	Figs, fresh or dried	Vegetables, fruits and grains	0.14	0.36
	Apricots, fresh	Vegetables, fruits and grains	0.50	0.36
	Orange juice, unfermented & not spirited	Prepared foodstuffs, beverages and tobacco	0.50	0.08
	Single citrus fruit juice, unfermented	Prepared foodstuffs, beverages and tobacco	0.50	0.08
Kai !Garib	Figs, fresh or dried	Vegetables, fruits and grains	0.14	0.36
	Apricots, fresh	Vegetables, fruits and grains	0.50	0.36
	Fructose & fructose syrup	Prepared foodstuffs, beverages and tobacco	0.50	0.08
	Orange juice, unfermented & not spirited	Prepared foodstuffs, beverages and tobacco	0.50	0.08
	Single citrus fruit juice, unfermented	Prepared foodstuffs, beverages and tobacco	0.50	0.08
	Grape juice, incl. grape must, unfermented	Prepared foodstuffs, beverages and tobacco	0.20	0.08
	Granite, merely cut, by sawing or otherwise, into blocks etc	Mineral products	0.00	0.16
	Zinc ores and concentrates	Mineral products	0.50	0.16
	Figs, fresh or dried	Vegetables, fruits and grains	0.14	0.36
	Apricots, fresh	Vegetables, fruits and grains	0.50	0.36
Breede Valley	Grape juice, incl. grape must, unfermented	Prepared foodstuffs, beverages and tobacco	0.20	0.08
	Spirits obtained by distilling grape wine or grape marc	Prepared foodstuffs, beverages and tobacco	0.00	0.08
	Appliances for baking, frying, grilling and cooking and plate warmers,	Base metals and articles thereof	0.50	0.08

Municipality	Product description	Sector	Distance	Labour intensity index
Siyancuma	Air conditioning machines	Machinery, appliances and electronic equipment	0.50	0.08
	Apricots, fresh	Vegetables, fruits and grains	0.50	0.36
	Maize (corn) flour	Vegetables, fruits and grains	0.50	0.08
	Cotton seeds: Other	Vegetables, fruits and grains	0.50	0.36
	Ground-nut oil-cake & other solid residues	Prepared foodstuffs, beverages and tobacco	0.40	0.08
Matzikama	Apricots, fresh	Vegetables, fruits and grains	0.50	0.36
	Orange juice, unfermented, not spirited	Prepared foodstuffs, beverages and tobacco	0.50	0.08
	Grape juice, incl. grape must, unfermented	Prepared foodstuffs, beverages and tobacco	0.20	0.08
	Spirits obtained by distilling grape wine or grape marc	Prepared foodstuffs, beverages and tobacco	0.00	0.08
	Original sculptures and statuary, in any material	Works of arts and antiques	0.50	0.08
Prince Albert	Peel of citrus fruit/melons (watermelons) fresh, frozen or dried preserves	Vegetables, fruits and grains	0.00	0.08
Oudtshoorn	Maize (corn) flour	Vegetables, fruits and grains	0.50	0.08
	Sunflower seeds, whether or not broken	Vegetables, fruits and grains	0.50	0.36
	Ground-nut oil-cake & other solid residues	Prepared foodstuffs, beverages and tobacco	0.40	0.08
Thembeihle	Maize (corn) flour	Vegetables, fruits and grains	0.50	0.08
	Sunflower seeds, whether or not broken	Vegetables, fruits and grains	0.50	0.36
	Ground-nut oil-cake & other solid residues	Prepared foodstuffs, beverages and tobacco	0.40	0.08
Blue Crane Route	Fructose & fructose syrup	Prepared foodstuffs, beverages and tobacco	0.50	0.08
Enoch Mgijima	Grapefruit juice, unfermented	Prepared foodstuffs, beverages and tobacco	0.33	0.08
	Mineral & aerated waters	Prepared foodstuffs, beverages and tobacco	0.43	0.08
	Undenatured ethyl alcohol <80% alcohol content by volume & spirit, liqueur & spirit beverages	Prepared foodstuffs, beverages and tobacco	0.00	0.08
Siyathemba	Zinc ores and concentrates	Mineral products	0.50	0.16
Tokologo	Zinc ores and concentrates	Mineral products	0.50	0.16
	Ferro-manganese	Base metals and articles thereof	0.33	0.08

The diversification opportunities depicted in **Table 12** are so-called 'low hanging fruits' in the sense that capitalising on these opportunities would require relatively small investments in new capability and knowledge, as most of them are already embedded in the Karoo Region's economy. Hence, with the necessary enabling environment, these specific diversification opportunities are attainable in the medium-term (seen as approximately five to ten years). However, why these have not yet been explored requires further analysis, as this can potentially be due to limited market potential, market failures, supply-side constraints, and/or first-mover disadvantages.

Some of the Karoo Region's main mineral mining competencies and its core competencies in primary agriculture have already led to the development of related processing competencies in milling and leather production. However, developing other activities in the region outside the related activities discussed in this section will require large 'jumps' in the product space network and, thus, large investments in local capabilities and knowledge. Such ventures are only attainable in the long-term (that is, in ten-plus years) but are still an option when looking to transition to a more diversified economy by moving incrementally within the product space. These opportunities are nonetheless still worth exploring, but as part of a longer-term strategy.

The analysis presented earlier in the document provided the framework (i.e. the product space) that forms the basis for potential diversification strategies tailored for each local municipality in the Karoo Region. The product-level growth paths for the Karoo Region in the product space can be implemented/driven based on three strategic values for diversification. These strategic values include (1) **structural transformation**, (2) **market-driven diversification**, and (3) **employment-driven diversification**. Thus, the Karoo Region's growth path along the lines of market-driven diversification, structural transformation (i.e. upgrade-driven diversification) and

employment creation (addressed in **Table 12** through the labour intensity index) can be determined based on the region's position within the product space.

Building a more innovative economy in the Karoo Region can also prove to be highly favourable for its socio-economic development. South Africa's innovation landscape has a strong focus on human necessities and instruments. The country exceeds the global innovation pattern in the fields of machinery, human necessities, construction, and mechanical engineering. On the other hand, it lags in terms of patents in chemicals, instruments, and electricity.

The Karoo Region's current production base is very narrow. The current core production competencies and identified diversification opportunities in the Karoo Region predominantly fall within the agricultural sector. With regards to innovation in this sector, South Africa fares relatively well when compared globally.

Innovation opportunities that could be explored include:

- Strengthening innovation in the agricultural sector: agricultural production and processing, especially drought-resistant crop production; geographic product marketing;
- Sustainable energy (electricity) generation at different scales, including contribution to the national grid and localised/off-grid provision for communities;
- Off-grid basic service provision methods and technologies and alternative service provision technologies, e.g. salt-water desalination;
- Human settlement focused innovation such as climate mitigating low-cost construction;

- Building on the potential of the bio-diversity economy for innovation and job creation. This could include:
 - Ecosystem-based innovation, e.g. bio-medicine, traditional medicine and other related research and development;
 - Conservation and restoration of biodiversity approaches for arid regions; and
 - Sustainable fisheries / aqua-culture
 - Sustainable wildlife ranching combined with biodiversity-based tourism.
- Exploration of hi-tech industries that require specific arid climatic conditions in addition to existing space observation, for example, manufacturing of electronic components (e.g. Intel).

The economic functional regions that were identified based on the above analysis taking into account (1) spatial and development characteristics, (2) large scale nationally significant initiatives, and (3) diversification and innovation opportunities, are shown on **Map 6: Economic Functional Regions** below. A number of the regions stretch beyond the boundaries of the Karoo due to functional linkages with larger nodes.

4.4.3.2. Regional Development Anchors

To provide guidance on the spatial planning and development implications of the economic functional regions, the 'Rural-Regional Development Model' as introduced in the NSDF was used/applied.

The NSDF model takes a systemic view of rural areas and proposes "the soft delineation of polycentric functional rural regions that have (1) at least one well-connected regional development anchor, both within the region on the national transport network to 'anchor' the region in the national space economy, (2) social, cultural, historical, economic and cultural characteristics and attributes that would make the development of a 'functional rural region' possible over time, and (3) the potential for intra-regional trade between towns and villages in the region".

The sparse rural setting of the Karoo makes this model ideal for the development of a spatial perspective on economic development in the region, using the concept of Regional Development Anchors as a mechanism to build/generate and sustain (1) a degree of concentration of population and economic activity, (2) economic diversification, and (3) economies of scale in an otherwise extensive and sparse rural landscape. In the context of the Karoo, the Regional Development Anchors also have a very specific role in localising the benefits offered by the large scale regional economic activities through beneficiation, diversification and provision of economic support services.

For each of the Economic Functional Regions, a Regional Development Anchor is proposed. The proposals for its role in the Karoo Region and required supportive action, are made taking cognisance of:

- The proposed Regional Development Anchors in terms of the NSDF;
- The diversity and agglomeration of current and potential future economic activities derived from the regional land use analysis in **Part 3** of this document;
- The connectivity of the Regional Development Anchors to each other and to other smaller towns and settlements to form the core of a 'regionally-connected polycentric system';
- Nodal roles identified in the PSDFs;
- Economic connections between towns derived from the 'Town Survey'¹⁰, and
- The framing elements provided by existing initiatives such as the Agri-Hub system and planned 'Government Precincts'.

Except for Mangaung, which is described as an Urban Core in the NSDF, towns with the potential to fulfil the function of Rural Development Anchors were identified for each of the Functional Economic Regions. In the case of Upington, Kimberley and Vredenburg, the Anchor is outside the Karoo but functionally connected to towns within the Region.

The application of the regional-rural model to the Karoo Region is illustrated conceptually in **Figure 22** below. **Table 13** below defines the **role** of each of the Economic Functional Regions, the **focus on infrastructure investment** in each, and **risks** that should be considered. This table should be read in conjunction with the Provincial SDFs that may contain more detailed proposals and requirements (high level alignment was ensured). More detailed, contextualised responses should be developed in District and Local SDFs. **Map 7: Regional Development Anchors** following the table shows the Anchors in relation to the Economic Functional Regions.

¹⁰ This survey was undertaken during the course of compiling the KRSDF.

Figure 22: Application of Regional-Rural Model: Economic Development

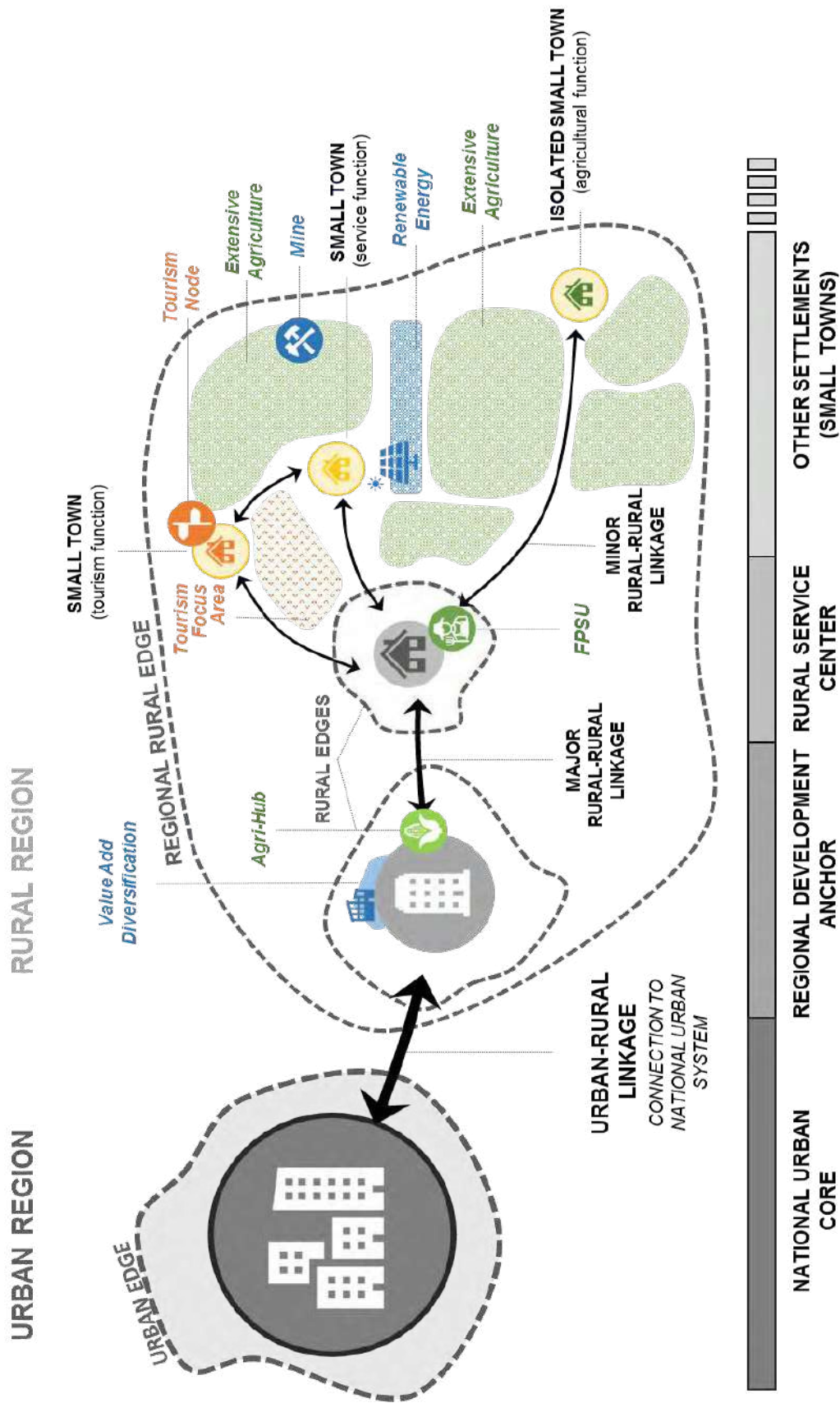


Table 13: Economic Functional Regions and Anchors: Focus for Economic Development and Support

Anchor	Role in Karoo Region and Implementation Focus	Required Supportive Action in Anchor and Functional Region
Graaff Reinet	Provincial Status: District Centre (EC). Economic Focus and Opportunity: Agriculture, further diversification opportunities in vegetables, fruits and grains; historical, cultural and nature tourism node – high linkages via tourism routes. Economic Infrastructure and Expansion in Functional Region: Implementation of REDZ and complementary upgrades to distribution network, implementation of power corridors, upgrade and maintenance of national road network.	• Improve ICT connectivity. • Investigate potential for expansion as an education node. • Support agricultural diversification via Agri-hub. • Strengthen historic tourism initiatives. • Support services for sustainable energy generation. • Risk management: ○ Potential shale gas extraction – long term impact on environment may hamper current and future economic activity; ○ Climate change impact: decreased rainfall – alternative service delivery options, decrease in agricultural output may strain economic growth and population numbers; ○ Stressed water catchment area – see above; and ○ Strategic gas pipeline network - no development permitted in servitudes.
Cradock	Provincial Status: Sub-District Centre (EC). Economic Focus and Opportunity: Agriculture, agri- and eco-tourism, diversification opportunities in prepared foodstuff and beverages. Economic Infrastructure and Expansion in Functional Region: Implementation of REDZ and complementary upgrades to distribution network, implementation of power corridors, upgrade and maintenance of national road network, upgrade and maintenance of the national rail network.	• Improve ICT connectivity. • Support agri-processing and logistics via rail network. • Consider the establishment of FPSU. • Support services for sustainable energy generation. • Risk management: ○ Potential shale gas extraction – long term impact on environment may hamper current and future economic activity; and ○ Climate change impact: decreased rainfall – consider alternative service delivery options, decrease in agricultural output may strain economic growth and population numbers.
Komani	Provincial Status: Future metro region, rural-urban market centre (EC).	• Support agri-processing and logistics via the road network.

Anchor	Role in Karoo Region and Implementation Focus	Required Supportive Action in Anchor and Functional Region
	Economic Focus and Opportunity: High-intensity agriculture focus (EC), diversification opportunities in prepared foodstuff and beverages, high connectivity via tourism routes, maintain medium-high ICT connectivity. Economic Infrastructure and Expansion in Functional Region: Implementation of REDZ and complementary upgrades to distribution network, implementation of power corridors, upgrade and maintenance of the national road network, upgrade and maintenance of the national rail network, medium-high access to ICT network, implementation of Agri-Hub and FPSU for low- and higher-intensity agriculture.	• Agricultural focus area – national priority to increase productivity due to future pressure of climate change. • Establish as educational node – agriculture. • Investigate agri-tourism potential. • Support services for sustainable energy generation. • Risk management: potential shale gas extraction – long term impact on environment may hamper current and future economic activity.
Maletswai	Provincial Status: District Centre, rural-urban market centre (EC). Economic Focus and Opportunity: Hig- intensity agriculture. Economic Infrastructure and Expansion in Functional Region: Upgrade and maintenance of regional road and rail network and maintain high ICT connectivity.	• Agricultural focus area – national priority to increase productivity due to future pressure of climate change. • Support logistics via rail network.
Springbok	Provincial Status: Regional Growth Centre (NC). Economic Focus and Opportunity: Transport and logistics (harbour, border posts, mining and mineral products, agriculture, tourism link to Namibia and Transfrontier Park, national development focus: part of the North-western National Spatial Transformation and Transition Region in the NSDF. Economic Infrastructure and Expansion in Functional Region: Implementation of REDZ and complementary upgrades to distribution network, electricity grid expansion (EG) priority area, implementation of power corridors, upgrade and maintenance of national road network and implementation of Agri-Hub for low-intensity as well as irrigation agriculture.	• Risk Management: ◦ Declining population projected in the functional region for 2030/2050 – consider decreased investment in scale of services in future; ◦ Distressed mining towns – may exacerbate declining population in future, prioritise economic diversification; ◦ Climate change impact: decreased rainfall and increase in the number of very hot days – consider alternative service delivery options, decrease in agricultural output may strain economic growth and population numbers; and ◦ Strategic gas pipeline network - no development permitted in servitudes. • Local economic diversification and climate resilience considerations:

Anchor	Role in Karoo Region and Implementation Focus	Required Supportive Action in Anchor and Functional Region
		- Feasibility studies for proposed Aggeneys SEZ must include measures to address water scarcity and conservation, protection of sensitive ecosystems, impact on tourism; - Feasibility study for alternative basic service provision: dry sanitation, seawater desalination; - Focus on tourism – gateway function to coastal and trans-frontier conservation areas; and - Investigate diversification in transport and logistics sector-linkage to Upington. - Improved ICT connectivity. - Support services for sustainable energy generation. - Mining/mineral beneficiation on condition of proven feasibility. - Investigate opportunity for the strengthening of education (mining, engineering, technical).
Calvinia	Provincial Status: Regional Growth Centre (NC). Economic Focus and Opportunity: Agriculture, regional scale geographic products - Rooibos and Karoo lamb, and tourism node. Economic Infrastructure and Expansion in Functional Region: electricity grid expansion (EGI) priority area, not on national road or rail network – prioritise regional connector roads.	- Not on the national road network – strengthen the provincial network. - Improve ICT connectivity. - Support and market as tourism niche area – clear night skies, urban escapism. - Risk management: - Potential shale gas extraction – long term impact on environment may hamper current and future economic activity; - SKA Advantage Area – focus on non-invasive land uses such as small-scale tourism and agriculture, subject to restrictions; - Climate change impact: decreased rainfall and increase in the number of very hot days – consider alternative service delivery options, decrease in agricultural output may strain economic growth and population numbers; and

Anchor	Role in Karoo Region and Implementation Focus	Required Supportive Action in Anchor and Functional Region
		o Stressed water catchment area – see above.
De Aar	Provincial Status: Regional Growth Centre (NC). Economic Focus and Opportunity: Transportation and logistics, high connectivity to tourism routes, and extensive agriculture. Economic Infrastructure and Expansion in Functional Region: Implementation of power corridors, upgrade and maintenance of the national road network, a key point on the national rail network, implementation of Agri-Hub and FPSUs for low-intensity agriculture.	• Improve ICT connectivity. • Development focus: logistics node.
Vredendal	Provincial Status: Regional Centre (WC). Economic Focus and Opportunity: Mining and mineral deposits, agriculture, diversification opportunities in vegetables, fruit and grains, and tourism node. Economic Infrastructure and Expansion in Functional Region: Electricity grid expansion (EGI) priority area, implementation of power corridors, upgrade and maintenance of the national road network, upgrade and maintenance of the national rail network, implementation of Agri-Hub and FPSUs in support of high-intensity agriculture.	• Risk management: - o Impact of mining on agriculture and tourism – consider risk of decreased diversification of economic base; - o Climate change impact: decreased rainfall and increase in the number of very hot days – consider alternative service delivery options, decrease in agricultural output may strain economic growth and population numbers; and - o Strategic gas pipeline network - no development permitted in servitudes. • Improve ICT connectivity. • Support diversification through Agri-Hub. • Strengthen tourism through a focus on natural attractions.
Piketberg	Provincial Status: Regional Centre (WC) Economic Focus and Opportunity: Agriculture, diversification opportunities in livestock and animal products, and tourism node. Economic Infrastructure and Expansion in Functional Region: Implementation of power corridor, upgrade and maintenance of the national road network, upgrade and maintenance of the national rail network, and maintain very high ICT connectivity.	• Risk management: - o Strategic gas pipeline network – no development permitted in servitudes; - o Berg / Breede strategic water source areas – consider impact of future land use on water quality and quantity before approval; and - o Climate change impact: decrease in annual rainfall – consider alternative service delivery options, decrease in

Anchor	Role in Karoo Region and Implementation Focus	Required Supportive Action in Anchor and Functional Region
		agricultural output may strain economic growth and population numbers. • Support high intensity agriculture. • Support tourism, potential gateway in relate close proximity to Cape Town.
Worcester	Provincial Status: Regional Centre (WC). Economic Focus and Opportunity: High intensity and extensive agriculture, diversification opportunity in vegetables, fruits and grains, tourism node, well connected to tourism routes, and SA Astronomical Observatory in Sutherland. Economic Infrastructure and Expansion in Functional Region: Implementation of REDZ and complementary upgrades to distribution network, implementation of power corridors, upgrade and maintenance of the national road network, upgrade and maintenance of the national rail network, and maintain medium-high ICT connectivity.	• Risk management: ◦ Strategic water resource area (Berg / Breede catchment) – consider impact of future land use on water quality and quantity before approval; ◦ Climate change impact: decreased rainfall – alternative service delivery options, decrease in agricultural output may strain economic growth and population numbers; ◦ Potential shale gas extraction – long term impact on environment may hamper current and future economic activity; and ◦ Strategic gas pipeline network - no development permitted in servitudes. • Support agricultural diversification via Agri-Hub. • Support services for sustainable energy generation. • Potential tourism gateway into the Karoo from Western Cape international tourism attractions – include in geographic marketing; agri- and eco-tourism, and SAAO (Sutherland).
Swellendam	Provincial Status: Regional Centre (WC). Economic Focus and Opportunity: High-intensity agriculture, diversification opportunity in vegetables, fruit and grain, tourism node (eco-tourism, cultural, arts and crafts) and mining. Economic Infrastructure and Expansion in Functional Region: Upgrade and maintenance of national road network, upgrade and maintenance of	• Support agricultural diversification via Agri-Hub. • Potential tourism gateway into the Karoo from Route 62 tourism attractions – include in geographic marketing. • Risk management: ◦ Strategic water source area (Berg/Breede catchment) – consider impact of future land use on water quality and quantity before approval; and

Anchor	Role in Karoo Region and Implementation Focus	Required Supportive Action in Anchor and Functional Region
Oudtshoorn	national rail network, maintain high ICT connectivity, and implementation of Agri-Hub and FPSUs for high-intensity agriculture. Provincial Status: Regional Centre (WC). Economic Focus and Opportunity: Tourism node (arts and culture), medium intensity agriculture. Economic Infrastructure and Expansion in Functional Region: Upgrade and maintenance of national road network, upgrade and maintenance of national rail network, implementation of Agri-Hub and FPSUs in support of medium-intensity agriculture.	- o Strategic gas pipeline network - no development permitted in servitudes. - Strengthen ICT connectivity. - Support agricultural diversification via Agri-Hub. - Potential tourism gateway into the Karoo from George area – include in geographic marketing. - Risk management: - o Climate change impact: decreased rainfall – consider alternative service delivery options, decrease in agricultural output may strain economic growth and population numbers; - o Stressed water catchment area – see above; and - o Strategic gas pipeline network - no development permitted in servitudes.
Beaufort West	Provincial Status: Regional Centre (WC). Economic Focus and Opportunity: Extensive agriculture, regional transit node serving as connecting point for regional and national routes, tourism gateway and eco-tourism. Economic Infrastructure and Expansion in Functional Region: Implementation of REDZ and complementary upgrades to distribution network, implementation of power corridors, upgrade and maintenance of the national road network, upgrade and maintenance of the national rail network, and implement Agri-Hub and FPSUs for low-intensity agriculture.	- Investigate the feasibility of commercial airport to strengthen gateway function. - Improve ICT connectivity. - Establish support services for sustainable energy generation. - Include risk management measures in local planning: - o Land use and ratio wave restrictions in SKA Advantage Area Area – focus on non-invasive land uses such as small-scale tourism and agriculture, subject to restrictions; - o Potential shale gas extraction – long term impact on environment may hamper current and future economic activity; - o Climate change impact – alternative service delivery options, decrease in agricultural output may strain economic growth and population numbers - o Stressed water catchment area – see above; and

Anchor	Role in Karoo Region and Implementation Focus	Required Supportive Action in Anchor and Functional Region
		o Strategic gas pipeline network - no development permitted in servitudes.
Anchor Outside Karoo Region	Role	Required Supportive Action in Anchor and Region
Upington	Provincial Status: Regional Growth Centre (NC) Economic Focus and Opportunity: Agriculture (high intensity along Orange River), tourism (regional gateway), mining, industrial development, services sector; diversification opportunities in mineral products, vegetables, fruit and grains; national development focus: part of the Northwestern National Spatial Transformation and Transition Region in the NSDF. Economic Infrastructure and Expansion in Functional Region: Implementation of REDZ and complementary upgrades to distribution network, implementation of power corridors, upgrade and maintenance of the national road network, upgrade and maintenance of the national rail network, Agri-Hub and FPSUs., upgrade of Airport (future International Airport)	• Improve ICT connectivity. • Potential tourism gateway – future international airport; link to Transfrontier Park. • Industrial development focus area. • New economic infrastructure: proposed link between Upington and Boegoebaai Harbour (see infrastructure proposal – realign to include Springbok) • Support services for sustainable energy generation. • Risk management: - o Declining population projected in the functional region for 2030/2050 – consider downscaling of service provision in future; - o Climate change impact: decreased rainfall and increase in the number of very hot days – consider alternative service delivery options, decrease in agricultural output may strain economic growth and population numbers; and - o SKA Advantage Area – focus on non-invasive land uses such as small-scale tourism and agriculture, subject to restrictions;
Kimberley	Provincial Status: Regional Growth Centre (NC) Economic Focus and Opportunity: Government and administration, tertiary economic sector, higher education, regional gateway, mining, agriculture (high intensity along the Orange and Vaal Rivers), diversification opportunities in mineral products, vegetables, fruit and grains.	• Marketing as tourism gateway, via N12 and airport. • Support for the mining sector. • Tertiary education and research. • Risk management: - o Climate change impact: increase in the number of very hot days – consider alternative service delivery options,

Anchor	Role in Karoo Region and Implementation Focus	Required Supportive Action in Anchor and Functional Region
	Economic Infrastructure and Expansion in Functional Region: REDZ, power corridors, upgrade and maintenance of the national road network, upgrade and maintenance of the national rail network, maintenance of airport, Agri-Park and FPSUs.	decrease in agricultural output may strain economic growth and population numbers
Vredenburg	Provincial Status: Regional Centre (WC). Economic Focus and Opportunity: High-intensity agriculture, mining, tourism gateway to the coastal region. Economic Infrastructure and Expansion in Functional Region: Power corridors, upgrade and maintenance of national rail network, very high ICT connectivity.	• Risk management: ◦ Strategic water source area (Berg/Breede catchment); ◦ Climate change impact: decreased rainfall – consider alternative service delivery options, decrease in agricultural output may strain economic growth and population numbers; and ◦ Strategic gas pipeline network – no development permitted in servitude areas. • More focus required as a tourism gateway to the coastal region (geographic marketing).
Urban Core	Role	Required Supportive Action in Region
Mangaung (Bloemfontein)	Provincial Status: Main Town (FS). Economic Focus and Opportunity: Metropolitan area – high economic diversity, mining, high-intensity agricultural hinterland – potential for diversification in livestock and animal products. Economic Infrastructure and Expansion in Functional Region: Implementation of REDZ and complementary upgrades to distribution network, implementation of power corridors, upgrade and maintenance of the national road network, upgrade and maintenance of the national rail network, maintenance of airport, high ICT connectivity, Agri-Hub and FPSUs.	• Support agricultural diversification via Agri-Hub. • Potential tourism gateway into the Karoo via international airport – include in geographic marketing. • Tertiary education and research.

4.4.3.3. Regional Economic Infrastructure

Key to the good functioning of the Regional-Rural Development Model is the connecting infrastructure that facilitates (1) the movement of people, goods and services, as well as (2) the flow of information between the points in the network.

The first aspect of regional economic infrastructure comprises the current and proposed spatial elements of regional-scale economic activities. These include (1) designated areas and corridors for renewable energy development, (2) current and potential mining areas, as well as (3) a proposed economic corridor in the north of the region, linking the Karoo to potential activities outside the region. This corridor includes the proposed Boegoebaai Harbour development and mineral beneficiation activities.

Key economic infrastructure to support large-scale regional activity and ensure national, regional and also global connectivity of the Rural Development Anchors include the following aspects that are also shown on **Map 8: Regional Economic Infrastructure** below.

1-National and International Connectors

These elements support the flow of goods and people across regional and international boundaries:

- Freight rail, including proposed new rail from Upington to Boegoebaai which should be realigned to include Springbok.
- Passenger rail, traversing the Region connecting the Gauteng Region to Cape Town and Gqubherha
- National roads, including roads making international connections.
- Ports
- Proposed gas and liquid fuel pipelines

2-Regional Connectors

Internal to the Region, the good connectivity between the network of Regional Development Anchors and other towns and areas in the Region is supported by the following infrastructure:

- Regional Arterial roads, linking the network of Regional Development Anchors
- Passenger rail connecting towns that could support tourism, including rail considered for reinstatement

3-Regional Economic Support Infrastructure

Large infrastructure installations that could contribute to economic activity:

- Renewable Energy Development Zones (REDZ)
- Corridors associated with REDZ
- Electricity network expansion area

National, provincial and local planning and implementation should take cognisance of the following matters and prioritise these for implementation:

- Although now major new road network elements are planned or proposed, the need to ensure high-quality road networks through regular maintenance is a priority. The quality of the regional arterial roads is of crucial importance to ensure not only the connectivity of Anchors to the national economic network but also their connectivity to other settlements in the local network.
- The national imperative of prioritising rail transport of high volume and high weight goods should be implemented as a priority in the Region. This is in support of mining, industry and importantly agriculture where affordable transport is a key requirement of connecting the Region to markets. All existing freight rail lines should be maintained and utilised to full potential to support rural production in the Region. Rail earmarked for revitalisation should be prioritised. To strengthen Regional Development Anchors, rail connectivity of these towns should be prioritised including the realignment of the proposed rail line to Boegoebaai to include Springbok.
- The development of new alternative energy generation capacity in the identified Renewable Energy Development Zones, as well as supportive distribution network construction and enhancements are a priority in the area. It must be noted that the supportive network enhancements are a critical part of the drive towards renewable energy. This is necessary in terms of the contribution to not only the economic activity of the Region but also the national grid supporting national energy security and a move away from fossil fuel reliance.
- ICT connectivity is low in many parts of the Karoo Region, hampering access to economic networks, not just for large operations, also for

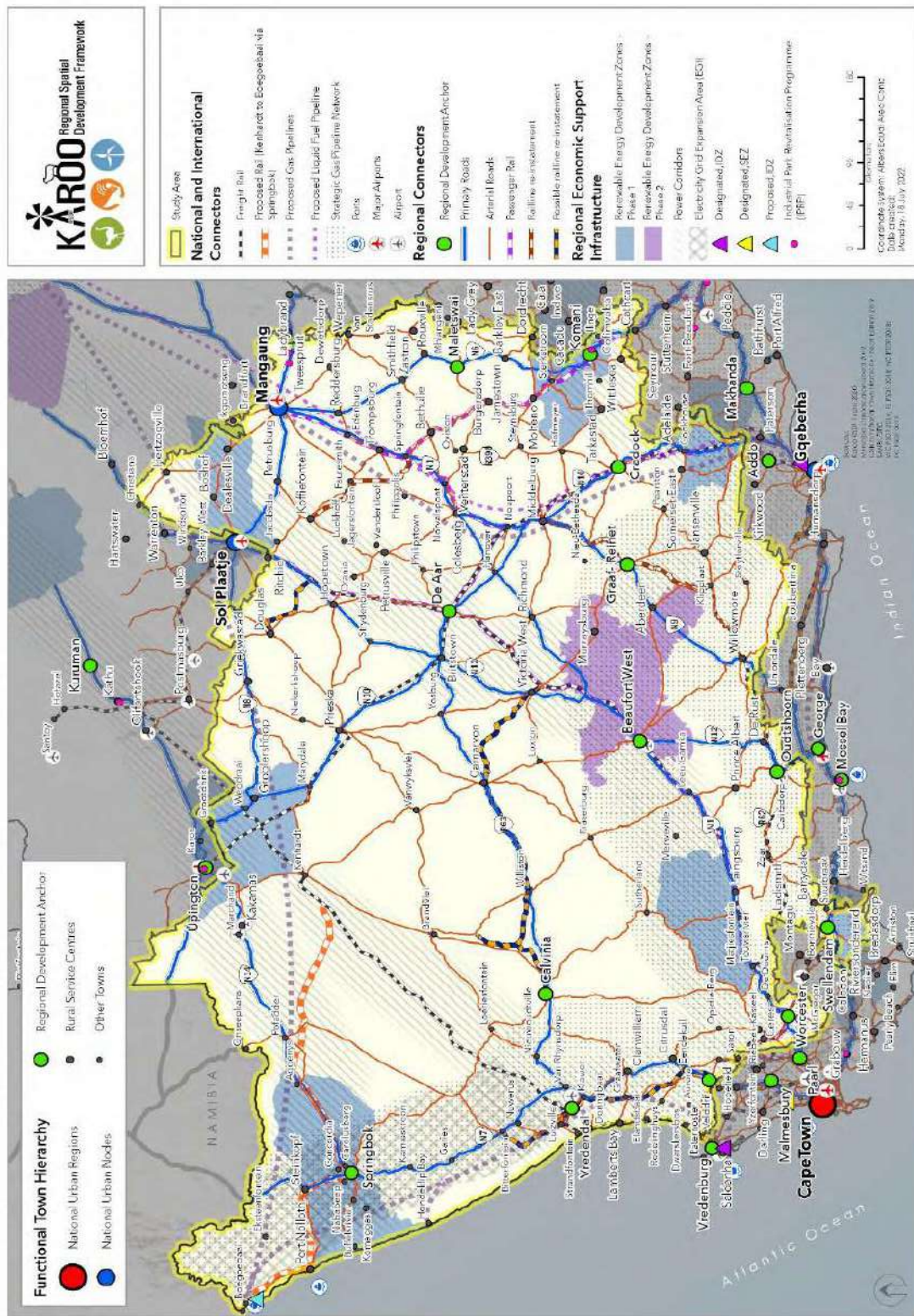
smaller enterprises and individuals. Good ICT connectivity should be prioritised in Regional Development Anchors and thereafter rolled out in the Region as a whole.

- The impact of large-scale economic development on water availability and water quality in an already arid region that is set to experience even less rainfall in the future. Feasibility studies should focus on water availability and impact on water resources, as well as alternative water sources such as seawater desalination making use of solar energy.
- All major infrastructure projects should be based on appropriate environmental impact assessment and recommended mitigation measures should be followed. Cognisance should be taken of the importance of Strategic Water Supply Areas (SWSAs) in the Region including ground water sources.

Key infrastructure that should be prioritised for construction in the case of new elements, but most importantly maintenance and smooth operation is indicated on **Map 8: Regional Economic Infrastructure**.

Map 8: Regional Economic Infrastructure

Karoo RSDF: Regional Economic Infrastructure



4.4.3.4. Regionally Significant Tourism Elements

Tourism is a regionally significant sector with a potential for growth and employment impact, even at very local scales. To optimise the tourism potential of the Karoo Region, the coordinated development and marketing across administrative boundaries is of critical importance.

Tourism is a sector with a strong spatial focus. The spatial dimension of tourism includes (making use of high-level adaptation from Leiper's tourism system model):

- Tourist/Traveller-generating regions;
- Tourist destination regions, containing tourism gateways, attractions, connections; and
- Tourist transit regions, with an emphasis on connections and gateways.

Tourist-generation in the Karoo is surprisingly very local. Information is only available at a provincial scale, but for each of the four provinces constituting part of the Karoo Region, the vast majority of tourists are local tourists, i.e. from the same province¹¹.

Table 14: Local Tourism

Destination Province	% Overnight Stays from Origin Provinces 2019									
	WC	EC	NC	FS	KZN	NW	GP	MP	LP	
Eastern Cape	10.5	46	1.1	1.7	3.2	0.7	5.6	0	0.2	
Free State	2.1	4	6.4	42.7	2.3	1.4	4.7	0.4	0.7	
Northern Cape	1.8	0.9	60	6.7	2	5.4	3.6	0.1	0.5	
Western Cape	72.5	30	7.4	0.8	0.7	0.3	3.6	0	1.4	

¹¹ Stats SA Domestic Tourism Survey 2019

The reason for the high degree of 'internal' tourism percentages per province may lie in the reason for most local tourist visits, i.e. 'visiting friends and relatives' (60.3% in 2019), which may often constitute travel to different parts of the same province.

The Region does not feature strongly as a destination region. The provincial share of overseas arrivals for 2019 is as follows:

Table 15: International Tourism

Province	Share of International Tourism Arrivals 2019	Rank in SA
Eastern Cape	4.1%	8
Free State	10.1%	5
Northern Cape	1.2%	9
Western Cape	19.6%	3

The overarching spatial strategy to strengthen tourism in the Karoo Region would be to strengthen its attractiveness as a destination region. This would entail **regional-scale place marketing of tourism nodes and routes to other provinces and internationally, as a unique region comprising a selection of experiences that could form part of a single trip**. Provinces with the highest international tourist numbers have high business tourism (Gauteng) or internationally-renowned natural and cultural attractions (Limpopo and Mpumalanga – Kruger Park; Western Cape – Cape Town and surrounds). While the Karoo Region lacks a single, major international attraction, the sum of its parts may add up to an internationally significant attraction. More

specific tourism recommendations (some non-spatial) emanating from the Regional Spatial Analysis are the following:

- 1- **Branding the Karoo as a Single Destination:** Following the same principle as geographically branded agricultural products, the Karoo should be marketed under a single, inclusive brand. Tourism routes, attractions and accommodation could apply to carry the 'brand', subject to certain conditions.
- 2- **Creation of a Regional Karoo Tourism Agency:** The regional agency (supported by the National Department of Tourism) could ensure coordination and cooperation between the different provinces and municipalities, allowing for the development of strategic tourism strategies and projects that will ensure effective investment and spending;
- 3- **Standardising and Maintaining Tourism Infrastructure:** Provincial coordination to attain a single standard for tourism infrastructure, e.g. branded tourist information centres, road and route signage, attraction and accommodation advertisement on a single platform, and inter-connecting current provincial-based tourism routes. Routes and facilities should be maintained. Maintenance of significant routes should be prioritised.
- 4- **Considering a 'Karoo-branded Port of Entry':** Feasibility studies should be reconsidered for the establishment of a small commercial airport in a central location such as Beaufort West. Combining a central Karoo Airport with car rental and other tourism facilities will greatly open up access to the Karoo Region as the lack of air transport, and very long

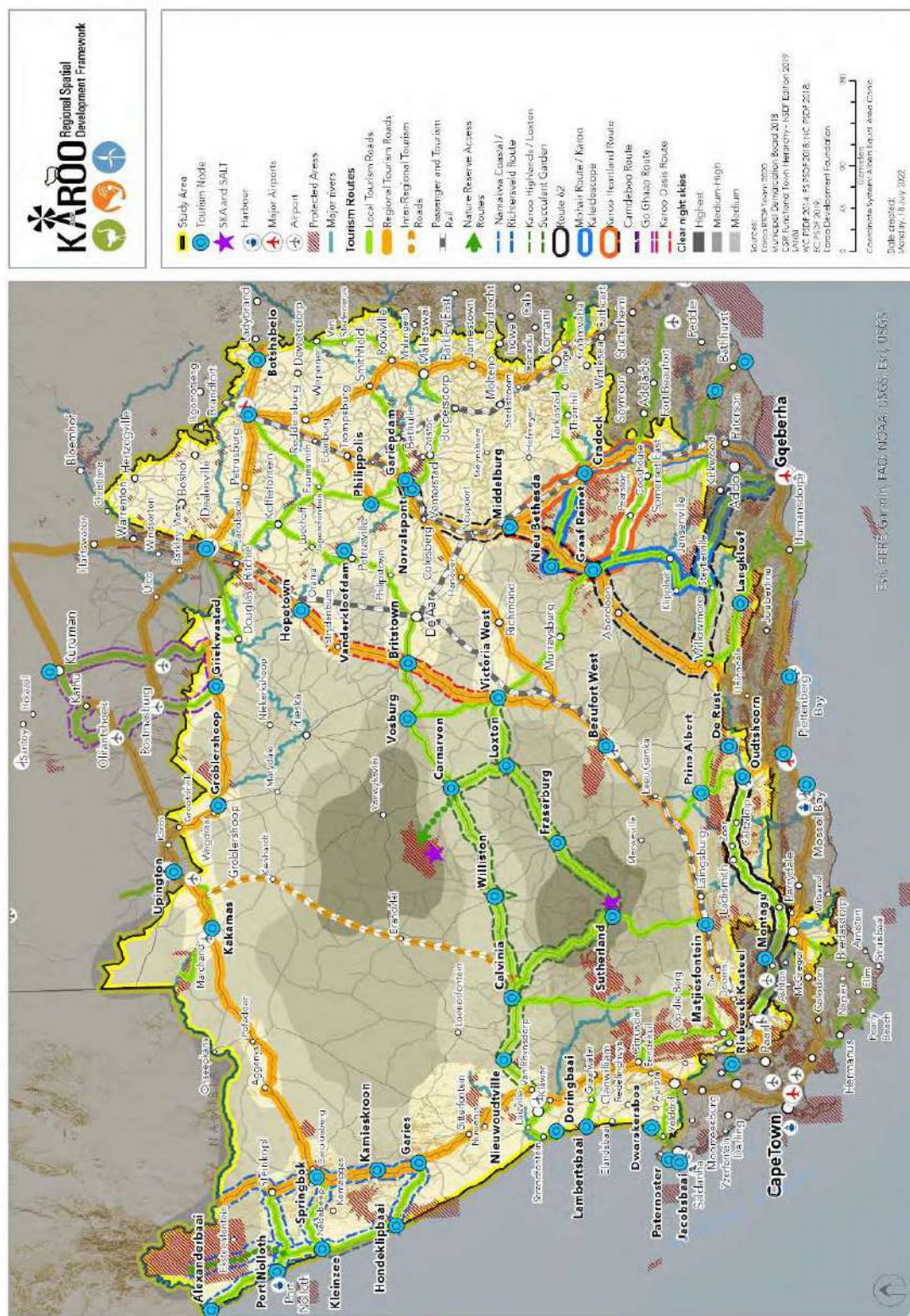
driving distances limit tourism. Beaufort West has been put forward for such a development in a number of plans as it is located along the N1 and a main north-south rail link, various towns can be accessed within a 200km radius, and it already one of the strongest retail centres in the Karoo;

- 5- **Investigate the Possibility of Utilising the Railway System:** Opportunity for mainline passenger travel, with stop-off points at De Aar, Middelburg and Matjiesfontein, and smaller regional routes which are ideal for private enterprise to launch specialised locomotives and carriages.
- 6- **Targeting Transit Tourists:** Tourists crossing through the region *en route* to, for example, the Cape Town or Kgalagadi attractions by linking tourism promotion to the large surrounding attractions.
- 7- **Identifying, Researching and Promoting Current And Developing Tourism Sectors:** Having a clear understanding of the type of tourism that is viable in the Karoo is crucial in effectively promoting tourism in the Region. E.g. extensive mention is made in tourism surveys about the Karoo cuisine, and developing and marketing this as a very specific niche tourism opportunity is crucial to make it viable and successful;
- 8- **Marketing Tourism as a Career of Choice:** Marketing tourism as a viable career choice in the Karoo Region and providing bursaries in related fields is crucial to the success of tourism;

Map 9: Regionally Significant Tourism Elements below indicates the main spatial elements of tourism in the Karoo Region.

Map 9: Tourism Network

Karoo RSDF: Tourism Network



4.4.3.5. Regionally Significant Agricultural Elements

Agriculture is (1) a significant and (2) character-defining element of the Karoo Region's economy. In order for this sector to thrive, certain regionally significant elements should be protected, managed and maintained.

The base of agriculture in the Karoo is the region's unique climate and vegetation. Geographical areas that need to be managed and protected to ensure the future of agriculture in the Karoo are indicated on **Map 10: Agriculture Network** and include the following four critical geographic focus areas:

- The unique vegetation areas required to support the sheep farming industry and the Place of Origin product Karoo Lamb;
- The high-intensity crop farming area on the southwestern boundary of the Karoo Region, which includes a substantial Rooibos farming area which also enjoys international Place of Origin recognition;
- The high-intensity crop farming area on the eastern boundary of the Karoo Region, which forms part of a nationally significant agricultural production region. The importance of the region will increase in future, as the western parts of the country will be increasingly affected by higher temperatures and reduced rainfall due to climate change; and
- The irrigation agriculture regions, which make a significant contribution to the regional agriculture market.

The four focus areas are supported by a network of infrastructure elements and connected facilities. In addition to maintenance of facilities, the roads/rail lines that connect these facilities to agricultural areas are of critical importance:

- Markets;

- Abattoirs;
- Silos;
- Grain Cellars;
- Ginners;
- Feedlots; and
- Supportive facilities such as Agri-Hubs and FPSUs.

In accordance with the principle of spatial concentration described earlier in this section, it is important that new or additional facilities should be provided in Regional Development Anchors to assist in the concentration of activities and the generation of economies of scale at designated points in the Region. More specific recommendations (including non-spatial recommendations) in support of the agricultural sector, emanating from the Regional Analysis, are the following:

- 1- **Promote and Protect the Karoo Lamb Brand:** The registration of the Karoo Lamb Geographic Indication (GI) by the DALRRD is the first and most critical step. It brings about government support for regional coordination and enforcement of the rules of production, thereby supporting the financial sustainability of Karoo farms and protecting the main economic base of the Karoo region;
- 2- **Improve Animal Health and Meat Hygiene to Support Export:** The DALRRD can support Karoo Region by ensuring that the various directorates responsible for animal health and meat hygiene procedures, standards and regulatory systems in place at an acceptable level so that the EU and the USA will allow exports of Karoo lamb and mutton. This will provide large returns to farmers as prices will typically be about 50% higher than current levels, which could provide an important boost for the Karoo regional economy;

3- **Explore Diversification of the Wool Industry:** Currently, 90% of wool is exported without adding any value to the raw product, with SA is heavily dependent on China as an export market. Beneficiation/production of wool products should be explored;

4- **Consolidation of and Reinvestment in Karoo Abattoirs:** Currently, most Karoo abattoirs run below capacity. The consolidation of the Karoo Abattoirs will support:

- a. Coordination of Karoo meat supply;
- b. Optimal utilisation of Karoo abattoir capacity;
- c. Reduced overheads and reduced losses;
- d. Improved meat hygiene – thus more marketing opportunities to high-end stores; and
- e. Better quality products and better prices for farmers.

5- **Investigate the Creation of One Abattoir Company for the Karoo:** This Company will be in a stronger position to compete with the other sheep meat-producing regions of the country;

6- **Explore Innovative Agricultural Technologies And Opportunities:** Due to the natural characteristics of the Karoo and the projected Climate Change trends, there is limited expansion potential in the area, and new and innovative agricultural technologies must be explored.

4.4.4. HUMAN SETTLEMENT NETWORK

Spatial Strategy: Guide **Spatial Transformation** in the Karoo region by refining and contextualising the Regional-Rural Development Model to create a network of towns and settlements as the points of concentration of (1) not only economic activity, but (2) also social services and human settlement development, supported by:

- Targeted areas for new human settlement development;
- A focussed land reform process to strengthen the network of towns in the Karoo Region; and
- Targeted areas for alternative, off-grid basic service delivery;

As a sparsely populated, vast rural region, communities in the Karoo Region rely on a series of small towns and settlements for both economic activities and social amenities. Travel times between towns are very long due to the extensive nature of the Karoo, and as such physical access to activities like retail, medical services and social support is limited. Extensive travel distances and the small population of towns provide a challenge to location and service planning considerations, such as economies of scale, population service thresholds, and travel-time standards.

In the context of the above spatial challenge, the communities of the Karoo are *dependent on a well-functioning network of towns to service their economic and social needs*. The approach adopted in the KRSDF is based on:

- Creating a series of 'nodes' of activity and as such ensuring a degree of (1) agglomeration, (2) clustering, and (3) the creation and sustenance of opportunities for the generation of economies of scale in the towns identified as **Regional Development Anchors**, as described in the previous section;
- Strengthening the concentration of activities in the Anchors by ensuring that the highest levels of social services appropriate for the service area population are located in the Anchor, preferably in the town centre and/or a consolidated government precinct;

- Due to the long distances between towns hampering accessibility, identifying **Rural Service Centres** and a selection of smaller towns to provide an additional and appropriate clustering of social services with the aim of ensuring/enhancing accessibility;
- Strengthening of connectivity between towns that form part of the human settlements network, to enable economic interaction and access to services; and
- Ensuring that transformative programmes such as (1) land reform and (2) the mass provision and/or upgrading of housing or sites strengthen the human settlements network according to the principles of spatial concentration and clustering.

The proposed human settlements network for the Karoo Region consists of four components relating to settlement function:

- 1- The first component of the human settlement network is the **Regional Development Anchors** described in the previous section, fulfilling the following roles:
 - Concentration points for value-adding economic activities, e.g. processing, manufacturing and economic services;
 - Collection points for inputs into economic processes, distribution points for finished or value-added products,

infrastructure maintenance to ensure accessibility, maintenance of historic town centres, etc.

In mining areas far away from Anchors, these service towns would likely be the most suitable location for (1) housing in support of mining activities and (2) the provision of technical and business support services required by mines. Similarly, these towns may feature additional housing, small offices and technical workshops in support of other large-scale projects, such as sustainable energy installations.

3- The third component in the regional-rural development model for the Karoo is the addition of **regionally specific roles for small towns that should form part** of the municipal spatial planning process. These roles may be focused on specific economic sectors (e.g. being part of a tourism network) or providing small scale social services as the only potential concentration point accessible to surrounding rural communities.

4- The fourth and very critical component are **the connections between towns** to facilitate the flow of people, goods and information.

The inclusion of new human settlement development, social service provision and land reform in the Regional-Rural Development Model for the Karoo Region is illustrated in **Figure 23** below. The figure is followed by **Table 16 to Table 23**, showing the settlements in relation to recommended service levels and human settlement development guidelines.

The suggested composition and scale of social services was directly informed by the **Karoo Regional Spatial Development Framework: Guide**

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logistics and market hubs connecting the Karoo Region and larger nodes outside the Region, and gateways for the local tourism industry;

- Focus points for higher-order personal and social service delivery, including education; and
- Preferred towns for large scale human settlement development and urban-rural land reform.

2- The second component in the regional-rural development model for the Karoo is the **Rural Service Centres and other settlements (small towns) linked to the Regional Development Anchors**. The production and activities in the other towns in the network feed into and get input from the activities in the Regional Development Anchors.

In agricultural production areas, these towns may feature Agri-Hubs or Farmer Production Support Units which *should also focus on providing support to the beneficiaries of the land reform process*. It is noted in the NSDF that land reform should be undertaken within the framework of the Regional-Rural Development Model to ensure that suitable and well-located (1) agricultural land and (2) stands in towns are identified through a multi-criteria assessment process and released for productive, commercially viable agricultural purposes. Ensuring that land reform takes places in locations linked to the settlement network or as part of the settlement network will go a long way towards addressing this requirement.

In addition to their role in agriculture, many of these towns are also designated tourism nodes, which would require focused input in

for Social Facility Planning and Provision 2021¹², which was specifically developed for application in the Karoo Region, and presents a more nuanced approach to especially the classification of small towns to address the spatial characteristics of the Karoo

Given limited government resources and an ever-more constrained fiscus, the Guide aims to:

- Provide guidance on the appropriate minimum levels of service to ensure that most citizens can access a basic level of services, even if only periodically from almost everywhere in the country;
- At a regional level, identify a hierarchy of places where it is most effective to provide middle to higher-order services at central locations so that these can serve the maximum number of people from the least number of accessible places to contribute to operational and service efficiency; and
- In addition to the regionally identified central places or nodes for middle and higher-order service provision, to also identify lower-level key service centres and small local services nodes, where appropriate.

In addition to the Regional Development Anchors and Rural Service Centres described above, the other small towns of the Karoo Region have been differentiated in the Guide as a resource for municipal level spatial planning. The further application of the Region-Rural Model is illustrated in **Figure 23**

¹² Green, Chéri and Maritz, Johan 2021. *Karoo Regional Spatial Development Framework: Guide for Social Facility Planning and Provision*. See Annexure B.

below, and the settlement differentiation is depicted on **Map 12 Human Settlement Network**.

The categorisation depicted on **Map 12: Human Settlement Network** is a guideline only, and this map, together with the Guide document, is recommended for use by Municipalities and Government social service providers in the Region *as an input into more detailed local planning together with their own knowledge and interpretation of local conditions*. This means that especially the smaller towns and settlements may be assigned a different role than the one proposed in the KRSDF, which is acceptable as long as the principle of establishing the settlement network is upheld.

It needs to be emphasised that the KRSDF proposals and Guide for Social Facility Planning and Provision should be regarded as a tool to especially focus on those settlement networks that stretch beyond administrative boundaries (municipalities, districts and provinces). Agreement on the network configuration in each area should lead to operational agreements for aspects such as basic service provision, infrastructure maintenance and use of social service across administrative boundaries of municipalities, districts and provinces. This will ensure greater access to a better quality of life for communities.

Figure 23: Application of Regional-Rural Model: New Settlement and Land Reform

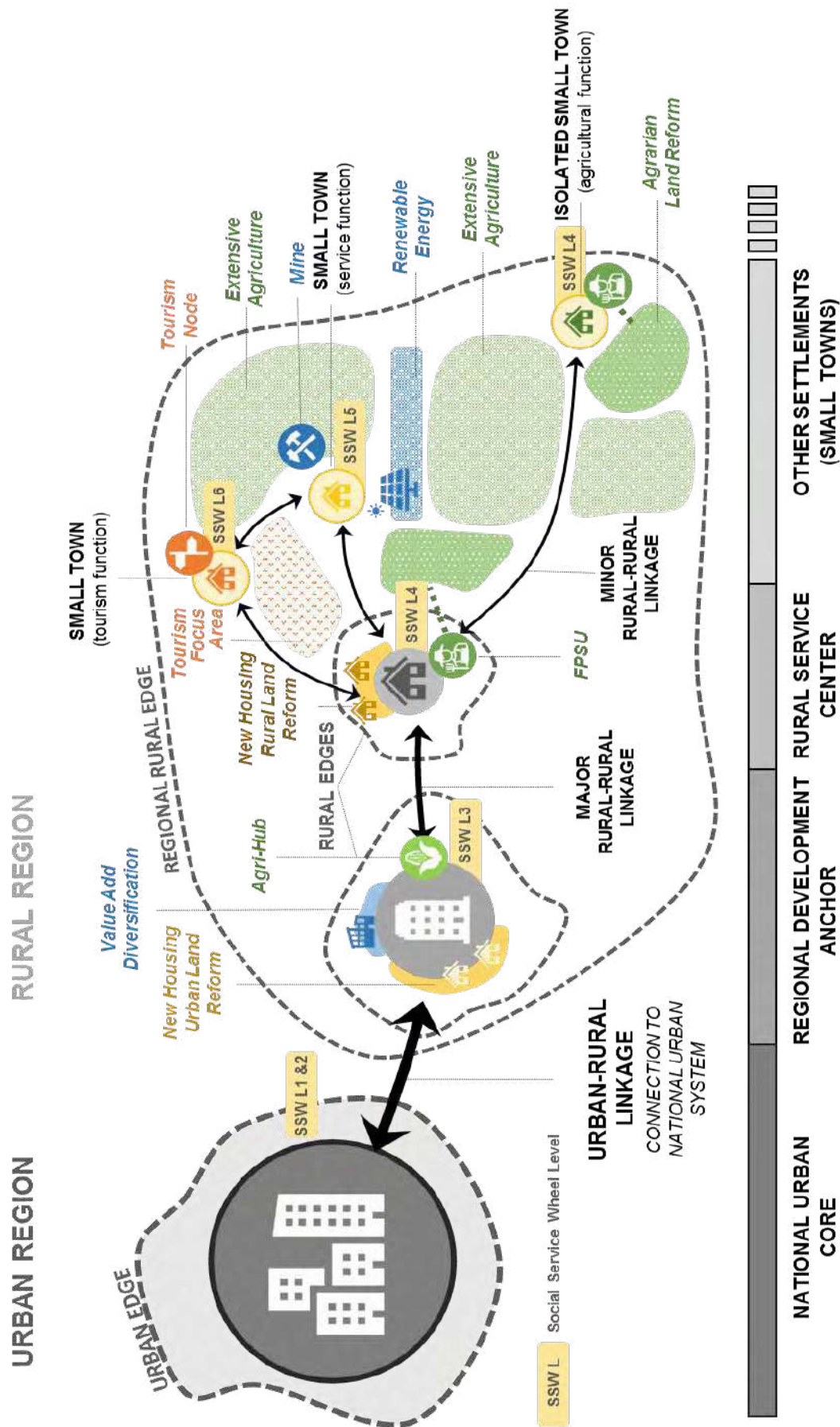


Table 16: Regional Development Anchors Settlement Development Guidelines

Regional Development Anchors	Service Level for Population Size	Settlement Development Guidelines
Komani, Oudtshoorn and Worcester.	Service town for more than 60 000 people.	• Social service provision: Refer to Table 24: Services for 60 000+ people. • New human settlement development at urban densities (40 units per hectare and higher) as close as possible to core business area. • Peri-urban land reform: smallholdings and high-intensity agriculture areas within rural edge in high-intensity agricultural areas (Komani, parts of Worcester region); no peri-urban land reform in water-scarce areas (Oudtshoorn, parts of Worcester region). • Peri-urban land reform should be linked with Agri-Hub or FPSU. • Urban land reform: human settlement development at urban densities.
Beaufort West, Cradock, De Aar Graaff-Reinet, Maletswai, Piketberg, Springbok, Swellendam and Vredendal	Service town for 20 000-39 999 people.	• Social service provision: Refer to Table 22: Services for 20 000-39 999 people. • New human settlement development at urban densities (40 units per hectare and higher) as close as possible to core business area. • Peri-urban land reform: smallholdings and high-intensity agriculture areas within rural edge in high-intensity agricultural areas (Swellendam, parts of Maletswai region); no peri-urban land reform in water-scarce areas (Beaufort West, Cradock, De Aar, Graaff-Reinet, Springbok) • Peri-urban land reform should be linked with Agri-Hub or FPSU.
Calvinia	Small service town for 10 000-19 999 people.	• Social service provision: Refer to Table 21: Services for 10 000-19 999 people. • New human settlement development at low urban densities (20-40 units per hectare) as close as possible to core business area. • No peri-urban land reform.

Table 17: Rural Service Centres Settlement Development Guidelines

Rural Service Centres	Service Level for Population Size	Settlement Development Guidelines
Ceres	Service town for 40 000-59 000 people.	• Social service provision: Refer to Table 23: Services for 40 000 to 59 000 people. • New human settlement development at urban densities (40 units per hectare and higher) as close as possible to core business area. • Peri-urban land reform: smallholdings and high-intensity agriculture areas within the rural edge. • Peri-urban land reform should be linked with Agri-Hub or FPSU. • Urban land reform: human settlement development at urban densities.
Middelburg, Somerset East, Wolseley and Wittlesea.	Service town for 20 000-39 999 people.	• Social service provision: Refer to Table 22: Services for 20 000-39 999 people • New human settlement development at urban densities (40 units per hectare and higher) as close as possible to core business area. • Peri-urban land reform: smallholdings and high-intensity agriculture areas within rural edge in high-intensity agricultural areas; no peri-urban land reform in water-scarce areas • Peri-urban land reform should be linked with Agri-Hub or FPSU.
Aberdeen, Barrydale, Bethulie Brittstown, Burgersdorp, Carnarvon, Citrusdal, Clanwilliam, Colesberg, Dealesville, De Rust, Douglas, Griekwastad, Groblershoop, Hertzogville, Jamestown, Jansenville, Hopetown, Kakamas, Koffiefontein, Ladismith, Laingsburg, Lamberts Bay, Molteno, Murraysburg, Boshof, Dewetsdorp, Petrusburg, Petrusville, Port Nolloth, Prieska Prince Albert, Reddersburg, Richmond, Rouxville, Steinkopf, Smithfield, Tarkastad, Trompsburg, Venterstad, Victoria West, Wepener, Willowmore and Zastron.	Small service town for 10 000-19 000 people.	• Social service provision: Refer to Table 21: Services for 10 000-19 999 people. • New human settlement development at low urban densities (20-40 units per hectare) as close as possible to core business area. • Peri-urban land reform: smallholdings and high-intensity agriculture areas within rural edge in high-intensity agricultural areas; no peri-urban land reform in water-scarce areas • Peri-urban land reform should be linked with Agri-Hub or FPSU.

Table 18: Other Towns Settlement Development Guidelines

Other Towns	Service Level For Population Size	Settlement Development Guidelines
Jacobsdal, Noupoot, Steynsburg and Veldrif.	Small service town for 10 000-19999 people.	• Social service provision: Refer to Table 21: Services for 10 000-19 999 people. • New human settlement development at low urban densities (20-40 units per hectare) as close as possible to core business area. • No peri-urban land reform. • Agrarian land reform – linked to FPSU in a small local town.
Concordia, Kenhardt, Klawer, Luizville, Nababeep, Porterville, Touwsrivier and Van Rhynsdorp.	Small local town for 5 000-9 999 people.	• Social service provision: refer to Table 20: Services for 5 000-9 999 people. • New human settlement development at rural settlement densities (10-20 units per hectare) as close as possible to core business area. • Agrarian land reform – access to a small local town for social services and linked to FPSU in a small local town.
Aggeneys, Alexander Bay, Aurora, Brandvlei, Bitterfontein, Buffelsrivier, Calitzdorp, Carolusberg, Cookhouse, De Doorns, Doringbaai, Dwarskersbos, Eendekuil, Eksteenfontein, Elandsbaai, Fauresmith, Fraserburg, Garies, Graafwater, Grootdrink, Hondeklip Bay, Hanover, Hofmeyer, Ikgomotseng, Jagersfontein, Kamieskroon, Kleinsee, Klipplaat, Komaggas, Leeu Gamka, Loeriesfontein, Loxton, Luckhoff, Marchand, Marydale, Merweville, Nieu-Bethesda, Niekerkshoop, Nieuwoudtville, Norvalspont, Nuwerus, Onseepkans, Op-die-Berg, Orania, Oviston, Pearston, Philipstown, Philippolis, Pofadder, Redelinghuys, Springfontein, Sterkstroom, Steytlerville, Strandfontein, Strydenburg, Sutherland, Suurbraak, Thornhill, Tulbagh, Van Stadensrus, Vanderkloof, Vanwyksvlei, Vosburg, Wegdraai, Williston, Zoar, Ilinge and Edenburg.	Local service node for less than 4 999 people.	• Social service provision: refer to Table 19 Services for less than 4 999 people. • New human settlement development at rural settlement densities (10-20 units per hectare) as close as possible to core business area. • Agrarian land reform – access to local service node for social services. (Note – should residential development and the initiatives at Boegoebaai lead to an increase in population in Alexander Bay, the town should be reclassified as a small local town on small service town depending on population numbers.)

Table 19: Services for 1 000 to 4 999 People

SERVICES FOR 1 000 – 4 999 PEOPLE					
SECTOR	FACILITY TYPE	POPULATION THRESHOLD PER FACILITY		WITHIN DISTANCE (KM)	
		MIN	up to	MAX	
Health	Satellite/Mobile Clinic	1 000		4 000	5
Education	Primary School – Small	1 000 (enrolment of 135 learners)		2 199 (enrolment of 310 learners)	5
	Secondary School – Small	2 000 (enrolment 200 learners)		3 999 (enrolment 400 learners)	5
Social Development	Crèche	2 400		3 500	5
	Social Grant Pay Point	100 beneficiaries		–	5
Government Service Cluster - such as Mobile Thusong/ Multi-purpose Centre	Mobile e-Government Service (with a minimum of Home Affairs & SASSA 1x per month)	2 000		9 999	25/ 40
Sports	Sports	3 000		–	5
Parks	Community Park	2 000		–	5
Cemeteries	Cemetery		0.26ha/ 1 000 people		–
For more detail, please consult the Guidelines for Differentiated Provision .					

Table 20: Services for 5 000 to 9 999 People

SERVICES FOR 5 000 – 9 999 PEOPLE					
SECTOR	FACILITY TYPE	POPULATION THRESHOLD		WITHIN DISTANCE (KM)	
		MIN	MAX		
Health	Basic Clinic	5 000	9 999	5	
Education	Primary School – Medium	2 200 (enrolment of 311 learners)	4 399 (enrolment of 620 learners)	5	
	Secondary School – Medium	4 000 (enrolment 401 learners)	5 999 (enrolment 600 learners)	5	
Social Development	Crèche	2 400	3 500	5	
	Social Grant Pay Point	100 beneficiaries	–	5	
Community Hall	E-grade Hall	5 000	14 999	10	
Government Service Cluster - such as Mobile Thusong/ Multi-purpose Centre	Mobile e-Government Services(with minimum of Home Affairs & SASSA 2x per month)	2 000	9 999	25/ 40	
Libraries	Basic Public Library	5 000	24 999	5	
Sports	Sports	3 000	–	5	
Parks	Community Park	2 000	–	5	
Cemeteries	Cemetery	0.26ha/ 1 000 people		–	
For more detail, please consult the Guidelines for Differentiated Provision.					

Table 21: Services for 10 000 to 19 999 People

SERVICES FOR 10 000 – 19 999 PEOPLE						
SECTOR	FACILITY TYPE	POPULATION THRESHOLD		WITHIN DISTANCE (KM)		
		MIN	MAX			
Health	Small Clinic	10 000	19 999	5		
Education	Primary School – Medium	2 200 (enrolment of 311 learners)	4 399 (enrolment of 620 learners)	5		
	Secondary School – Medium	4 000 (enrolment 401 learners)	5 999 (enrolment 600 learners)	5		
Social Development	Crèche	2 400	3 500	5		
	Social Grant Pay Point	100 beneficiaries	–	5		
Community Hall	E/ D-grade Hall	5 000/ 15 000	14 999/ 19 999	10		
Government Service Cluster - such as Mobile Thusong/ Multi-purpose Community Centre (MPCC)	MPCC/Thusong - Satellite Centre (with minimum of weekly Home Affairs & SASSA)	10 000	19 999	25 / 40		
Libraries	Basic Public Library	5 000	24 999	5		
Sports	Sports	3 000	–	5		
Parks	Community Park	2 000	–	5		
Cemeteries	Cemetery	0.26ha/ 1 000 people		–		
For more detail, please consult the Guidelines for Differentiated Provision .						

Table 22: Services for 20 000 to 39 999 People

SERVICES FOR 20 000 – 39 999 PEOPLE					
SECTOR	FACILITY TYPE	POPULATION THRESHOLD		WITHIN DISTANCE (KM)	
		MIN	MAX		
Health	Standard Clinic	20 000	39 999	5	
Education	Primary School – Medium	2 200 (enrolment of 311 learners)	4 399 (enrolment of 620 learners)	5	
	Secondary School – Medium	4 000 (enrolment 401 learners)	5 999 (enrolment 600 learners)	5	
Social Development	Crèche	2 400	3 500	5	
	Social Grant Pay Point	100 beneficiaries	–	5	
Community Hall	D-grade Hall	15 000	19 999	10	
Libraries	Basic Public Library	5 000	24 999	5	
Sports	Sports	3 000	–	5	
Parks	Community Park	2 000	–	5	
Cemeteries	Cemetery		0.26ha/ 1 000 people	–	
MIDDLE & HIGHER ORDER FACILITIES - Preferably as part of a Government Precinct or Thusong Centre / Cluster					
Community Halls	C-grade Hall	20 000	29 999	15	
Government Service Cluster	Small Thusong Centre/ Government Precinct with Home Affairs, SASSA, SAPS and Labour Office	20 000	59 999	25 / 40	
SASSA	SASSA Office	30 000	120 000	40	
Home Affairs	Home Affairs Office	20 000	200 000	25	
Social Development	Children's Home	20 000	60 000	25	
	Home for the Aged	20 000	60 000	25	
For more detail, please consult the Guidelines for Differentiated Provision.					

Table 23: Services for 40 000 to 59 999 People

SERVICES FOR 40 000 – 59 999 PEOPLE					
SECTOR	FACILITY TYPE	POPULATION THRESHOLD		WITHIN DISTANCE (KM)	
		MIN	MAX		
Health	Standard Clinic	20 000		39 999	5
Education	Primary School – Medium	2 200 (enrolment of 311 learners)		4 399 (enrolment of 620 learners)	5
	Secondary School – Medium	4 000 (enrolment 401 learners)		5 999 (enrolment 600 learners)	5
Social Development	Crèche	2 400		3 500	5
	Social Grant Pay Point	100 beneficiaries		–	5
Community Hall	C-grade Hall	20 000		29 999	15
Libraries	Basic Public Library	5 000		24 999	5
Sports	Sports	3 000		–	5
Parks	Community Park	2 000		–	5
Cemeteries	Cemetery		0.26ha/ 1 000 people		–
MIDDLE & HIGHER ORDER FACILITIES- Preferably as part of a Government Precinct or Thusing Centre / Cluster					
Health	Large Clinic	40 000		59 999	10
Community Hall	B-grade Hall	30 000		59 999	15
Government Service Cluster/ Precinct	Small Thusing Centre/ Cluster or MPCC with a range of government services including SASSA, Home Affairs & SAPS	20 000		59 999	25 / 40
	SASSA Office	30 000		120 000	40
Home Affairs	Home Affairs Office	20 000		200 000	25
Social Development	Children's Home	20 000		60 000	25
	Home for the Aged	20 000		60 000	25
Libraries	Branch Public Library	50 000		150 000	10
For more detail, please consult the Guidelines for Differentiated Provision					

Table 24: Services for 60 000-plus People

SERVICES FOR 60 000+ PEOPLE						
SECTOR	FACILITY TYPE	POPULATION THRESHOLD		WITHIN DISTANCE (KM)		
		MIN	MAX			
Health	Large Clinic	40 000	59 999			10
	Primary School – Medium	2 200 (enrolment of 311 learners)	4 399 (enrolment of 620 learners)			5
Education	Secondary School – Medium	4 000 (enrolment 401 learners)	5 999 (enrolment 600 learners)			5
	Crèche	2 400	3 500			5
Social Development	Social Grant Pay Point	100 beneficiaries	–			5
	B-grade Hall	30 000	59 999			15
Community Hall	Basic Public Library	5 000	24 999			5
Libraries	Sports	3 000	–			5
Parks	Community Park	2 000	–			5
Cemeteries	Cemetery		0.26ha/ 1 000 people			–
MIDDLE & HIGHER ORDER FACILITIES - Preferably as part of a Government Precinct or Thusong Centre / Cluster						
Health	Community Health Centre	60 000	149 999			10
	General Hospital (District Hospital L1)	150 000	900 000			30
Community Hall	A-grade Hall	60 000	300 000			15
Government Service Cluster/ Precinct	Government precinct/ Large Thusong Centre with permanent Home Affairs, SASSA, SAPS & Labour offices & possibly incorporating a Clinic & Court	60 000	200 000			25 / 40
	SASSA Office	30 000	120 000			40
Home Affairs	Home Affairs Office	20 000	200 000			25
Social Development	Children's Home	20 000	60 000			25
	Home for the Aged	20 000	60 000			25
Libraries	Branch Public Library	50 000	150 000			10
For more detail, please consult the Guidelines for Differentiated Provision.						

These facilities may be provided in any **Small Service Town** in the Karoo depending on the risk profile of the area, poverty level, travel access or areas of jurisdiction and cost-benefit feasibility:

Table 26: Facilities Dependent on Risk, Jurisdiction and/or Distance

FACILITIES DEPENDENT ON SPECIFIC RISK, JURISDICTION AND/OR DISTANCE	
	Social Grant Pay Point
	Police Station
	Fire Station
	Social Development Offices/ Service Points
	Magistrate's Court
	Tribal Council Office
	Youth Services
For more detail, please consult the Guidelines for Differentiated Provision .	

Small Towns and Regional Development Anchors that have a population of fewer than 60 000 people should potentially receive additional facilities based not on their population size, but rather on *their role in providing services to a larger region of 30 to 50 kilometres as defined, and due to the maximum travel distance to larger places with higher-order services being beyond the acceptable travel distances, as per the Guidelines.*

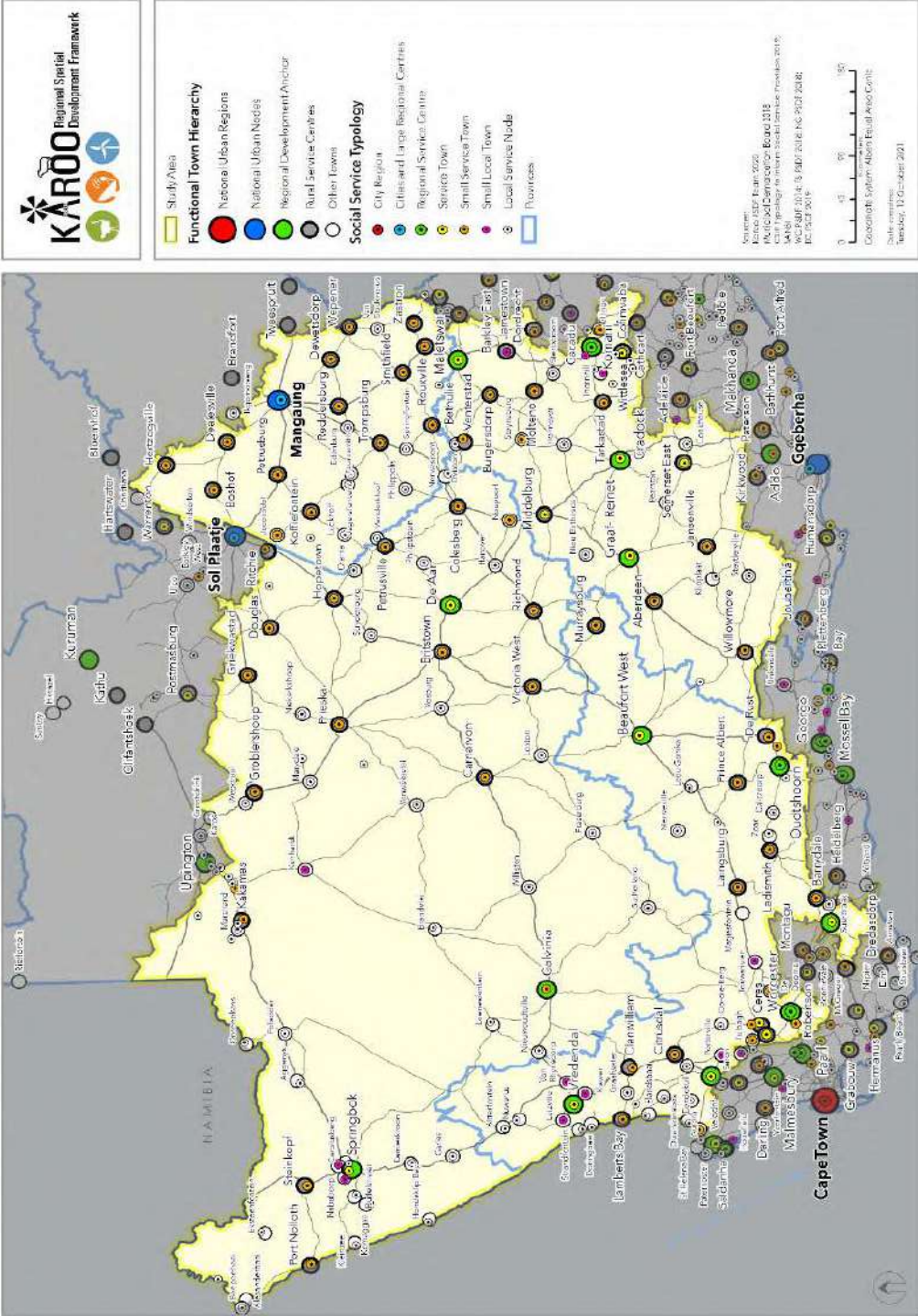
The provision of the following additional facilities should be considered in these cases, if not already provided:

Table 25: Additional Services

ADDITIONAL SERVICES REQUIRED FOR REGIONAL ANCHORS AND SERVICE TOWNS AND CENTRES WITH LESS THAN 60 000 PEOPLE	
SECTOR	FACILITY TYPE
Health	24-hour Health Facility/ Community Health Centre
Government Precinct/ Thusong Centres and Clusters	Government Precinct or Thusong Centre/ Services Cluster, which at minimum has a SASSA office, a Home Affairs office & Police Station as well as a Labour office- Depending on the town size, this service may be periodic but should operate at least two days a week. A tourism office may also be required.
For more detail, please consult the Guidelines for Differentiated Provision .	

Map 11: Settlement Role

Karoo RSDF: Settlement Role



4.5. COMPOSITE REGIONAL SPATIAL FRAME

The composite regional spatial frame is indicated on the map below, consisting of the following elements:

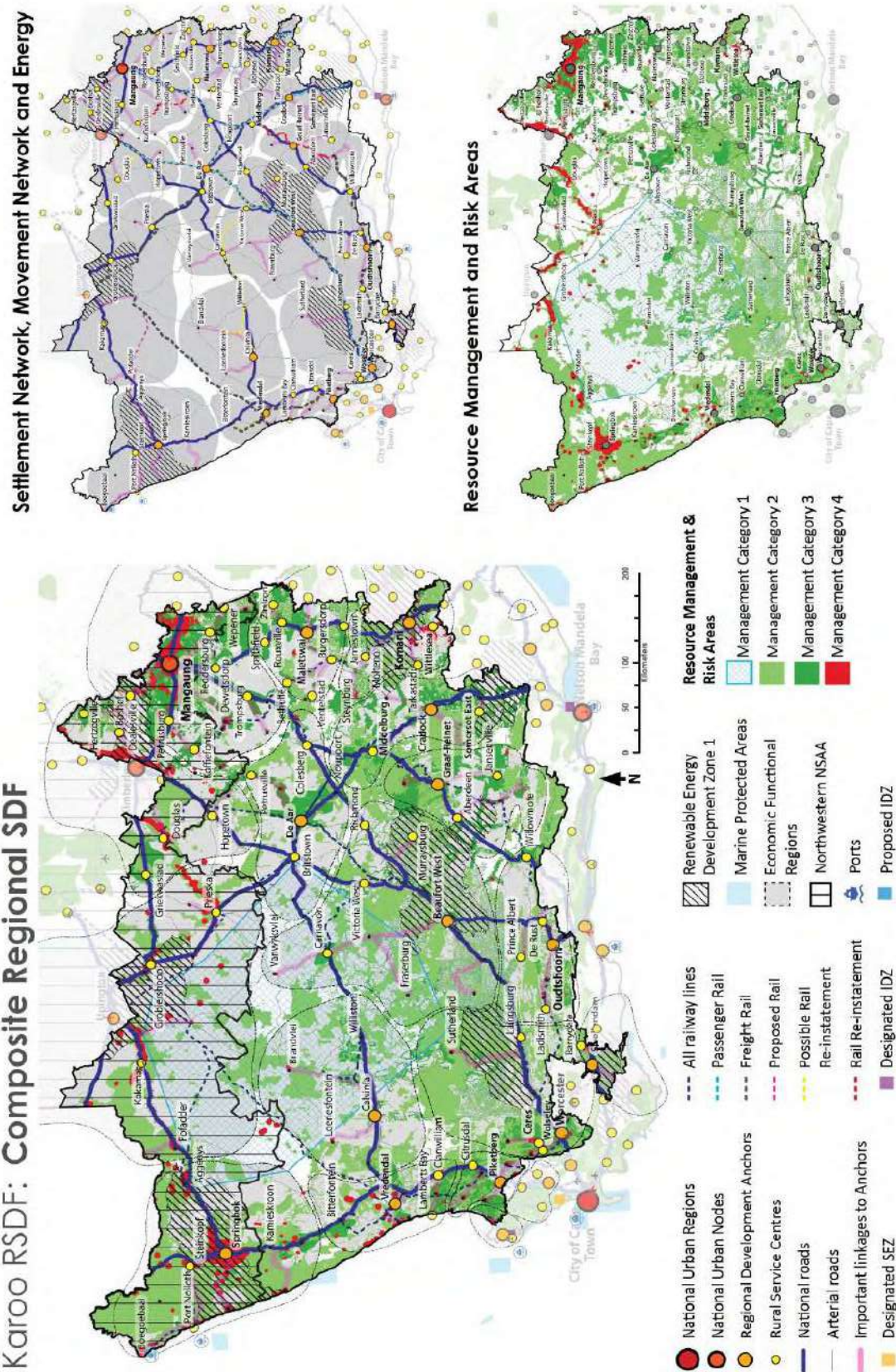
- Settlement Network and Functional Regions
- Mobility Network and Linkages
- Regional Scale Economic Activity
- Resource Management and Risk Areas

This map should be read in conjunction with the other detailed maps in this section, as the content on the map was simplified for ease of presentation.

The maps in this section, including the composite RSDF map, are available in GIS format for application in future planning processes.

Map 13: Composite Regional SDF

Karoo RSDF: Composite Regional SDF



PART 5: IMPLEMENTATION FRAMEWORK



5.1. INTRODUCTION

The Implementation Framework outlines **the approach** and the **key actions** required to rapidly, sustainably, and affordably:

- Realise the *vision* for the Karoo region;
- Bring about the desired (1) macro-regional *spatial development pattern* and (2) related micro-regional *settlement forms*; and
- Use, protect, and manage the region's rich and abundant yet highly fragile *natural resource base*.

This is undertaken within (1) full recognition and (2) deep appreciation of the ceaseless work done over many years (and even decades in some cases) with these objectives in mind, by (1) elected representatives and officials in the organs of State, and (2) a wide range of non-State actors, including individuals, communities, traditional authorities, large and small formal and informal businesses, NGOs, and CBOs in the region.

In terms of structure, the implementation framework consists of the following parts:

- Approach;
- Preparing for Implementation;
- Implementation Tasks;
- KRSDF review;
- Monitoring and Evaluation;
- Funding;
- Regional Spatial Governance Framework;
- Strategic Spatial Investment Guidance; and
- Priority Actions.

5.2. APPROACH

In keeping with the collaborative and cooperative way of thinking, engaging, and doing that has led to (1) the *formal, statutory declaration* of the Karoo region, and (2) the *preparation of the KRSDF, an approach* of joined-up, mutually supportive, cooperative, integrated, coordinated, and harmonious State and non-State planning, budgeting/resourcing and action is adopted.

The foundation that has already been put in place means that it is not a case of starting at 'ground zero', but rather of layering on, extending, strengthening, and deepening existing relations, practices, and actions. At the same time, and as is always the case with the benefit of hindsight and after-the-event reflection, the '*history of working in and for the region*' also provides guidance in terms of ideas, collaborative arrangements and instruments that were well-intended but have not worked, and that should be avoided. Finally, the immediacies of our time – of cataclysmic natural resource depletion, ecological destruction, climate change, COVID-19, rising unemployment, increasing poverty and inequality, and growing anxieties about the future, especially among our Youth – necessitate rapid action, and (1) an approach of '*learning by doing*', while (2) following in the footsteps, and using the paths made by those that have gone before in the region, while (3) at the same time:

- *Widening and levelling the path*, so more of those who live in the Karoo can get onto it, use it, and benefit from it for many more years to come;
- *Travelling together*, and making sure that all of those living in the Karoo get to where they want to go and can be, and the region needs to be;
- *Reducing the ecological footprint and limiting the cost incurred on the fragile natural systems* in the process of those living in the Karoo making their way in, on, and through the region; and

- Finding, designing, and deploying *new ways of doing and making their lives* by those who live in the Karoo that will be to the advantage of the region and the fragile ecosystems it is home to.

It is within this approach and set of implementation guides, parameters, and objectives that the key tasks in the implementation of the proposals as set out in this KRSDf are made.

5.3. PREPARING FOR IMPLEMENTATION

While much has been done, and the Karoo is no new-comer to *'collaborative regional thinking and doing'*, these activities will have to be (1) stepped up a few gears, (2) expanded to include, engage, and ignite more actors and entities, (3) better integrated, and (4) collectively pursued within *the broader regional development agenda*, and *set of regional spatial development objectives*, as put forward in the preceding sections of this framework. This will require that:

- *Institutions and organisations* that will be involved in the process of regional development will (1) need to be prepared, and (2) as and where required, be supported with formally taking on, owning, and assisting with the regional spatial development of the Karoo; and
- *Individuals* working in the State and non-State institutions and organisations will need to be properly prepared for and duly capacitated to both (1) include, and (2) provide for the implications of adding and taking on board a *'Karoo-based and inspired spatial development focus, intent, and pursuit'* in their work.

Although these actions have, in a way, already begun during the many meetings, work-sessions, and colloquia in the course of preparing the KRSDf, they will need to be specifically focused and structured, planned, budgeted for (as and where required) and formally be embarked upon.

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Importantly though, is that *it is not seen and undertaken as a once-off process. It needs to be regarded as a continuous, ongoing activity and key concern, and one that will be adjusted and enhanced as and where new needs arise in the region in time to come.*

Ideally, the process of capacity-building should, in the same vein as the proposals regarding the *'regional spatial governance model'* (see **Section 5.8** below), (1) be approached, (2) the contents thereof developed, and (3) the roll-out be undertaken in a joined-up, collaborative way, with sustained and active involvement and participation by both State and non-State actors and entities. Key in this regard will be to tap into the institutions of higher learning located in the region, but also further afield, as, and where such institutions may be of assistance in (1) building capacity and (2) initiating and/or undertaking research that may be supportive of these actions. In addition to building, deepening, and expanding competencies, the face-to-face capacity-building sessions that will form part of such an initiative should also be carefully planned and undertaken as opportunities for (1) establishing new partnerships and compacts and (2) expanding, broadening, and strengthening existing ones.

Finally, in this regard, engagements will need to be initiated in, between and amongst (1) organs of State, and (2) non-State actors, entities, and organisations, on ways of formalising cooperation and collaboration structures, rules, and programmes for action. Instead of spending months and even years on getting to perfect (1) structures/forums and (2) modes and rules of engagement, it is proposed that *'prototype structures and arrangements'* are put in place to get things going, show results, secure, strengthen, sustain, and retain buy-in, and move the process of regional development forward. Improvements and refinements can then be made, informed not only by theoretical perspectives and ideas, but by well-planned and implemented monitoring and review of the real-world

experiences when structures and actors meet on the track of life in the Karoo.

5.4. IMPLEMENTATION TASKS

5.4.1. INTRODUCTION

Ensuring (1) the utilisation of the guidance and (2) the implementation of the regional spatial development proposals set out in the KRSDF requires that a series of *five tasks*, as set out in this section, be undertaken. These tasks seek to:

- Ensure, enhance, broaden, and deepen collaboration and cooperation between the State and non-State actors and sectors active in the Karoo so as to ensure better alignment between planning, budgeting and infrastructure investment and development spending in the region;
- Spatially direct, focus, target and consolidate, integrate, align, and coordinate State action within the region, and provide clear, unambiguous regional spatial investment guidance to the non-State sector; and
- Provide for the introduction of collaboratively prepared and mutually agreed to a '*regional development and transformation accountability agreement*', as is envisaged on a national scale in the

NSDF, in terms of which all organs of State and all non-state actors active in the region will, individually and collectively, hold each other accountable for their planning, investment decisions and delivery programmes in relation to (1) targeted investment in regional priority spaces, (2) regional spatial transformation and regional-rural based settlement development, and (3) the careful,

respectful, and well-considered utilisation of the region's natural resource base.

While the tasks covered in this section are treated separately, they are not and should not be seen or engaged in isolation like separate lanes on a racetrack with participants not allowed to, and never looking to their sides, nor allowing themselves to cross the chalked-out lines, but simply dashing down their lanes once the gun has been fired, to the finish line and the achievement of a singular departmental or individual target, profit-point, or key performance indicator. Instead, the successful implementation of the KRSDF will rely on participants involved in this pursuit – while focusing on completing their tasks and getting their work done – constantly and consciously turning and looking to their sides, not necessarily stopping the race to have a complete standstill and get-together, and forgetting to move forward towards the goals as set for the region in the KRSDF, but sharing ideas, concerns, and proposals along the way, and adjusting the course of action in accordance with the information shared. Importantly too, is that in this case, the race, in contrast to most others in the materialistic, self-centred, and self-obsessed world we are living in, is only won when everyone succeeds and completes what they have been tasked with doing in the pursuit of the regional spatial development objectives as set out in this framework.

5.4.2. CHAMPIONING

The DALRRD, the DPME, the DCoGTA, the four Premiers' Offices, and SALGA will be given the responsibility of taking the lead in championing the KRSDF. This does not suggest that the District, Metropolitan and Local Municipalities and non-State actors, entities and organisation will not be involved in this endeavour, as they surely must and will be. It is merely a case of allocating responsibility for the 'lead' to a smaller group and making

this group responsible for setting up a network of 'Karoo champions' that span all the organs of State and non-State actors in the Karoo. *Importantly too is that this in no way suggests that there may only be one champion per organ of State, or non-State institution, entity, or organisation.* This is really a case of the more, the merrier. Ideally, each official, politician and non-State actor in the Karoo should be a champion for the region and the KRSDF.

The **key championing tasks** that will be allocated to the 'lead group', duly supported by the network of champions throughout the Region, are to:

- Provide collaborative, shared and mutually agreed to advice and guidance on ways to maximise (1) regional spatial development impact and (2) social, economic transformation in the Karoo within a natural resource-wise and climate-change aware and sustainable way;
- Actively (1) promoting awareness of the Karoo as Region and the KRSDF as an instrument aimed at developing and transforming the region in a wide and responsible way, (2) ensuring that the region features prominently in all government planning, budgeting, and action and that the KRSDF is used as a guide in all such endeavours planned in and for the region, and (3) coordinating, aligning, harmonising, and integrating action across government for ensuring better regional spatial development outcomes in the region;
- Report on the implementation of the KRSDF and the extent to which regional spatial development outcomes are being achieved; and
- Build and strengthen (1) regional spatial development literacy within government and the knowledge and awareness of the Karoo as a special and unique region, (2) the capacity and capability of officials and elected representatives in guiding, coordinating, and supporting regional spatial development in the Karoo, and (3) the national 'intergovernmental spatial planning system' that will be put in place by the NSDF, and with a distinct focus on the Karoo.

- These actions will be strongly supported by adequately budgeting for research into (1) regional spatial development planning and (2) social, demographic, economic and ecological trends in the Karoo, in collaboration with learning organisations, civil society and other bodies.

5.4.3 COMMUNICATION

Communication is an essential and cost-effective way of (1) building and deepening regional understanding, (2) reaching agreements on key regional challenges and opportunities, and (3) ensuring shared region-focused action. People and institutions can only act on and invest in a plan they know, understand, and believe in. As such, an effective communication strategy that targets all three spheres of government, the private sector, academia, and civil society (1) within the region, as well as (2) outside it, will have to be introduced. As in the case of the 'lead championing duties', the DALRRD, the DPME, CoGTA, the four Premiers' Offices and SALGA will be tasked with this key activity.

The envisaged communication strategy, developed and rolled out with the support of communication experts, would need to target a range of actors and work on and across a range of platforms. Included in the strategy should be the following two key components:

- A *strong web presence and profiling of the KRSDF* on key government websites, notably those departments dealing with overarching, integrated spatial and developmental policy, i.e., the DPME, the DCoGTA, the DALRRD, the NT and the four Premiers' Offices; and
- The *use of existing inter-governmental engagement platforms* to profile and explain the KRSDF, including key government partners, such as SALGA – who has played an enormous role in getting the

Karoo formally declared as a region and the KRSDF to where it is now – and would be a crucial ally in (1) introducing the KRSDF to municipalities, (2) sustaining a focus on it, and (3) championing the pursuit of its regional spatial development objectives in this key sphere of government.

5.4.4. INSTITUTIONALISATION

To have maximum spatial development and transformational impact in the Karoo, the KRSDF must become a 'formal component' of the existing systems of intergovernmental planning, budgeting, implementation, monitoring and evaluation. This includes ensuring that the KRSDF:

- Features in, supports, and strengthens the Medium Term Strategic Framework (MTSF) and related provincial strategic plans, strategies, and frameworks;
- Improves alignment of the planning and budgeting processes of all sectors and spheres of government and SOEs, insofar as the Karoo is, directly and indirectly, involved, as and when these are being undertaken, prepared, or reviewed, especially in relation to spatially targeted capital spending (and long-term infrastructure spending);
- Contributes, through exposure to and awareness of it, to both regional and settlement-scale spatial transformation; and
- Assists in identifying special grants or other funding mechanisms to support spatial targeting, regional development planning and other programmes aimed at spatial transformation at a regional scale, with a specific focus on the Karoo.

Indicators of **progress** with regards to this component are the following:

- **The five-year horizon:** The next MTSF refers to and includes the KRSDF as a core sub-national area for action;

- **The three-to-five-year horizon:** (1) National and provincial sector departments formulate their strategic plans, and (2) municipalities prepare and review their IDPs and SDFs and compile, in collaboration with other organs of State, the DDM One Plans, in accordance with the KRSDF's vision and in support of its objectives;
- **Annual actions:** Short-term, measurable spatial transformation targets are set in annual performance plans and budgets in terms of and in support of the KRSDF.
- **Collaborative monitoring and evaluation:** A collaboratively prepared and mutually agreed to 'regional development and transformation accountability agreement', as is envisaged on a national scale in the NSDF, in terms of which all organs of State and all non-state actors active in the region will, individually and collectively, hold each other accountable for their planning, investment decisions and delivery programmes in relation to (1) targeted investment in regional priority spaces, (2) spatial transformation, and (3) the careful, respectful, and well-considered utilisation of the region's natural resource base, is put in place.

5.4.5. EMBEDDING

While there are, and surely will be numerous target-dates for specific initiatives and actions in the Karoo region that will be initiated and/or guided by the KRSDF, a key date for the framework is 2050, as this is the target date of the NSDF, which the KRSDF is guided by, aligned with, and supportive of. In accordance with this time horizon, the embedding of the KRSDF is set to take place over the course of **three phases**:

Phase One: Initiation: 2022 to 2024

During this phase, the focus will be on ensuring that (1) the KRSDF is recognised, and clear attempts made at aligning national, provincial, municipal, and SOEs' long-term plans with the KRSDF, and (2) a shared

understanding within all three spheres of government and SOEs on the objectives and actions required to realise the long-term regional spatial development pattern, as 'sub-national subset' of the *national spatial development pattern*, as put forward in the *NSDF*, is developed. This will require the utilisation of existing and/or the setting up of intergovernmental cooperation and collaboration arrangements and structures, as provided for in **Section 5.8.5** below, between the DALRRD, the DPME, the four Premiers' Offices, the municipalities in the region, and all the SOEs active in and around the Karoo.

The key activity in this phase will be that of (1) championing the KRSDF and raising awareness of the framework and its implications across all three spheres of government, learning organisations, and non-State actors and organisations in the Karoo. Performance on this outcome will be measured by (1) acknowledgement of the KRSDF in the MTSF, and (2) the targeted and budgeted-for pursuit of the KRSDF objectives in national sector plans, and provincial SDFs and strategic and sector plans, municipal SDFs and IDPs, and the DDM's One Plans.

Phase Two: Alignment, Budgeting and Execution: 2025 to 2043

In this phase, the focus will be on (1) building on and strengthening the foundation laid in the Initiation Phase and (2) ensuring the recognition of the KRSDF in long-term national spatial development plans, budgets, and programmes of action. Crucially so, the objectives with regards to stabilisation, preservation, protection, and management of the region's fragile ecosystems would have been realised. As in the case of the Initiation Phase, progress is measured by the targeted and budgeted-for pursuit of the KRSDF objectives in national sector plans, provincial economic plans and SDFs, SOEs' plans, municipal SDFs and IDPs, and the DDM's One Plans.

Phase Three: Renew and Re-Do: 2044 to 2049

Karoo Regional Spatial Development Framework

In the last phase, implementation of the KRSDF would continue, a full evaluation of the framework would be undertaken, and the preparation for the compilation of the next '30-50 year KRSDF' would begin.

5.4.6. ACTIONING

A core objective of the KRSDF is the pursuit of (1) region-wide and (2) settlement-scale sustainable and affordable spatial development and transformation. *For the KRSDF to have this outcome and make a meaningful and decisive impact on the ground*, it needs to (1) inform, guide, drive, and direct, and, in turn (2) be informed, guided, driven, and directed by national and sub-national strategic, spatial and sector plans. The better and more successful the four other tasks are planned and undertaken, the better the chance of the KRSDF being actioned through the many plans, strategies and frameworks being prepared in and by (1) the sectors and spheres of government, as well as (2) the private sector, communities, and traditional authorities in the region. Importantly, as well, is that such action and achievement of the desired results are not viewed as a once-off event – the process of ensuring that the KRSDF is actioned starts tomorrow with the four other tasks and continues every day thereafter. The better this is done, the greater the action and the regional spatial development impact by the multitude of plans, strategies, budgets, and frameworks it works in and through, will be.

5.5. KRSDF REVIEW

As indicated in **Section 5.4** above, the KRSDF takes a long-term view with a 2050-horizon. Many changes and global, national, regional, and even local events and actions are sure to lead to parts of the framework becoming less relevant, or no longer relevant at all, while at the same time, new issues and

concerns may, and surely will arise. Both these sets of developments will require that amendments be made to the framework between today and 2050.

The 'five-yearly SDF reviews', as mandated in SPLUMA, are the ideal vehicles for making the necessary adjustments and refinements to the KRSDF. To be able to do so will, however, require that:

- There is a rich, wide-ranging and multi-stakeholder '*regional development dialogue*' in the Karoo, with the KRSDF a key component in these deliberations;
- Data has been, and is being sourced, and made available on the key developmental challenges and opportunities in the region;
- The KRSDF has been, and is *being used and implemented*, enabling 'real-life, tried-and-tested' user *feedback and reflections* on its value and use; and
- Related to the user experiences, *monitoring of the use and application of the KRSDF* in the preparation of national and sub-national plans, budgets and implementation plans that impact the region, or have the region as an area of focus and concern, has been systematically recorded, made sense of, and made available in an easily accessible format.

As for the legal requirements regarding the KRSDF review, neither SPLUMA nor the Regulations published in terms of the Act directly address requirements around the review, apart from the statutory requirement that it must be done once at least five years after its preparation and publication, and every five years thereafter, by the responsible Minister.

5.6. MONITORING AND EVALUATION

The processes of monitoring and review of the KRSDF and its impacts are ideal opportunities to contribute to the (1) championing and (2) deepening of the understanding of the framework. As such, they should be used to (1) bring together and (2) fuse support of the framework amongst all three spheres of government and other civil society, learning and private sector bodies, and traditional authorities.

On a *technical level*, these processes will also require the development of a monitoring and evaluation framework to assess the realisation of the KRSDF's intended (1) regional spatial development and (2) settlement development and transformation impacts. Given that the KRSDF is dependent on behavioural change amongst a wide range of stakeholders, it is important to prepare this monitoring and evaluation framework in collaboration with all these stakeholders involved. Coupled with this will be the development of reliable impact indicators that will support the concrete tracking of progress regarding the regional spatial development and spatial transformation agendas. Crucial in this regard will be the sourcing, securing, making sense of, and capturing of data that will enable this.

To ensure that the KRSDF is embedded in regional planning and implementation, an initial indicator framework is provided (see below). This framework can be expanded and detailed based on the availability of implementation data. It is proposed that a spatial database be established to spatially monitor the concentration of development according to the provisions of the KRSDF.

Table 27: Initial Indicator Framework

KRSDF Action Phase	Indicators	Targets	Dates
Championing	Approval of KRSDF	Sign-off by Minister of Agriculture, Land Reform and Rural Development	December 2022
	Municipal Support for KRSDF	Council resolution from 36 LM, 15 DM, 1 Metro	March 2023
	Provincial Support for KRSDF	Letter of support: 4 Premiers	March 2023
	IGRFA amended to provide for Regional IGF	Clause to provide for Regional IGF	June 2023
	Legislation to provide for KRDA	KRDA Act	December 2023
	Custodianship of website	DALRRD and / or SALGA takes over as website custodians	December 2022
	District Karoo Region champions	15 Karoo Regional Champions selected and appointed (one per District)	March 2023
Communication	Communications officer	Official designated as communications officer (DALRRD / SALGA)	December 2022
	Karoo Region website	KRSDF website changed to Karoo Region website	January 2023
	Web presence	Links to Karoo Region website published on the websites of DALRRD, DPME, DCoGTA, NT, SALGA and OTP of the four provinces	January 2023
		Links to Karoo Region website published on the websites of District, Local and Metropolitan Municipalities in the Region	February 2023
		Links to Karoo Region website published on the websites of Regional NGO's and interest groups	March 2023
	Conference presentations	KRSDF presented to at least two conferences	March – December 2023

KRSDF Action Phase	Indicators	Targets	Dates
Institutionalising	MTSF	The next MTSF refers to and includes the Karoo Region as a core sub-national area for action	2025-2029
	NSAA implementation plans	The KRSDF provisions and catalytic interventions are included in the NSAA implementation plans for the Arid-Innovation Region, the Northwestern Transition and Economic Transformation Region and the Berg/Breede National Resource Risk Area	June 2023
	Provincial Strategic Plans	The next Provincial Strategic Plans refer to and include the Karoo Region as a core sub-national area for action	2025-2029; subsequent terms
	Provincial SDF	The next review of the provincial SDFs, include the Karoo Region and the provisions of the KRSDF	2024 onwards
	District and LM SDFs	The next review of the district and municipal SDFs include the Karoo Region and the provisions of the KRSDF	2022 onwards
	One Plan	The One Plans for the districts in the Karoo Region are aligned to the KRSDF and include the catalytic interventions	2022 onwards
	KRIGF	The KRIGF has been established	December 2022
Embedding	KRDA	The KRDA has been established	June 2023
	National MTEF	The KRSDF catalytic interventions and NSAA Implementation Plan interventions appears in the national MTEF	March 2023 onwards
	Provincial MTEF	The KRSDF catalytic interventions and NSAA Implementation Plan interventions appears in the provincial MTEF	March 2023 onwards
	Municipal IDPs and budget (DM, LM, MM)	Supportive interventions appear in the Municipal IDPs and budgets	June 2023 – June 2049
Actioning	Implementation of Catalytic Interventions	Refer to Table (nr) in Section ()	March 2023 onwards

KRSDF Action Phase	Indicators	Targets	Dates
	Reinforcement of proposed spatial development patterns	Municipal land use decisions reinforce the principle of concentration in designated nodes in the settlement network: 1- All new residential land reform project in towns 2- All new subsidised human settlement development in towns 3- Government precincts and new government services in designated towns 4- Support services for major regional investments in designated Anchors	January 2023 onwards
		Spatial data base for monitoring spatial development patterns in the Region established by DALRRD	April 2023 – March 2024
		Spatial monitoring system managed by DALRRD	April 2024 onwards

5.7. FUNDING

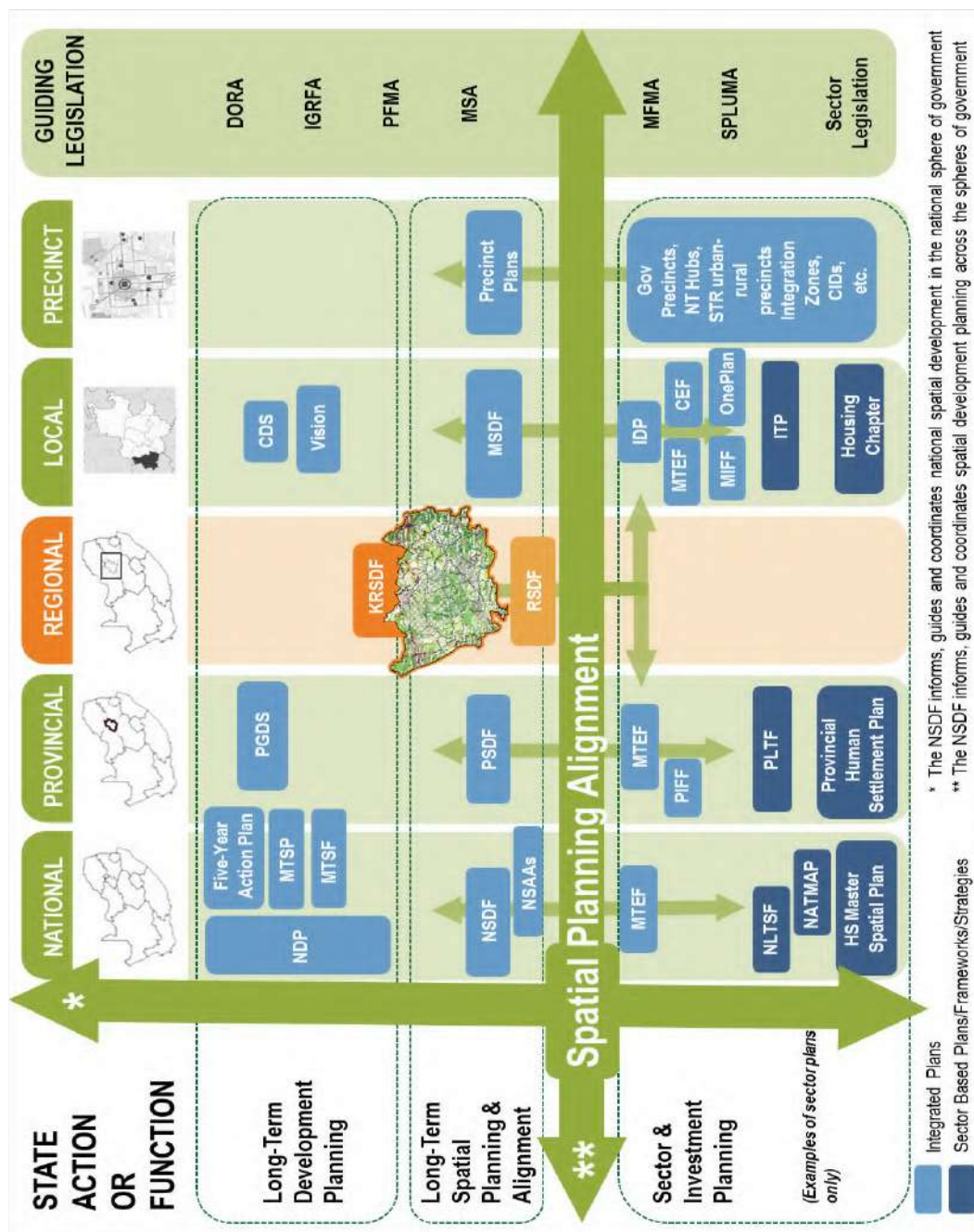
Section 19(f) of SPLUMA states that it must be indicated in an RSDF how it will be funded. Given the current (1) severe and ever-growing constraints on the national fiscus and (2) dire state of our economy, it would be very unlikely for 'new funds' to be allocated to the implementation of the KRSDF and to hence make such commitments, and promises in this RSDF would be *disingenuous, unfair, set it up for failure, and risk loss of belief in the power of the tool*. As such, it is recognised and clearly stated that the actions described in this framework, including the implementation tasks, *will need to be funded from existing departmental, provincial, and municipal budgets*. However, there is a very sizeable silver lining and pay-off to this somewhat sombre cloud, as through the championing, communicating, embedding and institutionalisation actions, the KRSDF will find its way into the plans, budgets, and programmes of action of all three spheres of government, SOEs, and non-State actors, with such new investment and spending coming to the Karoo in the not-too-distant future.

At the same time, it also needs to be noted that much of what the KRSDF talks about, proposes and requires, *is not about doing a whole range of new things and spending (new) money in the process of giving expression to these*, but rather doing existing things (1) within a new, regional focus, and (2) with far more care and consideration being given to the negative impacts of certain actions – and hence to be avoided – and the many positive impacts of investment and spending – and hence to be optimised and expanded upon. For this to happen, however, far better spatial targeting of investment and spending, so as to (1) maximise human development dividends from social expenditure, (2) manage and protect the region's natural resources, and (3) pursue transformative inclusive and job-creating economic growth, must take place.

Finally, on this matter is *the investment and expenditure by non-State actors* in the region. Vast investments have been, are being made, and will be made by mining companies and farmers at different points/places in the region, and primarily with the interests of the company or farmer involved in mind. However, by, for instance, pooling the huge investments made by mining companies in terms of the *Mining and Petroleum Resources Development Act, 2004 (MPRDA)*, and focusing these on the development and strengthening of the region's economic, social and movement and communication infrastructure and settlement functioning, in accordance with the NSDF's Regional-Rural Development Model, far more can be accomplished than by piecemeal investments made without consideration of the *regional* social, economic, spatial and ecological impacts of such investments. In addition to this, there is, of course, also the possibility of PPPs and other forms of mutually beneficial collaboration between the State and non-State sectors, by which the proposals made in the KRSDF can be pursued and realised. These will, however, require actors and entities within the State and non-State sectors to actively pursue and (1) make such PPPs happen and (2) deliver on the regional promise and value they hold.

The place of the RSDF in the spatial planning, sector spatial planning and budget context is indicated in the diagram below. In terms of sector spatial planning, the transport and human settlements sectors are used as illustrative examples.

Figure 24: KRSDF in Spatial Planning Context



5.8.2. THE LEGAL AND RELATED INSTITUTIONAL FRAMEWORK

While the Constitution refers to 'regional planning' in Schedule 4 as a functional area of concurrent national and provincial competence, the term 'region' does not feature in the Constitution as a *distinct sub-national administrative area*, as in the case of provinces and municipalities, that is governed by a distinct organ of the state through democratically elected representatives. While the *Intergovernmental Relations Framework Act, 2005 (IGRFA)* provides for (1) the establishment of formal intergovernmental structures and (2) the putting in place of mechanisms to pursue such intergovernmental engagement and collaboration, *it does so for the three spheres of government as provided for in the Constitution and does not provide guidance with regards to 'regional cross-sub-national-boundary' intergovernmental collaboration and governance.*

Despite the absence of such legal explicitness, (1) the Constitutional reference to 'regional planning' as a concurrent competence, (2) coupled with Chapter Three of the Constitution dealing with cooperative government, and (3) the definition of a region in SPLUMA, as "*... a circumscribed geographical area characterised by distinctive economic, social or natural features which may or may not correspond to the administrative boundary of a province or province or a municipality or municipalities*", **leaves no doubt that 'regional spatial governance' would and should be a joint, cooperative and collaborative affair.** In practical terms, this would mean that (1) the preparation of specific plans/frameworks/strategies for 'a/the region' as a formally declared sub-national area/portion of the country would be jointly undertaken, as would (2) the implementation of such regional plans and sub-regional plans/frameworks/strategies that may be part of such a plan, or emanate from it, for specific/distinct sub-regional spaces/areas and/or

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5.8. REGIONAL SPATIAL GOVERNANCE FRAMEWORK

Regional governance is the single most critical aspect to ensuring regional integration and growth. In the sections below, the way in which it will be undertaken in the region is put forward.

5.8.1. INTRODUCTION

The *statutory recognition of regions*, as provided for in SPLUMA, as geographically delineated entities that may be formally (1) declared, (2) demarcated, and (3) planned for in an integrated, holistic manner, is a new and novel development in South Africa. In this 'realm of firsts', the KRSDF is also *the first such region* to be planned for with 'statutory backing' in post-1994 South Africa. Being the first is both (1) an exciting and wonderful achievement and (2) a reward for and recognition of the ceaseless lobbying and advocacy work by communities, institutions, individuals, and NGOs and CBOs active in the Karoo.

Being first, however, comes with challenges, such as there not being any precedent to learn or borrow from. While other elements of the preparation of a regional-scale SDF, such as for instance the economic, spatial, social, ecological, and infrastructural analyses are not that different from those required in a national, provincial, or municipal SDF, the question of '*regional spatial governance*', including the preparation, driving, implementation and monitoring of regional plans – including RSDFs – is distinct and unique. As such, the preparation of proposals in this regard requires innovation, courage, and readiness for 'learning while doing'. This section of the proposals has been prepared with that 'in-service perspective' as a guide.

Karoo Regional Spatial Development Framework

5.8.3. PRINCIPLES

specific/distinct sectors within the region. Yet, at the same time, and given the Constitution's concern with the allocation of distinct powers and functions within the broader framework of cooperative government, it would not be out of place to provide for the sub-regional allocation of responsibilities for (1) specific/distinct sub-regional areas, or (2) specific/distinct economic activities that happen in some places, but not all, in the region.

The fact that the Law does not engage 'regions', 'regional planning' or 'the governance of such plans that get produced in the course of regional planning' in more detail **is not a problem**. Instead, it *creates an opportunity* for novel and innovative forms of (1) *non-state driven action, involvement, activism, partnership, and collaboration* and (2) formalised social compacts, in such matters, and in the process of doing so, building, and deepening our democracy and making the people of our country, within distinct regions that share distinct/certain features, attributes, histories and destinies, the key authors of, and actors in their collective regional futures. As noted above, in the case of the Karoo, such collaborative non-state activism has been a crucial driver in getting to the point where (1) the Karoo was formally declared as 'region', and (2) the process of preparing the KRSDF embarked upon. In addition to this, the naming of the National Spatial Action Area (NSAA) in the NSDF in which the Karoo is located as the '*Arid-Innovation Region*', could be interpreted as not only referring to the nature/kind of regional spatial development proposals that would need to be made, i.e. 'innovative', **but also the kind of regional spatial governance models that would need to be created in and for the region**. It is from this perspective that **an innovative model** for collaborative '*regional spatial governance*' was prepared to enable the '*joint pursuit of regional spatial development objectives within the broader ambit of the national spatial, social and economic development objectives*'.

Before moving into the proposals, it is important to make explicit the ten principles that:

- Informed and shaped the proposal for the *regional spatial governance model* and related structures to be created; and
- Must, as such, also *be observed* by all those who function, serve, and collaborate in these structures.

These *ten principles* are as follows:

1. Collaboration: We are stronger together, and our resources go further and often boost and replenish each other when we pool them and act together towards common objectives.

2. Transformation: Through our work in and for our Karoo region, we will ensure that we, individually and collectively, (1) address and normalise the damage done by colonialism and Apartheid in our region, (2) eradicate the injustices from the past, (3) assist in nurturing and developing the next generation of Karoo Regional Development Leaders and Champions, and (4) enable the people of our region to become the authors and crafters of their collective regional destinies.

3. Ecological Sustainability: In all the endeavours of the structures to be created, strengthened and joined up, we will ensure the protection of the region's natural resource endowment and the maintenance of its ecological sustainability.

4. Harmonisation: As far as possible, we will ensure that all human settlement, economic activities, and ecosystems in the region co-exist in a harmonious way.

5. Participation: All our structures and forums will be open and accessible to all those who have the interests of our Karoo region at heart, and no one who ascribes to the principles for the spatial governance and development of the region will be turned away, made to feel unwelcome, or alienated from these structures.

6. Co-production and 'Cooperative Regional Governance', including 'Cooperative Self-Regulation': The processes of (1) knowledge-generation in and about our region, and for use in its development, (2) the instruments we craft to develop it in a wise, planned and responsible way, and (3) the structures and mechanisms we establish/create to manage such development, must be initiated, pursued and sustained in a collaborative and cooperative way *between, in and amongst* organs of State and non-State actors, which includes communities, individuals, community structures and organisations, cooperatives, and formal and informal businesses (see **Text Box 5** below). As such, and (1) within this model, and (2) with the intent to 'own our collective futures' and be the authors of our shared and common destinies, we ascribe to '*self-regulation*' where the '*self*' in this case means '*the collective self of our region*'.

7. Democratisation and Nation and Region-Building: The work we do, and the initiatives we launch, will strengthen our democracy and grow our region's strengths.

8. Synergistic Specialisation and Niche Regional Enterprise Development and Protection: While we are one region, we do recognise the unique economic opportunities that (1) sub-regions and (2) specific economic sectors in our region offer, and, as such, commit to recognising and protecting these as core components of our region, and growing them into regional enterprises that everyone in the region can derive benefit from.

Box 3: The Concept of 'Governance' in relation to 'Government':

"Governance has been defined to refer to structures and processes that are designed to ensure accountability, transparency, responsiveness, the rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation. Governance also represents the norms, values and rules of the game through which public affairs are managed in a manner that is transparent, participatory, inclusive and responsive. Governance, therefore, can be subtle and may not be easily observable. In a broad sense, governance is about the culture and institutional environment in which citizens and stakeholders interact among themselves and participate in public affairs. It is more than the organs of the government". (bold, our own. UNESCO. Concept of Governance. Available at: <http://www.ibe.unesco.org/en/geqaf/technical-notes/concept-governance>.

9. Regional-Rural Development: Our regional development initiatives will be based on and driven by the Regional-Rural Development Model as set out in the NSDF, with a recognition of the economic and social roles that different settlements must play in accordance with the 'Social Services Wheel' as provided in the NSDF.

10. Balancing of Power: We will avoid the concentration of power in parts (towns, cities or sub-regions), governments (one or some provinces or municipalities), and structures (as established and exist in, between and/or amongst organs of State and/or non-State entities) or people (one or some individuals, groups or communities) in our region.

5.8.4. OBJECTIVES

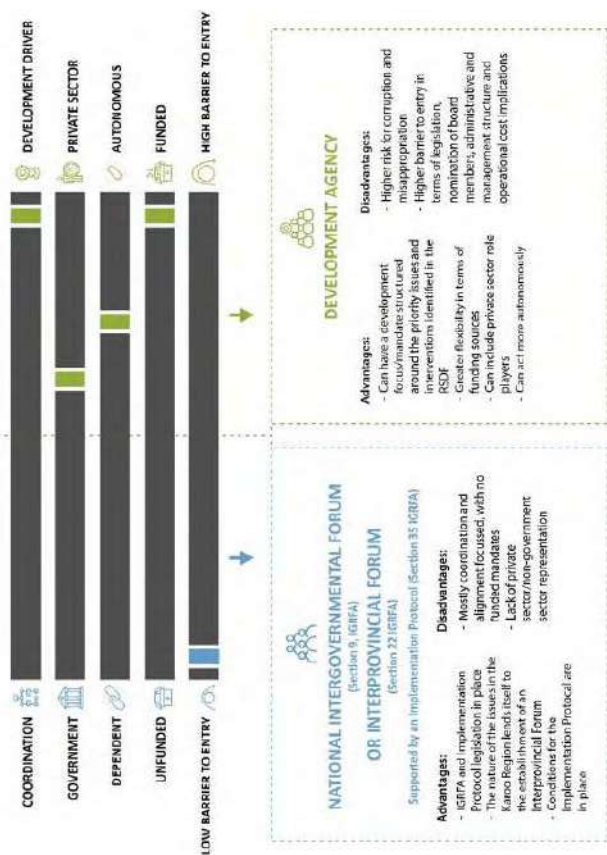
The objectives of 'regional spatial governance' as put forward in the KRSDF are threefold:

- **Develop and Do:** Guide, boost/support, manage and direct the spatial location, expansion and extent of desired human settlement and economic activity in the region, and bolster and support local initiatives that are in the common regional interest and/or that seek to do so;
- **Structure and Connect:** Establish, strengthen and connect State and non-State structures/entities that perform the guidance, management and directing functions; and
- **Monitor and Review:** Keep track of human settlement and development in the region, assess the impacts of these on the natural resource base and the achievement of regional development objectives, and make amendments as and where necessary.

5.8.5. DECISION FRAMEWORK

To ensure consideration of all relevant aspects, a 'decision framework for the design of the governance structure', as indicated in **Figure 25** below, was used to weigh and consider the possible institutional mechanisms for the establishment of the spatial governance structure.

Figure 25: Decision Framework: Governance Structure



The outcomes of the assessment were used to formulate proposals that are presented below.

5.8.6. STRUCTURES, COMPOSITION AND FUNCTIONS

To achieve the desired objectives within the set principles, the structures, together with their composition and functions, as illustrated and set out in more detail **Table 28** below, are provided for. A phase approach is recommended, with an Intergovernmental Forum being established to coordinate activities and budget in the Region and solidify multi-stakeholder regional cooperation, with a specific focus on the catalytic interventions. Over the medium term, it is proposed that this structure be formalised into a Development Agency, which would require legislation to be put in place to set out the powers and functions of the Agency.

Figure 26: Institutional Arrangements for Spatial Governance



Table 28: Karoo Regional Spatial Governance

Structure	Composition	Functions	Funding
Phase 1: Karoo Regional Intergovernmental Forum (KRIGF)	The KRIGF would consist of representatives from national government, the four provinces, SALGA and municipalities in the Region: • DALRRD • COGTA • SALGA • The four provincial governments • The thirteen District Municipalities, Mangaung Metropolitan Municipality • The thirty-six Local Municipalities The structure of the KRIGF should be layered to ensure sufficient layers of coordination and focus respectively: • To ensure coordination, an overarching structure or forum should be established. This coordinating forum could be comprised of political (elected) representatives and technical officials.	1- Provide formal conduits for political and technical intergovernmental collaboration, cooperation, integration, and harmonisation in the initiation, strengthening and support of spatial, social, and economic development in the Karoo region and/or its sub-regions. 2- Manage, govern, and monitor the implementation of (the) regional and sub-regional development proposals. 3- Review proposals and mechanisms provided for in the KRSDF, and make the necessary adjustments and amendments, as and where required. 4- Hold each other individually and collectively responsible and accountable for the implementation of the regional and sub-regional development proposals provided for in the KRSDF within the set of regional spatial governance principles as set out in Section 5.8.3 above.	The main aim of the KRIGF would be the coordination of investment and spending within the existing fiscal framework. This would comprise of: 1- Alignment of national, provincial and local budgets to specific regional priorities (refer to Section 5.9 Catalytic Interventions) and focus areas. 2- Alignment of national, provincial and local budgets according to the regional development logic, which is a more ongoing process than catalytic interventions. This would entail, for example: - Coordination of the establishment of the appropriate level of government services in designated towns - Encouragement of mines, energy providers, large developers to concentrate development and supportive services for regional activities in Regional Development Anchors - Ensuring regular maintenance spending on key regional linkages that connect the settlement network.

Structure	Composition	Functions	Funding
	- The coordinating forum could establish a range of sub-forums or working groups to focus on specific regional issues, e.g. water, coordination of renewable energy development, conservation, etc. - These sub-forums could be created for the Karoo as a whole (issue focus), as well as for one or more of the sub-regions in the Karoo (geographic focus).		
Phase 2: Karoo Regional Development Agency (KRDA)	This would be an entity that that would be established by an organ or organs of state, retaining the same membership as the KRIGF. It is however recommended that its membership be expanded to include stakeholders from the non-state sector in the form of a public-private partnership.	1- Continue the functions of the KRIGF. Provision of support in the form of technical capacity to under-capacitated municipalities should be considered as part of this function. 2- Drive general or target specific economic development initiatives and/or sectors in the Karoo as a whole or in one or more of its sub-regions. 3- This would include actions such as (1) sourcing and securing funding for the work of the agency, (2) initiating or collaborating with State and/or non-State actors in the region on matters related to regional or sub-regional economic development, (3) collecting, making sense of, packaging and disseminating data and information on the Karoo and its sub-regions that would be of value to existing, new and emerging entrepreneurs, companies, and cooperatives in the Karoo or its sub-regions, (4) providing financial,	The funding model for the KRDA is envisaged to be a mix of public and private funding. For example: 1- Dedicated annual contributions by the four provinces and national government 2- Contributions by large economic role-players in the Region, e.g. social investment by mining houses 3- Foreign donations and grants, e.g. specific research or education grants

Structure	Composition	Functions	Funding
		administrative and management support to economic operators in the region or its sub-regions, and (5) representing and marketing the Karoo or its sub-regions in local and international face-to-face arenas or on virtual platforms. 4- Provide technical, research and knowledge, and data to support development initiatives.	

5.9. CATALYTIC INTERVENTIONS AND SPATIAL TARGETING

The role of the RSDF is to provide strategic spatial guidance to regional development. In addition to the spatial guidance provided in Section 4 of this document, several Region-specific catalytic interventions are proposed to facilitate the realisation of the spatial strategies put forward in this document. The interventions are not all capital in nature, but also speaks to institutional and policy-level interventions. The interventions are shown in **Table 29** below.

While not all the catalytic interventions above have an exact spatial footprint, the spatial targeting of support efforts and direct investment is required to support the vision for the Region.

Spatial targeting is shown at two levels (regional and localised) in the illustrations below (**Figures 26** and **27** below the table), in line with the development concept presented in this RSDF. These illustrations present the concept of spatial targeting as applied in the RSDF, with Figure 26 showing the main components of the regional scale infrastructure and Figure 27 showing the focus on interventions per Functional Economic Region.

At the same time, and in line with the development concept for the Region, the benefits of the prioritised large-scale initiatives should be localised through (1) targeted direct investment by government, (2) public-private partnerships to further development objectives at a local level, and (3) the steering of supportive land-uses and new human settlement development into designated Regional Development Anchors and Service Towns.

Table 29: Catalytic Interventions

Nr	Intervention	Components	Lead Institution/s	Time Frame	Directly Affected Municipalities
Regional Spatial Governance					
G1	Establish Karoo Regional Intergovernmental Forum (RIGF)	Include provision of regional spatial governance / regional intergovernmental structures in review of Intergovernmental Relations Framework Act	SALGA National DCoGTA National DALRRD	2022-23	All
		Undertake establishment procedures: 1- Establish Terms of Reference 2- Designate members 3- Determine programme of action	SALGA National DCoGTA National DALRRD Provincial OTP: EC, FS, NC, WC	2022-23	All
G2	Establish Karoo Regional Development Agency	Draft and promulgate legislation	Karoo RIGF	2025-26	All
		Agency establishment procedures	Karoo RIGF	2027-28	All
G3	Nominate Karoo Regional Champions	Nominate one representative per District that will represent the Karoo Region on local level and support efforts to align local spatial planning to the approach and direction set by the Karoo RSDF.	All DMs	2022	All
G4	Local Governance and Service Delivery Strengthening Programme	Consolidation of the projects emanating from the District Development Model, the implementation proposals contained in the Small Town Regeneration Strategy (2021) and the proposals for focused intervention from a national perspectives contained in the NSDF: NSAA	Karoo RIGF COGTA DALRRD All DMs	2022-27	All

Nr	Intervention	Components	Lead Institution/s	Time Frame	Directly Affected Municipalities
		Implementation Plans (drafts, 2022) to ensure focused intervention into the following issues affecting municipalities in the region: • Filling of critical human resource capacity gaps. • Coordinated planning and implementation of basic service delivery projects. • Urban management, with a priority focus on town centres, service nodes and tourism nodes.			
Resource Management and Risk Mitigation					
R1	Protection and Avoidance of Loss of Critical Biodiversity Areas	Declaration of the National Priority Focus Areas from the NPAES (refer to Map 5: Natural Resource Risk and Restricted Areas) as Protected Areas Declaration of CBAs as formally Protected Areas by national or provincial conservation authorities. Incorporating CBAs into Municipal SDFs and Land Use Schemes with appropriate restrictions on land use; not approving incompatible forms of development in these areas that includes development that results in intensive modification of natural areas.	National DFFE Provincial Departments responsible for Environmental Affairs: EC, FS, NC, WC All DMs and LMs	2022-2027	All DM and LM's have expansion areas, with the exception of Central Karoo DM (Prince Albert LM); Joe Gqabi DM (Walter Sisulu LM) and Z F Mgcawu DM (Ikheis LM). All DMs and LMs have CBAs

Nr	Intervention	Components	Lead Institution/s	Time Frame	Directly Affected Municipalities
R2	Intervention: Secure Strategic Water Source Areas.	Mainstreaming of SWSA into provincial and municipal spatial development frameworks with appropriate restrictions on land use. Restoration of degraded ecosystems in SWSAs. Declaration of portions of SWSAs as protected areas where appropriate.	Provincial Departments responsible for Land Affairs Relevant municipalities Provincial conservation authorities	2022-2027	DMs: Sarah Baartman, Chris Hani, Xhariep, Lejweleputswa, Namakwa, Pixley ka Seme, Cape Winelands, Central Karoo, Garden Route, Overberg, West Coast LMs: Dr Beyers Naude, Inxuba Yethemba, Enoch Mgijima, Kopanong, Letsemeng, Tokologo, Karoo Hoogland, Kamiesberg, Hantam, Nama Khoi, Richtersveld, Ubuntu, Umsobomvu, Kareeberg, Emthanjeni, Renosterberg, Siyancuma, Breede Valley, Witzenberg, Beaufort West, Prince Albert, Laingsburg, Kannaland, Oudtshoorn, Swellendam, Bergivier, Cederberg, Matzikama
R3	Water risk management	Identification of alternative water sources (e.g. sea water desalination, see below) and alternative dry sanitation systems for distressed catchments and areas expected to experience decrease in rainfall. Awareness raising with affected communities	National DWS Affected Districts (see list)	2022-2024	Decreased rainfall: Joe Gqabi DM; Namakwa DM; Pixley ka Seme DM; Sarah Baartman DM; West Coast DM; Z F Mgcawu DM.

Nr	Intervention	Components	Lead Institution/s	Time Frame	Directly Affected Municipalities
					Distressed catchments AND decreased rainfall: Cape Winelands DM (Breede Valley LM, Witzenberg LM); Central Karoo DM (Prince Albert LM, Laingsburg LM, Beaufort West LM); Chris Hani DM (Inxuba Yethemba LM, Enoch Mgijima LM); Garden Route DM (Kannaland LM, Oudtshoorn LM); Namakwa DM (Karoo Hoogland LM, Hantam LM) ; Swellendam LM; Dr Beyers Naude LM; Cederberg LM
		Priority maintenance of water transfer systems and infrastructure	National DWS	Ongoing	Blue Crane Route LM (Sarah Baartman DM); Inxuba Yethemba LM (Chris Hani DM); Letsemeng LM (Xhariep DM); Mangaung; Nama Khoi LM (Namakwa DM); Siyancuma LM (Pixley ka Seme);

Nr	Intervention	Components	Lead Institution/s	Time Frame	Directly Affected Municipalities
					Walter Sisulu LM (Joe Gqabi DM).
		Feasibility study: desalination of salt water for residential, agricultural and commercial / industrial / mining use for northern industrial belt and north western districts – national pilot study	National DWS	2022-2024	Namakwa DM West Coast DM ZF Mgcawu DM
		Conduct detailed study on the extent, quality, and depth of the aquifer systems in the Karoo Region, and how these systems may or may not be impacted upon by potential shale gas extraction, and what a sustainable abstraction rate is for these aquifer systems.	National DWS National DMRE	2022-25	All
R4	Protection of agricultural potential for sustained economic development and food security	Moratorium of division of land in extensive farming areas (refer to Map 10)	National DALRRD	Ongoing	All
R5	Land reform policy for arid agricultural areas	Policy containing at least the following: 1- Minimum size of farming land for economic feasibility 2- Targeted technical support required (e.g. drought resistant crops, support to enter game market, availability of water licenses, alternative water source identification and access, etc.) 3- Financial support requirements, e.g. drought insurance, funding for alternative water sources 4- Marketing strategy for niche arid agriculture products	National DALRRD	2022--2025	All

Nr	Intervention	Components	Lead Institution/s	Time Frame	Directly Affected Municipalities
Inclusive Economic Development and Connectivity					
E1	Upington – Boegoebaai Economic Corridor	Reach formal intergovernmental agreement on implementation of development of corridor, including: 1- Upington Industrial Park; 2- Status of Aggeneys as SEZ and developments to be included in SEZ; 3- Status and developments to be included in Boegoebaai as provincial SEZ; 4- Residential development in Alexander Bay; 5- Sources of water and energy for both residential and non-residential development; 6- Measures to protect water quantity and quality to ensure sustainability of human settlement, agriculture, tourism and any new development in the area; 7- Community development and employment initiatives; 8- Measures to protect the Namaqua World Heritage Site and sensitive environmental and tourism areas; and 9- Alignment of new rail link between Upington and Boegoebaai (to include Springbok – refer to Map 8: Regional Economic Infrastructure)	NC OTP National dtic National DMR Namaqua District ZF Mgcawu District (Upington)	2022-2023	Namakwa DM ZF Mgcawu DM

Nr	Intervention	Components	Lead Institution/s	Time Frame	Directly Affected Municipalities
		Include in Implementation Plan for Northwestern Transition and Economic Transformation Region NSAA	National DALRRD	2022-23	Namakwa DM ZF Mgcau DM
E2	Regional Tourism Agency	Establish Regional Tourism Agency comprising all four provinces and private sector representation.	National Tourism Provincial Departments of Tourism Future: Karoo Regional Development Agency	2022-2024	All
E3	Upgrade of Regional Tourism Infrastructure	Provide capital funding for the upgrade and maintenance of the identified tourism routes and nodes as indicated on Map 9. This includes road upgrades, signage and upgrade of town centres and tourist precincts using methods such as special level (improvement districts).	Provincial Departments of Public Works Provincial Departments of Tourism Future: Karoo Regional Development Agency	2022-27	All
E4	Karoo Regional Airport	Conduct feasibility study on establishing Karoo Regional Airport in Beaufort West, or an alternative location if Beaufort West proves to not be feasible.	Airports company WC Department of Transport	2024-27	Central Karoo DM Beaufort West LM

Nr	Intervention	Components	Lead Institution/s	Time Frame	Directly Affected Municipalities
E5	Support for lamb and game agricultural sector infrastructure	Abattoirs: 1- Service level audit and if necessary, consolidation of abattoirs in Karoo Region 2- Feasibility study for establishing single Abattoir Company for Karoo Region. Export readiness: 1- Audit and review of animal health and meat hygiene procedures, standards and regulatory systems to meet standards for export to EU and the USA	National DALLRD	2022-23	All LM's have abattoirs, with the exception of Kamiesberg LM (Namakwa DM).
E6	Renewable Energy	Prioritise licencing of IPPs in Karoo Region in REDZs Enter into service agreements with relevant local authorities to supply electricity to local communities if IPPs establish facilities in the Karoo Region Compile a detailed investment strategy to address transmission line insufficiencies to support	National DALRRD National dtic National DoE National DoE Relevant local authorities National DoE	2022-25 2022 - 2050 Ongoing 2022-25	N/A Cape Winelands DM; Central Karoo DM (Laingsburg LM, Beaufort West LM); Chris Hani DM; Frances Baard DM; Tokologo LM (Lejweleputswa DM); Namakwa DM (excluding Kamiesberg and Hantam LMs); Overberg DM (Swellendam LM); Pixley ka Seme DM (Siyathemba LM); Sarah Baartman DM (Blue Crane Route LM, Dr Beyers Naude); Z F Mgcawu DM (IKheis LM, Kai IGarib LM). Priority focus on municipalities in REDZ (see above).

Nr	Intervention	Components	Lead Institution/s	Time Frame	Directly Affected Municipalities
		renewable energy generation, supported by an audit of existing capacity and gaps.			
E7	Regional Innovation Strategy,	Complete Phase 2 of the Karoo Innovation Mapping Formulate a focused Innovation Strategy that puts forward concrete propositions to address issues of innovation, with the aim of supporting development in the region	National DST&I	2023-25	All
Human Settlement Development and Land Reform					
H1	National coordination of social service delivery in terms of RSDF provisions	Ensure alignment between DPW&I Strategic Spatial Framework and KRSDF	National DPW&I	2022-23	All
H2	Land reform and human settlement development review	Review current urban / small town land reform and government human settlement development initiatives to ensure alignment with RSDF proposals in terms of location and density. This should include considerations such as: • Higher density residential development in Regional Development Anchors • Development of urban management strategies for small towns with a specific focus on town centres • Implementation of the Small-Town Regeneration Strategy, 2021 • Development of pilot projects adopting the Strategic Framework and Overarching Implementation Plan for Ecosystem-Based Adaptation (EbA) in South Africa (2016-2021)	National DALRRD National COGTA National DHS National DFFE National DPW&I Provincial DHS, Cooperative governance, Environmental: EC, FS, NC, WC	2022-23	All

Nr	Intervention	Components	Lead Institution/s	Time Frame	Directly Affected Municipalities
		Development of pilot projects for sustainable service provision using alternative methods			
H3	Alignment of investment upstream	Include focus areas for upstream investment in spatial planning and integrated development planning and One Plans of relevant municipalities for each of the Regional Development Anchors	Relevant Municipalities	2022-ongoing	Municipalities per Anchor: see note below **

**Note: Municipalities per Regional Development Anchor			
Anchor	LM	DM	
Graaff Reinet	Dr Beyers Naude	Sarah Baartman	
Cradock	Inxuba Yethemba	Chris Hani	
Komani	Enoch Mgijima	Chris Hani	
Maletswai	Walter Sisulu	Joe Gqabi	
Springbok	Nama Khoi	Namakwa	
Calvinia	Hantam	Namakwa	
De Aar	Emthanjeni	Pixley ka Seme	
Vredendal	Matzikama	West Coast	
Piketberg	Bergvliet	West Coast	
Worcester	Breede Valley	Cape Winelands	
Swellendam	Swellendam	Overberg	

**Note: Municipalities per Regional Development Anchor			
Anchor	LM	DM	
Oudshoorn	Oudtshoorn	Garden Route	
Beaufort West	Beaufort West	Central Karoo	
Upington	//Khara Hais #	ZF Mgcawu	
Kimberley	Sol Plaatje #	Frances Baard	
Vredenburg	Saldanha Bay #	West Coast	
Mangaung	Mangaung (Metro)	-	
# Outside Karoo Region			

Figure 27: Spatial Targeting for Regional Scale Investment

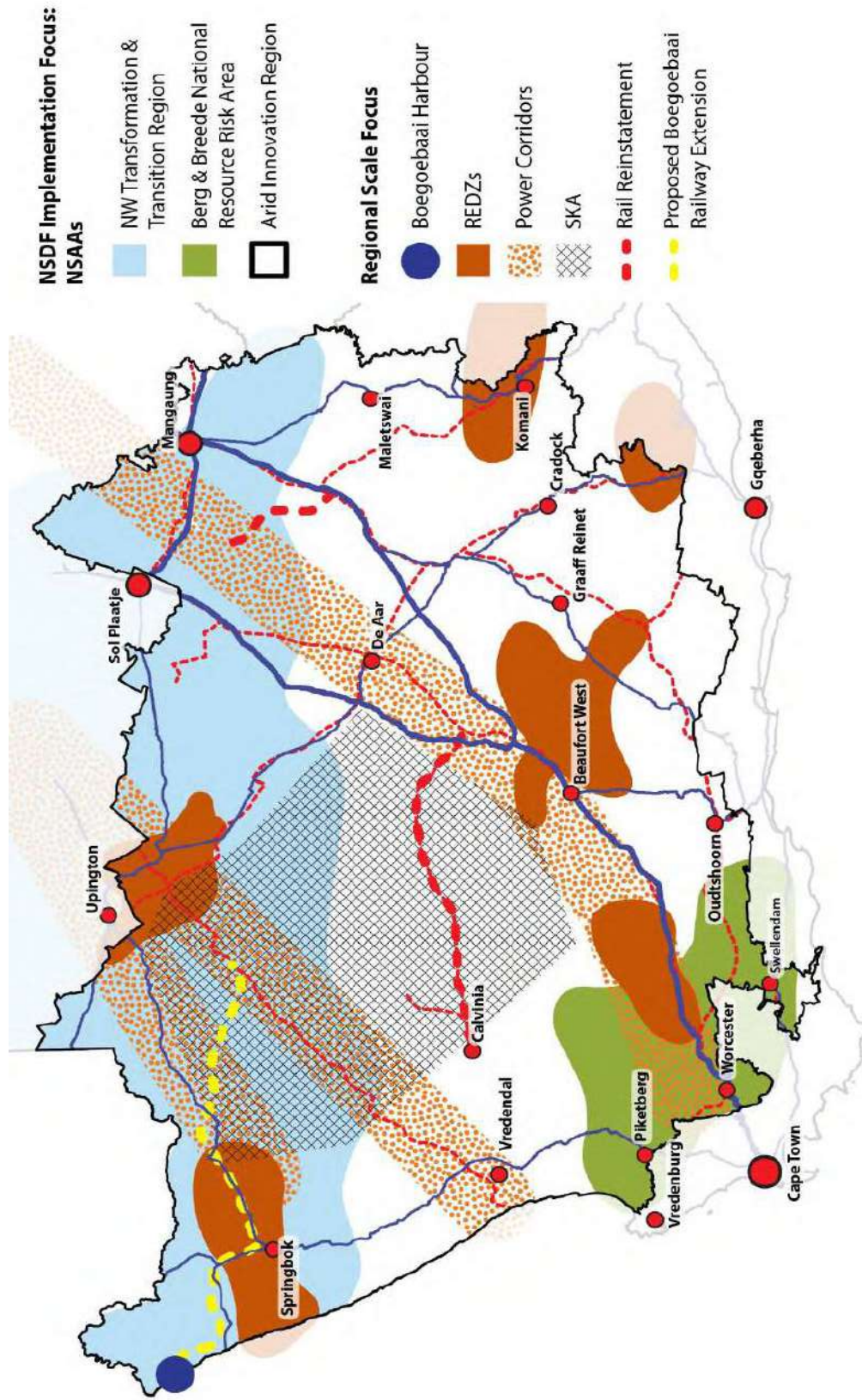
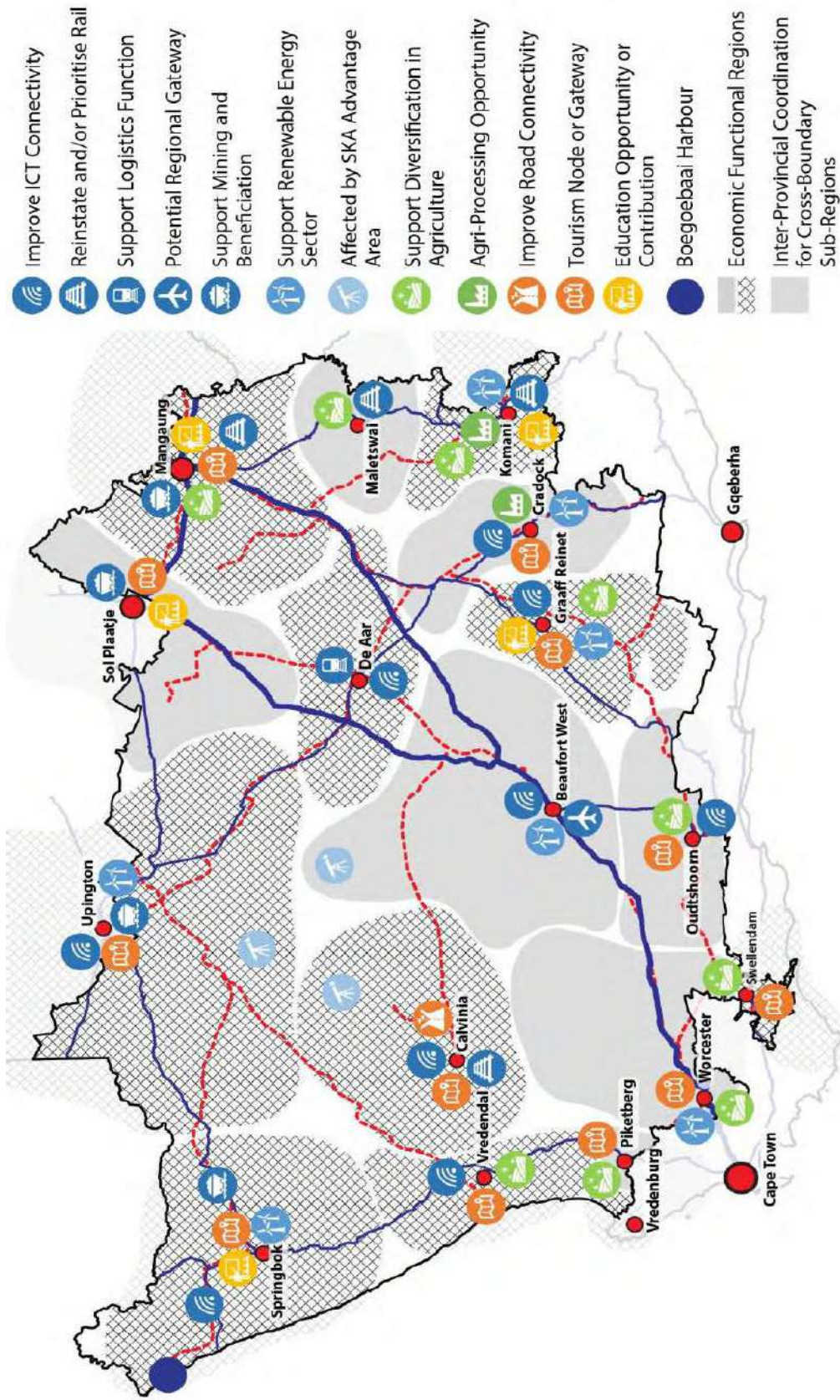


Figure 28: Spatial Targeting for Localisation of Regional Scale Investment



5.10. CONCLUSION

The KRSDF is intended as a long-term strategic framework that provides the basis for cross-boundary cooperation and mutual adjustment of spatial planning, spending and direct investment by government stakeholders in the Region. The direction provided by government planning and implementation should be complemented by regional scale private sector initiatives.

The KRSDF is part of a package of instruments to impact development in the Karoo Region and should be considered in this context. The focus of the framework is spatial issues of regional interest or regional significance and provides the context for more detailed local scale planning and implementation, as well as more specific sector initiatives.

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Sources for Maps:

Map Theme	Sources
Unique areas and characteristics	Karoo RSDF Team 2020 Municipal Demarcation Board 2018 CSIR Functional Town Hierarchy 2019 NSDF 2022 SANBI, National Biodiversity Atlas 2018 WC PSDF 2014; FS PSDF 2018; NC PSDF 2018; EC PSDF 2019
Natural Resource Management Areas	Karoo RSDF Team 2020 Municipal Demarcation Board 2018 CSIR Functional Town Hierarchy 2019 NSDF 2022 SANBI, RCP 4.5 Climate Scenario WC PSDF 2014; FS PSDF 2018; NC PSDF 2018; EC PSDF 2019
Resource Risk and Restricted Areas	Karoo RSDF Team 2020 Municipal Demarcation Board 2018 CSIR Functional Town Hierarchy 2019 NSDF 2022 SANBI WC PSDF 2014; FS PSDF 2018; NC PSDF 2018; EC PSDF 2019
Economic Regions	Karoo RSDF Team 2020 Municipal Demarcation Board 2018 CSIR Functional Town Hierarchy 2019 NSDF 2022 SANBI WC PSDF 2014; FS PSDF 2018; NC PSDF 2018; EC PSDF 2019 Riaan Rossouw
Regional Development Anchors	Karoo RSDF Team 2020 Municipal Demarcation Board 2018 CSIR Functional Town Hierarchy 2019 NSDF 2022

Map Theme	Sources
	SANBI WC PSDF 2014; FS PSDF 2018; NC PSDF 2018; EC PSDF 2019 Riaan Rossouw
Regional Economic Infrastructure	Karoo RSDF Team 2020 Municipal Demarcation Board 2018 CSIR Functional Town Hierarchy 2019 NSDF 2022 SANBI WC PSDF 2014; FS PSDF 2018; NC PSDF 2018; EC PSDF 2019 Riaan Rossouw
Tourism Network	Karoo RSDF Team 2020 Municipal Demarcation Board 2018 CSIR Functional Town Hierarchy 2019 NSDF 2022 SANBI WC PSDF 2014; FS PSDF 2018; NC PSDF 2018; EC PSDF 2019 Karoo Development Foundation
Agriculture Network	Karoo RSDF Team 2020 Municipal Demarcation Board 2018 CSIR Functional Town Hierarchy 2019 NSDF 2022 SANBI WC PSDF 2014; FS PSDF 2018; NC PSDF 2018; EC PSDF 2019 DALRRD 2015
Settlement Role	Karoo RSDF Team 2020 Municipal Demarcation Board 2018 CSIR Typology to inform Social Service Provision 2019; WC PSDF 2014; FS PSDF 2018; NC PSDF 2018; EC PSDF 2019
Settlement Network	Karoo RSDF Team 2020 Municipal Demarcation Board 2018

Map Theme	Sources
	CSIR Functional Town Hierarchy 2019 NSDF 2022 WC PSDF 2014; FS PSDF 2018; NC PSDF 2018; EC PSDF 2019
KRSDF Map	Karoo RSDF Team 2020 Municipal Demarcation Board 2018 CSIR Functional Town Hierarchy 2019 NSDF 2022 WC PSDF 2014; FS PSDF 2018; NC PSDF 2018; EC PSDF 2019 SANBI Riaan Rossouw

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