

Planning for a resilient peripheral region: a regional policy approach



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When I find myself experiencing personal fulfilment at the culmination of this journey, I realise that, although my name is the only one to appear on the cover of this research, numerous people contributed to this accomplishment.

oOo

It is with a heart filled with gratitude and awe that I thank and praise my Maker for this opportunity, and for blessing me in abundance.

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~ My husband ~ Ernst ~

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~ My parents ~ Andrè and Elsie ~

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I love you ~ Ousus ~

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~ Our beautiful boys ~ Eckhardt and Ludwig ~

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~ My family and friends ~

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~ My personal cheerleading squad ~ Elou ~ Mari ~ Zin ~

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oOo

~ To me ~

I live with a loving heart, faith and courage, knowing that whatever challenges life may bring, I will be okay, because...

I AM RESILIENT

ABSTRACT

The impact of global and national market shifts, together with continuous migration trends and resource shortages are identified as detrimental to the optimal functioning of the peripheral region. This research study aims to provide a regional policy framework for a more resilient peripheral region. In the attainment of this aim, the study at hand will have a three-pronged approach to the research, i.e. (i) to analyse the theoretical foundation of regional planning tools and their impact on regional resilience; (ii) to evaluate the content of international regional policies in terms of their broad outcomes; and (iii) to determine and propose a developmental policy approach towards more resilient peripheral regions. The research identifies 17 case study countries from which approaches to peripheral regional development is investigated. South African spatial planning and regional policy is subsequently investigated, followed by a more detailed quantitative analysis of indicators associated with the three pillars identified as being pivotal for greater evolutionary regional resilience. The study concludes with internationally appropriate recommendations as well as detailed proposals for a specific peripheral region in South Africa, per illustration of the proposed “Progressive Peripheral Regional Resilience” lens, keeping with the pragmatic paradigm.

Key terms: Regional policy; regional resilience; peripheral region.

OPSOMMING

Die impak van globale en nasionale markveranderinge, tesame met deurlopende migrasie tendense en uitputting van hulpbronne, word geïdentifiseer as nadelig vir die optimale funksionering van die perifere streek. Hierdie navorsingstudie het ten doel om 'n streeksbeleidsraamwerk vir 'n meer veerkragtige perifere streek te bied. In die bereiking van hierdie doel sal die navorsing 'n drieledige benadering tot die studie hê, (i) die teoretiese grondslag van streekbeplanningsinstrumente en hul impak op streeksbestendigheid te analiseer; (ii) die inhoud van internasionale streeksbeleide te evalueer in terme van hul breë uitkomst; en (iii) 'n ontwikkelingsbeleidbenadering tot meer veerkragtige perifere streke te bepaal en voor te stel. Die navorsing identifiseer 17 gevallestudielande waaruit benaderings tot perifere streeksontwikkeling ondersoek word. Suid-Afrikaanse ruimtelike beplanning en streekbeleid word vervolgens ondersoek, gevolg deur 'n meer gedetailleerde kwantitatiewe analise van aanwysers wat verband hou met die drie pilare wat geïdentifiseer is as die sleutel tot verbeterde evolusionêre streeksbestendigheid. Die studie sluit af met internasionaal toepaslike aanbevelings sowel as gedetailleerde voorstelle vir 'n spesifieke perifere streek in Suid-Afrika, as voorbeeld van die voorgestelde "Progressiewe Perifere Streek Veerkragtigheid" -lens, wat aan die pragmatiese paradigma voldoen.

Sleuteltermes: Streekbeleid; streek veerkragtigheid; perifere streek.

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CHAPTER 1: INTRODUCTION AND RESEARCH ORIENTATION

1.1 Introduction

Theoretically, one of the main aims of regional planning and policy is to achieve the optimum organisation and use of land resources in order to meet the social, environmental and economic needs of present and future generations. Currently the space economy, and especially the peripheral areas, in South Africa is not achieving this all-encompassing goal. The national space of South Africa is far from the “optimal organisation” thereof, and the role of strategic forward-planning in attaining this goal on a regional level will be explored during this study. Rogerson (2009) affirms that “in the wake of various spatial policies post-1994, no major shifts have taken place in the South African spatial landscape despite political transition and the demise of formal apartheid planning”.

Regional planning and policy in South Africa has left somewhat of a sour taste in the mouths of politicians and the public alike, due to its history of enforcing separate development through spatial planning tools. Since the early 1990`s South Africa seems to have been planning on a first-world level (social goals) instead of on a third-world level (focusing on economic growth and infrastructure development). It is known that social goals are not attainable without true economic growth. Is economic growth then obtainable if “geographic expression” is not given through regional policy? As so eloquently put by Tony Blair “It is not an arrogant government that chooses priorities, it's an irresponsible government that fails to choose.”

In the upsurge of the growing energy crisis and low economic growth rate South Africa has been experiencing, the impact and ability of each individual sector and region to absorb such shocks should not be underestimated. It will be argued that over the past three decades the national space has been left open for interpretation in terms of economic growth and development, which has led to a lack of execution of the well-intentioned regional guiding policy from the various levels of government. This has led to unexploited resources and regions becoming more and more dependent on a single sector for economic growth. The expertise does not exist on the provincial and local municipal levels (as per the Constitution) to give expression and influence economic development with the wide range of social goals given in more recent spatial planning guidelines. The identification and acknowledgement by government of the abovementioned development zones and corridors could be the first step towards ensuring more resilient regions, with the broadening of the economic base guided by regional policy focused on geographic expression of said goals.

This study was borne from the current economic crisis the Northern Cape Province as peripheral region is experiencing due to various mine closures and retrenchments in the past few years,

which can mainly be ascribed to world economic recession and plummeting commodity prices. This crisis is heightened by the continued drought affecting the agriculture sector. In order to revitalise this economy, an imminent need for diversification regarding the various economic sectors were identified. This region could benefit greatly from a regional resilience strategy, to ensure that the region will be able to rebound, adapt and recover from future setbacks. At present no regional strategy or policy, which incorporates or identifies the said sectors as zones /investment opportunities, exists - said strategy could attribute to future investment and growth.

This study will raise the question if regional policy should become more explicit to increase the quality of regional policy by exploiting the role of economic and natural resources as growth engines for the regional economy in a more effective way – with specific reference to greening and economic diversification as one of the policy tools which could be applied towards more resilient regions. This approach will undoubtedly require a more unitarised approach to regional planning and policy-making by central government indicating the “where” and “when” of especially large industries and other noteworthy economic endeavours. The proposals will address the issue of greening and economic diversification and the role which provincial, district and local government should play in shaping regional planning and policy in South Africa, giving more explicit guidelines as to the “where” and “when” of planning for a resilient region with a diversified and green economy.

The focus of this study will be on the peripheral regional policy problem, with the Northern Cape peripheral region as case study, and building regional resilience through policy as focus.

1.2 Problem statement

From the above background discussion, the following problem statements are identified:

- (1)** Planning in peripheral regions does not take cognisance of appropriate theory on regional policy and regional resilience.
- (2)** Area-specific and context-specific policies have not been adopted in regional development initiatives in South Africa.
- (3)** Regional policy for resilient peripheral regions have not been adopted in South Africa.

1.3 Research aims

The overall aim of the proposed study is to provide a regional policy framework for a more resilient peripheral region. The following specific aims relate back to the problem statement:

- (1) analyse the theoretical foundation of regional planning tools and their impact on regional resilience
- (2) evaluate the content of international regional policies in terms of their broad outcomes
- (3) determine and propose a developmental policy approach towards more resilient peripheral regions

1.4 Literature review

Literature on the structure of regions, and especially development and regional growth theory will be investigated, mainly referring to theories and impacts of balanced (Ohlin, 1967; North, 1955; Leven, 1985; Tiebout, 1964) and unbalanced growth (growth-pole theory; core-periphery model, agglomeration economies) and the impact and measures/tools (SOC and DPA, as well as others) available to influence regional growth. Theory regarding the development stages which countries passes through (Rostow, 1960) will play an important role in the final proposals of the study.

The literature study will be further directed towards different approaches to regional planning and development policies in the international environment. Policies and political views and approaches which has a trickle-down effect on the space economy will be investigated (Richardson, 1973). The chronology and components of regional plans will be reviewed to determine the process to be followed to ensure a fluid and sustainable process of policy formulation. The literature study will provide a basis to determine the regional status of the proposed study area as well as establish sound principles for regional growth and development.

A final section of the literature review will be focussed on the resilience concept, its origins in the environmental sciences (with an initial emphasis on natural disasters) and the evolution to a more encompassing concept of “regional resilience”, referring to a much broader spectrum. This section will explore the various components associated with regional resilience and derive a regional resilience approach and drivers of regional resilience to be used in the empirical study and the forth flowing proposals for policy-intervention.

1.5 Empirical analysis

A detail discussion on the research design and specifically the empirical data analysis will follow in Chapter 2, but the following main points are highlighted regarding the empirical study (refer Chapters 5, 6 and 7):

- A combination of quantitative and qualitative methods will be applied to reach the said objectives and aims.
- The empirical investigation will include a qualitative analysis of regional planning policy in South Africa. As well as international best practices regarding strategic regional planning initiatives focused on resilient peripheral regions, for comparison purposes.
- The qualitative and quantitative analysis will indicate the success of the various policies and plans during the regional planning past of South Africa, which will in turn transpire into potential proposals on successful regional policy.
- The study will also explore and assimilate from experience and policies of economic diversification of other countries.
- The policies of role-players in the world regarding strategic regional planning and policy will be researched and appropriate and applicable proposals could emanate from this.
- Spatial and policy analysis of the identified study area, by means of quantitative spatial and statistical data analysis, and qualitative policy analysis.
- This geospatial database will indicate a regional network of clusters (connectivity-based cluster analysis) for enhanced regional growth and more effective policy in peripheral regions – both in South Africa, and in an international context.

1.6 Definitions of terms

Table 1-1 Definitions of key terms

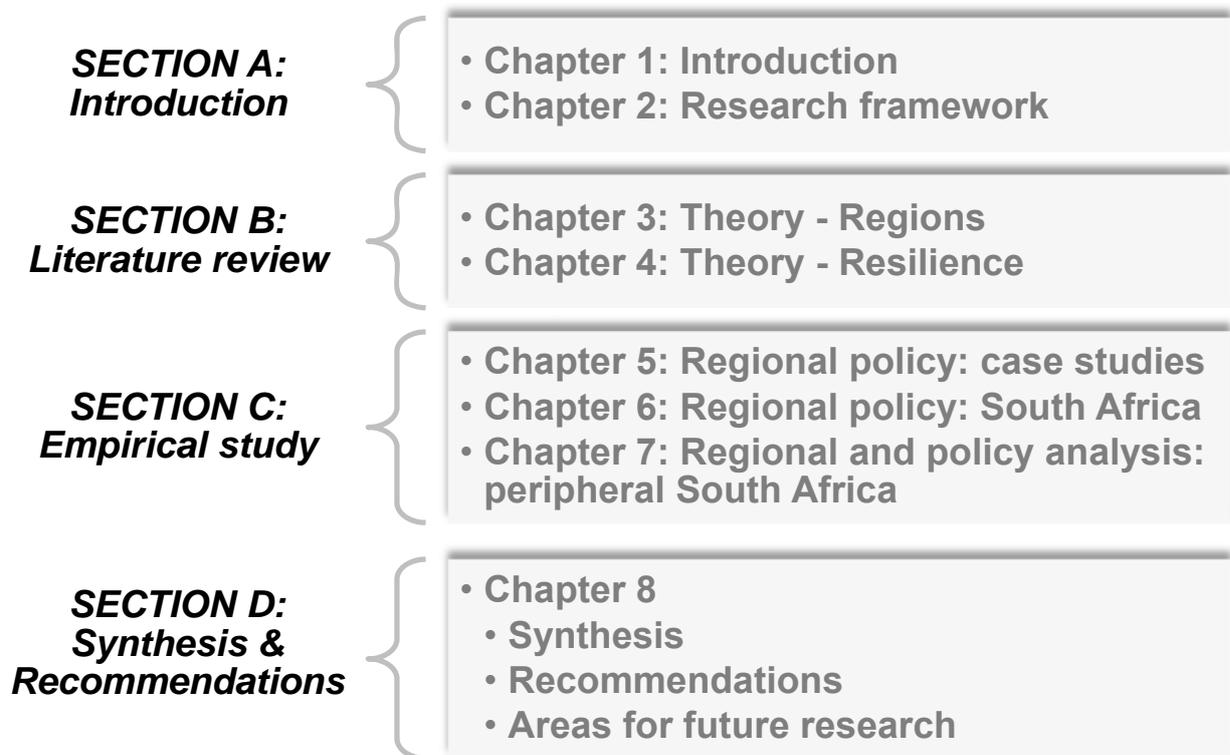
Term	Definition
Peripheral region	<i>Includes three types of planning regions, i.e. resource-frontier; downward transitional regions and specialist problem regions of any given country.</i>
Planning region	<i>Planning regions are geographical regions suitable for the designing and implementing of development plans for dealing with the regional problems”</i>
Polarized region	<i>The set of neighbouring towns exchanging more with the regional metropolis than with other cities of the same order in the nation.</i>
Region	<i>A region can be defined as the polarized socio-economic and politico-administrative spaces of urban settlements .</i>
Regional development	<i>Regional development concerns the incidence of economic growth and is ultimately the outcome of the position of economic activities in reaction to various regional attractions.</i>
Regional growth	<i>Regional growth on the other hand refers to the natural growth processes within a given region, without any interference.</i>
Regional policy	<i>Regional policy formulation is regarded as an instrument directed at solving (or aiming to solve) problems due to irregular spatial development.</i>
Regional resilience	<i>The ability to transform regional outcomes in the face of a challenge.</i>
Resilience	<i>The process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress and change.</i>

Source: Own compilation

1.7 Structure of research

The research study will mainly be divided in four sections, each of which is discussed in more detail:

Table 1-2 Structure of research



Source: Own compilation

Chapter Two will provide a research framework for this study by discussing the various types of data, the generation and analysis methods thereof, by giving an overview of research paradigms and strategies and touching on statistical analysis of the data generated. All research has certain underlying principles that guide and direct the research process. It is important to understand the epistemological viewpoint of any research and as such the philosophical paradigms of positivism, interpretivism, critical research and pragmatism which will be discussed. This chapter will further explore the research strategy to be applied as well as various data-generation methods which could be used. This chapter will outline the steps to be followed in the research process, thus providing a research plan and framework to guide the study.

Chapter Three will be devoted to set the scene regarding regional dynamics, regional planning and regional policy internationally. An overview on the various regional growth and development theories throughout the classical and neo-classical periods will provide a firm theoretical base in understanding and predicting patterns of regional development. Emphasis on the regional growth stages theories as well as core-periphery models will provide insight into the peripheral region and its interaction with the larger settlements within the regional and national space economy. The origins of regional planning and policy as well as the overarching objectives thereof in the international milieu will further be highlighted in this chapter. It is recognised that regional planning by means of regional policy have been applied worldwide by means of differing instruments to guide and shape the development of a region, whether it be as large as the European Union, or as small as a local municipality, and the various regional entities in-between.

Chapter Four will be dedicated to expand on the concept of resilience, its origins and evolution from an environmental perspective, to its various classifications (social, economic, engineering, psychology, disaster studies, ecological etc.) and application in the 21st century. The principle of regional resilience is derived as a continuously adapting notion which asks for a multi-disciplinary approach to strengthening the region. Chapple and Lester (2010) refers to regional resilience as “the ability to transform regional outcomes in the face of a challenge”. Regional resilience in its many forms and as derivative from “adaptive ability” (Simmie & Martin, 2010) its path-dependency-nature (Pendall, et al., 2010; Hudson, 2010; Grabner, 1993; Simmie & Martin, 2010) and critique against the term, will be explored. The chapter will further explore the panarchy as a conceptual model to understand the cyclical and complex nature of various systems, which will in turn be linked to the cycles through which regional systems move. The regional resilience concept will dominate the chapter in exploring how resilience is brought in context with regional economics, firstly with a focus on the equilibrium-based approaches, moving on to the non-equilibrium approaches and the concept of evolutionary regional resilience. The chapter will conclude with the identification of three pillars of regional resilience, to be further explored and measured in the empirical chapters to follow.

Chapter Five will explore and assimilate from experience and models of 17 case-study countries identified on the basis of peripherality, and will aim to highlight how regional policy plays an integral part in the resilience of economies of the peripheral region. The policies of international role-players with regard to strategic regional policy with a resilience focus will be quantitatively reviewed. The quantitative analysis will be based on the main elements forming part of regional policy in theory, including problem recognition, objectives, framework, instruments and actors. These elements will continuously be linked to the three pillar of regional resilience as identified through the literature analysis in the preceding two chapters. It is envisaged that appropriate and concrete policy proposals for peripheral regions will emanate from this analysis.

Chapter Six will aim to provide a historical synopsis and critically discuss regional policy and its spatial implication in the South African milieu. This Chapter will span a period of implicit socio-economic and developmental approach to planning in South Africa, since the early 1990s, but more specifically on spatial policy initiatives over the past decade (2007 – 2017). The qualitative analysis of nine identified spatial planning policy documents will follow the same pattern as with the international case-study countries. From the analysis it will be highlighted that during this period a decisive shift in the approach to regional planning is visible, focussing on the bottom-up approach (regionalization) of individual and community engagement in decision-making. This period, from a regional planning perspective, saw no explicit or geographical indication of locational advantage within the larger region, but rather large scale SOC-investment (Social Overhead Capital) in a “shotgun-approach”, attempting to provide services to “all”, housing for “all” and opportunities for “all”. This Chapter will argue that regionalisation has been lost and that this could partially carry the blame for many economic lacking regions (non-resilient) in the country with the necessary natural resources and potential for substantial economic growth, but requiring physical infrastructure and strong regional governance to open up the region for a new growth path to resilient development.

In Chapter Seven, a twofold approach to analysis will be followed. Firstly, the qualitative analysis of the specific study-area will be on a similar basis than on the international and national analysis in the first two chapters of the empirical section. This will be followed by a statistical data-analysis on indicators associated with the three pillars of regional resilience as identified in the literature section. Chapter Seven will act as a convergence of theoretical analysis and the empirical study, to add a pragmatic disposition to the research study. This spatial and policy analysis of the study-area will indicate a spatial core-peripheral network of growth potential within the regional system. This will in turn translate into policy actions to strengthen growth potential with an emphasis on the solidification of the three pillars of regional resilience as identified through literature analysis. It is envisaged that this analysis could inform local spatial strategies (LED & SDF), provincial planning policies (PGDS & PSDF), and national budget allocation (IDZ's and SEZ's).

The final chapter (Chapter Eight) will be dedicated to synthesising the theoretical framework and the application thereof throughout the study and the accompanying chapters. The chapter will identify pragmatic approaches to both the international policy environment with regard to the peripheral region, as well on study-area specific recommendations in an attempt to illustrate the practical application of the said instruments. This will highlight the need for the individual analysis of the generic peripheral region based on a number of indicators. Recommendations will be formulated to utilise regional policy in South Africa in such a way as to unlock the potential in many of the peripheral regions currently not being able to flourish due to infrastructure and economic constraints. It will ultimately propose that timeous planning and the utilisation of

appropriate spatial planning instruments (such as regional policy) and geographically focused (“where” and “when”) macro-economic investment could solve many of the regional concerns South Africa is experiencing and lead to more resilient peripheral regional development and long-term efficiency of the region.

1.8 Limitations of research

In the identification of limitations of the study at hand, the most prominent will be that of statistical data availability and consistency. The data sets relate to an annual time series projected for the period 1995-2015, for the five district municipalities (2011 demarcation). The data sets utilised have been projected using various sources of statistical information (Quantec, 2017) (refer Annexure B). Considering that this data is estimated with desktop studies based on the best official data available, a comparative analysis of the five planning regions was done, rather than focusing on the absolute values and interpretation for cyclic analysis. The analysis of the knowledge network pillar (refer Section 7.4.2) could have been potentially supported with the inclusion of both science, technology and innovation (STI) indicators, as well as indicators of research and development (R&D). These were however not available for the study area at hand up to the district municipal scale, as with other indicators used. The same argument applies for the recency of the statistical data utilised (2015 datasets), as some indicators utilised are measured less often with greater intervals between them.

In this research, qualitative and quantitative approaches are mixed within a single study to ensure that data and results are both authentic (quality) and reliable (quantity), wherein quantitative data is utilised only to embellish the primarily qualitative study. The limitations regarding data availability are thus not regarded as a threat for the validity of the study and the findings herein.

It could be argued that a detailed analysis of a single case-study country (as opposed to 17 countries) could potentially render a more valuable and comparable example on a reduced regional scale (as with the South African district level review). The researcher, however, argues that the considerable number of case study countries are utilised to rather identify trends and generalisations with regard to peripherality, resilience and policy approaches. This, and the inclusion of countries throughout the development spectrum, allows for the study to arrive at a globally applicable framework (in line with the aims of the study) with customisable elements, depending on the unique makeup of the region.

The composition of indicators within the three pillars of regional resilience identified, allows for a distinctive, area-based approach which were available for the study area at hand. The theoretical basis on which the pillars are identified (through detailed textual and narrative studies and meta-

research) are sound, the consequent indicators within each pillar are therefore qualified by the availability thereof. Arguing that similar indicators could be utilised in other peripheral regions to support and justify the applicability of this conceptual framework.

It is acknowledged that various statistical methods (i.e. factor analysis, regressions analysis, correlation etc.) could potentially add a more quantitative perspective on the research at hand, but is not included in this particular qualitative policy study as it falls outside the scope of the study (refer Section 1.3). Also refer Section 8.4 – Areas of future research.

CHAPTER 2: RESEARCH PLAN AND FRAMEWORK

2.1 Introduction

This chapter will serve as the structural and methodological justification of the study to follow, qualifying both the arrangement of the study and the viewpoints of the author. Research design in the field of spatial and regional planning draws from various interrelated, but not entirely similar, fields, i.e. human geography, social sciences and natural sciences (Knight & Turnbull, 2008). The subsequent disciplinary spectrum (Biglan, 1973: 201) highlights the quadrants of applied (concerned with practical application) and pure (basic) research and the interaction with hard (science-oriented) and soft (humanities) disciplines, with the social-sciences reflected in the centre of the horizontal axis.

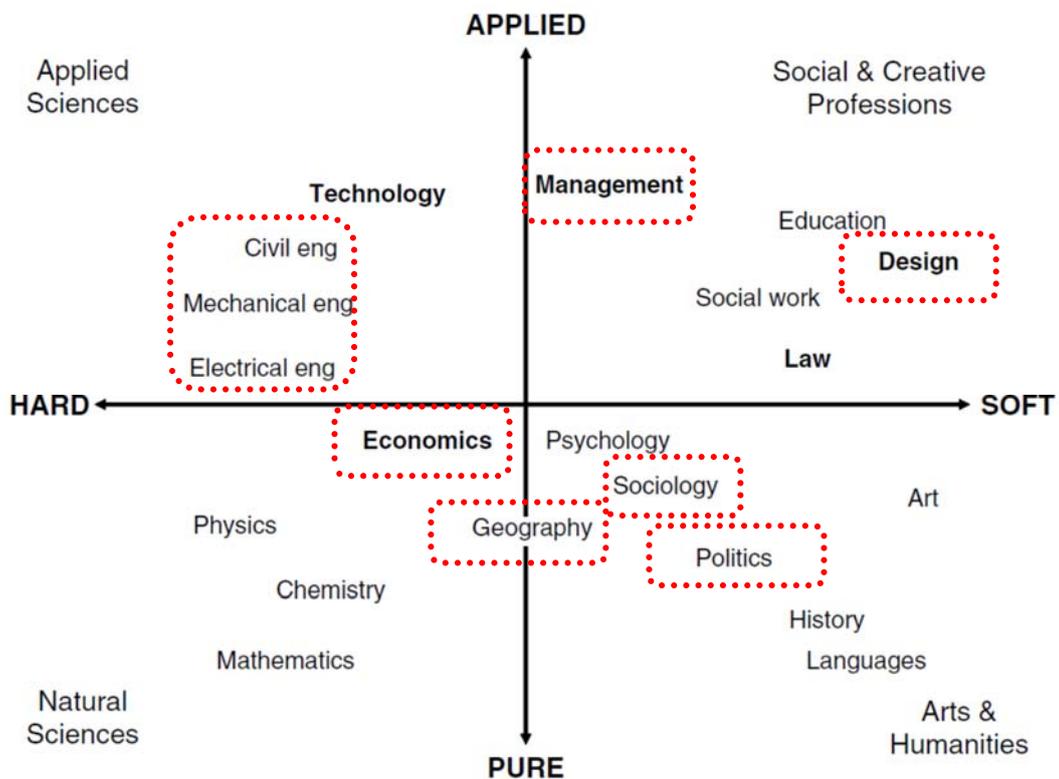


Figure 2-1 Disciplinary spectrum adapted to indicate fields concerned with spatial and regional planning

Source: Biglan (1973: 201)

From the disciplinary spectrum it is apparent that spatial and regional planning (as highlighted in red) justifies a unique approach towards research design and methodology, as it is found in all four quadrants of the disciplinary spectrum, displaying attributes of both hard and soft disciplines, and moving along the vertical axis between applied and pure research.

One of the most recent attempts (Silva, et al., 2015: 330) to justify and direct attention to a research-oriented approach to studies in spatial and regional planning, identifies key disciplinary traits in this specific research environment:

- Action-oriented approach referring to the problem-solving mind-set of researchers in this field, with a focus on the ability or strive towards making a difference;
- The explicit normative focus of research in the planning environment taking into account the different interests and viewpoints of all role-players involved;
- Recognising that knowledge gained from a systematic research approach has value in moulding and appraising practical interventions;
- Emphasised interest in the qualities of place and spatial relations, as it is recognised that various forces and relations shapes not only the immediate space in which a study is carried out, but also has a ripple-effect on other spaces via various connections;
- Heightened sensitivity towards diversity, both in the disciplinary approaches followed as well as the paradigmatic viewpoints of researchers;
- Recognising that knowledge gained and the use thereof is carried out within a specific context, i.e. the political and institutional context; and
- A strong sensitivity towards the ethical implication and setting in which research is done and how it is influenced by the values and ethics of the researcher(s) involved.

From these traits of spatial and regional planning research and against the background of the disciplinary spectrum (Biglan, 1973), it is recognised that research design and methods in spatial and regional planning call for a unique approach. This chapter proposes the study to be carried out against the ensuing context.

2.2 Research context and aim

The study will aim to balance between the continuum of basic (pure) and applied research (refer Figure 2-1). As indicated in the traits of spatial and regional planning research (refer Section 2.1), an action-oriented approach towards the identification of the research problem, the subsequent theoretical aims (refer Chapters 4 & 5) to advance fundamental planning knowledge (basic research) and, ultimately, driven by the practical aims (refer Chapter 8) and solutions for the identified problem (applied research). Therefore, emphasis will not only be on the theoretical

principles (refer Chapters 3 & 4) underlying the identified problem, but will also allow for creative and practical design in a combination of these approaches (refer Chapter 8).

2.3 Research purpose

In an attempt to answer the research questions (refer Section 1.1) as unambiguously as possible, the research has an (overall, but not specific) purpose to engage with the empirical reality in the following manners:

(i) Descriptive research

The descriptive approach regarding the research will mostly be followed to provide a better understanding of the specific spatial environment in which the demarcated study area is found (refer Empirical Chapters 5, 6 & 7). This includes, but is not limited to, the physical environment, the developmental environment, the political environment, the policy-environment and the economic-environment. This will provide a better grasp of the reality of this specific planning realm.

(ii) Interpretive research; and

In terms of this specific study, interpretive research regarding the content analysis of planning policies and documents will form the basis of Sections 5.2, 6.2, 7.3).

(iii) Formative research.

The study will make use of formative research to inform the proposals in Section 8.3, therefore detailed regional analysis (refer Section 7.4) and plan and policy analysis (refer Sections 3.6, 4.4, 5.2.4, 6.2, 7.3) will form some of the main components of the research study.

2.4 Research paradigm

In the identification of a research paradigm, one bounds the various facets of the study to be permeated by subtle philosophical paradigm(s). According to Neuman (2011: 94) a paradigm is “a general organizing framework for theory and research that includes basic assumptions, key issues, models of quality research, and methods for seeking answers”. Different paradigmatic approaches will most obviously require different research approaches, and in the research field of spatial and regional planning the three most prominent research paradigms as highlighted by Du Toit, in (Van Huyssteen, et al., 2008: 64), are the positivist, interpretive, and the critical social

science approach. A lesser frequented paradigm in this research area is that of pragmatism (Feilzer, 2010; Healey, 2009). Each of these will subsequently be discussed in order to determine and highlight the reasoning behind a specific paradigm for the study at hand.

(i) Positive paradigm

The positivist (also referred to as the systematic, scientific approach) social science is most distinctively found within the natural sciences, and models itself on an objective research approach in an attempt to forecast and influence reality (Neuman, 2011). Research is therefore approached from the stance that reality exists independently and therefore not within the influence of humans.

(ii) Interpretive paradigm

Opposed to the positivistic approach, one finds the interpretive social science, which promotes subjective description based on social interaction to better understand and grasp the social reality in which one researches. This paradigm regards the social reality as constantly changing, and tend to base most of the research on qualitative methods (Willis & Jost, 2007; Neuman, 2011; Wahyuni, 2012).

(iii) Critical paradigm

In the critical social science, the concept of relevance is emphasised, consequently favouring qualitative and participatory design. This entails that the subject matter being researched are involved in the process itself, therefore bringing empowerment directly to the community / people involved (Willis & Jost, 2007; Wahyuni, 2012).

(iv) Pragmatic paradigm

Pragmatism is similar to the critical paradigm in the sense that it also aims to empower and improve the human condition by identifying and solving everyday problems through scientific research. In the pragmatic approach various social realities are recognised and therefore uses an array of research designs focused specifically at the research problem at hand (Healey, 2009; Feilzer, 2010).

The researcher will take a **pragmatic approach** towards the study, research will mainly be built with the incorporation of various methods and designs to approach this unique problem objectively from a scientific approach but with a solution-focused approach. Taking cognisance of the fact that the social and physical reality being researched is within a constantly changing realm – therefore not providing a single solution, but proposing different approaches based on diverse circumstances.

2.5 Research approach

First and foremost, it is to be noted that the study will be approached from a methodological stance, with a strong focus on the research process as discussed in this Chapter. The researcher will study the overarching topics within their theoretical context and focus on the details of the study (refer Chapters 3 & 4), before making generalisations (Creswell, 2007: 101). In the research process, two types of data stand out as generalised across various disciplines and fields of research, which are qualitative and quantitative data. Steckler et al. (1992: 5) recognised that both qualitative and quantitative paradigms display flaws which, to an extent, are counterbalanced for by the strengths of the other. Quantitative methods produce accurate, dependable outcome data which can to an extent be generalised to a larger study group / population. Whereas qualitative methods generate prolific, comprehensive, authentic data with a sensitivity towards the participants' perspectives.

Creswell (2009: 41) highlights that a study is not purely qualitative or solely quantitative, it rather tends to be more qualitative than quantitative, and vice versa. He describes a mixed-method approach as in-between the two main data types, where (according to Johnson and Onwuegbuzie (2004: 15)) the researcher mixes different research techniques, methods, approaches, and concepts into a single study by making use of triangulation methods. Figure 2-2 indicates a simplistic approach in which qualitative and quantitative approaches are mixed within a single study to ensure that data and results are both authentic (quality) and reliable (quantity).

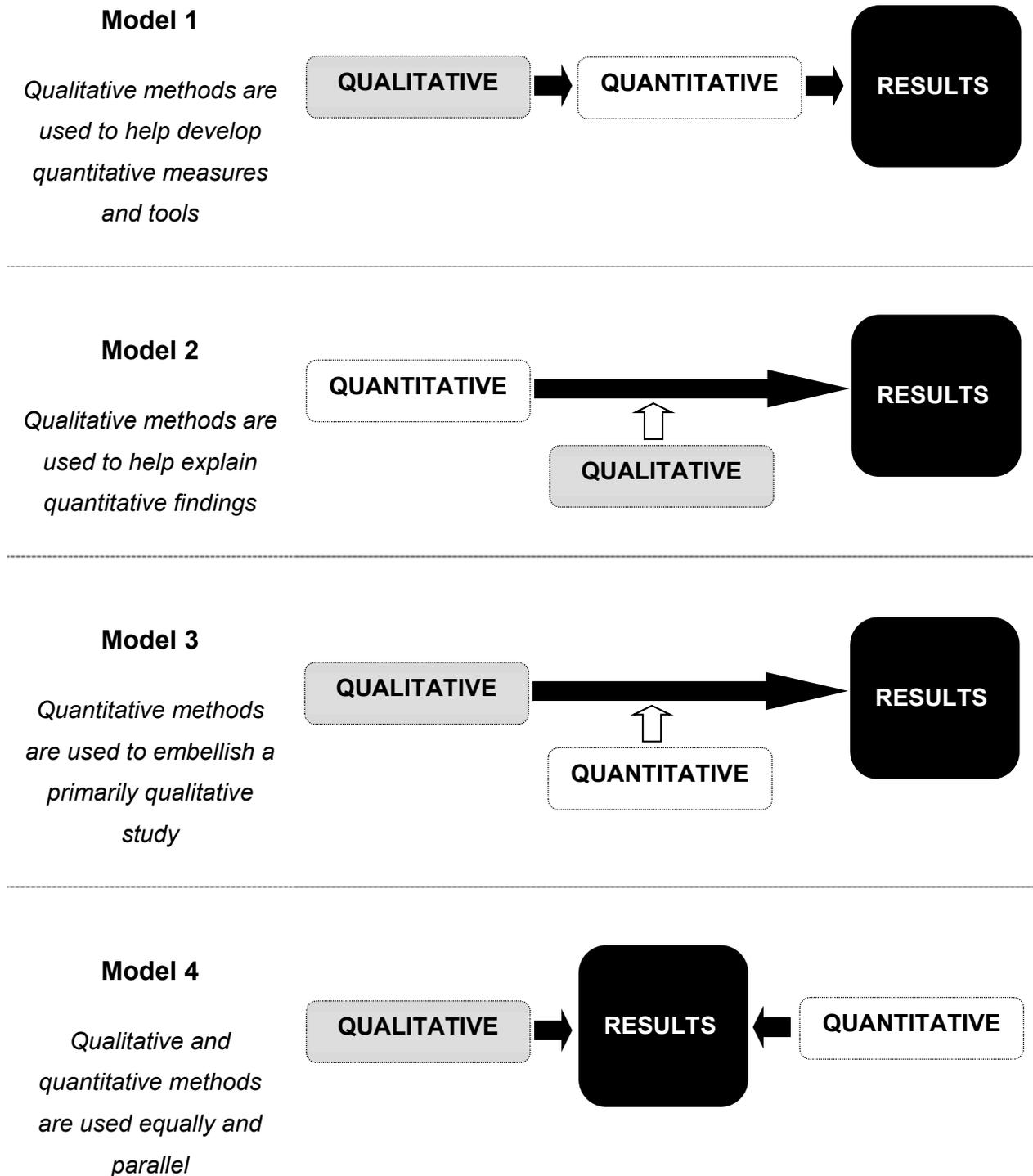


Figure 2-2 Possible integration of qualitative and quantitative methods

Source: Steckler et al. (1992: 5)

For the purposes of this study, the research approach will be based on Model 3 as described in Figure 2-2 and Figure 2-3 in which quantitative methods (refer Section 7.4) are used to embellish a primarily qualitative study (refer Sections 5.2.4, 6.2, 7.3).

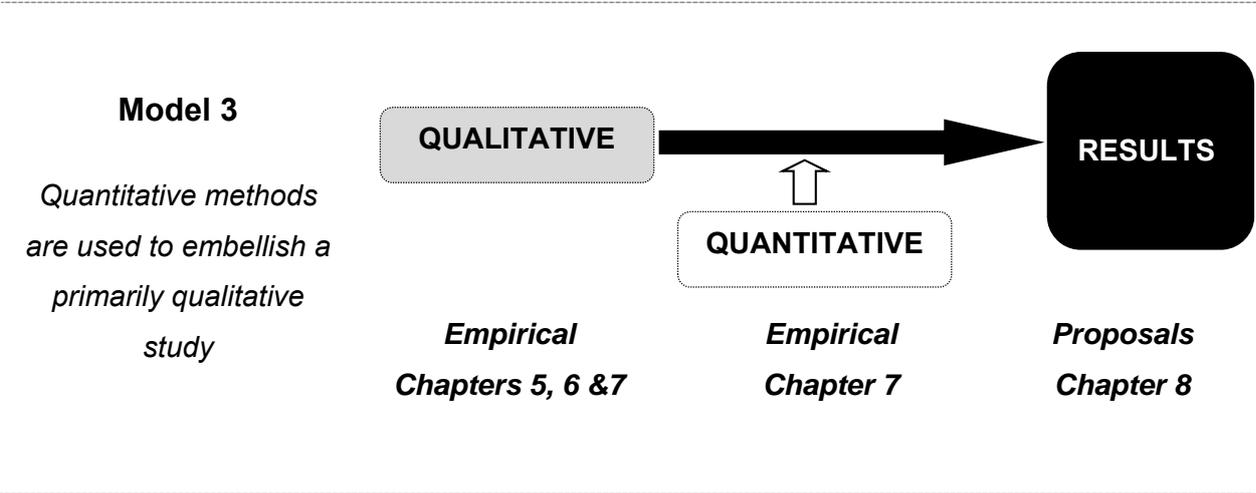


Figure 2-3 Empirical approach to study

Source: Adapted from Steckler et al. (1992: 5)

2.6 Research design

As with the research paradigms and research approaches, various research design prototypes exist within the spatial and regional planning research, i.e. (i) surveys; (ii) experiments; (iii) modelling, simulation, mapping and visualisation; (iv) textual and narrative studies; (v) field studies; (vi) case studies; (vii) intervention research; (viii) evaluation research; (ix) participatory action research (PAR); and (x) meta-research (Du Toit & Mouton, 2013: 125). During a comprehensive study on the assortment of research designs Du Toit and Mouton (2013: 128) found that these ten designs are most applicable to the spatial and regional planning field as indicated in the subsequent table.

Table 2-1 An index of designs applicable to social research in the built environment

Research design subtypes	Research designs	Core logics
Cross-sectional surveys	Surveys	Generalisation
Longitudinal surveys		
True experiments (aka laboratory experiments)	Experiments	Causal attribution
Quasi-experiments (aka field/natural experiments)		
Modelling and simulation	Modelling, simulation, mapping and visualisation	Prediction/illustration
Mapping and visualisation		
Content/textual analysis	Textual and narrative studies	Interpretation (hermeneutical)
Discourse/conversational analysis		
Historiography and biography		
Ethnography (aka participant observation)	Field studies	Interpretation (ethnographical/phenomenological)
Phenomenology		
Single/multiple case studies	Case studies	Contextualisation
Comparative case studies		
Site/settlement analysis and assessment	Intervention research	Intervention
Plan/policy analysis and assessment		
Diagnostic/clarificatory evaluation (aka <i>ex ante</i> evaluation)	Evaluation research	Evaluation
Implementation evaluation and programme monitoring		
Outcome/impact evaluation (aka <i>ex post</i> evaluation)		
Technical/scientific/collaborative PAR	PAR	Participation/action
Practical/mutual and/or collaborative/deliberate PAR		
Emancipating/enhancing/critical science PAR		
Literature reviews and research synthesis	Meta-research	Various logics depending on the objectives of the research (e.g. to 'review', 'synthesise', 'analyse', etc.)
Conceptual analysis		
Typology/model/theory construction		
Philosophical/logical/normative argumentation		

Source: Du Toit and Mouton (2013: 128)

From the identified research design types, it was construed that this study will follow a mixed approach with more than one research design, i.e. mapping and visualisation (refer Section 7.4); textual and narrative studies (refer Sections 5.2, 6.2); case studies (refer Section 5.2); intervention research (refer Sections 5.2, 6.2, 7.3); evaluation research; and meta research (refer Chapters 3 & 4) (Du Toit, 2010).

(i) Modelling, simulation, mapping and visualisation

In the research design of modelling, simulation, mapping and visualisation, this study will focus on the subtype of “mapping and visualisation” in Section 7.4 as part of the socio-spatial analysis (Khattab, 2005) of the demarcated study area.

(ii) Textual and narrative studies

A further approach in the research design will be that of textual and narrative studies, specifically referring to the subtype of content or textual analysis, most commonly found in plan and policy analysis and assessment (Gaber & Gaber, 2007); socio-spatial analysis of spatial policy (Richardson & Jensen, 2003) and urban policy research (Gaber & Gaber, 2007). This study being focused on a regional policy approach, will lean greatly on textual and narrative analysis, specifically in Sections 3.5, 5.2, and 6.2 where an in-depth assessment on existing spatial policy will be compiled.

(iii) Case studies

The case-study approach will be followed in both the policy analysis (refer Sections 5.2, 6.2, 7.3) and the empirical (refer Section 7) sections. The study will aim to provide a case study analysis on the South African policy approach versus the developed world approach to resilience in policy design and application. The area of application therefore refers to the “cross-national approach” as identified by (Steinführer, 2005: 102)The case-study approach is described as advantageous due to its close link with reality, where the theory can be tested and empirically confirmed (Eisenhardt, 1989).

(iv) Intervention research

Du Toit (Silva, et al., 2015) identifies plan and policy analysis as a subtype of intervention research (Zeisel, 2006), applied in this study in Section 5.2. The analysis of existing as well as former policies on national and regional level will provide insight in the predominant growth patterns and economic sectors within the peripheral region. It will furthermore serve as a basis for proposed interventions in Sections 7.3, 8.3.

(v) Evaluation research

Evaluation research, as a research design, is further subdivided into (i) diagnostic evaluation; (ii) implementation evaluation and programme monitoring; and (iii) outcome /impact evaluation as visible from Table 2-2. This study will make use of evaluation research, more specifically impact evaluation in the planning of sustainable settlement and site analysis (Ellis, 2005; LaGro, 2008) (refer Sections 5.2, 6.2, 7.3).

(vi) Meta research

Lastly, meta-research as research design will be utilised by means of the sub-type “literature review and research synthesis”, as necessitated in Chapters 3, 4, 5, and 8. The literature review will ensure a thorough understanding of the main topics and sub-fields; it will assist in identifying potential areas for future research and will recognise related research done within the research field.

Table 2-2 A typology of designs for social research in the built environment

Design considerations						Research designs
Research context & Research aim	Research purpose	Methodological paradigm	Methodological approach	Source of data	Core logic	
Basic (towards applied) contexts Theoretical aims	Descriptive Explanatory	Post-positivist	Quantitative	Primary	Generalisation	Surveys
					Causal attribution	Experiments
	Interpretative Exploratory Descriptive	Interpretative social science (towards pragmatic)	Qualitative	Secondary (numerical/spatial)	Prediction/illustration	Modelling, simulation, mapping and visualisation
					Secondary (textual)	Interpretation (hermeneutical)
				Primary (towards hybrid)	Interpretation (ethnographical/phenomenological)	Field studies
					Contextualisation	Case studies
Applied contexts Practical aims	Formative Evaluative	Pragmatic	Mixed-method (towards qualitative)	Hybrid	Intervention	Intervention research
					Evaluation	Evaluation research
Basic contexts Meta-theoretical aims	Emancipatory Meta-analytical purposes	Critical social science	Participatory	Primary	Participation/action	PAR
		NA (Nonempirical)	NA (Nonempirical)	NA (Nonempirical)	Various core logics	Metaresearch

Source: Du Toit (2010)

2.7 Data-generation

In the qualitative analysis section of the empirical study, the main national spatial planning policy documents of 17 case-study countries will be perused from which certain aspects as applicable to the peripheral region and resilience will be highlighted (data set included as Annexure A). A similar policy analysis in the South African context (as host country to the study area) will be completed in an attempt to indicate differences to the regional policy approach, as opposed to the findings within the 17 case-study countries. The national census-based data set of Quantec (2017) will be utilised to form the basis of the quantitative analysis of the identified study area (refer Annexure B). The resilience pillars as identified will be qualitatively (refer Section 7.3) and quantitatively represented within the five planning regions of the study area (refer Section 7.4). From the combined spatial, policy and data-analysis proposals for the specific study area will flow (refer Section 8.3.2), as well as proposals as applicable on a more generic and international scale (refer Section 8.3.1) for the peripheral region in general.

2.8 Conclusion

To conclude, this chapter can be summarised in the subsequent figure, highlighting the research framework for the study at hand. The disciplinary spectrum to be used refers to the applied context with the practical aims associated therewith in order to address the three-pronged research purpose (being mostly descriptive and interpretive, and to a lesser degree informative). The research will further be approached in a pragmatic paradigm, informed and supported by a largely qualitative approach, and to a lesser degree by quantitative verification. Research design for this study includes a multitude of approaches as discussed in the preceding section, in order to address and cover all aspects of a very complex and integrated topic within the spatial planning environment.

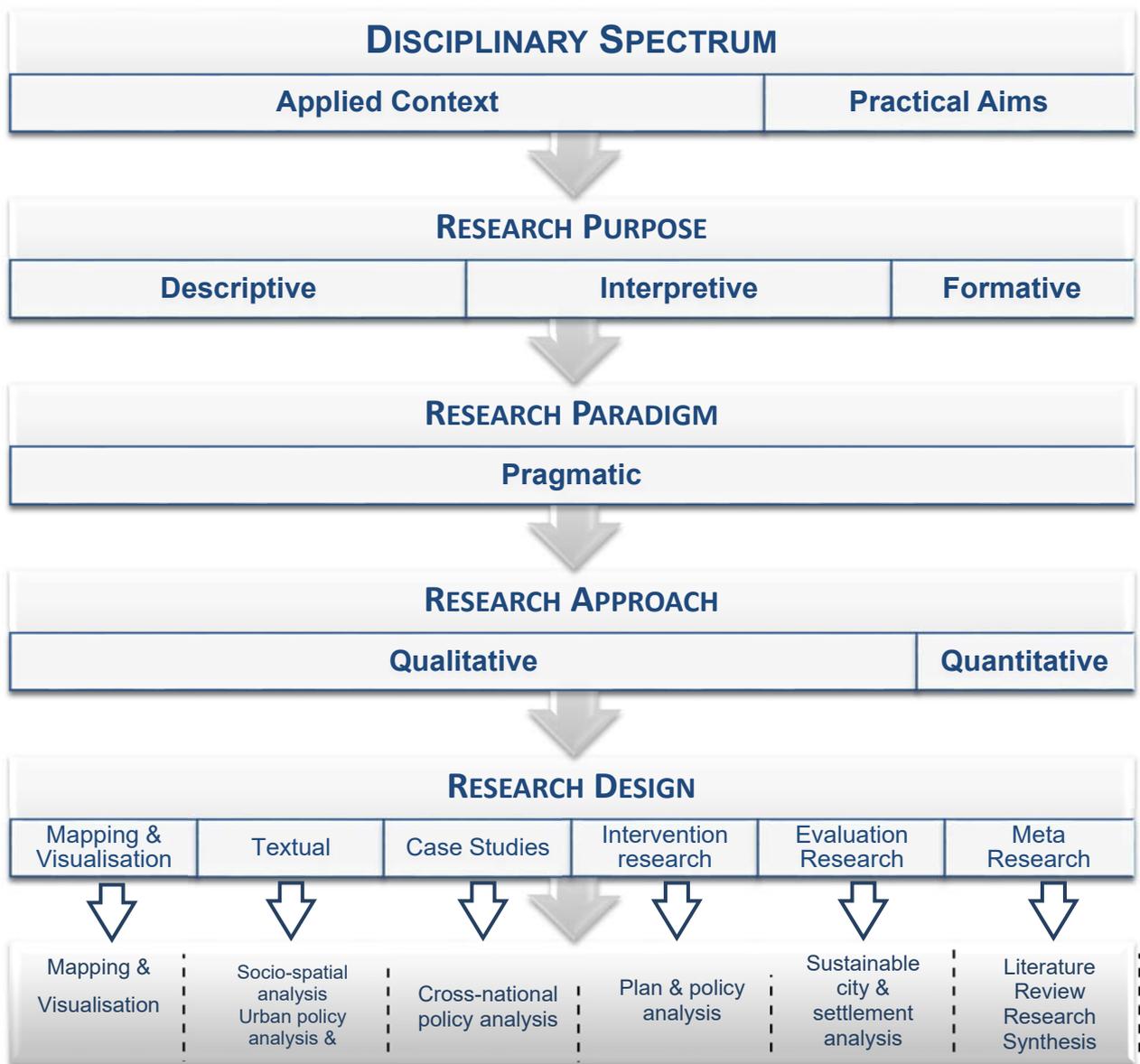


Figure 2-4 Study-specific research framework

Source: Own construction

CH 2: RESEARCH METHODS



Research Design & Framework

Chapter message:

- Planning falls within various disciplinary spectrums
- This necessitates a unique approach to research design
- The research will be approached from an applied context with practical aims
- Research will be done in the pragmatic paradigm
- The research approach lean towards qualitative analysis, informed by quantitative data
- A mixed-method research design will be followed

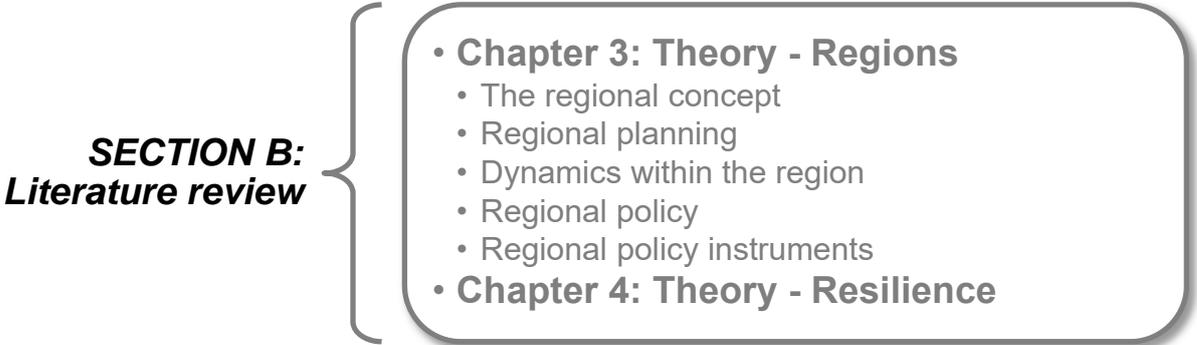
Figure 2-5 Chapter message: Chapter 2

CHAPTER 3: SETTING THE SCENE: REGIONS AND REGIONAL POLICY

3.1 Introduction

This chapter relates directly to **Aim 1: to analyse the theoretical foundation of regional planning tools and their impact on regional resilience**, of the study at hand, and will mainly be populated with qualitative literature review, or meta-research as research design (refer Section 2.6). The theoretical foundation established throughout this Chapter will in turn inform and populate the “**proposed developmental policy approach towards more peripheral regions**”, i.e. **Aim 3**. This chapter will be organized to firstly address the regional concept, and identify stages of growth and development within regions; secondly attention will be guided towards regional planning and regional policy as tools to influence the development and growth of regions; this will be followed by a discussion on various theoretical and generic regional planning instruments and the application thereof. This chapter will form the first part of **Section B: Literature review**.

Table 3-1 Structure of research – Literature review



Source: Own compilation

Section B (Chapters 3 & 4) is deemed as a necessary and crucial part of this study as the concept of regions and regional delineation will be practically applied in Section C: Empirical study; it will furthermore assist in understanding the various policy instruments available to assist in attaining policy goals supported by the practical application thereof. Which will in turn relate back to two of the three objectives of the study (refer Section 1.3):

Aim 2: *evaluate the content of South African regional policies in terms of their broad outcomes*

Aim 3: *determine and propose a developmental policy approach towards more resilient regions*

It is recognised that regional planning consists of two elements, i.e. the action to be taken, and the space (region) within which this action is performed. For the action to be taken (proposal towards increased regional resilience) the space (peripheral regional case study) in which the action is performed must be clearly delineated, explored and understood. This chapter will enable the researcher to effectively determine a region as case study, to classify the region accordingly, identify potential policy instruments and consequently propose a developmental approach towards a more resilient region. This approach in turn, links up with the chosen mixed-method approach (refer Figure 2-2), firstly obtaining qualitative information, and in turn using the qualitative analysis to populate a quantitative measure (i.e. criteria for resilient regions, refer Sections 4.4.3.2 and 7.4) to ultimately reach conclusive results.

3.2 The regional concept

The central place theory, as a spatially induced growth theory, is regarded as a static theory which aims to describe the existence of specific arrangements of centers, however, it does not reveal how these patterns come into being and how they may experience changes in the future. The theory of central places (Christaller, 1966) provides a partial framework of great value in understanding regional structure and order. This theory is mainly used in regional planning as a supportive tool to derive hierarchical order in terms of places or nodes (refer Section 7.3). Central place theory evolved from the concept of centralisation as an ordering principle. He proposed that if the centralisation of mass around a core is an elementary form of order, then the same centralistic principle can be equated in urban settlements. A central place is described as an urban node with the primary function of providing in the population of the surrounding area's needs and desires for goods and services, and distinction is made between central places of higher order and central places of lower order (Christaller, 1966). The former referring to places with central functions that extend over a larger region in which other central places of less importance exists. The latter refers to towns which have only local central importance for the immediate vicinity. According to the central place theory, the variety of consumer goods and services offered by establishments in cities and towns determines the range of the place. 'Range' refers to the maximum distance the dispersed population would be willing to travel to purchase a

particular commodity offered at a central place. The further the range of a central place, the greater the importance of that place. Pred (1977) explained the theory as whenever a city cannot fulfil in a given demand for goods and services, the commodity must be obtained from the nearest more populous city which can provide commodity required. The market areas of cities of each size class are nested into the market areas of higher order centres until the entire country or region falls within the market area of the single largest urban unit (refer Figure 3-1). The model proposed a hierarchical arrangement of settlements and conceptualised the model with hexagonal arrangements. The hexagon best equated a circle for maximum coverage and some of the problems of overlap within circular arrangements were removed from hexagonal arrangements. Christaller (1966) identified seven levels in all, in each level the larger central place contains all the functions, and more, of the place of lower order. This theory is based on the assumption that all parts of the region are supplied with all conceivable central goods from the minimum possible number of central places, i.e. the market principle.

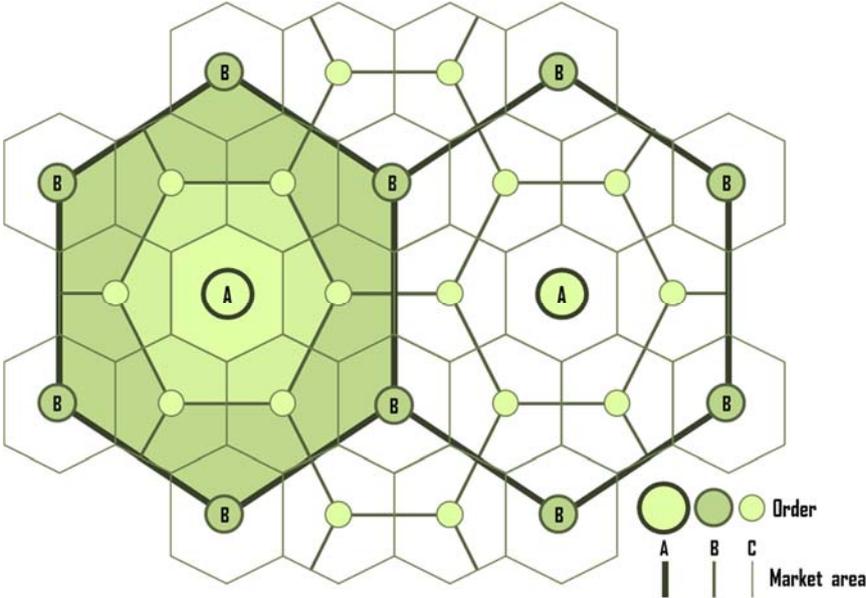


Figure 3-1 System of central places: Marketing regions

Source: Christaller (1966:66)

From the above figure it is evident that there will always be a greater number of places of a lower order i.e. towns of lesser importance and smaller size, but as the size and importance of places increase, the number of places diminishes. Thus, surrounding a greater place (B-type), are a number of smaller A-places and even more M-places of the smallest size. As one moves further away from the central place, a number of larger towns or K-places appear surrounded by their own number of A-places and M-places.

Lösch (1954) refined central-place theory even further, also using hexagonal service areas but allowing various systems (also refer Section 4.3) to coexist. An attempt was made to more realistically explain the size and shape of the different market areas by looking at the spatial system as a continuous distribution of settlements, and not as a discontinuous hierarchy of settlements (the rigid approach Christaller followed). Because of the market-area determination principles used by Lösch, urban size does not automatically define which goods and services are locally available, taking the interdependence between service areas into account. Central place theory is relevant to spatial planning as a hierarchical system provides an efficient means of administering and allocating resources to regions (refer Chapter 8). Major central places are often the key points of growth in a region and determine the rate of economic development over the region as a whole (refer Section 7.3). Nichols (1969) postulated that the identification of a growth pole on an existing central place will not necessarily enhance the local economy, based on the notion that central places rarely have spread-effects to centers of a lower order, but rather interacts with higher order centres, thus implicating growth / development from below.

Richardson (1973) in turn criticized the theories of Lösch and Christaller, especially in terms of the uniform plain both of them used as point of departure. Richardson argued that this uniform plain is too far from reality, and that the point of departure for such theories should be of a spatial structure of an economy preceding industrialization. In such an economy a number of nodes already exists, which are called locational constants. Locational constants (Richardson, 1979: 158) are described as constants that, because of their immobility, impose constraints on agglomeration; and are fundamentally helpful in understanding the dispersion process (refer Sections 7.2, 7.4). Richardson (1979: 158) describes these constants as "...fixed locations that act as a focus for the agglomeration of population." These locational constants tend to predetermine the economy's spatial structure and fall mainly into three categories, i.e. (i) immobile natural resource i.e. area of mineral deposits; (ii) long-established city; and (iii) sites with particular advantage (heterogeneity of land, potential nodal location of site). Locational constants perform certain vital functions within regional analysis. Firstly, it simplifies the task of constructing a spatial development model by pre-identifying a number of key locations (this makes spatial pattern prediction possible). Secondly, it affects the number of urban centres in a region and in turn the agglomeration pull effect of that region. Lastly, this theory explains why industries and people do not necessarily concentrate in only one major centre, but choose isolated development patterns. Furthermore, Richardson (1973) explains that this concept also sheds light on the production pattern of certain goods. If goods are hierarchically classified according to the size of the market area over which it is traded, a certain relation exists. Lower goods, i.e. fresh bread, are produced locally because it restricts the scope for agglomeration, and should thus be supplied in all centres, regardless of their size. Higher order goods, i.e. vehicle manufacturing, tend to enhance the scope for agglomeration and are thus only supplied in centres of higher order and larger size. The

hierarchical classification aids in the provision of social services and economic advantage, which could be utilised to the advantage of the various settlements in the greater regional system.

Geddes (1949: 151) shows the need for “relating a given town not only to its intermediate environment, but to the larger surrounding region” in order to better comprehend the surrounding environment in which daily interactions within our cities are exhibited. Glasson (1978:19) differentiates between two views on regions, subjective and objective. According to the subjective view on a region, a region is seen as a tool to describe certain criteria within a spatial unit. In this interpretation a number of similar characteristics are grouped together and thus describes a number of entities within a space, or region. An objective view on regions describes a region as an entity determined by physical characteristics, which implies that these regions can typically be mapped. The subjective view (refer Figure 3-2) on regions is most commonly adopted amongst academics. A region can thus be defined as “the polarized socio-economic and politico-administrative spaces of urban settlements that perform the functions of the second-order cities” (Hilhorst, 1971). The reasoning behind regional identification is explained either as a tool of research (referring to a statistical unit as visible in Chapters 5 & 6); as an object of research (entailing the delineation of a region as part of the research, as visible in Chapter 7); and lastly as a tool of area management (for which a plan is developed based on analysis, discussed in Chapter 8) (Glasson, 1978; Klapka, et al., 2013).

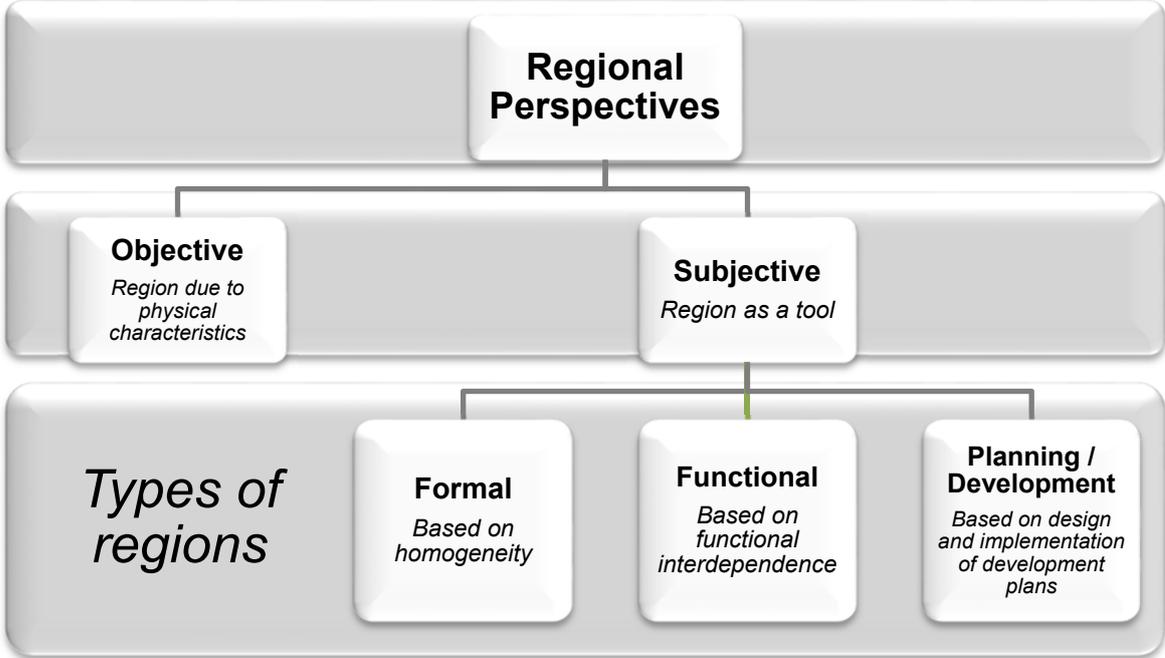


Figure 3-2 Classification of regions

Source: Own compilation from literature

The concept of the region as a method of classification has evolved through two distinct phases reflecting the economic advance from a simple agrarian economy to a complex industrial system (Glasson, 1978). The first phase identified the 'formal region' (refer Figure 3-2) as a region concerned with uniformity, and defined according to homogeneity (Haggett, 1965; Brown & Holmes, 1971). The second phase identified the development of the 'functional region' as a region concerned with interdependence, the interrelationship of parts, and defined on the basis of functional coherence (Haggett, 2001). Early definitions of formal regions mainly focused on physical criteria for delineation. This included criteria such as geography, climate and vegetation. In later phases in the delineation of regions, factors such as economic, social and political criteria came to play a role. Glasson (1978: 21) defines the functional region as "... a geographical area which displays a certain functional coherence, on interdependence of parts, when defined on the basis of certain criteria." The functional region has also been described by Perroux (1950) as a polarized region consisting of heterogeneous units, such as towns, cities and villages, which are functionally interrelated. Formal or functional regions, seen separately or combined, form the basis for another type of region, the planning region. The planning region have been described by a number of authors and definitions include that of Boudeville (1966: 89) who describes planning regions as areas displaying some consistency or unanimity of economic decision; while Klaassen (1965) aptly sums it up as a region defined according to the purpose of one's analysis – a region is therefore regarded as whatever spatial unit one needs to identify and solve a specific problem linked to a locality. Keeble (1969: 264) describes a planning region as "...an area which is large enough to enable substantial changes in distribution of population and employment to take place within its boundaries, yet which is small enough for its planning problems to be seen as a whole". Glasson (1978: 22) describes it as follows: "Planning regions are geographical regions suitable for the designing and implementing of development plans for dealing with the regional problems". This study will aim to identify a planning region and subsequently identify some form of solution, therefore a need arises for a more in-depth discussion of various types of planning regions. Five types of planning regions are commonly accepted: (i) core regions; (ii) upward transitional regions; (iii) resource-frontier regions; (iv) downward transitional regions; and (v) specialist problem regions (Friedmann, 1966; Kuklinski, 1970; Stilwell, 1972). Friedmann argues that the first two regions (core region and upward transitional regions) combined is regarded as the "core" of a country, whereas the latter three regions (resource-frontier; downward transitional regions and specialist problem regions) are deemed the "peripheral regions" of said country (refer Figure 3-3).

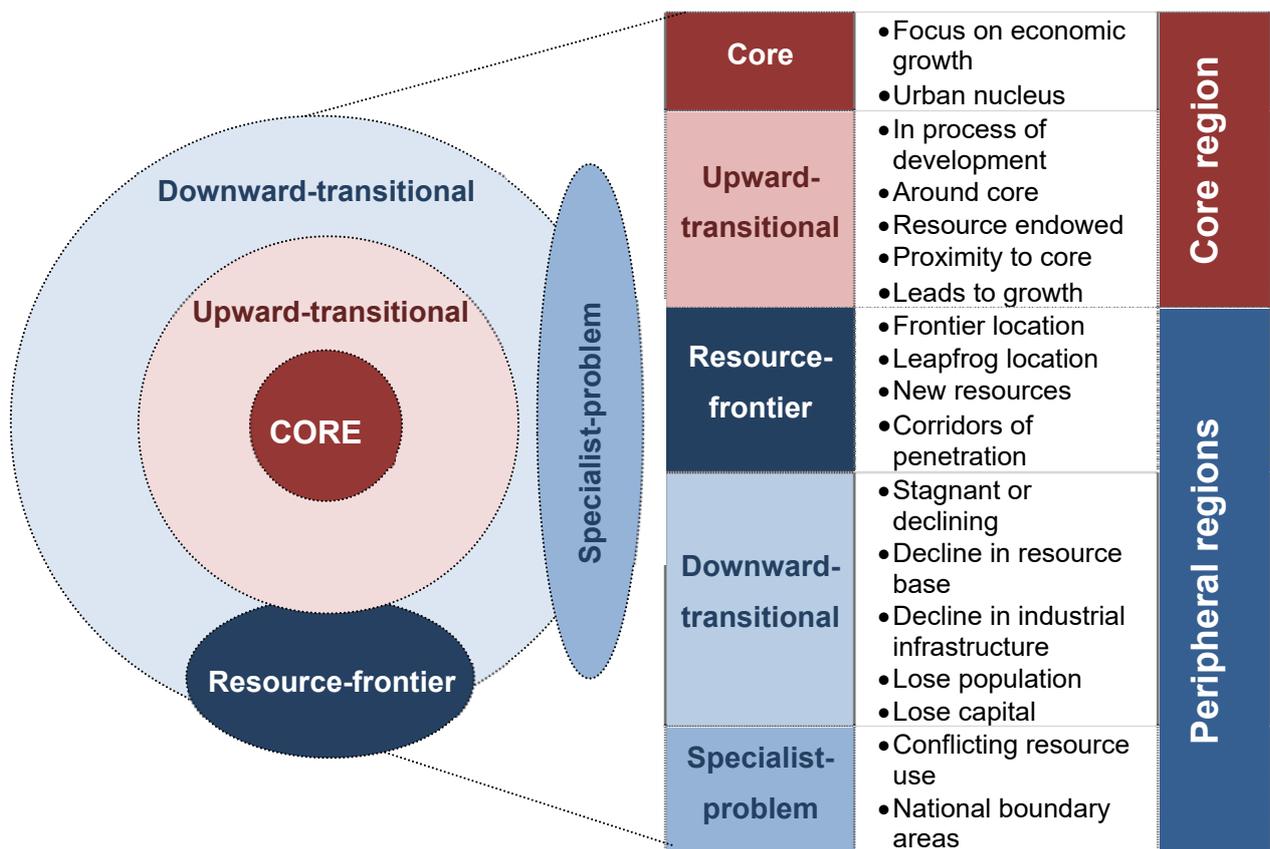


Figure 3-3 Classification of planning regions

Source: Own compilation from Friedmann (1966)

Friedmann (1966) is supported by the United Nations (1967: 281) in their identification of typical problematic regions, i.e. underdeveloped regions in which different barriers hampers the regions from participating in development; depressed regions referring to regions which developed during the first industrial revolution, but experience economic and social depression due to declining industries; whereas the third type of over congested regions refers to areas where growth has surpassed the capacity for development. Other causes for lagging or depressed regions (Van Duijn, 1979: 168) identifies policy mistakes, exogenous disturbances, over investment, decline on the quality of the economic structure, lack of technological improvement, exhaustion of raw materials and energy sources, rising labour costs and socialisation of demands (Capello & Nijkamp, 2009: 96; Richardson, et al., 2011: 41-47).

It is apparent that what constitutes a 'region' for one party, will differ for another, depending on the viewpoint and purpose for the 'region' at hand, be it from a political, geographic, biophysical, social or economic approach. Regions can therefore be regarded as fluid in nature, and subjective to the purpose thereof, as stated by James (1952: 205) "no system of regions is right and all the others wrong: there are as many regions as there are problems worth studying".

3.3 Regional Planning

The question arises as to what regional planning constitutes and why a need exists to plan for policy within a region. Various authors have spent many years in an attempt to pull apart the terms “planning” and “region” to better explain the overarching concept. Planning in its simplest form refers to the “process of thinking through and implementing a set of appropriate actions to achieve some goals” (Johnson, 1981: 255). Regional planning is also commonly referred to as regional/local planning, intra-regional planning or regional strategic planning (Glasson & Marshall, 2007: 6). The regional concept has been discussed previously in this study (refer Section 3.2) – therefore regional planning for the purpose of this research study refers to a level of forward planning spanning a level between that of country’s planning, and that of a local level (settlement level) – effectively building a bridge between national economic planning and local physical planning (Keeble, 1969). Regional planning is regarded as a form of spatial planning (in which geographical dimension is explicit) and involves a holistic approach to various regional elements, including socio-economic, infrastructure, political and bio-physical elements and is utilised to affect the existing pattern of human activity within an identified space (Chaudhuri, 2001). Spatial planning in turn is divided in adaptive spatial planning (referring to process attempting to streamline spatial evolution in order to achieve optimal efficiency) and developmental spatial planning (based on national pressures of economic development in order to promote rapid economic growth or effectiveness), in which case it is regarded as a responsive tool to address contemporary issues. Regional planning is characterised by a direct confrontation between urgent practical problems (i.e. disequilibrium and underdevelopment) on the one side and abstract and theoretical concepts regarding equity and efficiency in allocation on the other which lead to various frictions within regional planning (Cumberland, 1971: 96-97), which touches on the elements of regional planning as identified. These frictions are mostly ascribed to lack of insight into growth processes and lack of insight into the regional economy, political differences regarding policy instruments, philosophical differences between planners and the inflexibility of tools of economic policy (refer Section 4.4.3.1).

The regional planning process is classified as having both a technical and a political component (Perloff, 1968). The technical component referring to a process of information analysis, regional designation, programming and operations, whereas the political component is more focused on the setting of high-level goals and objectives, identifying alternatives and political payoff. Glasson and Marshall (2007: 125) regards this level of intervention on regional level as important due to the emerging trends and issues in a developing society, heightened by the ease of mobility and increased flows within and between regions. They regard the regional level as central to the ‘territorial integration’ of (inextricably woven together) natural and socio-economic systems in a society focused more on sustainability issues than ever. The purpose of regional planning can be

approached from various stances, but constantly keeping in mind that the primary purpose is related to the spatial dispersal of activities, and/or developments. Other reflexions of regional planning regards the balancing of economic, social and environmental goals as central to the goal thereto (Klaassen, 1965; Kuklinski, 1970) with a physical regional plan/ policy as product of the regional planning process. The regional planning process typically includes the following steps (i) problem identification; (ii) formulation of goals and objectives; (iii) identify constraints; (iv) projection of future situation; (v) generate and evaluate alternatives; and (vi) production of a plan (Glasson, 1978).

The following section will pay attention to concepts and theoretical foundation of growth and development within regions over the past 100 years, as background to which factors can be taken into account to maximise regional resilience (refer Section 4.4.3.2).

3.4 Dynamics within a region

Regional dynamics or forces within regions with specific reference to those impacting on the spatial distribution within a given space is subsequently discussed. It is important to note that various other factors, especially in terms of economic sciences, impact on growth and development in general, but only those regarded as spatially bound will be highlighted for the purposes of this spatial planning study.

3.4.1 Overview

In the previous sections attention was directed towards the different types of regions, the components a region consists of and theories that led to different views of the region – which in turn led to a discussion on the concept regional planning. In the section that follows the dynamics within regions will be discussed, this covers a number of different influences within a region which determines the growth and development of the specific region. Whatever the *raison d'etre* for the delineation of a specific region, be it formal, functional or for forward planning purposes, various dynamics are visible in any form of region. Approaching these dynamics from an economic stance, three main themes are visible in studying regional dynamics, i.e. (i) regional development; (ii) regional growth; and (iii) settlement within a region (Capello, 2011: 3). Regional development concerns the incidence of economic growth and is ultimately the outcome of the position of economic activities in reaction to various regional attractions (Friedmann & Alonso, 1964). Regional development can consequently be regarded as assistance or interference (physical or non-physical) provided to less developed regions to boost economic growth. Regional growth on

the other hand refers to the natural growth processes within a given region, without any interference (Capello & Nijkamp, 2009: 189).

Capello (2007: 240) highlighted these themes as a convergence between theories, interlinked with one another. Theories associated with development and location (refer Section 3.2) are bound together by diversified-relational space theories, with a pertinent focus on endogenous local development. Whereas diversified-stylized theories on space, with a strong focus on new economic geography, are amalgamated in the growth and location theories, as illustrated in Figure 3-4

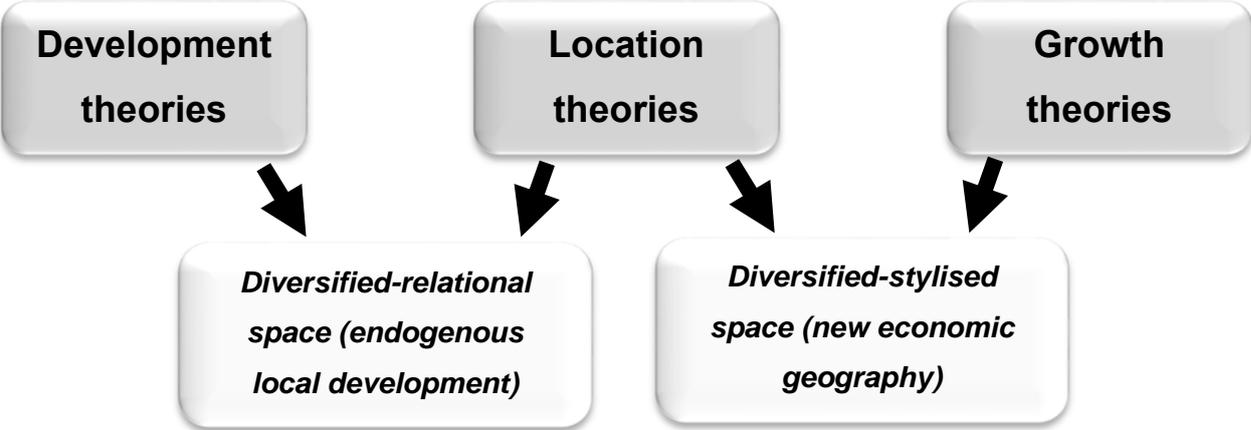


Figure 3-4 Convergence among theoretical approaches

Source: Adapted from Capello (2007)

There are two quite different methodological approaches to regional growth (Richardson, 1969); i.e. (i) adaptation of macroeconomic models used in aggregate growth theory or, (ii) interpretation of a region's growth in terms of the dynamics of industrial structure. In this section attention will be guided towards the former, macroeconomic models of growth. Regional growth in a macroeconomic sense refers to an increase in the GDP of a region, or the per capita income of the region (demand), which is directly linked to the growth of production factors (e.g. land, labour, capital, raw material). This implies that regional growth is directly linked to the optimal usage of the production factors in the region (supply). Regional growth can also be ascribed to the growth in demand for commodities from outside the region in terms of regional exports. It is recognised that regional growth can result from either endogenous factors (growth from within) or exogenous factors (growth due to outside demand increase) or a combination of these. Regional growth can thirdly be ascribed to the locational advantages of a service or industry (i.e. ports, natural resources etc.) otherwise known as spatially induced growth. Three strands of growth potential theories within regions are visible from the classical period 1930's to late 1960's in regional science (refer Figure 3-5), which was followed by a two-decade period (1970's and 1980's) of

waned interest in the field of economics and geography, as well as spatial and regional economic issues. This period was followed by renewed interest in the fields of spatial and economic growth and development theories, and in turn led to three new growth approaches (emerging from the classical theories) – with a specific focus on endogenously induced growth (OECD, 2012: 100). During this period, the idea of growth as a short-term view of increases in income and employment, was discarded, and the focus was placed on a long-term perspective, identifying both tangible and intangible local elements which impacts on long-term competitiveness (Capello, 2011: 16).

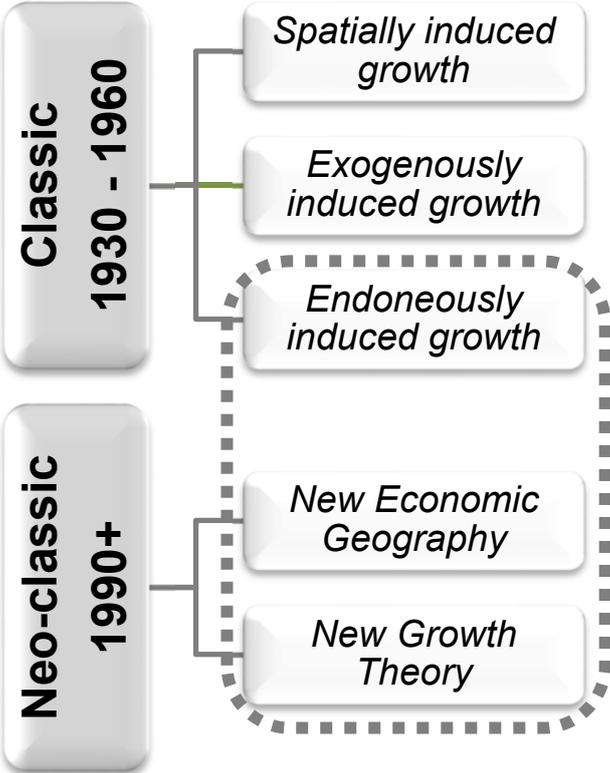


Figure 3-5 Economic growth and development theories

Source: Own compilation from literature

The main divide between the classic and neo-classic periods are the perception of space (Capello, 2009), which was formerly regarded as uniform-abstract space (or abstract and discrete space being internally homogenous and uniform), enabling regional delineation by means of aggregation of characteristics and allowing for the use of macroeconomic principles to interpret local growth. In the neo-classical period, space was redefined as more diversified and multifaceted, based on the social and economic relations that evolve in a territorial region. Diversified space assumes that regional development rather stems from “local productive capacity, competitiveness and innovativeness” (Capello, 2009: 178), thus leaning very strong on endogenous explanation for regional development (Cheshire & Malecki, 2004).

3.4.2 Classic period: 1930`s- 1960`s

Literature in this period mainly distinguishes between balanced growth and unbalanced growth. In balanced growth, emphasis is put on the investment of capital on a number of locations simultaneously. This type of investment strives towards growth over a multiple number of economic fields and implies that geographic equilibrium in spatial planning will be possible over time. Rostöw (1960), Tiebout (1964), and Ohlin (1967) made a contribution to balanced growth theory. The unbalanced growth approach to development places emphasis on interaction between industries during the different phases of production in order for growth to take place. Capital is invested in the sectors in which a specific region has the comparative advantage. Theories to be deliberated in this section focuses on unbalanced growth theory as well as on theories of balanced growth and is reviewed by means of various approaches visible during the classic period, i.e. regional structure theories; theories based on technological development and diffusion of knowledge; and agglomeration theories. Balanced growth and unbalanced growth approaches also transpires into regional policy approach of a balanced or unbalanced nature.

Balanced growth refers to the use of a combination of policies by government to ensure that the level of economic activity is the same in each region (Glasson, 1978: 14). The term balanced growth thus not denotes equality, homogeneity or consistency, but rather refers to equality of prospect to address demographic, economic, social and environmental weaknesses. In this way each region will have equal opportunity to reach its full potential. Rosenstein-Rodan (1943), Nurkse (1961) and Scitovsky (1954) was some of the first theorists who attempted to apply the theory of balanced growth to policy of economic growth. Rosenstein-Rodan (1943) believed that thriving development can only be accomplished through a large-scale investment list involving diverse lines of production. Scitovsky (1954: 150) states that "...equilibrium is reached only when successive doses of investment and expansion in the two industries have led to the simultaneous elimination of profits in both. It is only at this stage, where equilibrium has been established, that the conclusions of equilibrium theory become applicable." From this it is apparent that balanced growth theory can only be seen as a theoretical approach to growth and development, and is not a viable concept in practice. It is indeed possible to give equal opportunity to various regions for development, but even if this is done through policy, it will not necessarily be practically executed. The theory of balanced growth therefore emphasizes the need for diverse parts of a financial system to remain equivalent. Glasson and Marshall (2007: 154) identifies various role-players in the regional policy process, which includes industrialists, developers and infrastructure providers. These are supported by government on various levels to draw up and implement policy. Hirschman (1958) argued that growth is inherently unbalanced, and through forcing the system through imbalances, will eventually create positive growth, in his opinion either through Social Overhead Capital (SOC) and Direct Productive Activities (DPA).

Theorists who made a contribution to the unbalanced growth theory on regional development include Perroux (1950), Hägerstrand (1965), Boudeville (1966), Friedmann (1966), and Richardson (1969). Each of these authors supported the idea that a region will not grow and develop uniformly between the nodes within the region, but that a region develops unevenly over time as interaction between industries takes place. Richardson (1973: 85) developed his own theory after taking the above and other theories into account. He motivated this step with the following, "Too many economists borrowing heavily from international trade theory, macro-economics and neo-classical resource allocation models have ignored the importance of intra-regional spatial differentiation." His development theory is summarised based on the growth rate in regional income which is dependent upon various contributing factors, viz. agglomeration economics; location preferences; the size and spatial distribution of the capital stock; the rate of natural increase; the relative rates of return to capital and labour; and measures of the region's capacity to absorb innovations first introduced elsewhere and the strength of the region's channel of communication with the outside world" (Richardson, 1973: 85). He recognises that "agglomeration economies and spatial clustering of activities may induce more output than if production is dispersed... and additional growth may come from improvements in spatial efficiency rather than from additional factor inputs" (Richardson, 1978: 146). Agglomeration economies was first noted by Marshall (1890), Arrow (1962) and Romer (1986) and are referred to as localisation externalities/advantages. The agglomeration of firms is ascribed to the need to minimise costs (transport and transaction costs) and suggested that firms will benefit from concentrating in a certain locality. Firms within a specific industry will therefore locate near (i) other firms along their supply chain, (ii) other firms that use similar labour; and (ii) firms that share knowledge.

In the further exploration of unbalanced growth, a need exists to identify interaction within a region. It is apparent that development of a region is initiated from both outside (exogenous) and from within the region (endogenous). Endogenously induced growth-theories include sector theory and stages theory. The sectoral theories depart from the assumption that the contributions made by different sectors in the economy, in different levels impacts on the development of the region. The theories revolving around stages of development visualises economic development within any region as successive stages of transformation, promoting the idea of sequences of development in phases. Sectoral approaches to regional growth mainly refers to the work of Clark (1957) and Kuznets (1966) and ascribes the growth potential of regions to the aggregated product of region, which is effected by the sectoral composition of the regional economy during different intensities of development (Fisher, 1939; Clark, 1940), in contrast to the export base theory. Economic growth of nations was quantified for the first time, both using the gross national product to explain and predict long-term growth. The economic structure refers to various aspects of economic life, i.e. structure of production, sectoral and occupational structure of employment,

structure of employment, income size and spatial distribution of the population. Kuznets (1966) bases the sectoral theory on the arrangement of the primary, secondary and tertiary sectors and the shifting employment patterns within each as economic development occurs. By comparing the different sectors, theory composition (size) and elasticity in demand and productivity, this theory sheds light on some of the most important elements of economic growth and opposes the simplistic view that countries go through linear stages of development (refer Rostöw). This theory is however criticised for lacking to acknowledge the impact of exogenous factors, although the theory has proved to be empirically reliable in terms of historical trends and cross-sectional analysis on a broad level.

Hirschman (1958) described a theory of unbalanced growth within a region which closely relates to Perroux's growth-pole theory. According to this theory, economic growth occurs at different rates within different sectors and different regions within a country. He ascribed these varying tempos of growth and development to two factors, namely the demand and supply factors and then resumed: "On the demand side the market can absorb 'unbalanced' advances in output because of cost reducing innovations, new products, and import substitutions, so we can have isolated forward thrusts on the supply side as inputs are redistributed among users through price changes" (Hirschman, 1958: 62). He notes that not all countries or regions are inherently strong enough to provide for a "big-push" effect to kick-start development, and should therefore focus their attention on developing a single sector at a time, as growth is inherently spatially unbalanced. Development can thus take place through technological advances that occur continuously on the supply side of a region or urban centre. He stated that non-economic factors also play a role in the growth of urban centres and argued that government could encourage growth and development in two ways. Firstly, government could encourage development by being proactive. This could be achieved by establishing operations within centres with the necessary potential for development, or by establishing the necessary infrastructure in a centre to attract entrepreneurs and enable them to establish new enterprises. This is called Direct Productive Activities (DPA). Secondly, development could be encouraged by implementing reactive measures. These measures, or Social Overhead Capital Investment (SOC), comprise measuring the potential and development tendencies within urban centres, and establishing infrastructure within centres with the necessary potential. Infrastructure is supplied in order to encourage further development initiatives within the centre. Hirschman (1958) described SOC as the basic services in the absence of which productive activities cannot be performed, such as public services, i.e. education, transportation, communication, water supply, public health and law and order. This theory of unbalanced growth and the interference of government through DPA or SOC, has established that growth and development can be ascribed to the availability of infrastructure. In both cases (of DPA and SOC) government promotes and initiates development either directly by

providing the necessary infrastructure, or by investing in social infrastructure in centres with growth potential.

Stages theory in a regional setting was also noted by Hoover and Fischer (1949) with the identification of successive phases of development, starting off with a phase focused on subsistence agriculture; followed by more diversified manufacturing phase on a regional level and finally reaching a phase of a region specialising in tertiary industries (similar to Kuznets' phases) for export (linking up with export-base theory and exogenous growth theories). Hoover and Fischer (1949) denotes growth from within (endogenous), but also emphasises continued growth with exports (exogenous) and interregional interaction, and observes that if a region does not industrialise at some point during the last phase, growth will be limited and decay is inevitable.

In terms of growth stages theory Rostöw (1960) introduced a theory on growth phases which a country's economic development goes through. He identified five stages of growth, viz. (i) Traditional phase; (ii) Transitional phase; (iii) Take-off phase; (iv) Drive-to-maturity phase; (v) Mass-consumption phase. The most significant features of each phase are summarised in Table 3-2.

Table 3-2 Rostöw stages of regional growth

CHARACTERISTICS	1 : TRADITIONAL SOCIETY	2: PRECONDI- TIONS FOR TAKE-OFF	3: TAKE-OFF	4: DRIVE TO MATURITY	5: MASS- CONSUMP- TION
ECONOMY	Largely agricultural (>75%) Limited production	Surplus of agriculture and capital. Expansion of trade & manuf.	Rapid expansion of industry. Surge of technology. Commercial agriculture.	Technology extends to all sectors. Labour-saving devices.	Increased use and production of durable goods. Services sector dominates (>75%)
SOCIETY	Hierarchical social structure	Beginning of commercial class. Some urbanisation.	Increasingly dominant entrepreneurial class.	Urbanisation. Increase in skilled and professional workers.	New middle class. Shift to suburbs. Stable population growth.
POLITICAL POWER	Regionally-based in the hand of the owners	Centralised national government.	Powerful factions encourage modernisation.	Industrial leaders are highly influential.	Social welfare. More resources for security & military.
VALUES	Resist change, focus on traditions	Spirit of progress & openness.	Increased investment of capital for profit.	Emphasis on technology. Expectation of progress.	Increased acquisition of consumer goods.

Source: Adapted from Rostöw (1960: 17)

Various critique against the phases of development have been identified over the years, the most prevalent being the boxed classification of regions based on historical context of mostly developed countries (Europe and America). The linearity and overlapping of the phases of growth has also drawn heavy critique, together with the neoliberal approach suggested in the final stages of maturity. The stages of regional growth as identified by Rostöw (1960: 17-92) draws heavily from a liberal school of economic theories, focused on assumptions of free trade as supported by the laissez-faire approach of the Smithsonian theorists. Opposing the growth phases of Rostöw is the notion of Gerschenkron (1962) who referred to the “economic backwardness” of a region, implicating that once a region stagnates (in terms of economic growth, in this case referring to exports) it will only deteriorate further, and will move deeper into the economic periphery of a given country / larger region. Gerschenkron is supported by List (1983) indicating that an economy which solely relies on exports of raw material (exogenous influences), will get “locked in”, or marginalised due to their inability to diversify, and will therefore not continue along the linear growth path as identified by Rostöw. This economic backwardness in turn relates to the downward transitional region (Friedmann, 1966) and the accompanying characteristics of a declining resource base and simultaneous decline in industrial infrastructure, with the inevitable out-migration of the regional population, continuing the downward spiral of capital loss for the regional economy. Other characteristics of backwardness as identified by Gerschenkron (1962) refers to a greater focus on producer (capital) goods than consumer goods (also refer basic industries as identified by (North, 1955)), rapid growth spurts in contrast to gradual economic growth, and a focus on capital-intensive goods. Such backward regions are also noted by their dependence on government induced entrepreneurship and capital supply and strong ideologies on growth policy.

Friedmann (1966), in the identification of the core-periphery model, attempted to explain the economic growth process in spatial terms when he identified four phases through which an economy passes to reach industrial maturity. This closely links up with the stages of growth as identified by Rostöw (see Figure 3-7). The first phase is that of a pre-industrial economy wherein no hierarchy of towns exists, all centers in this phase are independent. In phase two, or the transitional phase, a single strong center exists to which migration of skilled workers occurs, and a stagnant periphery with little or no development exists (see Figure 3-6). In the industrial development phase, the single national center prevails, but is supported by a strong peripheral sub-center. The periphery is thus reduced to more manageable inter-metropolitan peripheries. In the last phase of development (industrial maturity) a functionally interdependent system of cities exists. This phase is characterized by “organized complexity”, wherein national integration takes place and maximum growth potential is reached, which is one of the main motives for regional planning. Over time the polarization process initiates a pattern of core and periphery, the core dominates over the periphery and this process of domination mainly occurs in six perceptible effects (Friedmann, 1966), i.e. dominance, information, psychological, modernisation, linkage and

production effects (also noted in new growth theories, refer Section 3.4.3) (refer Figure 3-6). The dominance effect implies that the transfer of resources from the periphery to the core weakens the periphery. In turn the information effect (Hagerstrand, 1965; Berry, 1972) recognises that innovation tends to start where a large number of people and functions concentrate together, thus strengthening the core even further. The psychological effect interprets the information effect to create even more favourable conditions in the core for further innovation. In terms of the modernisation effect it is recognised that change need to be adjusted to, therefore social values, attitudes and behaviours will change as modernisation kick in. The linkage effect sees innovation as a breeding ground for further innovation, whereas the production effect states that agglomeration and economies of scale leads to greater and continued growth within the core.

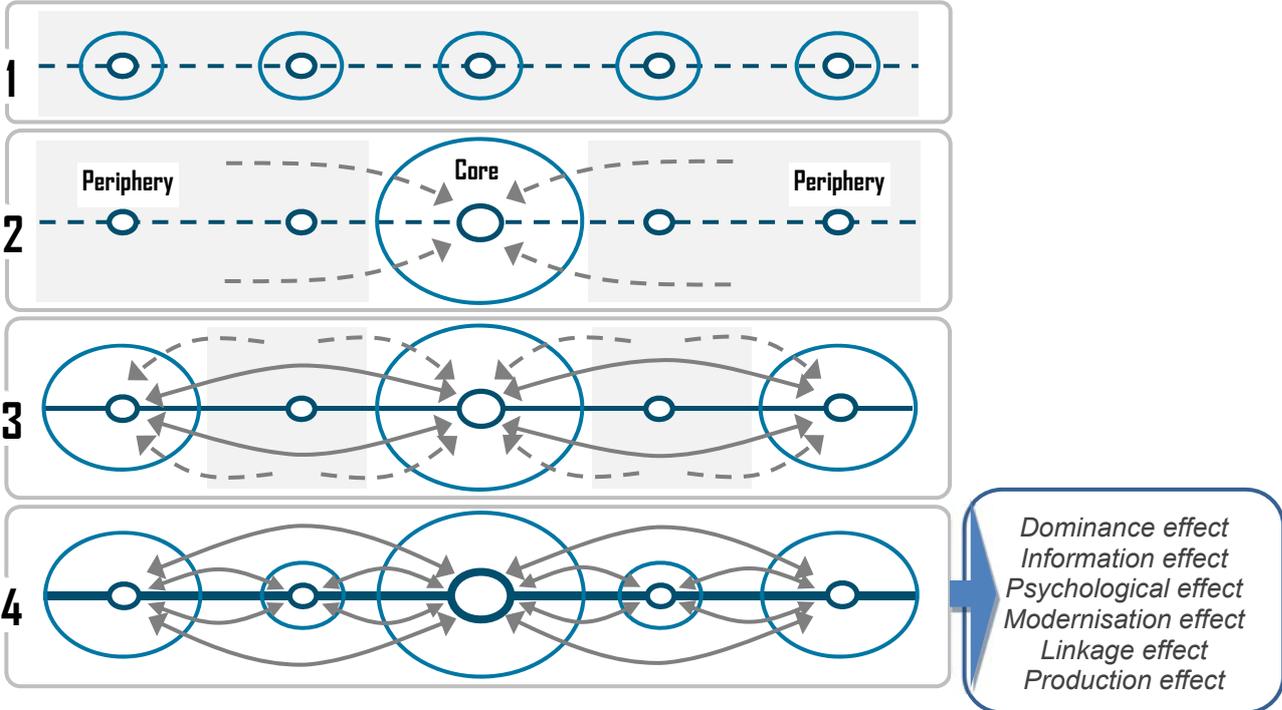


Figure 3-6 Core-periphery model: phases of development

Source: Adapted from Friedmann (1966)

Therefore, growth is linked to industrialisation which is linked to rising per capita income (endogenous demand), which is in turn dependent on capital flowing into the region (exogenous supply). It is important to have this context on development stages and their characteristics to better understand different growth theories. In line with the economic theory of Rostöw and others listed the World Economic Forum (WEF) (Schwab, 2012) have based their annual Global Competitiveness Report on assumptions that economies in the initial phases of development are

mainly factor-driven (referring to the availability and spread of production factors); followed by an efficiency-driven stage (focused on processes to increase production processes and quality) of development and finally an innovation-driven phase (focused on advances in technology based development), which is superimposed (refer Figure 3-7) with both the core-periphery model and the growth phases as identified by Rostow.

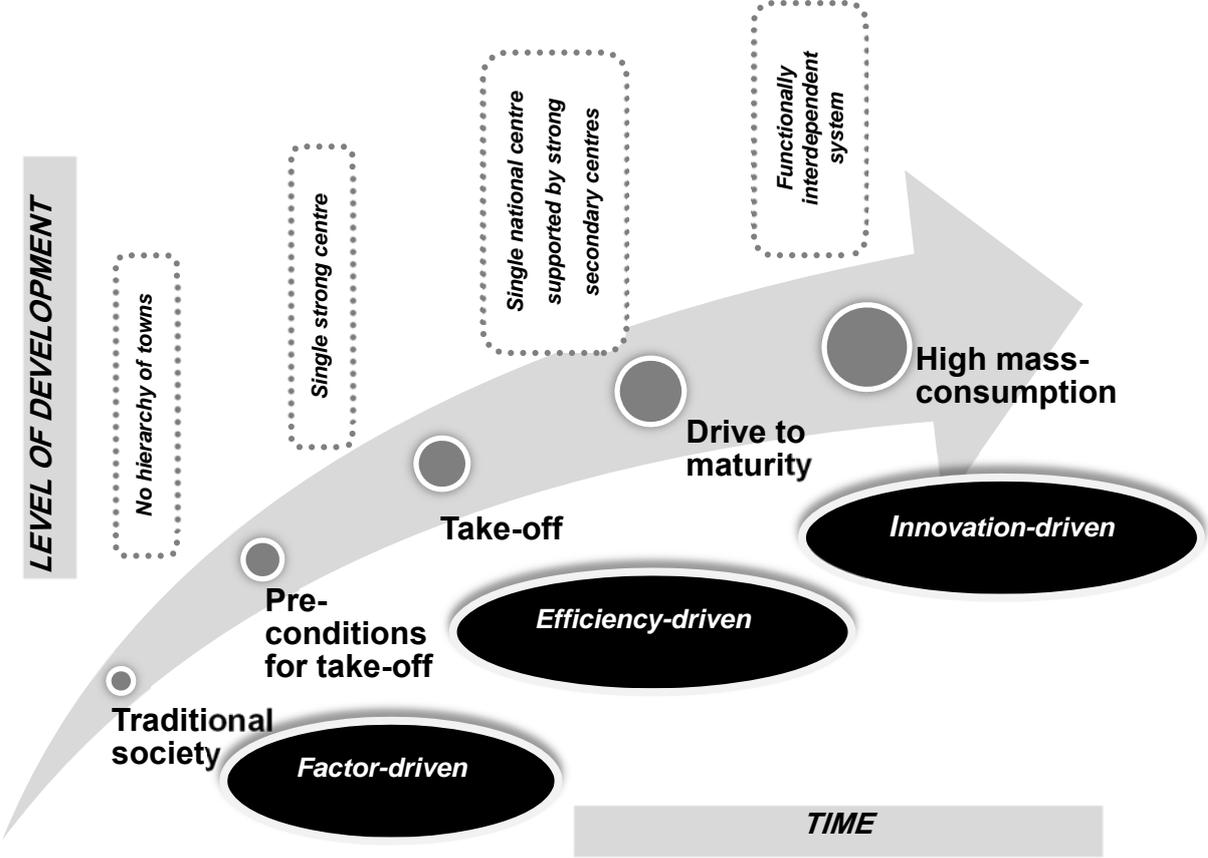


Figure 3-7 Integrated stages theory

Source: Own compilation from literature

The WEF bases their suggested policy approaches for the various regions on the stage of development (refer Figure 3-6) in which the specific country/region finds itself, which have been transposed in Figure 3-7 and linked to Rostow’s stages of growth theory (refer Table 3-2).

The phases of growth aids in the identification of developed and less developed regions, peripheral and core regions, or even backward regions. And as the pragmatic approach stipulates (refer Section 2.4), practical solutions must be found for real-world problems, and real-world problems can only be understood if the space economy is understood.

Another form of interaction **within** a region was identified by Hägerstrand (1965: 28) and describes the process of innovation as follows, "...shows a slow take-off stage of varying length, an intermediate stage of more rapid development and a final stage of declining growth which asymptotically seems to approach a ceiling. Different innovations run through this process with very different speed, also various degrees of irregularity are noted". Innovation can thus be seen as a means of interaction on intra-regional scale. Another model of interaction is the gravity model of human interaction. "The simple gravity model assumes that the interaction between two centres is directly proportional to the mass of the centres; and inversely proportional to the distance between the centres" (Glasson, 1978: 46). With mass representing variables such as population, employment, income etc., and distance in physical terms (kilometres), time, price and intervening opportunities. Berry (1972) uses the diffusion process to illustrate the centrifugal effects emanating from a pole into its hinterland. Through a model of 'hierarchical diffusion' (combining ideologies of Christaller, Hägerstrand and Perroux) Berry suggests that diffusion of innovation takes place by means of a hierarchical filtration process. In this manner innovation is initially adopted in the contiguous zone around a major centre (upward transitional region according to Freidman, 1966) and then sequentially accepted by other centres (in downward transition and peripheral regions) in relation to a descending order of size (allowing for some distance decay constraint). He regards the filtering of diffusion as accounting for the spread of positive feedback away from the pole, and also as a medium for maintaining the dynamism needed for self-sustaining development. The diffusion of innovation and knowledge made a comeback in the neo-classical period in the form of New Growth Theories (refer Section 3.4.3).

It is also evident that the growth of regions is determined by **exogenous factors**, or in this case their regional export base and services provided to other regions (Richardson, 1969: 19-36), which is in turn dependent on the demand for goods and services from outside the region (exports). The export base-theory, as identified by North (1955: 251) regards a region as a zone developing around a mutual export base, linking the growth of a region as being "closely tied to the success of its exports and it may take place either as result of the improved position of existing exports relative to competing areas or as a result of the development of new exports.", this in increase in external demand. In the export-base theory a distinction is made between basic and non-basic services, the former referring not only to export services, but includes all activities which are not closely tied to the level of economic activity inside the region. Hoyt (1939) made the first attempt to separate and explain these two types of services. His theory was later complimented and expanded by that of Hartshorne (1959), whose theory is widely used for the examination of cities, the components within these systems and city-specific growth patterns. The basic services and goods earn and bring capital into the region and therefore stimulate development of the region. Non-basic services and goods refer to services and goods supplied to people and enterprises within the region itself (growing local demand), these types of services only circulate

money within the region and therefore does not contribute to growth per se (North, 1955). Non-basic services are dependent upon the basic services to create income and employment which will in turn have a multiplier effect on local services and goods. The principal factor of this theory consequently promotes the expansion of the export base in order to increase outside demand and stimulate growth within the region.

The increase in outside demand and subsequent growth within the region gave rise to the concept of backwash. The idea of backwash originated in international-trade theory by Myrdal (1957). Myrdal noted that an increase in exports from a region may stimulate capital and labour flows into the region to the detriment of the localities from which the resources came, and ultimately claims that “disequilibrium causes further disequilibrium” (unbalanced growth). Vietorisz and Harrison (1973) later (in the new growth theories, refer Section 3.4.3) proposed that spread and backwash feedbacks between labour markets contributed to a divergence of technology levels, labour productivity, and wages in these markets. Gaile (1980) used backwash concepts to describe the potential negative effects of urban growth on peripheral areas. These theories on backwash effects in practice illustrates unequal exchanges (Myrdal, 1957) between developed countries exploiting lesser developed countries, richer regions exploiting backward regions (in a semi-colonial manner), and rich people exploiting the poor – this implies that the trickle-down of the spread effects of privileged investment (by means of policy instruments) into backward regions is not strong enough (or is not applied correctly?) to trigger growth impulses in the backward regions. This is ascribed to foreign investment favouring a few selected industries (most commonly mining), creating a skewed local economy, not triggering the desired effects (spill over of wealth, growth in employment and rising per capita income) in the surrounding region, but leaving the region’s people (mostly unskilled) worse off when ultimately draining the region from its natural locational constants (refer Section 3.2) and subsequently out-migration to more developed regions. This magnifies a ‘vicious cycle’ of the backward poor and marginalised regions encouraging this downward spiral into decay (especially in less developed countries or regions) (Myrdal, 1957). During the 1990’s a renewed interest was stimulated by new economic growth theory (refer Section 3.4.3) with a focus on the interaction between rural and urban areas and their zones of influence, which built upon the continuous disequilibrium theory.

Spatially induced growth processes are seen as growth due to the specific location of a settlement and will be discussed by means of location theory (refer Section 3.2) (refer Figure 3-4). Location theory refers to a “body of theories which seek to account for the location of economic activities” (Johnston, et al., 2000: 339). Settlement theory therefore seeks to focus on the arrangement of economic activity throughout space (regarded as this time as physical-metric space (Capello, 2009: 20)) and time and can be broadly categorised into theories based on

simplified assumptions (typically referring to formal regions), and theories taking into account the complexity of the real world (planning or development regions, refer Figure 3-3).

Perroux's (1950) contribution to unbalanced growth theory was the first of a French dominated field of research. Following Schumpeter's lead (1934), as a supporter of the historical school of economics, Perroux stated that economic development results from the adoptions of innovation, Perroux's growth-pole theory states that that growth occurs in certain places and gravitates from that point outwards as explained: "...growth does not appear everywhere and all at once; it appears in points or development poles, with variable intensities; it spreads along diverse channels and with varying terminal affects to the whole of the economy". In support to the theory of Perroux, Boudeville (1966: 112) identified this regional growth pole as a "...set of expanding industries located in an urban area and inducing further development of economic activity throughout its zone of influence", similar to the core-periphery model as presented by Friedmann (refer Figure 3-6) Perroux (1950: 27) describes the economic space as "...a field of forces, economic space consists of centers from which centrifugal forces emanate and to which centripetal forces are attracted." Growth-pole theory distinguishes between leading industries (propulsive firms which dominate other economic units), polarization (process of rapid growth of these leading industries which in turn leads to the polarization of other economic units) and spread effects (which states that in time the dynamic propulsive qualities of the growth pole will radiate outwards to the surrounding spaces). Growth pole theory has been used successfully in a number of growth policies and strategies and serves as policy tool to not only generate development but also to guide investment to growth points where returns will presumably be larger. The spread effects caused by this investment also helps in solving problems within depressed / lagging regions. However, many studies in less developed countries showed that the backwash effects of the implementation of a growth pole outweighs the accompanying spread effects and that the normal trickle-down effect is not experienced (refer Myrdal, 1957). Boudeville (1966) expanded on the original, economically orientated theory of Perroux to include more comprehensively the geographical dimension of the theory; he in turn referred to growth poles as growth centres or growth points, which implies spatial location.

Growth pole theory as identified by Perroux (1950) lacked in linking the economic space with the geographic space (surrounding region). Boudeville (1966) observed that the term polarisation implies the flow of economic activity to a specific node in the region, and thereby identifies the polarized region - which refers to a bounded area which stipulates a certain relationship between nodes in the region. Each node, together with its influence sphere, forms part of this polarized region. A polarized region is defined as "...the set of neighbouring towns exchanging more with the regional metropolis than with other cities of the same order in the nation" (Boudeville, 1966: 10). "Polarization involves the notion of hierarchy...This hierarchy is analogous to that of a

national metropolis vis-à-vis a regional capital, the local towns, the small centres and the villages. But the important point concerns the stability of connections and their relative importance". With this he successfully points out the close correspondence between hierarchical structures (Christaller, 1966) and polarized spatial organization (Perroux, 1950).

The growth-pole hypothesis is not without critique (Blaug, 1964; Hansen, 1967; Lasuen, 1969), mainly referring to its inaptness to varied regional problems (in a typical one-size-fits-all approach) where for instance in a resource rich and densely populated area categorised by economic and social decay, the leading industry established only contributes to the instant (short term dimension) physical development but does not have the desired spread effect on the immediate region (Nichols, 1969) The growth pole hypothesis is further critiqued (Thomas, 1972) as being over-dependent on the expected impacts of establishing such a large-scale industry, but does not take into account the inherent socio-economic environment of the region (Monsted, 2006) . And finally, the growth-pole theory is not a theory of location, but of economic impact – it therefore does not propose where such growth-poles must be established, and leans heavily on the central-place theory to support the location of growth poles (policy implications to be further discussed). Misra et al. (1974) advanced the concept of 'growth foci' in the identification of six tiers types of foci, i.e. (i) Growth Poles on a national level; (ii) Growth Centers on a regional level; (iii) Growth Points on a sub-regional level (iv) Service Centers at a micro-regional level; (v) Central Villages; and (vi) Villages and hamlets on a local level. The growth foci structure of interlinked hierarchical settlements (refer Christaller) can provide for complementarities between the basic elements of the organisation of space, viz. nodes, linkages and hinterland. Misra and Sundaram (1978: 138) noted various weaknesses in the growth pole theory, especially its application in underdeveloped or developing countries, due to the hypothesis having its roots in the Western economic thought – which emphasises industrialisation as an economic growth engine, thus rendering a functional rigid model for development. According to Misra and Sundaram (1978: 25) "The growth pole theory has proved to be inapplicable to developing countries marked with dual economies. The growth poles transplanted in such economies have remained poles without a deeply rooted broad base. The propulsive industries located in the poles have failed to diffuse development in the hinterland". Misra and Sundaram (1978: 138) recognises the importance of the growth-pole concept in developing countries and extends the concept to 'growth foci' in an attempt to integrate elements of growth pole theory (refer Perroux), central place theory (refer Christaller and Lösch), and spatial diffusion theory (refer Myrdal, Berry and Hägerstrand) by adopting a strategy of "decentralised concentration" in order to provide suitable institutional infrastructure in less developed areas. This hybrid concept provides for a manner in which the socio-economic needs in less developed countries (regions) can be conceptualised and address in a multi-level planning process with focused and context-specific strategies for growth. The relevance of growth-pole theory is still recognised today due to its practical orientation towards planned public investment

which, if located or arranged in favourable predetermined locations, could have positive spread effects on regional growth; it further advocates polarization (refer Friedmann) and agglomeration (refer Richardson, Hirschman) of dynamic industries in ensuring the maximum beneficiation for the regional economy (Glasson, 1978). This mechanism is especially popular in less developed regions / countries as a promising hope for regenerating a lagging economy.

Taken together, growth pole theory and central place theory provide a partial explanation of the spatial structure of regions. Spatial interaction models (Glasson, 1978) serve basically a twofold purpose; firstly it acts as a primary part of the development of theory on spatial structure of nodes, and can secondly to help with forecasting future development.

From the discussion on the classical approaches, it is visible that these models are mainly focused along three approaches to traditional growth theories and the accompanying regional policy responses, i.e. (i) role of capital and infrastructure subsidies; (ii) migration as an adjustment mechanism; and (iii) the growth centre approach (Coffey & Polese, 1984), to be discussed in more detail in Section 3.5.

3.4.3 Neo-classic period: 1990 +

Spatial inequality between regions heightened at the start of the 1990`s with a new spatial divide caused by the growing technological sector, which increased the use of technology for information transfer and communication, focused on the serviced-based segments of the economy. This period of globalisation sparked a renewed interest in regional economic growth theories, led by the work of Krugman (1991: 485). This 'new economy' refers to the transition from a primary and secondary economy (traditional sectoral approach), to a technology and serviced-based economy – which resulted in the emergence of large agglomerations (geographical concentration) reliant on economies of scale, linkages (and the transportation cost associated) and production factors (labour, materials etc.). The neo-classical period places a renewed focus on agglomeration economies and spillovers, but with a strong emphasis on the micro-level (growth from within the region).

Regional dominance and concentration as explained by Perroux (1950), North (1955), Friedmann (1966), Berry (1972), Richardson (1973), and Glasson (1978), equilibrium and interaction-based theories prominent in the growth theories of Myrdal (1957), Hirschman (1958), and Henderson (1974); whereas centripetal and centrifugal forces (and the variations thereof) were highlighted by Christaller (1966), Myrdal (1957), Hirschman (1958), Ohlin (1967) and others. These classic theories of regional economics were revisited during the neo-classical period from the early-1990`s, its most notable contribution being ascribed to the fact that previously no single coherent

framework that took all of these facets into account, existed (Schmutzler, 1999). Another prominent influence from the New Economic Geography (NEG) is that '... countries both occupy and exist in space' (Krugman, 1991: 2), therefore space is regarded as a crucial factor of economic development, which aided in a better understanding of international trade theory (refer export-base model (Ohlin, 1967)) and how local space and international space interacts with one another to bring into account economic growth and development. This built upon the classical theories' approach to space (Capello, 2011: 13) as acting either a physical barrier (referring to traditional views on transportation cost and the impact of physical distance), or a physical container (as referred to in a pure geographical or administrative view). In this neo-classical phase (refer Figure 3-5), space is for the first time regarded as an economic resource – a production factor in its own right. Krugman's (1979) approach recognises that international flow patterns are not only determined by the 'two countries, two commodities' model (Heckscher & Ohlin, 1991), stating that regions specialise in a single commodity and trades with another region in order to obtain a commodity which the first region does not have access to – but rather that similar goods are both imported and exported between countries with similar characteristics (bring into account that trade is also a factor of consumer preference). The success and competitiveness of the local economy in terms of endogenous development theories is determined by the local production factors (viz. local labour and local capital), the relational skills of local role-players in terms of their knowledge acquisition and the entrepreneurial skills of local labour and residents.

New Growth Theory (NGT) acknowledges that maximising intra-regional activities will have an impact on long-term growth, a lesser emphasis is thus placed in inter-regional activities and greater emphasis on internal factors that impact on growth and productivity (Harris, 2008; Capello, 2011) – which in turn impacts on the policy approach of such a region. New economic geography (NEG) models are based on the (i) advantages of concentration and the dominance of regions; (ii) focus on equilibrium (balance) and the interactions between markets, firms, suppliers and customers; (iii) centrifugal and centripetal forces; and (iv) positive externalities (Andrew & Feiock, 2010: 496-7). Notably, these characteristics of the NEG build upon theories of regional growth and location as discussed in Section 3.3.1.1, but is regarded as more 'applied regional theory' due to the use of advanced mathematical tools and analytical models (Krugman, 1991). The Nobel Prize winning work of Krugman further resulted in an understanding of governance in regional integration, but is mostly focused on metropolitan areas. The Nobel Foundation (2008: 2) regards Krugman's basic contribution to the understanding of flow of goods in international markets as "self-evident, but the step from speculation to a stringent and cohesive theory is substantial". NEG theories reaffirms that concentration or clustering (Perroux, 1950) has positive economic effects due to agglomeration advantages (Richardson, 1973) which in turn results in highly innovative and knowledge intensive firms to centralise in an economic core, as opposed to standardised routine production facilities that tend to dominate in peripheral areas (Harris, 2008;

Quah, 2002). This explains the continuous differences in agglomeration and/or development between the core and the periphery (Baldwin & Martin, 2004). NEG models commonly assume that both labour and firms are mobile factors within space (Andrew & Feiock, 2010), therefore economic activities are movable assets which will locate in regions with an advantage in market size – creating clusters of development which in turn attracts labour, and further stimulates the local market, attracting even more activities in the form of economic firms. Harris (2008), however notes that various centrifugal forces could potentially counterbalance the clustering of activities (Andrew & Feiock, 2010), leading to an equilibrium (balanced) state. Cheshire and Malecki (2004: 251) stresses the importance of attracting labour: "... regional growth is dependent on attracting and keeping capital and labour – to become 'sticky' places (Markusen, 1996) – and making them more productive. This process does not necessarily result in a tidy equilibrium growth path, as the neo-classical model assumes... or in convergence of growth rates. Instead, shocks, disequilibrium and divergent growth remain recurrent features of the real world".

NGT further focuses on the impact of knowledge spillovers on regional growth, and distinguishes between the use of knowledge within a specific firm, as well as the absorption capacity of knowledge transferred from outside the firm. Innovation is seen as a primary driver of growth within a region, and innovation is directly related to the acquisition and use of knowledge (Aghion & Howitt, 1992). This is affirmed by Armstrong and Taylor (2000: 87), "... the primary reason for long-term persistence is that some regions are able to generate their own technical change. Knowledge-rich regions with an institutional environment conducive to the creation and transmission of new ideas will have a continuing advantage over less well-endowed regions which depend far more on acquiring technical change through purchasing capital equipment from other regions. Less well-endowed regions have no alternative but to rely on exogenously embodied technology since they are not capable of producing their own". The institutional environment is also regarded as a large role-player in regional growth and acts as a producer of shared collaborations and externalities, which in turn boost "localised knowledge spillovers" (Feldman, 2003), these spillovers arise by means of social networks and contacts which results in social capital and increases the flow of knowledge (Putnam, 2000). Martin and Ottaviano (2001) recognise that localised spillovers (horizontal) is also supported by vertical linkages that generate growth and agglomeration, highlighting the vertical interaction between the location of manufacturing industries (as input in the local firm's production chain) and the innovation sector. The NEG models enables the use of growth models to also take into account agglomeration (Richardson, 1973) economies as a determinant of local development, and therefore enables the introduction of elements of uncertainty into growth courses (Capello, 2011). NEG highlights two specific issues, the first pertaining to inequalities between regions (which have been discussed at length, refer Section 3.4.3), and the second referring to uneven development within a region, in essence rendering the core-periphery model more dynamic when taking into account that both

labour and capital can be mobilised within a region and is visible in centrifugal forces pushing residents out of the core (where they have access to better 'lifestyle services' (Williams, 1967)) and into the periphery visible in out-migration, decentralisation, and urban sprawl.

Krugman (1991) furthers this discussion on labour and capital mobility, illustrating that if a region, for instance, has a larger manufacturing sector than another region, labour and firms will be attracted to the locality due to its lower transport cost (proximity to production factor) and resultant economies of scale – this growth (if large enough) may trigger an increase in the welfare of the peripheral region's residents. This will also be the case for other sectors and is not only applicable to the manufacturing sector as per example. Labourers and capital therefore not only moves between sectors (as per classical growth theory, refer Section 3.4.2), but also between regions, creating backward and forward linkages. The centripetal forces at work in the peripheral region could potentially kick-start a process of circular causation (Fujita & Krugman, 2004: 145) when an influx of the workforce creates a growing local demand, which will cause similar and complimentary services to settle and attract investment into the region, in essence growing the non-basic service base of the region – therefore establishing a core-periphery structure within the region. These newly established firms will have an "intertwined and mutually reinforcing" (Scott, 2006: 5) effect on each other, which will positively add to agglomeration and clustering within said region leading to the advancement of knowledge exchange, innovation and entrepreneurial skills in a "learning region" environment (Florida, 1995: 531) – this will, however, be to the detriment of another region, be it the core or another peripheral region (Andrew & Feiock, 2010) which have to be dealt with by the local government. Scott (2006: 86) describes the accelerated clustering as a result of intra-industry trading (knowledge exchange) which stimulates external economies of scale.

Krugman's work (1979; 1991) identifies that the advantages resulting from the spatial nearness of firms must be recognised and supported by intergovernmental coordination in terms of land strategies to successfully manage urban (or regional?) growth by focusing on the concept of clustering activities / firms together to take advantage of the agglomeration advantages in a "localised regionalism" approach (Andrew & Feiock, 2010: 495) – this will in turn stimulate endogenous growth. The need for regional governance process (and policy making) and the undertakings of industries can therefore be seen as interdependent to one another, in effect creating an "industrial atmosphere" (Marshall, 1919) of attracting and sustaining investment and will be dealt with consequently.

The above section attempted to provide a concise overview of theories related to the spatial impact of economic growth and development in an attempt to better understand the dynamics taking place within regions. The subsequent section will focus on the regional policy approach to interfere directly or indirectly with these growth and development approaches.

3.5 Regional Policy

This section will provide an overview of regional policy practice, analysing the concept and need for regional policy, the various approaches and process of policy making as well as identifying various instruments in attaining the goals of different policies. It is important to note that these approaches, processes, instruments and methods are referred to under different names according to different contributors, but an attempt will be made to clarify these at the end of this section.

3.5.1 Overview

A need for regional planning in terms of the policy approach was identified by Kuklinski (1970) for two reasons, firstly a direct stimulus due to special difficulties of a socio-economic character arising from problem areas / regions (refer Section 3.2); and secondly, as an indirect stimuli, the overall need to plan on a national level, for various sectors as well as urban planning on a local level. Once again, the need for planning on an intermediate level is highlighted.

Regional policy formulation is regarded as an instrument directed at solving (or aiming to solve) problems due to irregular spatial development (which could be due to the distribution of production or regional change) – and is more pronounced in developing countries, with a strong emphasis on the regional effect (geographical or spatial impact) it will have (Johnson, et al., 1986; Armstrong & Taylor, 2000). Regional policy (Friedmann & Weaver, 1979; Urban Foundation, 1993), refers to two levels, i.e. within regions, and within a country as whole, supported by Glasson (1985) with his distinction between inter and intra-regional policies. The lower level (or inter-regional level) focuses on the attainment of certain regional goals within a spatial context, as well as the provision and coordination of infrastructure at a regional level. The higher level of intra-regional policy focuses on initiatives on a national scale and has as goal national growth and development. Important to note is that regional policy does not fit into a single sector in the national system, such as economic policy or environmental policy, but cuts across all the different sectors and has to take each of these into account to provide a holistic and integrated approach as a horizontal slice (Richardson, 1987) approach to policy. This reiterates, that although regional policy may not have spatially explicit aims or applications, it will still have an impact in the larger space economy (Armstrong & Taylor, 2000). Sustainable regional policy refers to four main components in obtaining general societal goals, which includes social, economic, political and environmental concerns (Drakakis-Smith, 1995; Armstrong & Taylor, 2000) – environmental concerns are also often referred to as vitality (Markusen, 1994).

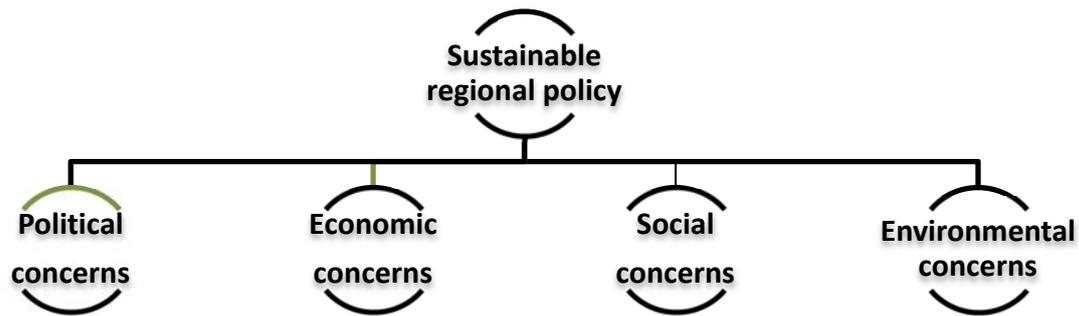


Figure 3-8 Sustainable regional policy

Source: Adapted from Drakakis-Smith (1995: 665)

Environmentalists are specifically concerned for what is referred to as ‘cowboy’ economies which regards resources as infinite and mostly focuses on goals of efficiency and quantity, without taking the detrimental environmental effects of infrastructure development and inward investment into account (Foust & Desouza, 1978; Bennett, 1996; Gibbs, 1998). A plea for a ‘spaceship’ economic approach is advocated, being mindful of the exhaustible resources, focusing as much on input control as on output control with a long-term global outlook (Miller, 1996).

Various problems in the design of regional policy have come forth (Kuklinski, 1970: 273), referring to (i) the analysis of resources which can be used for regional development (herein highlighting that it is not viable to use all resources within every region, but rather focusing on those of comparative advantage); (ii) an analysis of barriers for development, specifically social, economic and cultural barriers which is regarded as a neglected field in policy making – which is mainly ascribed to political and social sensitivity and leads to results focusing on lesser important and marginal issues; (iii) the selection of a proper strategy / strategies (either a balanced or unbalanced approach (Vietorisz, 1967)), in a spatial sense referring to a growth pole approach (on national level) or growth centre approach (on regional level), bearing in mind that both approaches will impact on the larger space economy (Perroux, 1950; Hansen, 1967; Urban Foundation, 1993); and (iv) informed choice of instruments or methods (micro models and macro models) available to design policy.

Micro models, as identified by Isard (1960: 543), refer to models influencing the allocation of labour and capital between regions, or between industries in a region (Armstrong & Taylor, 2000: 84). And macro models in turn aim to integrate the central, sectoral and regional approaches to the decision-making and planning process. Macro model options referring to long-term schemes for regional development (Nekrasov, 1969); sectoral approaches by central and regional

government to look at the long-term planning needs; and localised research projects with a multi-level planning approach and decision making process (Mennes, et al., 1969). Against a background of increasing decentralisation, regional disparities and globalisation, a shift from a classical subsidy-based top-down approach (aiming at lessening disparities between regions), towards a more balanced approach of regional redistribution and local development (Armstrong & Taylor, 2000). In terms of micro models, a necessity to identify more localised approaches to regional policy is borne, in which is widely referred to a local development policy (in this instance 'local' referring to a meso-regional scale) and locally (or endogenously) induced growth as sustained by the population of a region (Coffey & Polese, 1985; Armstrong & Taylor, 2000). This approach is more focused on a multi-governmental approach also involving third-party stakeholders (private actors). Local development policy is based on the assumption that regions can develop a comparative advantage based upon indigenous efforts, be it entrepreneurial, due to production factors or locational advantages. Local development policy does not infer that regional policy measures are null and void, but rather that the larger scale regional policy approaches should be cross fertilised by local policy initiatives to foster innovation-oriented initiatives by means of a cross-sectoral and co-operative approach (Yuill, 2008: 36). Typical micro-policy options include policies to reallocate labour (typically by means of education policies and training, or migration and mobility policies), and policies to reallocate capital (most often by means of taxes and subsidies, but also through administrative controls and the development of social capital) (Armstrong & Taylor, 2000).

3.5.2 Goals

Regional policy, in the broader sense, focuses on attaining high-level social and economic goals, such as reducing inequality, promoting efficiency and societal upliftment – these goals will all ultimately have a spatial impact, but are not focused on a locality per se, whereas spatial policies and spatial policy objectives are more explicit in their goals, such as specific growth centres or sectoral development being promoted (Richardson, 1987; European Commission, 1997). The three main goals of regional policy according to Mihailovic (1968) refers to (i) economic growth, (ii) employment and (iii) social equality, these goals are to be attained on the different levels of regional policy (Kuklinski, 1970: 272), viz. multiregional and interregional policies; and intraregional and interlocal policies; each of these ultimately requiring different instruments to attain this three-dimensional goal. Regional policy is therefore defined as an attempt to induce a more effective spatial pattern through restructuring and modernising the productive base of an economy, all while being conscious and careful to fit in with national goals for growth and development (Friedmann, 1966: 15). Regional policy aims to either slow down certain negative aspects of growth and development, or to promote more balanced development across a region,

and according to Kuklinski (1970: 272) is strongly focused on furthering the mobility of capital (to encourage economic growth) and furthering the mobility of labour (to encourage inclusive employment), and more recently supported by an aim of regional competitiveness (Capello, 2007; Feiock, 2007; OECD, 2010).

3.5.3 Process

The traditional approach (before 1970`s) to regional policy design process refers to a linear process from the identification of an agenda, formulation of policy and the subsequent implementation thereof. This was contested by Barrett and Fudge (1981: 42) stating that the policy process and the implementation are more tangled up, supported by Hill (2005: 205), describing the process as much more complex and overlapping, without definite end of one step before another commences. Glasson and Marshall (2007: 47) identifies three broad approaches to the process of policy making, viz. (i) a strategic choice approach; (ii) networks and governance and approach; and (iii) collaborative and communicative approach. The first approach (strategic-choice) mainly entails the identification of a network of actors with influence on the policy (Friend, et al., 1974), and making them part of the process of plan-making, monitoring and managing (Wenban-Smith, 2002), this is a typical top-down approach to a highly complex process. The second approach, put forward by Rhodes (1997: 13), is focused on a horizontal network structure, taking into account role-players and sectors impacting on policy-making and subsequent impacts of the proposed policy (a more integrated and lengthy process than the traditional linear process). The last approach of collaborative and communicative perceptible to the process of policy making emphasises the communication (Healey, 1997; Healey, 2003; Vigar, et al., 2000) and openness within the process, taking a bottom-up approach of community participation (Innes, 1996; Forester, 1999) and input from all levels (both vertical and horizontal). Glasson and Marshall (2007: 127) highlights the importance of vertical and horizontal coordination of the policy and implementation process, resulting in a new paradigm approach of a cycle of coordination (OECD, 2010: 17), rather than a linear process. They propose a policy process with five integrated and somewhat overlapping stages. The first referring to a stage where a generalised vision is set for the specific region, entailing the identification of broad aims and more specific objectives being of a social, spatial, economic or other nature. These objectives (which should be both consistent and feasible) refers to a quantification of targets and entails a process where the planner and politician must work closely together to marry the greater socio-economic goals with the technical feasibility and practical implementation thereof (Kuklinski, 1970). A second phase (not necessarily separate from the first) will be that of data collection on the various levels which assists in building a picture of the region and understanding the spatial relationships within the region, mostly by means of quantitative analysis (statistical data) and in comparing it to the existing policy

(Armstrong & Taylor, 2000). At this time the future of the region will come at play by means of modelling, scenario building or a process of extrapolation, this third stage will potentially identify drivers of change within the region. Followed up by a stage of generating the policy, which is sometimes accompanied by a spatial plan, which identified places of growth in an attempt to distribute growth more evenly, which brings the process to a stage where options are provided for public debate. This is, however, not the end of the process, as indicated by Armstrong and Taylor (2000: 365). The policy formulation and evaluation process is a continuous cycle (Lungu & Bwalya, 1994).

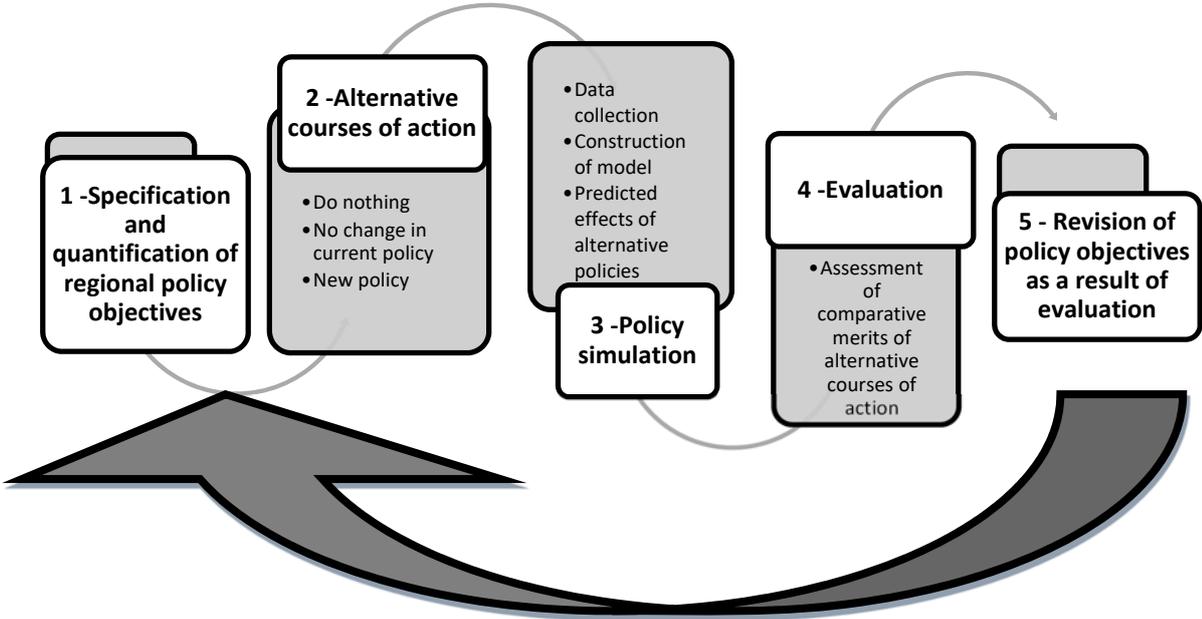


Figure 3-9 The traditional policy formulation process

Source: Armstrong and Taylor (2000: 365)

The regional policy process often shows a weakness in the implementation thereof, and therefore many well intended and well-constructed policies are never practically implemented. Kuklinski (1970: 274) identifies two potential reasons for this poor implementation, i.e. firstly, the agencies responsible for policy formulation are mostly just there in an advisory capacity; and secondly that the national sectoral agencies decide on where and how investment will be done, effectively not giving out to the strategies identified. In terms of potential weaknesses of regional policy, two are most prominent, and links back to the reasons for poor implementation. These being institutional weaknesses and technical weaknesses. Institutional weaknesses identified (Kuklinski, 1970: 274) include: (i) poor integration among regional policies and planning; (ii) low level of integration between sectoral planners and regional planners, which leads to a discrepancy between physical and economic goals; and (iii) the promotion of regional development (and the

understanding of its necessity) among the average citizen. Technical weaknesses in turn refers to the single-solution approach of many policy documents, which implicates a low level of policy elasticity. The delineation of regions and the definition confusion of what a region entails (refer Section 3.2) also has an influence on the technical aspects of a policy. Friedmann (1967: 233) put forward a possible solution to these matters when he called for a generalised typology of plans and policies to avoid confusion on regional delineation and regional concept, this would in turn lead to a more validated approach and cross-country knowledge transfer. He further proposes that two models of policy implementation on a regional scale could overcome these difficulties, viz. allocative and innovative instruments (refer Section 3.6), but that most importantly that the focus should not only be on allocative instruments, but should comprise a mixture of the two approaches. Nijkamp (1980: 5) notes that inequality between various regions, and even regions within similar circumstances (for instance depressed regions) due to varying causes and features should be approached from a multidimensional scope. Unambiguous features of underdevelopment and inequality are characterised by multiple attributes and must therefore be approached by manifold policy instruments – and not a “one-size-fits-all” approach (OECD, 2012: 29). Various policy challenges are visible in the spatial planning environment, some of which have been touched on earlier in this section, which includes issues of horizontal and vertical fragmentation (Niklasson, 2007), evaluation and monitoring issues, capacity challenges and administrative challenges (Charbit, 2007; Regional Australia Institute, 2015) (to be further highlighted in Sections 5.2, 6.2, 7.3). The subsequent section provides a brief overview of numerous traditional policy instruments to address the difficulties as discussed.

3.6 Regional policy instruments

Instruments of regional policy aim to discourage and smooth out any frictions which may have been caused due to inefficient resource allocation, regional disequilibrium and underdevelopment, from which Friedman (1967: 241) makes a distinction between allocative and innovative planning. Allocative planning and policy referring to an orientation towards achievement of the ‘optimal spatial allocation’ within the economic and social status quo of a region by making use of the scarce resources of the region (financial, labour, land) (Urban Foundation, 1993). Innovative planning and policy on the other hand takes into account the institutional as well as the socio-economic structure of the region when designing a plan or policy. Examples of allocative planning are typically program budgeting, sectoral planning, land use planning and economic development planning (Friedmann, 1987: 34). This led to various action-oriented styles of policy making to approach this goal of a harmonious adjustment to cultural, social and economic needs of a society, as identified by (Berry, 1976: 189-194), i.e. (i) ameliorative problem-solving; (ii) allocative trend-modifying; (iii) exploitive opportunity-seeking;

and (iv) normative and goal-oriented styles. The first approach towards improved problem-solving, focuses on avoiding and approaching said frictions and challenges through the anticipated developments and tendencies in the region. In an approach to work towards a specifically identified future structure or pattern, an allocative trend-modifying approach can also be followed, thus identifying and implementing specific policies to work towards obtaining a certain pattern. The third, exploitive opportunity-seeking approach aims to seek out future spatial problems before its onset and selecting an approach to hinder these anticipated problems from transpiring. Finally, an approach of deductive theoretic methods can also be followed, consequently designing spatial alternatives based on a theoretical analysis.

These approaches or styles are more action-oriented and does not allow for many perspectives to practically epitomise public policies, which led to the distinction of direct regional policy and indirect regional policy (Broersma, 1977: 154). In the direct regional policy approach, government controls the development of a specific region by restricting private economic activities by means of location decision prohibition or preventing investment in certain localities. Indirect regional policy is also government controlled (top-down approach), but rather than prohibiting economic freedom of entrepreneurs, investment in the regional economy is guided towards certain objectives. Instruments of indirect regional policy include fiscal (e.g. regulations for depreciation and investment reserves), financial (e.g. loan guarantees and subsidies); and non-financial instruments, i.e. international trade policy, provision of infrastructure and mobility policy.

Regional policy can be applied in many different ways, as identified by Glasson and Marshall (2007: 15-16). Firstly, one approach could be that of targeted economic activity (referring to explicit policy instruments) which mostly includes targeting especially knowledge-based and high technology sectors (as economic driver), and development in the quaternary sector by means of promoting higher education and further education, as well as promoting information exchange (Kuklinski, 1970: 271). Targeted economic activity also mostly focuses in support to the tourism sector, modernisation and diversification of the manufacturing industry and general support towards the diversification of sectors as a result of continuing globalisation. Local development and industry is also encouraged, and an emphasis on sectoral policies in terms of investment in health and education; water and sanitation, social development, transport and rural and urban development (Lall, 2011: 53). Local development as policy instrument is often disregarded for various reasons, mainly referring to this instrument being lesser visible, less immediate and less predictable (Coffey & Polese, 1984: 2). In these approaches the local population is regarded as both the greatest virtue and the greatest weakness of this approach. The classical models of regional growth and development (refer Section 3.4.2) are transposed into instruments to encourage local development by means of capital investment (not only in 'normal' goods, i.e. buildings and infrastructure, but also in 'inferior' goods i.e. education and social services

(Rittenoure & Pluta, 1977; Creswell, 2007), migration and economic adjustment and finally in the growth centre approach (referring to a top-down state interventionist approach, refer Section 3.4.2).

A second instrument identified is that of spatial distribution by means of zones of regeneration; corridor development; innovation hubs; science and technology parks and the identification of sites for strategic investment. Worth the mention is that various regional policies, although spatially blind, can also have a powerful spatial impact on the larger space economy, typically referring to instruments such as income tax, minimum standards, and property rights (Lall, 2011: 49-51). Referring to the goals of regional policy, he postulates that all growth is unbalanced (refer Section 3.4.2), but that reconciliation between unbalanced growth and inclusive development should be the target of regional policy. He goes further in claiming that economic integration is the answer and that spatial integration should be pursued, rather than policy of spatial targeting. Various instruments are identified by the World Bank to give life to this idea of spatial integration (World Bank, 2008: 125), i.e. institutions, infrastructure and interventions. Policies that are spatially blind (not area-bound) in their design is grouped under the instrument of “institutions”, these refer to policies that are universal in their application and include regulations aimed at affecting labour, international trade, land and social services (education, health, water etc.). Infrastructure policies, or spatially connective policies, refers to systems that facilitate the local, national and international movement of people, ideas and services along roads, railways, and communication corridors. And lastly, the instrument of “interventions” are linked to (often dominating) spatially targeted (or explicit) programs such as fiscal incentives, preferential trade access, clearance of informal areas etc. The World Bank regards the foundation of spatial and economic integration as spatially blind institutions, but not all regions deal with the same issues, and therefore additional instruments are identified based on the scale of the regional problem:

Table 3-3 stipulates that for a one-dimensional problem, there should be a single policy instrument (in this case spatially blind institutions) to address the problem. However, as soon as a problem becomes a two-dimensional challenge or a three-dimensional predicament, the policy approach and instruments will change accordingly, with the severest case calling for all three policy priorities to be addressed by the various associated instruments.

Table 3-3 A rule of thumb for calibrating the policy response

<i>Complexity of challenge</i>	<i>POLICY PRIORITIES FOR ECONOMIC INTEGRATION</i>			
	Place type L (local); N (national); I (international)	Institutions <i>Spatially blind</i>	Infrastructure <i>Spatially connective</i>	Interventions <i>Spatially targeted</i>
<i>One-dimensional problem</i>	L – Areas of incipient urbanisation N – Nations with sparse lagging regions I – Regions close to world markets			
<i>Two-dimensional challenge</i>	L – Areas of intermediate urbanisation N – Nations with dense lagging regions I – Regions distant from world markets			
<i>Three-dimensional predicament</i>	L – Areas of advanced urbanisation that have within-city divisions N – Nations with dense lagging areas and domestic divisions I – Regions distant from world markets with small economies			

Source: World Bank (2008: 202)

Instruments associated with the various goals of regional policy (being economic growth, employment and social equality) differs for the level on which policy is designed for, i.e. interregional or intra-regional (Kuklinski, 1970: 270). For instance, short-term economic growth can be stimulated by allocating investment in stronger core regions (refer Section 3.2), which will yield quick results, but for longer term growth it will be necessary to focus on breaking barriers (also refer Lall (2011: 53) on spatial integration) on an inter-regional scale. Economic growth as general policy goal was addressed earlier in this section referring to targeted economic activity and spatial distribution of activities. Lastly, social equality as goal, is proposed to be addresses by social capital investment in terms of assistance to underdeveloped or lagging regions (also refer spatially connective “Infrastructure” priority as identified by the World Bank (2008)). Martin and Schulman (1977: 184) in support hereto noted that the improvement of infrastructure as tool to boost economic attractiveness of a locality barely has an impact on the local population or the region’s long term growth and productivity, and that these infrastructure (DPA – refer Section 3.4.2) upgrades should be supported by social capital (or SOC as discussed in Section 3.4.2) and policies directed at the entrepreneurial capacity of local inhabitants – or which is often referred to as the ‘people development paradigm’. On a local level the ‘institutional collective action’ (ICA) approach is pointed out as an instrument where local governments operate beyond the limits of

their political boundaries in an attempt to bring amplified benefit to participatory regions through formal cooperation agreements or informal arrangements (Andrew, 2009; Feiock & Scholz, 2009). This highlights the work of Krugman by explaining the role that regional governance can play in rendering a region more attractive and economically competitiveness by working closely together (Feiock, 2007; Feiock, 2009). ICA can also be by means of joint infrastructure supply and investment, which will facilitate the movement of goods and labour and strengthen the local communities.

From the discussion on the classical approaches to regional growth and development (refer Section 3.4.2), it was visible that these models are mainly focused along three 'pillars' of traditional growth theories and the accompanying regional policy responses, i.e. (i) role of capital and infrastructure subsidies; (ii) migration as an adjustment mechanism; and (iii) the growth centre approach. A further three approaches following the dynamic core-periphery model as put forward by Krugman (1991), infers that government policy in terms of economic intervention can have a long-term cumulative effect on a region's growth; secondly, that government role-players can play a pivotal role in the identification of localities for industries (supported by instruments such as selective grants, special economic zone and low interest loans); and thirdly, according to Fisher (1997) that local government can develop strategies to attract investment and labour by means of subsidies, education and training (refer knowledge transfer, refer Section 4.4.3.4) and the provision of infrastructure. Andrew and Feiock (2010: 497) propose that in order to attract new businesses and a skilled knowledgeable labour force, local governments should especially focus on public service provision which is comparable with the level of taxes payable. Krugman (1991: 52) suggest that there is a horizontal integration between towns and or regions of a similar size (rather than a higher-order to lower-order interaction), he proposes that interactions / integration could be in terms of public private partnerships, formal contracts, tax reduction, subsidies and redevelopment programs as policy instruments. These instruments will not necessarily have a direct influence on economic and regional growth, but could indirectly influence the motivation of firms and labour to relocate, which will contribute to the dynamics of regional integration.

Of course, no policy instrument can be successful without various support measures (Glasson & Marshall, 2007: 32), the latter referring to the various socio-economic measures which supports the successful implementation of said policy. As identified in literature, these include a skilled workforce, levels of employment, land availability, infrastructure (Lall, 2011: 53), key services and human resource development. In terms of the workforce, it is recognised that a dual-interconnected labour force is needed, both skilled and well-qualified labours to focus on innovation, as well as the lower skilled labour to support the other functions and services within the region. In this regard regional skills partnerships are often incorporated to train and support local employees.

From the last section, it is apparent that regional development policy has progressed significantly over the past 50 odd years, leading to a more progressive and inclusive approach as illustrated in the subsequent table.

Table 3-4 Paradigm shift of regional development policy

	Old paradigm	New paradigm
Problem recognition	Regional disparities in income, infrastructure stock, and employment	Lack of regional competitiveness, underused regional potential
Objectives	Equity through balanced regional development	Competitiveness and equity
General policy framework	Compensating temporarily for location disadvantages of lagging regions, responding to shocks (e.g. industrial decline) (<i>Reactive to problems</i>)	Tapping underutilised regional potential through regional programming (<i>Proactive for potential</i>)
– theme coverage	Sectoral approach with a limited set of sectors	Integrated and comprehensive development projects with wider policy area coverage
– spatial orientation	Targeted at lagging regions	All-region focus
– unit for policy intervention	Administrative areas	Functional areas
– time dimension	Short term	Long term
– approach	One-size-fits-all approach	Context-specific approach (place-based approach)
– focus	Exogenous investments and transfers	Endogenous local assets and knowledge
Instruments	Subsidies and state aid (often to individual firms)	Mixed investment for soft and hard capital (business environment, labour market, infrastructure)
Actors	Central government	Different levels of government, various stakeholders (public, private, NGOs)

Source: OECD (2010: 13)

From the table it is noted that problem recognition is currently highly focused on competitiveness and a better use of regional potential by proactively focusing on using the region's available resources to enhance equity. Policy has also shifted from having a short-term, single region approach, to that of a long-term context-specific approach – this implies that regional policy no longer has a broad approach implemented by central government. It recognises that a more sector- specific and area-specific approach renders better results when implemented in a multi-level and mixed-investment manner.

3.7 Conclusion

In this chapter the concept of a region was discussed in terms objective and subjective views. A classification of regions can be made in terms of formal regions, functional regions as well as a combination of the two, used to address problems within the combined region – the planning or

development region. A region for the purpose of this study can thus be seen as tool describing a spatial entity, enclosing a number of settlements in which problems may exist.

The dynamic powers that exist within regions have been explained, and refer to growth, development and interaction. Development and growth theory is divided in two, that of balanced growth as well as unbalanced growth. In this section, attention was mainly guided towards unbalanced growth and development theory, discussing theories of polarisation within regions (Boudeville), growth poles (Perroux) and the core periphery relationship (Friedmann). These researchers all made an important contribution in understanding regions and the interaction within them better. A short discussion on balanced growth was also provided, in which government, through various policies, attempt to keep the economic development of a country in balance by providing equal opportunity to all regions. It was however noted that a balanced region only exists in theory. From this discussion on regional growth theories (both classic and neo-classic) it is emanated that various factors impact on regional growth and development; which include (but is not limited to): location; natural resource endowment; technical progress; diversity of industry; regional specialization; agglomeration economies; strategies or policies and the implementation by various institutions; and local development through entrepreneurship.

All of these theories of spatial growth (economically and geographically influenced growth) aimed to answer a single question: which aspects have influenced and remain to influence the geographical dispersal of economic activity? The answer which continues to be elusive.

The subsequent chapter will aim to provide a theoretical background on the concept of resilience, and how it is translated in the regional milieu.

CH 3: REGIONS



Regional concept,
regional policy

Chapter message

- Planning regions aptly describes the type of region this study aims to deal with.
- A region`s development is open to the outside world and subject to both external and internal influences
- Regional economic growth is both internally and externally induced (and internally maintained?)
- Successful conversion of export sector growth into growth of the local sector depends of the socio-political structure of the region and the local distribution of income and patterns of expenditure.
- Local leadership is decisive for successful adaptation to external change
- Flows of labour and capital tend to exert an equilibrating force on the welfare effects of economic growth. But contradictory results may be obtained.
- Regional policy can be a valuable tool to reach regional goals.
- Local development is a prerequisite for sustained growth within a region.

Figure 3-10 Chapter message: Chapter 3

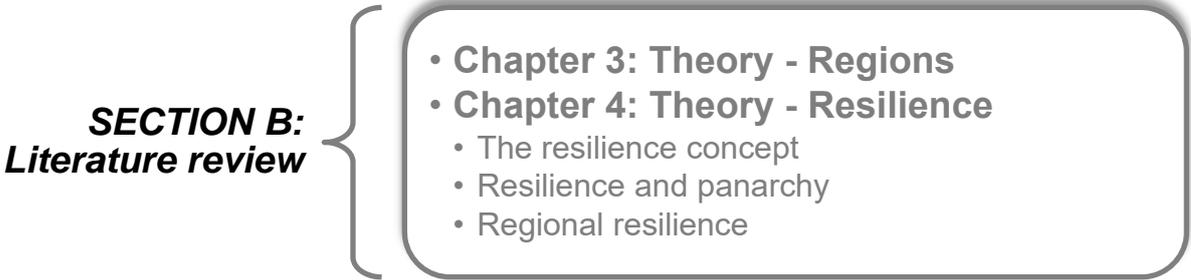
CHAPTER 4: THEORY OF REGIONAL RESILIENCE

4.1 Introduction

This chapter relates directly to **Aim 1: to analyse the theoretical foundation of regional planning tools and their impact on regional resilience**, of the study at hand, and will mainly be populated with qualitative literature review, or meta-research as research design (refer Section 2.6). Chapter 4 will further be utilised as theoretical base to inform **Aim 3: determine and propose a developmental policy approach towards more resilient peripheral regions**.

In Chapter 3 the regional concept, different types of regions and growth within regions were discussed. This led to an in-depth analysis on various regional policy instruments to potentially influence the direction and speed with which a region grows. This chapter will shortly refer to the understanding of the concept resilience, its origins and evolution into what has become a very popular and often misused term over a broad spectrum of disciplines. The remaining focus of the chapter will shift to regional resilience, where and how the term is adopted and what it entails. This will assist the reader and researcher in exploring existing literature on regional resilience and identify certain limitations. Once an understanding of the literature is acquired, the emphasis can be on identifying the region and analysing the regional planning mechanisms currently in place (refer Chapter 7). The subsequent table highlights that this chapter still forms part of the literature review section of the research, and will be ensued by a focus on regional policy in Chapter 5.

Table 4-1 Structure of research – Literature review



Source: Own compilation

4.2 The resilience concept

The concept of resilience is most often associated with the ecological system and how it reacts to adverse shocks or impacts (Holling, 1973: 5) and is influenced in terms of the ecological diversity and connectedness. The subsequent section will guide attention towards the use of the term and its evolution into the regional planning discipline.

Resilience spans various disciplines and is regarded as a means to describe the state of a system or person to return to its previous equilibrium after a shock or disturbance occurred. The resilience concept has been noted in the fields of psychology and psychiatry (Kaplan, 1999), ecology (Adger, 2000) (also noted in regional resilience, refer Section 4.4.2.1), engineering (Vale & Campanella, 2005) (also noted in regional resilience, refer Section 4.4.2.3), social studies (Adger, 2000) and more recently in the spatial sciences (Foster, 2007; Hill, et al., 2008). The spatial and territorial discipline has most prominently been influenced by the neo-classical economic theories (refer Section 3.4.3) with a successive emphasis on the geographical milieu and how regions as “complex systems” (Brugman, 2012: 20; Lhomme, et al., 2013: 112) are influenced by shocks and/or slow-burn processes. The relationships and interactions in space and the subcomponents are often rationalised in terms of systems theory, which was initially described by Hall and Fagen (1956: 19) as “a set off objects together with relationships between the objects and between their attributes”. Objects are defined as the components within a system, attributes as the properties of the objects, and relationships as the ties which holds the system together. Systems theory (from a regional resilience view) highlights the presence or absence of resilience as a result of endogenous or exogenous factors (Pike, et al., 2010) (refer Sections 3.4.2 and 3.4.3) and places emphasis on the return to a single or multiple equilibria state after a shock or slow-burn process, whereas the non-equilibrium approaches (refer Section 4.4.3) maintains that resilient urban systems are “safe-to-fail” as opposed to “fail-safe” (Ahern, 2011: 341). From the literature, three distinct pathways to resilience are identified: (i) persistence (refer Section 4.4.2.3); (ii) transition (refer Section 4.4.3); and (ii) transformation (refer Section 4.4.3.2) (Chelleri & Olazabal, 2012; Elmqvist, 2014; Matyas & Pelling, 2014; Chelleri, et al., 2015) – which will be subsequently discussed in the various sections applicable. Turok (2014) notes a very rational and sensible reason for the popularity of the layman’s use of the term resilience as having a positive and constructive connotation (Leichenko, 2011; Brown, et al., 2012), as opposed to more disheartening terms such as fragility, risk or vulnerability (all which describes the same state from a cynical view) (McEvoy, et al., 2013; O’Hare & White, 2013).

Resilience literature across all disciplines is continuously focused on what Meerow et al. (2016: 46) refers to as the ‘fundamental questions’ or 5 W’s of urban resilience, referring to the question: ‘for whom and of what to what?’ (Carpenter, et al., 2001; Brown, et al., 2012; Elmqvist, 2014;

Vale, 2014). Meerow et al. (2016) pose the subsequent table as central to approaching any state of resilience.

Table 4-2 Fundamental questions related to urban resilience as adapted for urban systems

FUNDAMENTAL QUESTIONS RELATED TO URBAN RESILIENCE		
WHO?	<i>Trade-offs?</i>	<ul style="list-style-type: none"> • Who determines what is desirable for a system? • Whose resilience is prioritised? • Who is included (or excluded) from the urban system?
WHAT?		<ul style="list-style-type: none"> • What perturbations should the urban system be resilient to? • What networks and sectors are included in the urban system? • Is the focus on generic or specific resilience?
WHEN?		<ul style="list-style-type: none"> • Is the focus on rapid-onset disturbances or slow-onset changes? • Is the focus on short-term resilience or long-term resilience? • Is the focus on the resilience of present or future generations?
WHERE?		<ul style="list-style-type: none"> • Where are the spatial boundaries of the urban system? • Is the resilience of some areas prioritised over others? • Does building resilience in some areas affect resilience elsewhere?
WHY?		<ul style="list-style-type: none"> • What is the goal of building resilience? • What are the underlying motivations for building urban resilience? • Is the focus on process or outcome?

Source: Adapted from Meerow et al. (2016: 46)

Meerow et al. (2016: 47) concludes that there is no single or correct answer for any of these questions, but that jointly dealing with them and considering trade-offs between them, should deliver an “inclusive and open discourse” to shape cities towards greater resilience. The trade-offs between the fundamental questions are typically managed by various role-players, such as institutions and leaders within the system. As with any evolutionary and broadly defined concept, such as resilience, or sustainability or competitiveness, various authors highlight shortcomings and critique against the concept. These include the ‘fuzziness’ of the concept (Star & Griesemer, 1989; Markusen, 1999; Pendall, et al., 2010), especially in terms of various definitions that do exist and the conceptual tensions that arise due hereto (Da Silva, et al., 2012). As Klein et al. (2003: 42) rather pessimistically argue, “The problem with resilience is the multitude of different definitions and turning any of them into operational tools. After thirty years of academic analysis and debate, the definition of resilience has become so broad as to render it almost meaningless.” Other scholars, however, see the value in having a positive concept such as resilience applied to various fields and for better understanding across disciplines, although Martin (2012) highlights that more precision and clarity is needed, and Boschma (2015) calls for a clearer understanding of which is cause and which is effect of resilience, which is subsequently addressed in the panarchy component of resilience (refer Section 4.3). Turok (2014: 752) reinforces the idea that “the concept of resilience needs to be contextualised because there is something locally specific and unique about the threats and opportunities facing every city” and argues that similarly, the

various approaches required especially in terms of policy, need to be focused on context specific needs of the community or region in question, rather than a generic set of principles applicable across various regional scales.

4.3 Resilience and panarchy

The concept of resilience is often linked to that of panarchy, stemming from the social-ecological systems (SES) theories which links the spatial and functional social systems to that of ecosystems and explains the interactions between these (Ostrom, 2001; Olsson, et al., 2006). Panarchy, acknowledged as a conceptual model (Walker, et al., 2006), in turn illustrates the dynamic and complex organisation between people (social aspect) and the ecosystem, and how these intricate interactions take place across temporal and spatial scales (Gunderson, et al., 1995; Gunderson & Holling, 2002; Holling, et al., 2002) – often referred to as the “adaptive cycle metaphor” (Walker, et al., 2006: 5). In panarchy the ecosystem is understood by taking a complex systems approach (refer Section 4.2) (Holland, 1992) and an emphasis is placed on the hierarchical structures which exist in both the natural and the human field (Allen, et al., 2014: 580) taking the form of a cyclical process as adapted from Schumpeter (1934). In his theory on economic development Schumpeter relates to circular flow of any economy (continuously moving at a constant rate and repetitively through time), and the introduction of innovation (refer Section 3.4.2 and 4.4.3.4) which will lead to development, or breaking from the cycle. Various links have been found between the panarchy approach and that of the world-systems framework (Wallerstein, 1974; Wallerstein, 1993; Hall, 2000) in an attempt to explain the processes that implicate on the multiple and interlinked spatial and temporal scales, stemming from an ecosystems approach, or a network of city-systems approach. In panarchy, it is emphasised that the hierarchical structure is not only influenced by significant top-down processes, but that the smaller-scale bottom-up approaches plays as important a role, if not even more substantial (Holling, et al., 2002; Gunderson & Holling, 2002; Allen, et al., 2014). The subsequent figure illustrates the panarchy concept and the hierarchical and nested systems approach across temporal and spatial scales.

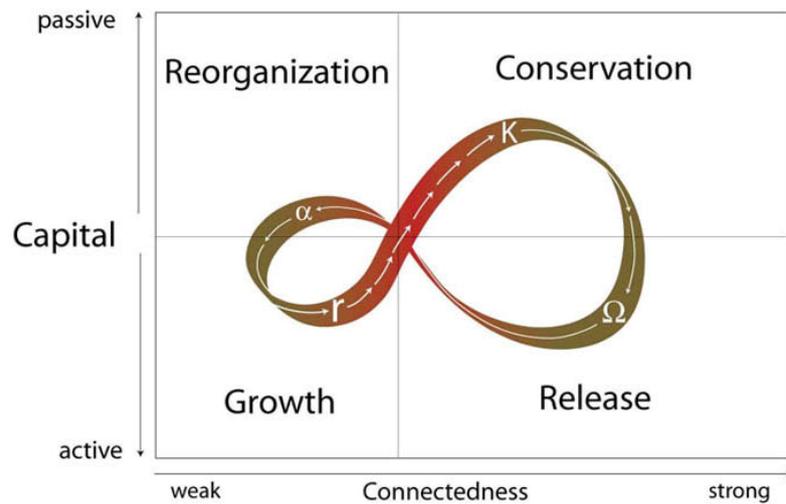


Figure 4-1 Panarchy model

Source: Holling, et al., (2002: 18)

Accordingly, a system proceeds through four phases, i.e. growth (r), conservation (k), release (Ω) and reorganisation (∞) (Holling, 1986). During the growth phase, rapid exploitation of resources is observed, followed by a conservation stage of longer duration, characterised by capital accumulation and rigidity in the system. In the release phase, collapse of the system is experienced with a rapid release of reserves accumulated in the conservation phase. In the last phase of this cycle, the reorganisation of the system takes place wherein rapid reassembly of the system is experienced and recombination takes place, often in new ways than previous combinations. It is further acknowledged that during each of these phases connectedness and capital expenditure (be it active or passive) plays an important role (also refer Sections 4.4.3.1, 4.4.3.3, 4.4.3.4, and 4.4.3.5). A regime shift is often experienced in the reorganisation phase where a 'new growth path' is followed. Allen et al. (2014: 584) affirms that these fluctuations across scales can occur due to bottom-up (small-scale) influences or as a result of top-down (larger-scale) influences. The panarchy concept as described, has become increasingly important not only in the ecological or social-ecological systems (SES) literature, but is regarded as being applicable to various other fields of study, especially in its application in governance (Fraser, 2003; Beier, et al., 2009; Allen, et al., 2014) and government interventions.

With specific reference to urban systems, the discontinuity in urban systems and the sizes of settlements within the system is linked to panarchy (Bessey, 2002; Garmestani, et al., 2005), furthermore the regional economic systems are also explored as being subject to panarchy (Garmestani, et al., 2006). It is acknowledged that the panarchy framework joins adaptive cycles

in a nested hierarchy, leading to multiple connections within the framework visible across scales and over time (refer Figure 4-2).

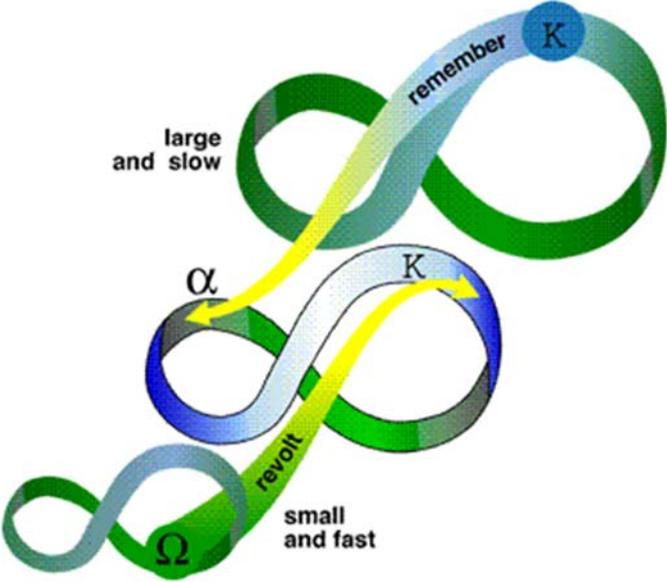


Figure 4-2 A nested panarchy model with three nested adaptive cycles

Source: Gunderson & Holling (2002: 75)

It is, however, noted that due to the complexity of the systems and various scales across which interaction takes place, it is a difficult to do empirical testing on this conceptual model (Allen, et al., 2014: 585), but that the processes described holds value in an explanation of cyclical change across (and between) hierarchical levels and in the recognition of opportune times for intervention. These are referred to as ‘threshold opportunities’ (Van Apeldoorn, et al., 2011: 6) and points of transformation (Walker, et al., 2004; Evans, 2008), as it allows for the identification of intervention points where transformation may most easily be implemented (Allen, et al., 2014). It is recognised that any system has two opposing modes, i.e. a fore loop and a back loop, the former referring to the phase of development (r) and the latter to the phases of release (Ω) and reorganisation (∞). During the fore loop, resistance to management attempts are experienced, whereas the back loop is typically more susceptible to management intervention (also refer Section 4.4.3.5.1).

Following this overview on resilience in general and subsequent reference to panarchy and the role it plays in resilience, the shift will now be to resilience in the regional context.

4.4 Resilience in regional planning

In the context of the global economic crisis in 2008 and the ensuing economic downturn in many cities and regions across the world, growing concern regarding urbanisation and extreme weather patterns, the term resilience rose to the surface, prominently featuring in the policy debate of many cities and regions (Turok, 2014).

4.4.1 Introduction

The resilience concept is considered a cross-cutting and multifaceted idea bringing together various institutions and role-players, but with the focus mainly on settlement or local level, which led to the need for resilience to be more regionalised in its constant quest to answer the most important questions of resilience: resilience for whom? And resilient to what? (refer Section 4.2). By narrowing the scope of this very broad notion and defining the context in which resilience is approached, the ambiguity of the concept is dealt with (Folke, et al., 2010). In reference to the above questions, the notion of defining a region (for whom) and the shock (from what) depicts the regional resilience concept as more practical and concrete for the purpose of identifying an approach to prevent or absorb a shock within a specified space. During the course of the maturing of the regional resilience concept, various studies have been conducted and resilience on a regional level approached from a multitude of angles, Porter and Davoudi (2012: 330) notes that introducing the resilience concept in spatial planning offers "...concepts and methods for breaking planning out of its obsession with order, certainty and stasis", which will in the discourse of this section, become more perceptible and evident. The subsequent section will trace the evolving concept and aim to conclude with a more encompassing and evolutionary approach which could assist in ensuing the main aim of this study: **to provide a regional policy framework for a more resilient peripheral region**. This subsection will distinguish between the equilibrium-based approaches to regional resilience (refer Section 4.4.2), and the adaptation and adaptability approaches to regional resilience (refer Section 4.4.3).

4.4.2 Equilibrium-based approaches to regional resilience

Through perusal of literature it is apparent that equilibrium-based approaches to regional resilience are universally viewed from three perspectives, being the (i) ecological concept, the (ii) regional economics viewpoint and the (iii) engineering-based concept. Equilibrium-based approaches are in essence focused on returning as system to its original state (the focus on the original level of equilibrium), and or to avoid or withstand shocks, and are mostly approached by

means of the diversification of the economic sector (also refer Section 4.4.3.3) in an attempt to attain macro-economic stability making use of tools to intensify output and increase employment levels (Briguglio, et al., 2007; Duval, et al., 2007; Hill, et al., 2008; Pendall, et al., 2010). This type of equilibrium approach is referred to as a 'single equilibrium state', whereas the 'multiple equilibria state' (Holling, 1996; Pendall, et al., 2010) is based on a path-dependence notion, operating in a closed system. Accordingly, it is noted that various events and actors (the 'who' – refer Section 4.2) impact on and stimulate development trajectories (David, 2001: 7) and that the original state or path that the region was following before the shock, was not necessarily the optimal path for growth (Hill, et al., 2008: 28). A third state of 'dynamic non-equilibrium' is identified where a system is seen as being subject to constant change and never really reaches a state of content (Pickett, et al., 2004: 373).

4.4.2.1 Ecological equilibrium

According to literature, this ambiguous view regards resilience as based on multiple equilibria, wherein a region can adapt its function and structure pre-shock and subsequently move into a new state of equilibrium before the shock occurs (Reggiani, et al., 2002; Swanstrom, et al., 2009; Zolli & Healy, 2012). This approach depicts the region as an independent spatial unit and not being part of a broader systems approach, in which the role of human agency, structural change and the influence of institutions are not taken into account (MacKinnon & Driscoll Derickson, 2012: 258). This approach provides an understanding of the long-term growth and change of regions (in each instance to a new equilibrium state), but fails to provides reasons (the 'why' – refer Section 4.2) or reactions to shocks and most often only describes the region's sensitivity to shocks (Christopherson, et al., 2010: 5). This approach regards the multiple states of stability as being central to resilience, as the system will move between the various stable states as shocks occur (Holling, 1996: 34).

4.4.2.2 Economic equilibrium

Regional resilience was, understandably, initially approached from an economic stance – taking the notion that the shock the region has to recover from is mostly due to economic reasons. Hill et al. (2011: 36) identifies three types of shocks, i.e. (i) national economic downturn shocks; (ii) shocks due to industry downturns; and (iii) other external shocks such as an important firm retracting from a region, natural disasters etc. He highlights that these shocks are not mutually exclusive, and that any given economy can experience more than one of these simultaneously.

Economic shocks, such as the ones described above, do not however entail that a region is noticeably forced off its previous growth path, and will therefore not inevitably experience an economic downturn – these are referred to as ‘shock-resistant’ regions (Hill, et al., 2011: 2), which are not necessarily desirable as the original growth path could be undesirable. If the region is, however, notably affected by such a shock and does not return to its original growth path, it is regarded as ‘non-resilient’, and ‘resilient’ if the return to the growth-path is achieved within a short time period.

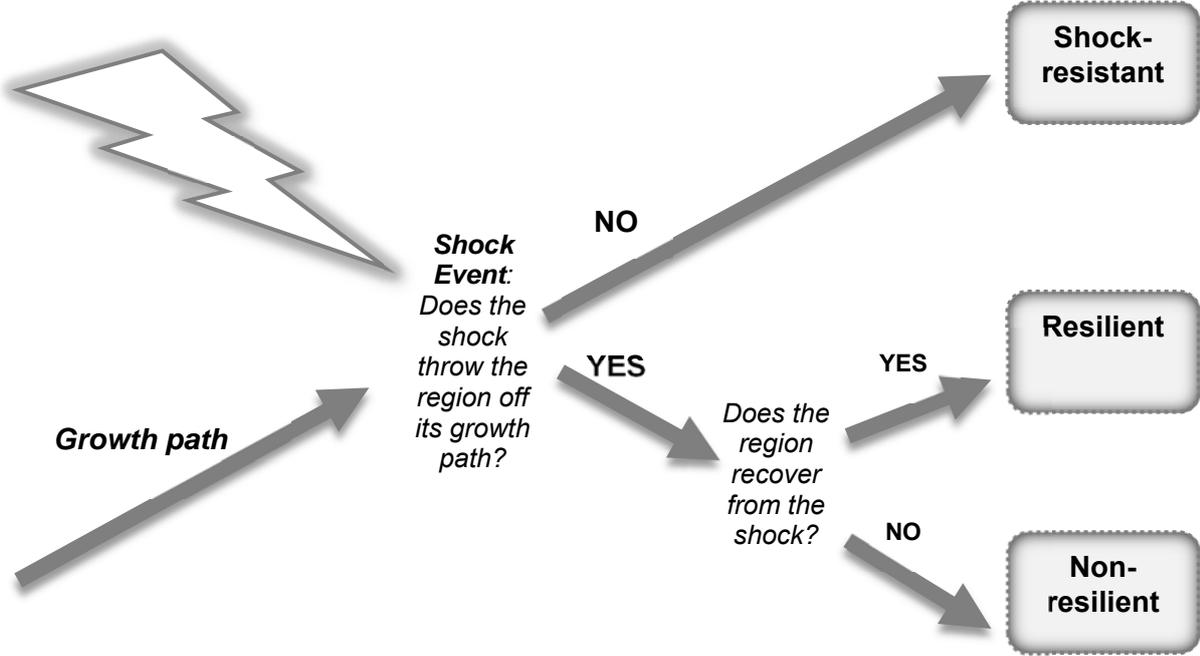


Figure 4-3 Economic resilience concepts

Source: Adapted from Hill et al. (2011: 3)

The state of ‘shock-resistance’ is more desirable as these types of regions do not need to recover from shocks, and links up with the subsequent section on adaptation and adaptability.

As noted by Turok (2014: 751) economic resilience can be reflected from two dimensions, i.e. a narrow approach and a broad approach. The first referring to the capacity to endure the results of shocks, and the latter to the aptitude to advance growth and speed up recovery by escalating investment and improved efficiency. The narrow economic approach links with the engineering resilience as discussed subsequently, and the broader approach to the novel evolutionary approach in Section 4.4.3.2. As noted in the initial discussion on regional resilience (refer Section 4.4.2), the economic component and what is referred to as “economic geography” (Boschma, 2015: 734) initially received a lot of attention when the modification from an ecological to a geographical approach to resilience was adopted. The automatic response to these shocks was

to return the region to its initial state (also referred to as the ‘equilibrium concept’ or ‘bounce back’ (Pelling, 2003: 7) or ‘turned a corner’ (Pendall, et al., 2010: 78)) as soon as possible, which was most often approached by promoting structural change, recovering infrastructure and reinstating institutions after natural disasters (Vale & Campanella, 2005; Atkins, W.S., 2012). This interpretation is often referred to as ‘engineering robustness’ (Walker, et al., 2004: 3), or single-state equilibrium (Holling, 1996; Pendall, et al., 2010) and brings the discussion to the second equilibrium-based approach to regional resilience, viz engineering resilience.

4.4.2.3 Engineering equilibrium

Engineering resilience or robustness (Walker, et al., 2004; Martin, 2012) places emphasis on “tolerating disturbances and avoiding catastrophe” (Turok, 2014: 751) and measured in terms of the speed at which a system reaches the initial ‘equilibrium state’ or pre-existing position along the natural growth path (Rose, 2004; Fingleton, et al., 2012). Engineering resilience, as a single-state equilibrium concept (Holling, 1996), in its most basic form attempts to be ‘shock-resistant’ (refer Figure 4-3), rather than being adaptable after a shock is experienced, and can be seen as a pre-emptive approach to potential disasters. Single-state equilibrium is typically found in the engineering, disaster management, psychology and economic disciplines (Pendall, et al., 2010). This lack of dynamism and innovation regarding new and slow-burning processes to adjust with time, renders the approach obsolete at times, as the environment keeps shifting in this established and rigid system (Martin, 2012: 2). These patterns of locked in systems could lead to long-term stagnation and decline as no flexibility is allowed for, although every comprehensible situation or disaster is planned for, a system should allow for experimentation and creativity to approach the inconceivable (Evans, 2011; De Weijer, 2013). The engineering equilibrium concept forms one of the three identified pathways to a resilient state (Meerow, et al., 2016: 40), i.e. persistence (refer Section 4.2), which reflects that systems should be able to resist disturbance and persist in maintaining its status quo (Chelleri & Olazabal, 2012: 35).

The equilibrium-based approaches to regional resilience shows definite weaknesses and called for a new approach (as subsequently discussed, refer Section 4.4.3) based on these weaknesses. Pike et al. (2010: 3) describes the lack of geographical diversity and variety in an uneven space-economy as a weakness, as well as the explicit focus on a national level, rather than the sub-regional systems. The multifaceted and dynamic nature of urban systems makes a return to a previous path highly implausible (Klein, et al., 2003; Barata-Salgueiro & Erkip, 2014).

4.4.3 Non-equilibrium based approaches

The new school of thought on non-equilibrium resilience follows two broad notions, firstly, of multiple states of equilibrium where it is believed that a system has various states of equilibrium and to be resilient must return to one of these states after a shock or disturbance (Ahern, 2011; Desouza & Flanery, 2013). And secondly, that a system will never be able to return to its original or single-equilibrium state following a shock, but that a resilient system in this instance will follow a new path (Lhomme, et al., 2013; Lu & Stead, 2013). In support hereto Barat-Salguiero and Erkip (2014: 109) and Klein et al. (2003: 38) affirms that due to the vibrant and intricate character of urban systems, the return of any system to its pre-disturbance state is decidedly disputed. Friedmann (2011: 231) explains the almost natural evolvement of equilibrium-based approaches to non-equilibrium approaches as due to that a simple linear perspective in statutory planning has to be replaced by a more intricate viewpoint in which choices are never definitive.

4.4.3.1 Paradoxical concepts: adaptation and adaptability

The concepts of adaptability and adaptation in a region's ability to withstand shocks, as noted by Grabher (1993), is believed to have a substantial impact on pushing a region onto a new growth path, or developing a new growth path in advance of shocks (Godschalk, 2003; Pickett, et al., 2004; Ahern, 2011; Leichenko, 2011; Brugman, 2012; Desouza & Flanery, 2013). According to Grabher (1993: 265) "adaptation leads to an increasing specialisation of resources and a pronounced preference for innovations that reproduce existing structures. And while the system optimizes the 'fit' into its environment, it loses its adaptability. Adaptability crucially depends on the availability of unspecific and uncommitted capacities that can be put to a variety of unforeseeable uses: redundancy." The adaptability and adaptation based approaches brings into account and attempts to explain the geographically unevenness of resilience or a non-equilibrium approach (Ahern, 2011; Desouza & Flanery, 2013; Lhomme, et al., 2013; Lu & Stead, 2013). This approach flows from the theories of new economic geography (refer Section 3.4.3) as it addresses conceptual, theoretical, analytical and political reasons for change and as being influential on regional resilience (Pike, et al., 2010). The contradiction in this case referring to the opposing, yet interconnected terms, adaptation and adaptability, which concurrently exist and sustain over time (Lewis, 2000)

This new approach to regional resilience thinking advocates that there is a constant evolution of a region along multiple growth paths (due to multiple sectors' and actors' influences), but that a realisation towards optimal change (during transition phase according to resilience pathways) is the focus, rather than a previous notion of perfect equilibrium (Grabher & Stark, 1997). The

second and third pathways to a resilient state (as identified in literature (also refer Section 4.2)), i.e. transition and transformation is found within the adaptation and adaptability approaches to regional resilience. In the instance of transition, many definitions of resilience refers to the ability to adapt (Folke, et al., 2002; Brown, et al., 2012; Romero-Lankao & Gnatz, 2013) and transform or even change its existing structures in undesirable circumstances (Folke, 2006; Jerneck & Olsson, 2008). For Brown et al. (2012: 534) transition falls somewhere in between, as resilience is “a spectrum from avoidance of breakdown to a state where transformational change is possible”, supported by Wamsler et al. (2013).

In the subsequent discussion on the evolutionary approach to regional resilience (refer Section 4.4.3.2), it is advocated that both adaptation (variations within predetermined paths) and adaptability (departing or altering from the present path) is essential for the region to react in a resilient manner (Christopherson, et al., 2010; Pike, et al., 2010; Bristow, et al., 2012) and to surmount negative lock-in (Boschma & Lambooy, 1999). It is noted by Majoor (2015: 261) that if the focus is primarily on adaptation (predominance of efficiency and reliability) there is a risk of a ‘performance trap’ or even eventual stagnation, due to inflexibility and lack of innovation. Where in the instance of a predominant emphasis on adaptability (flexibility and innovation) could lead to a ‘failure trap’ due to a multitude of underdeveloped ideas and slow (or no) progress (Simsek, et al., 2009: 867). These notions of adaptability and adaptation is noted in various scholars` work, often by different descriptions (Grabher, 1993; Grabher & Stark, 1997; Pike, et al., 2010), but all conferring that if these two notions can coincide and complement each other (Miller, et al., 2010; Pike, et al., 2010) a truly resilient system is possible, one which allows for continuous growth on an existing path (continuity or adaptation) and a simultaneous shifting (adaptability and transformation) of other components to adjust the growth path into a new direction to ensure future resistance to shocks (De Weijer, 2013; Turok, 2014). This ‘dynamic stability’ is regarded as a key to empower a system to be protected from damaging shocks, but simultaneous evolvment towards a more defensible and viable position. The following table provides a concise overview of the varying terms in the non-equilibrium approach to resilience, highlighting the constant “paradoxical tension” (Majoor, 2015: 259) that exist within the evolutionary approach.

Table 4-3 Paradoxical tensions in the evolutionary approach

Adaptation	Adaptability	Sources
<i>High adaptedness</i> <ul style="list-style-type: none"> • <i>Known threats</i> 	Generic adaptability <ul style="list-style-type: none"> • Unknown threats 	(Nelson, et al., 2007) (Cutter, et al., 2010) (Pelling & Manuel-Navarrete, 2011) (Elmqvist, 2014)
<i>Specified resilience</i> <ul style="list-style-type: none"> • <i>Undermines system flexibility, diversity and ability to respond to inevitable unexpected threats</i> 	General resilience	(Folke, et al., 2002) (Carpenter & Brock, 2008) (Pelling & Manuel-Navarrete, 2011) (Zurlini, et al., 2012) (Wu & Wu, 2013)
<i>Inherent resilience</i> <ul style="list-style-type: none"> • <i>Better under “normal circumstances”</i> 	Adaptive resilience <ul style="list-style-type: none"> • Better during disasters 	(Cutter, et al., 2010)
<i>Short-term adaptation</i> <ul style="list-style-type: none"> • <i>Highly specialised economy</i> 	Long-term adaptability <ul style="list-style-type: none"> • More diversified economy 	(Pike, et al., 2010)
<i>Generic adaptability</i>	Flexibility	(Godschalk, 2003) (Pickett, et al., 2004) (Walker & Salt, 2006) (Wardekker, et al., 2010) (Ahern, 2011) (Brugman, 2012) (Chelleri, 2012) (Desouza & Flanery, 2013) (Leichenko, 2011) (Lu & Stead, 2013) (Romero-Lankao & Gnatz, 2013)
<i>Efficiency</i> <ul style="list-style-type: none"> • <i>Reliability</i> • <i>Sustaining</i> 	Flexibility <ul style="list-style-type: none"> • Allowing for innovation • Developing 	(Clegg, et al., 2002) (Smith & Lewis, 2011) (Majoor, 2015)
<i>Order-creating</i> <ul style="list-style-type: none"> • <i>Element in legal and political systems of planning</i> 	Complexity allowing <ul style="list-style-type: none"> • Process must be open for alternative avenues of development 	(Teisman, 2005) (Van Rijswick & Salet, 2012) (Giezen, 2013)
<i>Exploitation</i> <i>Optimising existing state</i>	Exploration Search for new innovations	(He & Wong, 2004) (Luscher & Lewis, 2008) (Raisch, et al., 2009) (Smith, et al., 2010)

Source: Own construction from literature

Clegg et al. (2002: 486) is of the opinion that resilient aptitude is found in practices that recognise the relationship between these contrasts and deal with this contradiction without substituting or diminishing the tensions that ground it, or “operating at the edge of chaos” (Pascale, 1999: 92), most often approached from a plan-making or policy viewpoint (refer Section 3.5) by means of internal response mechanisms.

In order to further the evolutionary approach to regional resilience, the concept of 'lock-in' is crucial. as it is regarded as a mechanism shaping adaptation and adaptability (Grabher, 1993: 256). Lock-in and a locality's reaction thereto is pertinent in understanding the adaptation and adaptability capabilities of a region and its ultimate resilience. Various types of lock-in is identified, i.e. functional, political and cognitive, and describes a region which becomes reliant on previous growth paths due to ossification of institutional outlooks, relationships and configurations, which inhibits adaptability. Lock-ins are often found to overlap and are self-reinforcing, rendering the region vulnerable to shocks and slow-burn processes as discussed in Sections 4.4.3.3, 4.4.3.4, and 4.4.3.5. Martin and Sunley (2006: 121-123) identifies various 'de-locking' mechanisms to provide a basis to move from a state of adaptation and adaptability, which includes, i.e. diversification of the economic structure, arranging technological advances, introducing and entrenching external resources, and generating innovation by economic agents. This suggests that settlements can enhance their adaptability if strategies are in place to prevent lock-in.

4.4.3.2 An evolutionary approach to regional resilience

The previous approaches in regional resilience (refer Section 4.4.2) highlight that the initial advances (economic and structural focus) in regional resilience is not adequate to ensure long-term and sustained growth within a region, and that a need exists for a combination of both short-term and long-term integration (Garud, et al., 2010; Martin & Sunley, 2013). This will result in what Boschma (2015: 734) refers to as an 'evolutionary approach', also described as an 'adaptive' approach or even a 'bounce forward' to regional resilience (Simmie & Martin, 2010; Martin, 2012; Davoudi, 2012). The evolutionary approach evolved from the theories of complex adaptive systems (Folke, 2006; Folke, et al., 2010), and links up with the urban systems approach (Bourne, 1975) from a regional planning perspective. This new approach highlights the juxtaposition between 'sustaining' (adaptation) and 'developing' (adaptability) of certain actions within the larger system (Majoor, 2015: 258). Cities in these approaches are regarded as interconnected systems which are both bound by internal forces and external dynamics (refer Section 3.4) which can either have positive or negative consequences with ambiguous and volatile effects, which was highlighted by de Weijer (2013) in his appraisal of non-linearity of resilience. This systems approach emphasises the self-organising aspect of systems and their inherent ability to renew themselves although environmental or other shifts may occur (Folke, et al., 2010; Evans, 2011; Martin, 2012). Turok (2014: 752) notes that such an organic process of adjustment over time will render long term sustainable results as opposed to a strategy forced from above. The evolutionary analysis approach allows for different path-dependent trajectories of change to be taken into account by respecting the influence history has on the growth path of a region, and how the economic geography will influence diversity and variety within a region (Martin & Sunley, 2006;

Boschma & Martin, 2007). This approach furthermore distinguishes between shocks and a 'slow-burn' process as necessitating a more resilient approach to the larger system. Negative shocks are referred to as natural disasters such as hurricanes, earthquakes, or (to a lesser extent) economic shocks such as the closing down of a plant, whereas positive shocks will bring new economic activity into a region, i.e. major new economic investment. The 'slow-burn' or 'slow moving' processes refers to continuous long term, inevitable change or even a depression due to decentralisation, urban sprawl, climate change and continued population growth (Pendall, et al., 2010: 74). Endogenous or exogenous shocks are frequently closely related to (and exuberated by) the longer slow-burn processes of change (Hudson, 2005; Pike, 2005).

Furthermore, a need for a new approach is based on the notion that the so-called 'shock-resistant' regions (Hill, et al., 2011)(refer Section 4.4.2.2) are not necessarily on a positive or sustainable growth path to start off with, and that a return to the original growth path will not automatically be conducive to growth and development. Martin (2012: 26) identified that a need for a 'new growth path' exists, which leads to a further critique against the traditional approach to regional resilience, with reference to the disregard of the history of the region (Magnusson & Ottosson, 2009; Henning, et al., 2013). In essence, signifying that the new growth path of a region, should also take into account where the region originated from, how the settlements within the space economy interacts with one another and other regions and towns, looking at the economic base of the region and especially reasons why the downturn had such an impact. By referring back to historical patterns and growth engines, a more resilient approach can be custom designed for each unique region and problem. The new approach to regional resilience further aims to reach a point of balance between adaptability and adaption (refer Section 4.4.3), regarding this very sensitive trade-off between the two as crucial to the various component to regional resilience (refer subsequent discussion in Sections 4.4.3.3 - 4.4.3.5). This 'balancing act' once again emphasises the absolute need for an adaptable and flexible approach pertaining to diverse situations within different regions. Which brings forward the final critique to the traditional regional resilience approach (refer Section 4.4.2), where the concept and approaches were homogenous and singular in nature, not responding in a multi-dimensional manner to the complex nature of shocks (Boschma, 2015: 734). Note that the terms 'diversity' and 'connectedness' still form the essence of evolutionary regional resilience, as initially described by Holling (1973: 31) in the ecological field from which the term evolved, allowing for association with SES-panarchy concept.

From the discussion above, it is pertinent that regional resilience is embodied in the history of firstly, the economic (and industrial) sectoral composition and growth of a region; secondly, in the dynamic interactions along networks (physical or abstract) within the region; and finally, in the institutions found, and their reactions to change. Turok (2014: 753) supports this with the observation that all countries in the world has similar urban agendas, based on the three

dimensions of change, i.e. economic progress, spatial integration and responsive government. The dimensions of change directly corresponds to the types of lock-in experienced by regions (refer Section 4.4.3.1) and could be regarded as an approach to prevent lock-in, or stagnation. The final discussion points on regional resilience will refer to these three pillars and build upon existing literature to ultimately propose how these three pillars and the interaction between them could inform approaches to regional resilience. The subsequent figure (refer Figure 4-4) simplistically indicates the pillars of regional resilience as emanated from literature, and proposed as crucial and pivotal to the regional resilience concept.

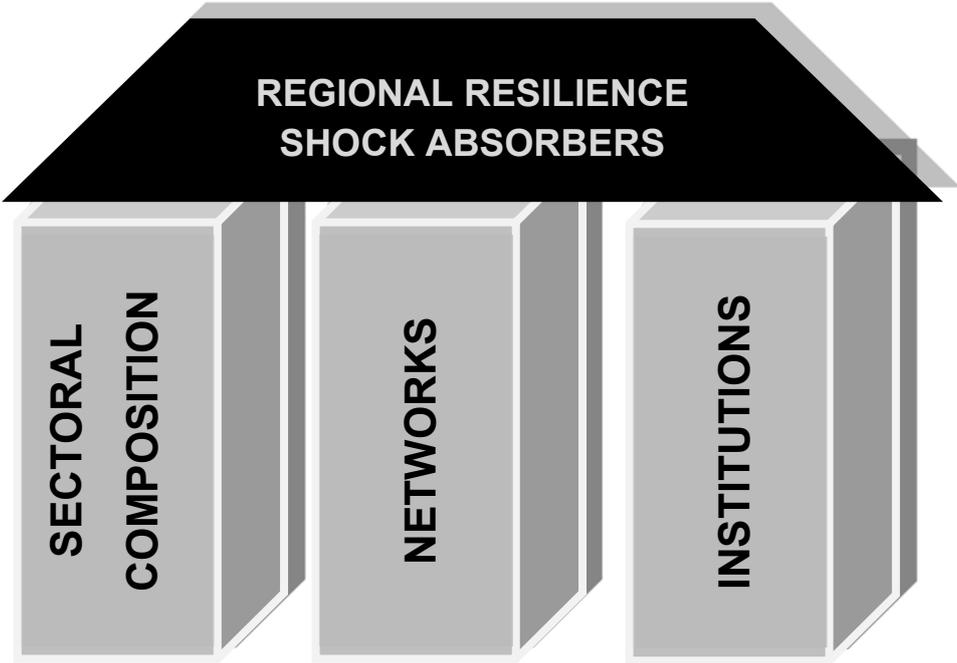


Figure 4-4 Regional resilience shock absorbers

Source: Own construction from literature

According to Turok (2014: 753) the economic pillar will typically be supported by job creation, municipal revenue, public services and higher living standards, whereas the networks pillar (or spatial integration) will support more efficient, sustainable and equitable environments. Finally, the institutional pillar will be responsible for implementation and resource allocation, and therefore plays a vital role in the design and implementation of responsive policies. These pillars are regarded as the three shock absorbers (Boschma, 2015: 736) which could counteract the various impacts a region could suffer impacting on its overall resilience.

4.4.3.3 The role of sectoral composition in regional resilience

The role of the industrial composition of a region has been extensively emphasised in resilience literature, with a strong focus on the negative impact of external shocks to a specific sector, for instance a fall in demand (Davies, 2011; Groot, et al., 2011). Consequently, it is perceived that regions with a higher rate of specialisation are less vulnerable to a sector-specific shock (being dominated by a single sector), but if a shock strikes the dominant sector, the regional economy will be impacted on more greatly. Specialised regions are accordingly regarded as having high levels of adaptation, but low levels of adaptability (refer Section 4.4.3.1). Treado (2010: 108) is of opinion that specialised regions should attempt to overcome this trade-off by using their knowledge to diversify into new, but related activities. Specialised regions could further attempt to enhance their inter-regional relationships with other regions in an effort to draw related resources and recombining these in their own industries. In a more diversified region, the chances of experiencing a sector-specific shock is higher (due to the numerous sectors), but a shock to a single sector will have less damaging impact than in the sole-sector economy (Dissart, 2003; Essletzbichler, 2007; Davies & Tonts, 2010; Desrochers & Leppala, 2011). Industrial variety is therefore regarded as a tool to spread risks if the local industries are disconnected (Diodato & Weterings, 2015) from one another (where one industry is not linked to another in terms of input-output relationships) and where there is no related variety in terms of knowledge networks (Frenken, et al., 2007). It is, however, also noted that if industries are interdependent in terms of their skill relatedness, it will enhance the ability of a region to bounce back from a sector-specific shock, once more affirming the delicate balance between adaptability and adaptation (refer Section 4.4.3) or the state of 'dynamic stability'.

The sectoral composition of a region's economy is further measured in terms of its ability to establish a new growth path after (or even before) a shock occurs. A similar distinction between specialised and diversified regions are made when considering this new growth path approach to resilience. Boschma (2015: 736) notes that a single-sector dependent region will be less resilient in terms of a new growth path approach, as fewer combinations of sectors are possible when the larger portion of industries are interlinked with one another. This could potentially lead to cognitive regional lock-in into a specific path (refer Section 4.4.3.1) due to specialisation in a certain knowledge-base, restricting industries from recognising new growth opportunities beyond the current growth path (Malmberg & Maskell, 1997; Maskell & Malmberg, 1999). This leads to what Grabher (1993: 256) describes as a 'trap of rigid specialisation', when the region's level of perfect adaptation (the conservation phase in panarchy, refer Section 4.3) discourages its levels of adaptability, causing the region to be negatively influenced by its high levels of specialisation (Boschma & Lambooy, 1999; Hassink, 2005). Contrarily, a more diversified region shows less inclination to adaptation, harming potential adaptability (Boschma, 2015: 738) due to the higher

potential to make new recombination among remaining sectors when a sector-specific shock occurs. The recombination or 'Jacobs' externalities' (Jacobs, 1969: 147) will lessen the levels of adaptation within a region, but considerably heighten the adaptability thereof and provide for a potential new growth path to be followed (refer Section 4.4.3). The balance in this case is disturbed by the fact that the region lacks industrial focus and has lesser critical mass to provide for a 'big-push' (Rosenstein-Rodan, 1943), and furthermore by the 'loosely embeddedness' and 'non relatedness' of local industries (Neffke, et al., 2011a; Essletzbichler, 2015). The presence of various unrelated local industries makes the region more vulnerable to shocks, as these are regarded as being more likely to fail (Neffke, et al., 2011a; Neffke, et al., 2014; Essletzbichler, 2015). The lack of trade-offs between local firms lead to an imbalance of stronger adaptability and weaker adaptation, rendering the region in need for loftier levels of complementarity. Case-study evidence reaffirms that a region's capacity over the long-term to move onto a new growth path is very much dependent on its ability to use existing regional assets in a new way (through reconfiguration and reorientation) to reinvent itself (similar to the transformation stage in panarchy, refer Section 4.3) (Bathelt & Boggs, 2003; Belussi & Sedita, 2009; Moriset, 2009).

Literature highlights that related variety could potentially lead to a more acceptable level of balance between adaptation and adaptability and ultimately ensure long-term capacity of a region to timeously push itself onto a new growth path (Klepper & Simons, 2000; Bathelt & Boggs, 2003; Glaeser, 2005; Frenken, et al., 2007; Belussi & Sedita, 2009; Moriset, 2009; Treado, 2010; Neffke, et al., 2011a; Tanner, 2011; Rigby, 2012). A region with high levels of related variety is regarded as one with a wide range of related industries which shows potential for inter-industry learning and which allows for a recombination of industries to follow a new growth path if and when required (Martin & Sunley, 2006; Frenken, et al., 2007; Pike, et al., 2010). Accordingly, related variety will not only guarantee adaptation, but also enhance adaptability (refer Section 4.4.3.1). In terms of the strive towards adaptation, local related externalities (when local industries gain from each other's co-presence) will be possible due to the local existence of a high number of interrelated industries, which is reinforced by a supportive local environment and technologically related industries (Neffke, et al., 2011a; Neffke, et al., 2012). In respect of the endeavour towards improved adaptability, Frenken et al, (2007: 689) regards related variety as a key ingredient for a region to diversify and develop new growth paths, as this will ensure better long-term capacity of the region as new industries often emerge from related industries due to entrepreneurial endeavours (Klepper, 2007; Buenstorf & Klepper, 2009). Technological evolution within a region will be further enhanced due to related variety and cross-fertilisation between local firms (Tanner, 2011; Boschma, et al., 2014a; Colombelli, et al., 2014; Tanner, 2014), which leads to enhanced knowledge network opportunities (refer Section 4.4.3.4) and a growing learning environment. It is however acknowledged that related variety by its own power, is not sufficient to withstand shocks, as a shock to one industry will impact on various others, but that unrelated variety is crucial to

ensure longevity (Boschma, 2015: 737). The subsequent figure illustrates this constant tension between the four concepts highlighted:

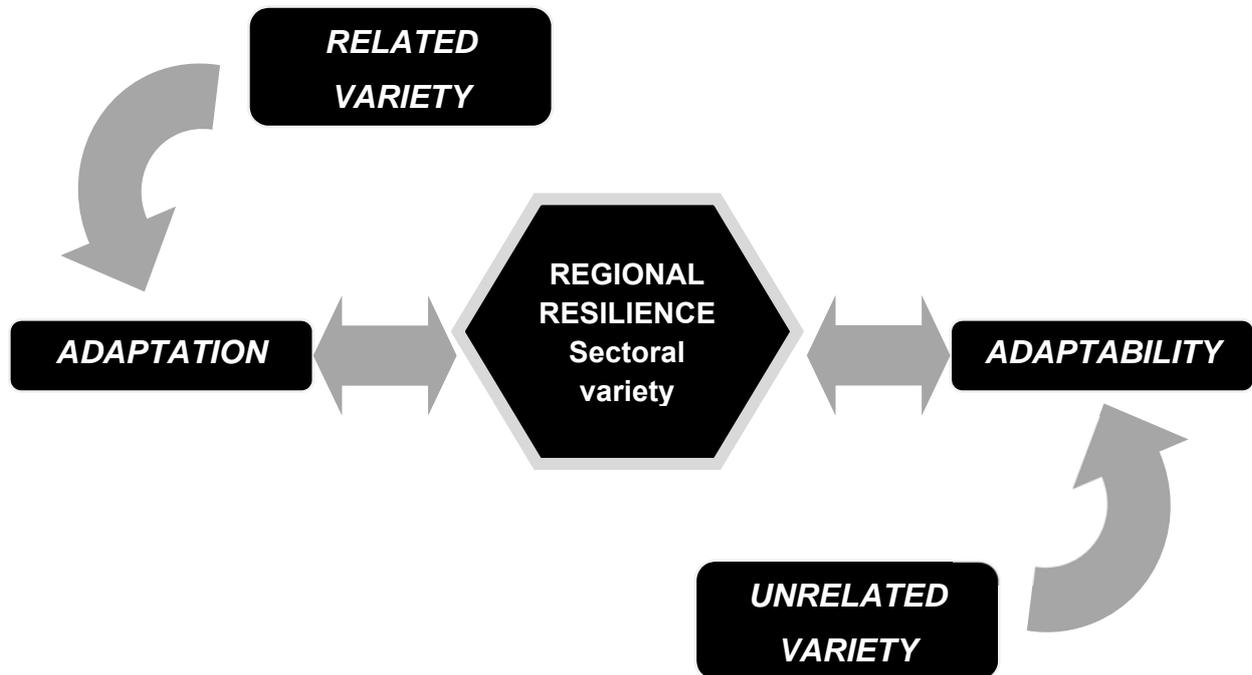


Figure 4-5 Regional resilience in terms of sectoral variety

Source: Own construction from literature

From this section it is highlighted that in a specialised, concentrated economy, adaptation harms adaptability, with the reverse being true for a diversified economy. The fine balance between related variety and its positive spinoffs with regard to long-term capacity, entrepreneurial innovation and technological evolution, and unrelated variety was also discussed. The following section will refer to the second pillar of regional resilience, viz. networks.

4.4.3.4 The role of knowledge networks in regional resilience

The role of **knowledge networks** in regional resilience is discussed on the premises that it influences the sensitivity of regions to shocks as there is a constant conflict between connectedness and resilience (Simmie & Martin, 2010: 33). Knowledge networks or relationships are viewed as the social interactions which leads to knowledge gain or exchange between local role-players and those outside the region (Lawson, 1999: 162). According to literature, adaptation in the case of knowledge networks is high when the local network **structures** are well-developed (with a closely tied core and high degree of proximity between network partners), and focused on the local region's needs (inward-looking). These well-developed and inward-looking network

structures are observed to enhance information flow and better coordination (Crespo, et al., 2014: 205), but on the other hand could lead to low adaptability as the excessive 'cognitive proximity' makes renewal almost impossible due to a closed mind-set by role-players (Grabher, 1993; Boschma & Frenken, 2010). This renders regions (especially specialised regions) more vulnerable to shocks due to recombination being more difficult and prevents participation of other actors. It can also be found that local networks are too fragmented with many nodes, but few connections, making the region score higher on adaptability, and lower on adaptation. In this case the high adaptability of the region can potentially harm the adaptation of the region due to a lack of regional cohesiveness (no integrated or mutual learning taking place) which in turn weakens the efficiency of the region (Boschma, 2015: 740). The former scenario (high adaptation, low adaptability) reminds of what Saxenian (1994: 7) referred to as 'regional network-based industrial systems', and the latter scenario (low adaptation and high adaptability) as 'independent firm based industrial systems' which promotes learning and adjustment. Fleming et al. (2007: 446) proposes that this sensitive balance between adaptation and adaptability can be overcome by a 'knowledge network structure', similar to the core-periphery structure (Friedmann, 1967), in this instance that the core of the network is loosely tied to the periphery. He argues and is supported by Balland et al. (2013: 61), that the core of the network structure will lead to intensification of new ideas (and increasing adaptability), whereas the periphery in the network structure will be responsible for better coordination and circulation (heightening the adaptation score of the region). This will favour technological lock-in, but prevent full regional lock-out due to high levels of connections between the core and periphery (aiding in resisting shocks) while diffusion of explorative behaviour will be more prevalent due to the ability of key nodes to bridge into the periphery and tapping from the existing circulation of ideas (Crespo, et al., 2014).

The nature of network relationships could further aid in overcoming the trade-off between adaptation and adaptability. Network relationships mainly refer to the proximity between role-players and its impact on regional resilience (Boschma & Frenken, 2010; Balland, 2012). It is observed that "proximity between agents favours the formation of knowledge network ties" (Boschma, 2015: 740), but simultaneously a sensitive balance of proximity is needed to counterattack possible lock-in of the region. A similar balancing act between cognitive distance (for the sake of innovativeness) and cognitive proximity (for more effective communication) is deemed vital for the effective functioning of these network relationships, which Grabher and Stark (1997: 537) propose should aim towards a lightly entwined network that unite flexibility and coordination. It is identified that networks that span regional scales (local to national) are able to secure resources in order to facilitate change and to encourage diversity within systems (Chaffin, et al., 2014) and are able to better facilitate communication and integration of knowledge and more flexible approaches to adjustments (Folke, et al., 2005; Lebel, et al., 2006). The agents (institutions) within the network structure also play a strategic role in order to ensure coordination

and stability, and acts as “gatekeepers” of these networks (Boschma, 2015: 740) which will be discussed in more detail in the subsequent section (refer Section 4.4.3.5).

4.4.3.5 The role of institutions in regional resilience

First and foremost, it is of importance to define the type of institutions that are mentioned in the subsequent discussion as the convention in social sciences view institutions as rules or organisations governing the behaviour of various actors (North, 1990; Scott, 2001), and not necessarily referring to physical structures. According to North (1990: 3) “institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction”. Differentiation is made between formal and informal institutions, both referring to the “nature of processes of development, codification, communication and enforcement” (Pahl-Wostl, 2009: 356), in which formal institutions are linked to the channels of administrative government, whereas informal institutions constitute the social and cultural norms. Formal institutions are arranged in regulatory frameworks and enforced by legal procedures – from this point forward, the reference to institutions will be to that of formal government institutions.

The role of institutions in regional resilience has received a lot of attention in the evolutionary approach of adaptation and adaptability, which Pike et al. (2010: 8) describes as a need for the “understanding of how power relations, politics and the uneven contestation and cooperation between capital, labour, the state and civil society shape and are shaped by evolutionary paths”. It is acknowledged that institutions are closely intertwined with the economic structure of the region (refer Section 4.4.3.3), and the accompanying knowledge networks (refer Section 4.4.3.4). Similarly, the institutional structure within a region is also subject to various shocks (i.e. social capital expenditure, economic policy influence), which will consequently have a direct impact on a region to develop and follow a new growth path (which is the essence of evolutionary regional resilience – refer Section 4.4.3) (Dawley, 2014; Boschma, 2015). The institutional capacity and prowess within a region can greatly influence how the region’s resources are allocated, how the region reacts to shocks and how open-minded the region is to exogenous interaction and technological innovation – all of which plays an important role in the resilience of regions (refer Section 4.4.3.1). Institutions are largely linked to managing the trade-off between adaptability and adaptation (Boschma, 2015) and therefore the institutions involved should be equipped to cope with such tension, either as a precautionary measure, as a reaction to a shock, or as a directive towards a new growth path. Adaptation and adaptability within the institutional environment raises issues of normative values, political will and principles and priorities (Pike, et al., 2010: 9). The management of the so-called paradoxical tensions (refer Section 4.4.3 and Table 4-3) as described by Majoor (2015) is the task of the institutions within the larger system, and the success

dependent on their operational (refer policy approaches Sections 5.2.5 and 6.2.5) and rational capacity to deal with the paradox on multiple scales or levels of the system. These cognitive abilities refer to the capabilities such as learning, thinking and decision-making (Portugali, 2008: 257) and their overall understanding of the multitude of interactions within the functioning of such a system. Therefore, the outcomes of shocks or slow-burning change in systems can also be shaped by human intervention, enabling the system to better cope with changes (Majoor, 2015: 259). Public authorities (government) in this instance have to be able to both spend money cautiously, but simultaneously be responsive (adjustable) to new and emerging public demands, described by some scholars (March, 1991; Raisch & Birkinshaw, 2008) as organisational ambidexterity (He & Wong, 2004) – in this instance being able to cope with the demands of exploitation and exploration. Portugali (2008: 257) rightly notes that there are many actors in the urban planning field where “everybody is a planner at a certain scale”, referring to the role that private actors (individuals) and governance play in the process of planning. Evolutionary resilience strives to unlock effective instruments by which multifaceted systems can steer through constant changes and is associated with institutionalist approaches that take behavioural changes into account in the intricate relationship of organisations and structuring forces as put by Gonzales and Healey (2005: 2059) and Salet (2002), but the human systems approach in urban development specifically, is still generally underdeveloped (Majoor, 2015: 260). Lebel et al. (2006) directly links various attributes of governance systems to the capacity to manage resilience (Young, 1992: 19), which includes a participatory, deliberate, multi-layered, just, accountable and polycentric government. The governance system is expected to effectively deal with uncertainties through anticipation; knowledge to deal with the various surprises; ability to engage effectively with multiple- and cross-scale dynamics; to design fit institute and to maintain diversity within the system. The aforementioned characteristics are visible throughout the subsequent discussion and influences institutions` ability to self-organise (ways to maintain and re-create a certain identity (Lebel, et al., 2006)) and to learn from and adapt to disturbances within the system.

The role of institutions in regional resilience can be divided into three subgroups, according to the literature review, i.e. (i) institutional leadership; (ii) institutional arrangement; and (iii) institutional adaptive capacity, which will be subsequently discussed.

4.4.3.5.1 Institutional leadership

A pragmatic approach is proposed by Healey (2009: 278) in an effort to be aware of the tension that exist (between adaptation and adaptability), but also to be accepting in its strategies to invite new and creative approaches to problem solution (innovation refer Section 4.4.3.4). The role of strong leadership is key in the pragmatic approach in order to create awareness of these paradoxes and react to it positively (Jansen, et al., 2008; O`Reilly & Tushman, 2011). Rodríguez-Pose (2013: 13) proposes that leadership is possibly the ‘missing variable’ in grasping why some

places develop and others fail. Supporting the notion for strong leadership, Pike et al. (2010: 10) concurs that there is a definite need for intelligent institutional leadership with “a heightened sensitivity and/or preparedness for rapid and pervasive changes”. He continues to highlight that such intelligent leadership will be able to frame and convey the type of shock / event (i.e. immediate crisis or slow-burn process) and timeously and strategically adapt (or allow for adaptability) by involving actors from all levels (vertically and horizontally) to assist in stabilising the situation, or identify a new growth path. There is a strong agreement among researchers (McKinsey & Co., 1994; Marshall & Finch, 2006; Stimson, et al., 2009) that place-based leadership is important for optimal local and, hence, regional development. Arguing that enhanced opportunities to develop leadership within a region, will subsequently maximise development prospects. Stimson et al. (2009: 34) identify three vital features for effective local leadership, referring to the (i) sharing of power; (ii) flexibility; and (iii) entrepreneurial in nature.

Such strong local leadership is synonymous with credibility and authority making sense of the paradox and adapting with change, rather than regarding the change as an impasse. This transformational leadership ability is aptly defined by Kotter (1995: 62) as a “process to establish direction, align people, motivate and inspire – with the ultimate goal of producing movement or change”. In support, Westley (1995) notes that visionary leaders are able to effectively manage and bring knowledge and action together during times of crisis, proved in various case studies with reference to social-ecological systems (SES) and transformation wherein leaders were able to transform a dire situation through various attributes (Olsson, et al., 2006: 32): (i) ability to reconceptualise ideas; (ii) generating and integrating a diversity of ideas, solutions, and viewpoints; (iii) effective communication and engagement with different role-players and sectors; (iv) spanning scales of government; (v) recognising and creating windows of opportunity in time; and (vi) combining different networks and experiences (Folke, et al., 2005). Leadership (either concentrated in one or a few people, or distributed among various actors (Olsson, et al., 2006)) plays a substantial roll in recognising problems and prioritising them, to avoid having competing issues to focus on and not taking a stance and downplaying the problems (Scheffer, et al., 2003). According to Kingdon (1995) the timing (also refer threshold opportunities Section 4.3) for initiating change is a crucial component driven by decision makers, or leaders. Ideally, leadership will have to be able to recognise such ‘policy windows’ or ‘windows of opportunity’ in a timeous fashion, or ‘creating policy space’ (Folke, et al., 2005: 456), to either address an important and pressing problem (problem-driven window) or in justifying change through seeking out problems as part of a political agenda (politically driven window) (Grindle & Thomas, 1995).

From a regional economic development stance, Stimson, et al. (2002: 279) argues that leadership in this milieu should not be based on a traditional hierarchical relationship, but should rather be a collaboration between institutional actors (public, private and community) based on trust and

cooperation. Halkier (2013), suggests that ‘path plasticity’ (refer Section 4.4.3.2) is possible, and that local leadership plays a vital role in directing places to alternate growth paths. Stimson et al. (2009: 27) concurs that local leadership is a key driver of growth (De Santis & Stough, 1999), indicating that the quality of decisions made at the local level can positively or negatively influence the region’s growth potential.

One of the major challenges identified in applying such paradoxical strategies are the different spatial or scale levels which are relevant. As identified by Majoor (2015: 268), three levels are specifically at play, i.e. (i) micro level (including the actors); (ii) meso level (referring to specific project approaches); and (iii) macro level (or the context within which these measures will be applied). He further distinguishes between two clear indicators to be concurrently taken into account, viz. cognitive and operational indicators. In this instance, cognitive indicators express the ability to understand the situation, and operational indicators expresses the way to act to create a more balanced approach to the situation. Majoor (2015: 268) in his identification of cognitive indicators of resilience, aptly sums up the reasoning abilities to be possessed by institutional role-players across the three levels applicable in most regions.

Table 4-4 Cognitive indicators of resilience

	Micro level (Local)	Meso level (Regional)	Macro level (National)
Cognitive indicators of resilience	<i>Acknowledgement of the efficiency / reliability – reliability / innovation paradox</i>	<i>Constantly having different pathways in consideration. Redundancy of alternatives</i>	<i>Better acceptance of uncertainties and the value of change.</i>

Source: Majoor (2015: 268)

Stimson et al. (2009: 27) highlights that the institutions of government influences the type and robustness of leadership, where it is found that centralised government institutions are not as accommodating towards emerging local leaders, as is the case in devolved power governance. It is argued that centralised government systems tend to have a more narrow output-oriented approach, as opposed to devolved systems` strategic approach to local challenges and opportunities (Pollitt & Bouckaert, 2002) (refer Section 5.2.5, 6.2.5). Institutional leadership alone cannot be held responsible balancing the intricate process of adaptation and adaptability, and is supported by the institutional arrangement within the larger regional system, as subsequently indicated.

4.4.3.5.2 Institutional arrangement

According to Pike et al. (2010: 10), the cross-cutting challenge of adaptation and adaptability suggests institutional coordination of numerous actors vertically and horizontally between various spatial levels, including all spheres of government from national to local level. Lebel et al. (2006: 24) argues that “an organisational structure with multiple, relatively independent centers creates opportunities for locally appropriate institutions to evolve by tightening monitoring and feedback loops and by enhancing associated institutional incentives”. Which is supported by Pahl-Wostl (2009: 355) reinforcing this notion that the more complex and diverse the government system, the higher its adaptive capacity will be (Berkes & Folke, 1998: 327). Polycentric governance systems are a recurrent subject in the literature on governance and institutions, mainly derived from the work of Ostrom (1961: 831) on polycentric political systems as “a system of many centres of decision-making which are formally independent of each other”, and more recently extended beyond the political realm (Ostrom, 2001: 2). Generally, polycentric governance systems are regarded as “complex, modular systems where differently sized governance units with different purpose, organisation, and spatial location interact to form together a largely self-organised governance regime” (Pahl-Wostl, 2009: 357), and these systems are regarded as having a higher ability to adapt to changes and failures in a system (Pahl-Wostl, 1995; Ostrom, 2001; Ostrom, 2005; Pahl-Wostl, 2007a; Pahl-Wostl, 2007b) as adapted from the Complex Adaptive Systems (CAS) Theory (Pahl-Wostl, 1995; Levin, 1999). CAS theory is characterised by its ability to self-organise in a changing environment. Polycentric institutions, with its multiples centers or authorities (Lebel, et al., 2006) provides for a more balanced approach between decentralised (bottom-up) at regional and local levels, and centralised (top-down) control at local and national levels (Imperial, 1999) allowing for “adaptive governance” (Folke, et al., 2005: 444) or “adaptive co-management” (Olsson, et al., 2004a: 21) (discussed in more detail in the subsequent section). Such systems are thought to create opportunities for understanding and servicing spatially heterogeneous needs (Imperial, 1999; McGinnis, 1999; Cash, 2000). These polycentric systems are typically found to be multi-layered (Lebel, et al., 2006: 21), and although not neatly hierarchical, assists in coping with scale-dependent governance challenge, and reinforcing cross-scale interaction (Young, 1994; Berkes, 2002). Institutional layering (Hollingsworth, 2000; Williamson, 2000; Boschma, 2015) or institutional complementarity (Amable, 2000; Hollingsworth, 2000; Hall & Soskice, 2001) in regions allow for more opportunity to explore new growth paths due to the possibility of exploiting new recombination of industries. Grillitsch (2014: 9) defines an institutional layer as “the set of rules and constraints that govern the interactions between individuals belonging to a distinct social structure” and can be linked to administrative structures, such as municipalities or regions, or on a national level, all combined within an “institutional framework” as depicted below.

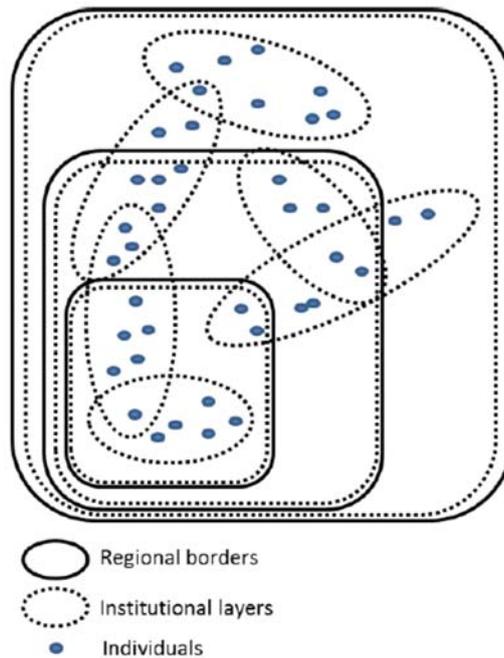


Figure 4-6 Institutional layering within a spatial dimension

Source: Grillitsch (2014: 11)

A regional institutional framework will typically include various connected layers and focuses on the notion of institutional ‘plasticity’ (Strambach, 2010: 4) in which new growth paths are explored by various actors within such framework. Such institutional arrangement allows for reinforcement among and higher efficiency of institutions (Grillitsch, 2014: 3). Multi-layered governance creates prospects for diminished vertical interaction among institutions (Berkes, 2002; Young, 2002), and is critiqued to have inefficient overlapping between layers and lack of coordination in its administrative execution (Lebel, et al., 2006). In theory, adaptive governance systems are nested institutions with representing diversity at local, regional and national levels, connected by both formal and informal networks (Dietz, et al., 2003)

4.4.3.5.3 Institutional adaptive capacity

The adaptive capacity of any institution is closely linked to the aforementioned discussions on leadership and the arrangement of the institutions. The ability of institutions to cope with change is also closely linked with the economic structure and level of industrial specialisation (refer Section 4.4.3.3) of a region, where it is observed that regions with a more specialised structure has an institutional character of being more focused on the needs of the specific dominant industry

(Boschma, 2015: 742). These specialised regions are more prone to “political lock-in” (Grabher, 1993: 263), as institutions associated with these regions have long-standing relationships with large firms, and actively opposes change (Hill, et al., 2012: 20) or only allows for path-stabilisation (slow and gradual institutional change) (Ebbinghaus, 2009: 8). This is regarded as a level of adaptation, which weakens adaptability as it obstructs the advance of institutions and new industries, and regions fall victim of their own institutional lock-in or “institutional sclerosis” (Olson, 1982: 47). The more diversified a region is in terms of its sectoral composition, the more adaptable the institutions are to change as key firms or role players do not monopolize the local institutions (Neffke, et al., 2011b: 52). This renders the heterogeneous regions to be more prone to institutional change and moving towards new growth paths as less obstruction is experienced from high profile role-players. A lack of institutional focus and control (or a weak institutional environment according to (Hollingsworth, 2009: 616)), will however, limit the level of adaptation or stability of the region due to high fragmentation and lack of cohesiveness.

This adaptive capacity (adaptability) is also often linked to the concept of transformability defined as a capacity to create a fundamentally new system (or new growth path) when political, social, economic or ecological conditions adversely affects the existing system (Walker, et al., 2004: 3) which occurs in three phases (Olsson, et al., 2004b: 20). The first phase describes that of a system preparing for change, secondly a phase of transition, and finally building resilience by following a new direction (Olsson, et al., 2006), with the first two phases being linked by a window of opportunity (refer Section 4.3). Adaptive governance, or the adaptive capacity in this instance, highlights the role of institutions to be prepared for such transformation (or shock) by timeously exploring alternative approaches for governance and identifying strategies (policy refer Section 3.5) to deal with change during the first phase of preparation. In being prepared for change, the windows of opportunity to initiate policy changes can be optimally used to induce significant change (Kingdon, 1995). The window of opportunity for change is closely linked to the specific timing when three “streams” i.e. problems, solutions and politics coincide – leaving a small timeframe for transformation or adaptability. Folke et al. (2005) mentions that periods of rapid change could prompt the occurrence of new networks and encourage new forms of governance (refer Section 4.3 – regime shifts in panarchy). The phase of transition is a vague and unpredictable phase, where strong leadership (refer Section 4.4.3.5.1) is necessary to navigate through the phase according to the plans set out during the preparation phase, as well as be able to modify the plan to meet the changing conditions as it evolves (Olsson, et al., 2006). In this phase, adaptive governance is key to navigate the various problems and allowing for new interactions between role-players to lead to a better absorption of new networks.

Institutions are classified as either path-dependent or resilient (Wink, 2012: 24) and exemplifies the constant conflicting notions of adaptation and adaptability (refer Section 4.4.3.1). A typical

path-dependent institution is regarded as more stable over the long term, but is often unable to respond positively to change and will collapse and even lose its function in times of system shocks. The more resilient institutions adapt more effectively to external or internal change and maintain their function in such conditions (Wink, 2012: 38). Literature suggests that 'institutional complementarity' (Amable, 2000; Hollingsworth, 2000; Hall & Soskice, 2001) could be effectively exploited in circumstances of change, to better adapt to externalities and to reinforce each other and even assist each other in becoming more efficient (Grillitsch, 2014: 7). Institutional complementarity (or overlap) in this instance will have the effect that over the longer run these institutions are more likely to effectively explore recombination between industries (refer Section 4.4.3.3) and continue or even develop new growth paths. The complementarity will further ensure that the positives of the existing path-dependent institutions remain intact, with concurrent resilience and effective negotiation of new challenges (Boschma, 2015: 741). This is referred to as 'institutional plasticity' by Strambach (2010: 4) in keeping with the existing overarching institutional system, but having a range of deviation options and the option of establishing new institutions within the established path in case of shocks (Strambach & Klement, 2012). Therefore, there is not necessarily a choice between two governance institutions, but rather a shift towards new pathways to address the complexity and uncertainty experienced (Lynch & Brunner, 2010).

A level of stability within the institutional environment is also noted in literature, or as Bailey et al. (2008: 49) refers to as 'institutional memory' and 'permanence', leading to enhanced adaptive capacity (Pike, 2002: 720). This stability of having established bodies of experienced staff and well-prepared strategies, will allow for better continuity in the ability of institutions to adjust to challenges (Pike, et al., 2010: 10), rather than impulsive and reactive responses. Lebel et al. (2006: 34) explored various attributes of government and governance structures and found that "the flexibility and multi-layered systems of governance can create opportunities for learning and decision making in places and scales that match social and ecological contexts more closely than is possible in monolithic arrangements" through a continuous monitoring, using and managing of these systems by accountable authorities in an attempt to enrich the ability of society to better manage resilience.

In terms of their institutional arrangement, developing and developed countries all face their own challenges and are characterised by different failures (Pahl-Wostl, 2009: 356), i.e. corruption, absence of civil society, lack of efficiency and ineffective governance in developing countries. Whereas developed countries have to deal with rigidity and over-regulation, sectoral fragmentation and dominance of economic development over environmental and sustainable development. Combining strong institutional leadership with polycentric and multi-layered institutions with the level of adaptive capacity as discussed in this section, ultimately relates to enhanced institutional resilience which exudes participatory, accountable, deliberative, and just

attributes. Pahl-Wostl (2009: 356) recognises the need for evolution from bureaucratic governments, via a change in thinking regarding the policy process to a multi-level polycentric adaptive governance with various actors and institutions, especially in times of change. It has been found (Pahl-Wostl, 2009: 356) that the more polycentric structure exhibiting a balance between top-down and bottom-up approaches has a higher adaptive capacity, which implies better sustainability and more diverse governance structure. In these types of systems, the top-down and bottom-up networks exist in a side-by-side or parallel manner within a framework of intermediate complexity.

Institutions and resilience do pose various constraints (Lebel, et al., 2006: 28), especially in terms of measurement, the problem of experts and with relevance to causality. With reference to measurement it is noted that the assessment of the capacity of various actors and the relationships between them are a challenge (Rayner, 2003; Rowe & Frewer, 2004). The problems of experts refers to the role that governments play and that the right level of expertise is not always available to inform sound decision-making or forward thinking, this is coupled with a need for more cooperative management in close relation with civil society and other role-players (Goldman, 2004). And thirdly, it is noted that a strong interconnection is found between the capacity to manage resilience and the form of governance (Lebel, et al., 2006), the one influencing the other. Gunderson et al. (1995: 495) identified two major challenges for governance systems to transition into a more resilient system, i.e. (i) overcoming barriers of a legal and institutional kind; and (ii) building bridges from the current to the new governance structures. Legal reform is regarded as an especially difficult challenge due to the complex and politically charged environment in which these changes should take place (Ebbesson & Hey, 2013; Garmestani & Allen, 2014).

4.5 Conclusion

This chapter paid specific attention to the concept and evolution of resilience, with its origin in the ecological sciences and its subsequent spill over into various other disciplines and sciences, including the economic and study-specific regional sciences. Initially, resilience was focused on sustaining an equilibrium state after a shock to a system (be it ecological, social, political, economic etc.), over time this concept evolved in its recognition that a single-equilibrium state is an implausible concept, which subsequently led to a non-equilibrium based approach to resilience. The following figure conceptually illustrates a state of regional growth against time, which can be referred to as a “normal growth path” across a long time span (not taking into account short term variations), typically taking the shape of an upward logistical curve.

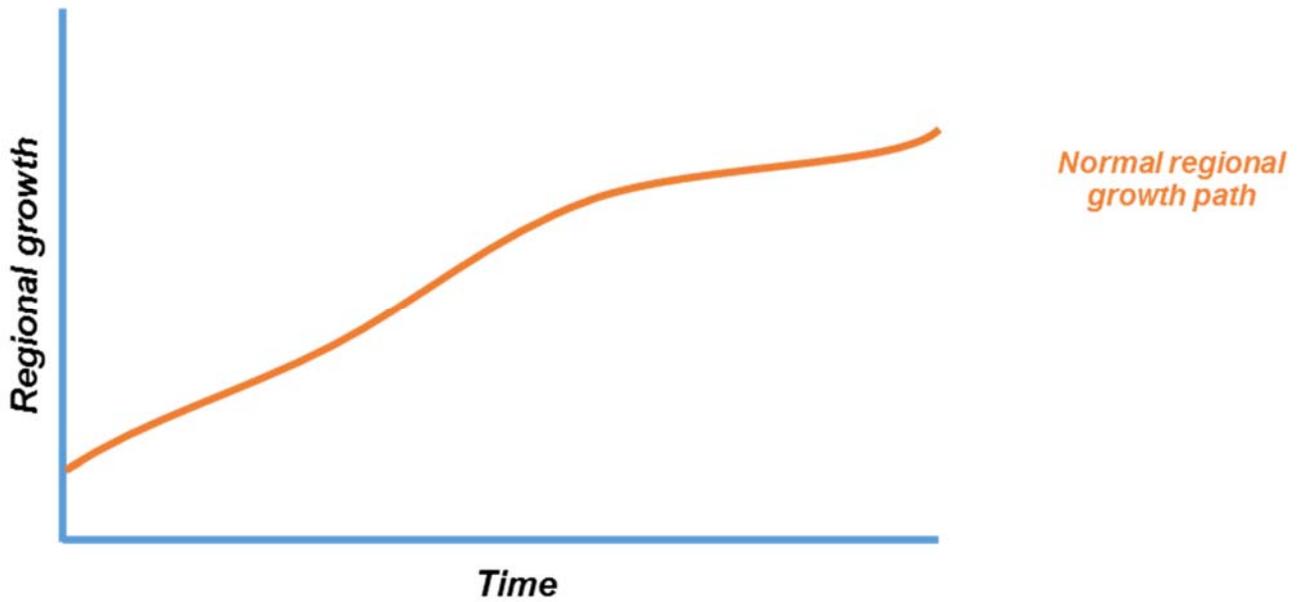


Figure 4-7 Normal regional growth path without disturbance

Source: Own representation

In Figure 4-8 the illustration presents a typical non-resilient system, where after a shock, the system is unable to return to its initial growth path and experiences serious downturn.

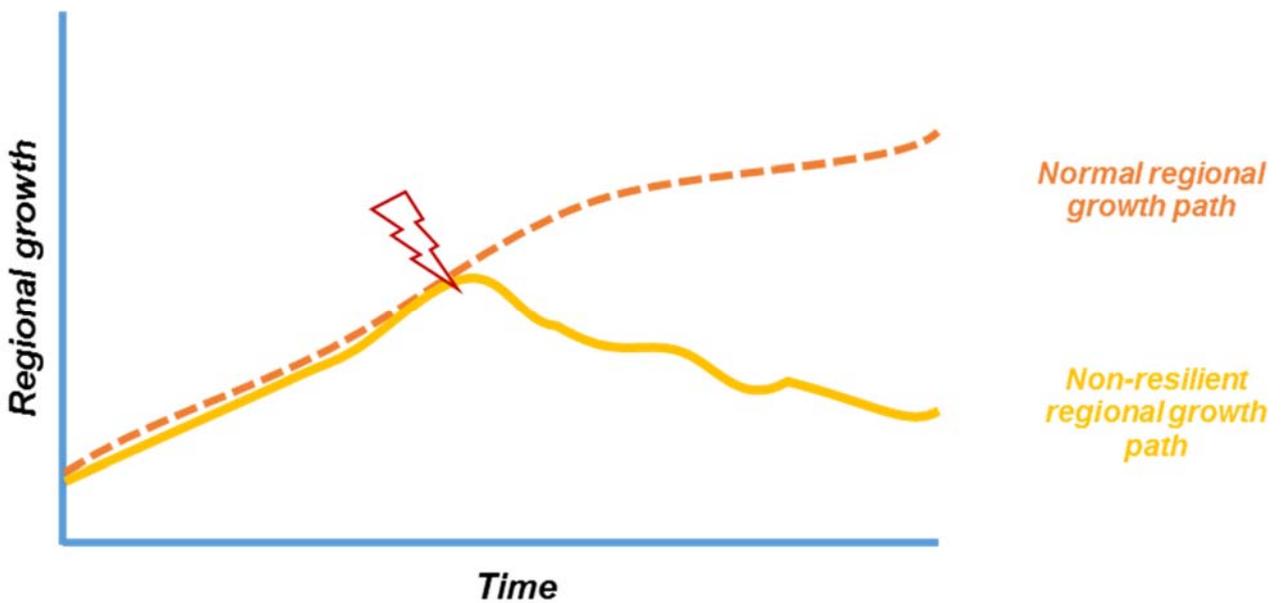


Figure 4-8 Non-resilient regional growth path after disturbance

Source: Own representation

The subsequent figure is an illustration of what is initially referred to as a resilient system (single state equilibrium), wherein a system is able to return to its original growth path after a shock or disturbance (refer Section 4.4.2) or equilibrium-based approaches to resilience.

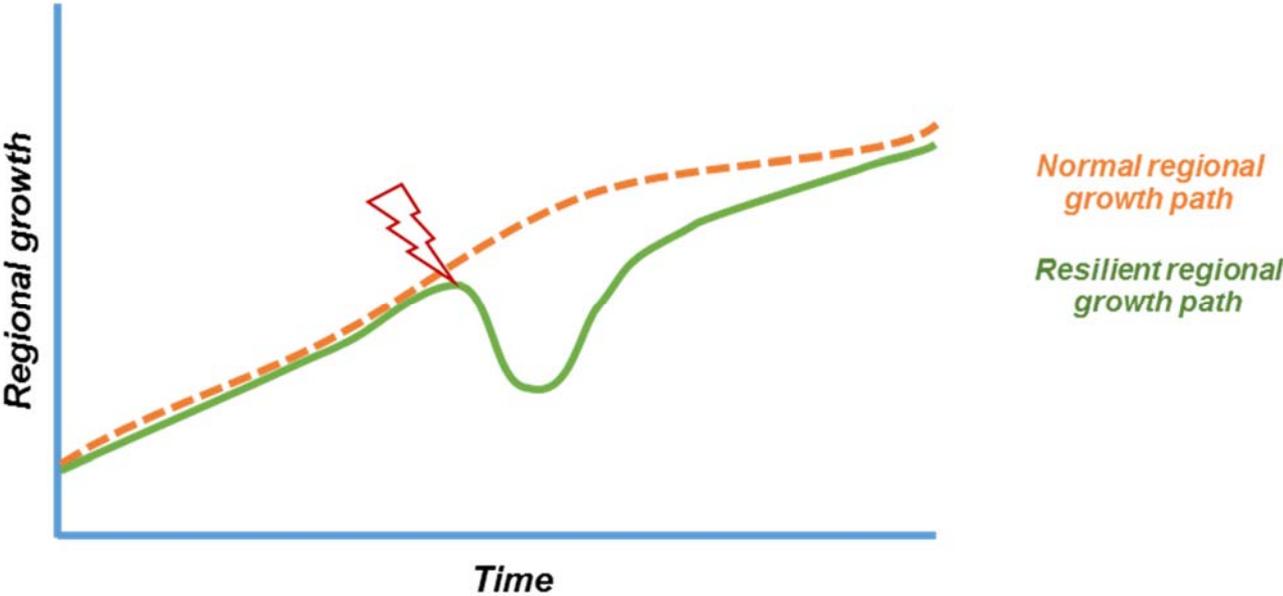


Figure 4-9 Resilient regional growth path after disturbance

Source: Own representation

The paradoxical concepts of adaptation and adaptability (refer Section 4.4.3.1) was introduced as part of the non-equilibrium-based approaches to resilience (in its many definitions and forms – refer Sections 4.2 and 4.4), arguing that a desirable state of resilience is obtainable through adaptation (efficiency, reliability, sustainability etc. refer Section 4.4.3.1) but that a new growth path is only attainable through an intricate balance between adaptation and adaptability (optimal change, dynamic stability, evolvment, flexibility etc.) as illustrated in the subsequent figure. Too much focus on adaptation could lead to lock-in for a region, rendering it more vulnerable to shocks and disturbance, whereas too much emphasis on adaptability could have an inefficient system as result.

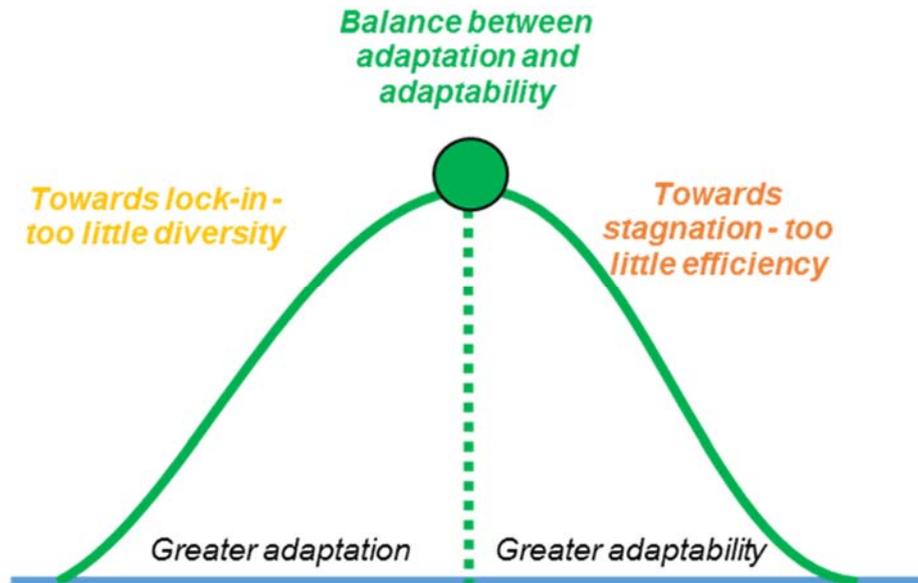


Figure 4-10 Balancing adaptation and adaptability

Source: Own representation

In the non-equilibrium approach, it is conceded that a return to a previous growth path is not necessarily a desirable or attainable state, and that various influences can impact on a growth path to either have a downturn or upturn after a shock or slow burn disturbance is experienced. The system will consequently not necessarily return to its original growth path, but follow a new growth path depending on the type and scale of interference (refer Figure 4-11).

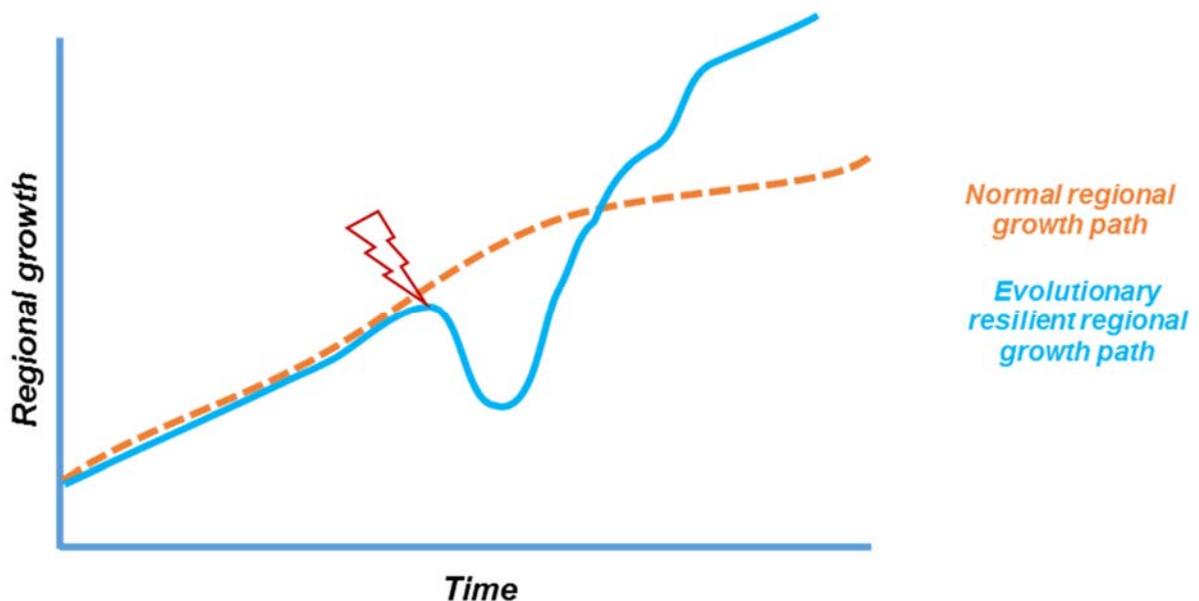


Figure 4-11 Evolutionary regional resilience new growth path after disturbance

Source: Own representation

In recognition of regional resilience, various factors were highlighted as influencing the balancing act between adaptation and adaptability, including historical influences recognised as important pillars to absorb regional shocks, i.e. sectoral composition, knowledge networks, and institutions.

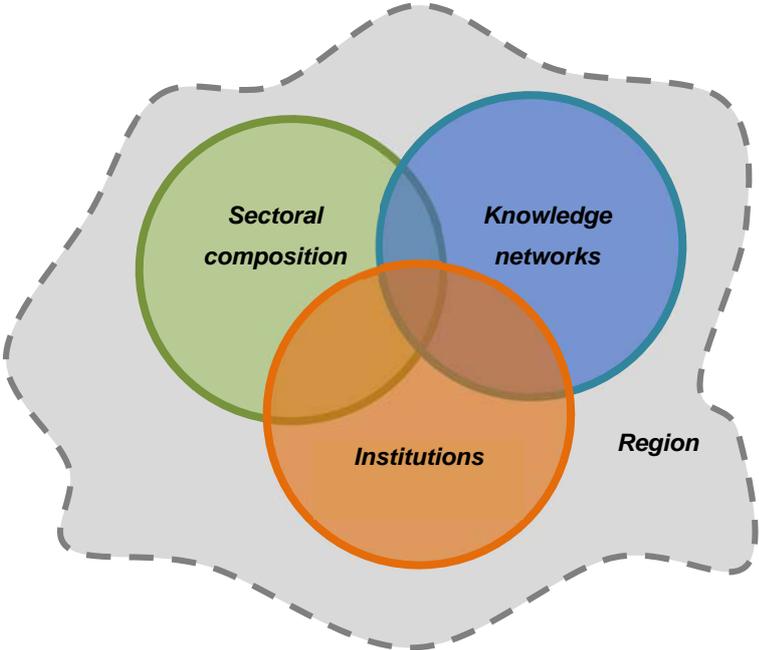


Figure 4-12 Pillars of resilience within a singular regional context

Source: Own representation

A similar balance dependency on balance between three pillars as identified (refer Section 4.4.3.2) within the evolutionary, is noted to move towards a more resilient regional state, and is subsequently illustrated as forming part of the balance between adaptation and adaptability. Ultimately rendering regional resilience as dependent on a balance between adaptation and adaptability of each of the three pillars and their combined steadiness. It is recognised (proposed) that for a state of efficient balance between adaptation and adaptability (as components of resilience), the tension between each of the pillars applicable also need to be in simultaneous coordination with one another.

In the subsequent figure the various approaches and influences on regional resilience is represented as growth over time, and how shock and disturbances could influence evolutionary resilience when the various “pillars” identified coincide.

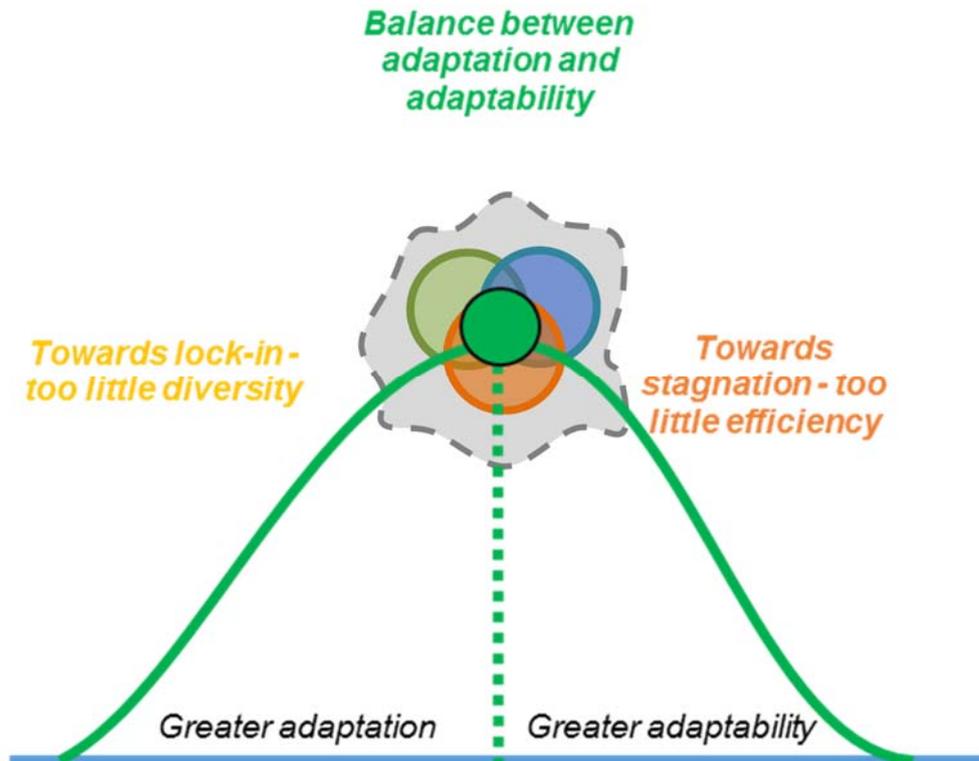


Figure 4-13 Pillars of resilience with adaptation and adaptability

Source: Own representation

The level of impact and importance of each of these pillars will differ according to the type and spatial level of region (refer Chapter 3), and the typical response to shocks through a policy approach will depend on the level of impact, and type and level of region.

CH 4: RESILIENCE



Resilience concept,
Regional Resilience

Chapter message:

- Regional resilience evolved from the ecological resilience literature
- Regional resilience was initially approached from an equilibrium-based approach
- Non-equilibrium based approach flowed from the equilibrium-based approach due to various inadequacies
- The paradoxical concepts of adaptation and adaptability and the crux between these play a pertinent role in regional resilience
- The evolutionary regional resilience approach recognises that both short and long-term integration in a region is key to resilience
- Through the literature, three pertinent pillars of regional resilience were identified, i.e. sectoral composition, networks and institutions.
- The higher the specialisation of sectors in a region, the less vulnerable the region is to shocks.
- A region dependent on a single sector is regarded as less resilient
- Related variety within sectoral composition leads to better adaptation
- Unrelated variety within sectoral composition leads to higher adaptability
- A balance between these four concepts will lead to better regional resilience
- Adaptation is found to be high where local network structures are well-developed
- A knowledge network exhibiting properties of a core-periphery structure is more resilient
- Institutional capacity (in terms of leadership and arrangement) can lead to higher adaptive capacity and resultant regional resilience
- Strong leadership is key to identifying windows of opportunity
- A structure with polycentric multiple, relatively independent centers and various connected layers is more resilient
- Adaptive capacity within institutions allows for transformability

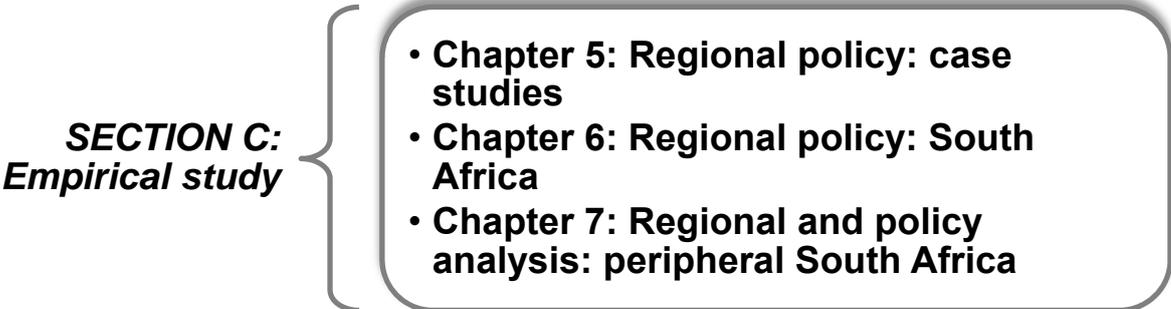
Figure 4-14 Chapter message: Chapter 4

CHAPTER 5: RESILIENCE AND REGIONAL POLICY: CASE STUDIES

5.1 Introduction

Chapter five relates to Aim 2 of the research study, i.e. **“to evaluate the content of international regional policies in terms of the broad outcomes”** and will subsequently be utilised in Chapter 7 to fulfil Aim 3 of the study **“determine and propose a developmental policy approach towards more resilient peripheral regions”**. This Chapter forms the first chapter within the empirical section, Section C, as indicated in Table 5-1. This Chapter, in reviewing the various case studies, will attribute to the study through learnings from international experience. These will in turn inform principles for implementing integrated government in terms of policy design, and contribute to designing a resilience framework for the peripheral region.

Table 5-1 Section C - Empirical Study



Source: Own compilation

The evaluation of international regional policy and its implications for resilience in peripheral regions will be from a qualitative approach (refer Section 2.5) and will follow textual study (specifically the analysis of spatial policy) in the form of various case studies (cross-national design) as identified in the subsequent section and will ultimately entail an interventionist (pragmatic) approach to plan and policy analysis as described in Chapter 2 – Research Plan and Framework.

Van Rijswijk and Solet (2012: 2) notes that resilience has become an objective in many policy documents, addressing and referring to its system-wide aptitude to meet conditions of change and complexity in social-ecological systems. Resilience in the policy environment is often regarded as a politically neutral and a common-sense objective (Raco & Street, 2012: 1073), driven by a pragmatic attitude, bringing to mind once again the questions of ‘who?’ and ‘what?’ (Meerow, et al., 2016) with reference to institutions and benefits attainable. Porter and Davoudi (2012: 331) however warns that such resilience driven policies could underline prevailing (mostly neoliberal) urban development and agendas of renewal and regeneration. Hillier (1999: 505)

describes plans (including policies) as a ‘pause’, or moments of stability in a world of continuous fluctuations, stressing the need for such complexity-allowing measures (Teisman, 2005) to allow for new actors and new concepts (Giezen, 2013: 728) to be explored to the benefit of the larger region or economy. Smith and Lewis (2011: 394) warn of the ineffectiveness of singular strategies, as investors will expect both the reliability (effectiveness) and the innovativeness of a region.

Chapter 4 commenced with a discussion of the resilience concept and perpetuated that there are five fundamental questions impacting on specifically urban resilience (refer Section 4.2), each with its own sub-themes or questions. This chapter will make an attempt to do a comparative textual case-study analysis of cross-national policies regarding resilience and its existence and application in specifically peripheral regions (refer Section 3.2) across the world. The subsequent table therefore serves as a reminder of the fundamental questions that has to be answered in resilience studies, from a policy viewpoint, and also on the trade-offs between these aspects. In the perusal of the various policy and strategic documents of the case-study countries, it is found that regional resilience is not prominent, although various components thereof can be linked to the resilience approach. The chapter will continuously aim to bring resilience questions in line with existing regional policy approaches.

Table 5-2 Fundamental questions related to urban resilience

FUNDAMENTAL QUESTIONS RELATED TO RESILIENCE		
WHO?	Trade-offs?	<ul style="list-style-type: none"> • Who determines what is desirable for a system? • Whose resilience is prioritised? • Who is included (or excluded) from the urban system?
WHAT?		<ul style="list-style-type: none"> • What perturbations should the urban system be resilient to? • What networks and sectors are included in the urban system? • Is the focus on generic or specific resilience?
WHEN?		<ul style="list-style-type: none"> • Is the focus on rapid-onset disturbances or slow-onset changes? • Is the focus on short-term resilience or long-term resilience? • Is the focus on the resilience of present or future generations?
WHERE?		<ul style="list-style-type: none"> • Where are the spatial boundaries of the urban system? • Is the resilience of some areas prioritised over others? • Does building resilience in some areas affect resilience elsewhere?
WHY?		<ul style="list-style-type: none"> • What is the goal of building resilience? • What are the underlying motivations for building urban resilience? • Is the focus on process or outcome?

Source: Meerow et al. (2016: 46)

In the narrative studies regarding regional policies (refer Section 3.5), it was found that different concepts define peripheral as the shift is from one country’s approach to another, as earlier indicated per definitions (refer Section 3.2). The subsequent chapter will explore various approaches to regional policy, not exclusively on peripheral regions, but on broad regional policy.

5.2 Case studies

A non-probability sampling approach was followed in identifying regional policy paradigms, referring to countries with regions with predominantly rural characteristics and countries which identified lagging / peripheral regions as important to their overall regional strategy. This was done by means purposive sampling in the paradigm of this study (pragmatic), therefore ultimately aiming to assimilate from regions` experiences such as the ones chosen and to provide for a regional resilience approach in specifically peripheral South Africa (as study area, refer Sections 6.1, 7.2). After detailed review on existing regional policy, the researcher`s judgment and knowledge of regional policy was used in the identification of the case studies, which include the following countries.

Table 5-3 Case study countries

Country	EU / Non-EU	Governance
Australia	Non-EU	Federal
Canada	Non-EU	Federal
Chile	Non-EU	Unitary
Denmark	EU	Unitary
Estonia	EU	Unitary
Finland	EU	Unitary
Hungary	EU	Unitary
Iceland	Non-EU	Unitary
Ireland	EU	Unitary
Italy	EU	Unitary
New Zealand	Non-EU	Unitary
Norway	Non-EU	Unitary
Poland	EU	Unitary
Portugal	EU	Unitary
Slovenia	EU	Unitary
Sweden	EU	Unitary
Turkey	Non-EU	Unitary

Source: Own compilation from non-probability sampling

These countries represent both EU and non-EU countries, as indicated in the table, and are from both unitary and federal governance approaches, in order to highlight if such differentiation impacts on the approaches and principles of the case study countries. Both EU and non-EU countries were chosen specifically to determine the impact intra-regional economic cooperation may have on regional policy approaches. All of the countries forming part of the case studies are members of the Organisation for Economic Co-operation and Development (OECD) as an international policy-benchmark organisation, which, through cooperation and mutual learning, is focused on promoting policies that will enhance the economic and social welfare of people around the world (indicated in orange in Figure 5-1).



Figure 5-1 Countries included in policy review

Source: Own representation

The policies included in the subsequent discussion are a compilation of overarching national, regional and rural plans or strategies, as not all countries have each level of policy approach in place. In many countries regional development and growth plans are found within their rural strategies, as opposed to national strategies and regional strategies. Of the listed seventeen case study countries, fifteen have dedicated regional policy frameworks, with the exclusion of Canada and Chile, each with a rural development approach to regional policy. Various other sources of information were included in the analysis, including nationally recognised and government-supported organisations and institutions.

As discussed earlier (refer Section 3.2) the peripheral region concept constitutes the three types of (i) resource-frontier regions; (ii) downward transitional regions; and (iii) specialist problem regions (Friedmann, 1966; Kuklinski, 1970; Stilwell, 1972). Similarly, regional policy subsequently identified and discussed often refers to the various characteristics of these regional types, i.e. frontier location, leapfrog location, areas where new resources have been identified, areas penetrated by corridors, a declining resource base, and regions with stagnant and declining population, capital and infrastructure (refer Figure 3-2). Chapter 4 identified three pillars (refer Section 4.4.3.2) as potential shock absorbers within regions, i.e. sectoral composition of the region; the networks that exist within the region and between a specific region and others; and finally to institutions within the regions, which includes institutional capacity, leadership and institutional arrangement. These will subsequently feature prominently in the discussion of

regional policy in peripheral / lagging regions across the case study countries. This chapter will further aim to integrate various components of regional policy, as identified in Chapter 3 (refer Section 3.5.3), in the policy analysis of countries identified. These components include (but are not limited to) (i) problem recognition; (ii) objectives of the policy; (iii) the policy framework, including the theme coverage, spatial orientation, policy intervention units, time dimension, approach and focus of said countries; (iv) the instruments identified in the various approaches to peripheral regions and (v) the actors responsible for the implementation of said policy. Which are all integrated with one another as indicated in the subsequent figure (refer Figure 5-2)

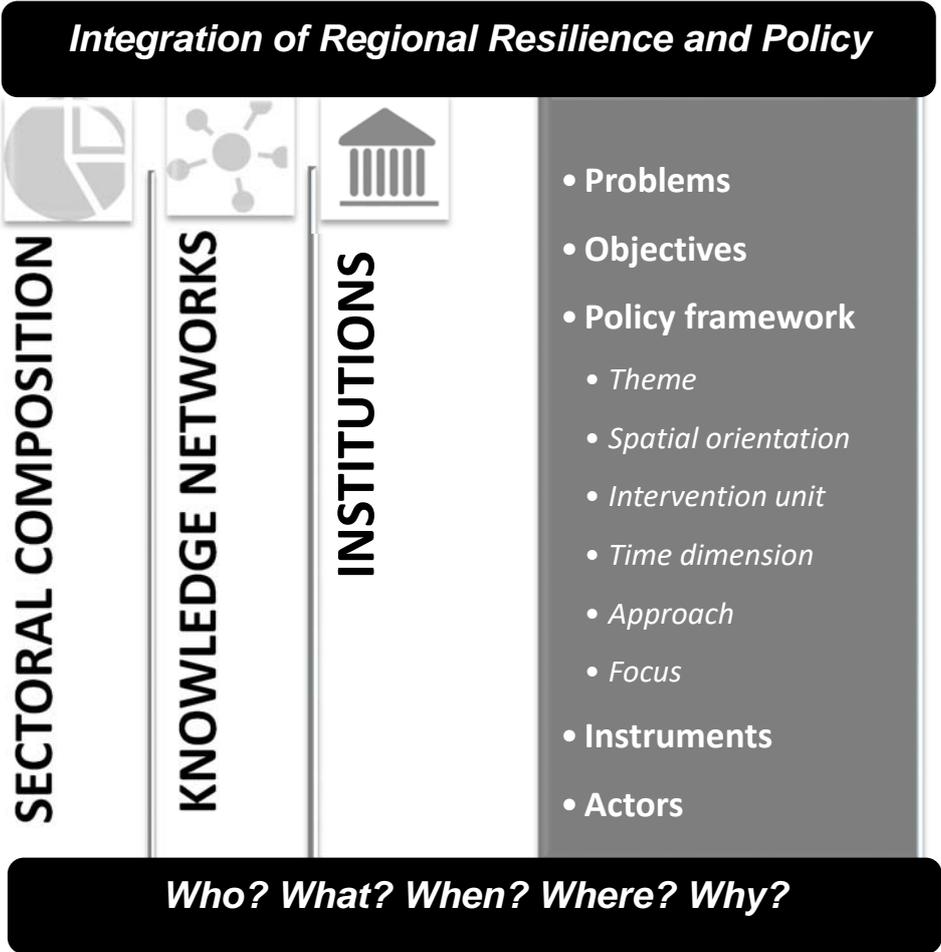


Figure 5-2 Policy overview elements in relation to regional resilience pillars and resilience questions

Source: Own representation

The discussion to follow will be an integration of each pillar with the proposed components as identified by the OECD (2010: 13), and will aim to relate each section to the five fundamental questions of resilience (refer Section 4.2). The aim of this chapter is not to provide a

comprehensive analysis of each country's regional and ancillary policies, but rather to highlight various initiatives forming part of each case study's peripheral regional focus, or any initiatives that may impact on peripheral regions as such.

The policy analysis of said case study countries will include the overall objectives of regional development policy, taking into account problem recognition (refer Section 5.2.1) to determine the major challenges regions face and also to identify which main objectives (refer Section 5.2.2) regional policy follows in terms of the strategic documents. A second focus will be on the legal and institutional framework (refer Section 5.2.3) to define what the main policy framework is within the case study countries. This will assist in determining the focus of policy, i.e. urban, rural, and regional or a combination thereof, as well as the spatial orientation of the indicated frameworks or strategies. The main policy instruments (refer Section 5.2.4) to address the specific spatial orientation (problem recognition) will be concentrated on in more detail. The segment will conclude with a governance section (refer Section 5.2.5) highlighting the types of coordination found across the horizontal government relationships (cross sectoral interaction), as well as the vertical relationships applicable on national, regional and local level.

5.2.1 Regional policy: Problem recognition

Traditionally the challenges identified by central government of countries within their regional policies mainly refer to whatever is inhibiting growth or development of the total economy due to struggling regions (refer Section 3.3) These challenges typically refer to aspects such as inter-regional disparities (Canada, Chile, Finland, Hungary, Ireland, Italy, Portugal and Turkey), decline in lagging regions, and insufficient economic competitiveness of specific region, single-sector economic structure (Italy, Chile, Hungary, Norway and Sweden), migration and brain drain from rural to urban regions (Australia, Finland, Iceland, Norway, Portugal, Slovenia and Sweden), ageing rural population, and the resultant urban-rural divide (Canada, Denmark, Hungary, Ireland, Poland, Sweden and Turkey). The subsequent figure illustrates the various problems as identified by the case study countries (refer Figure 5-3) (refer Annexure A).

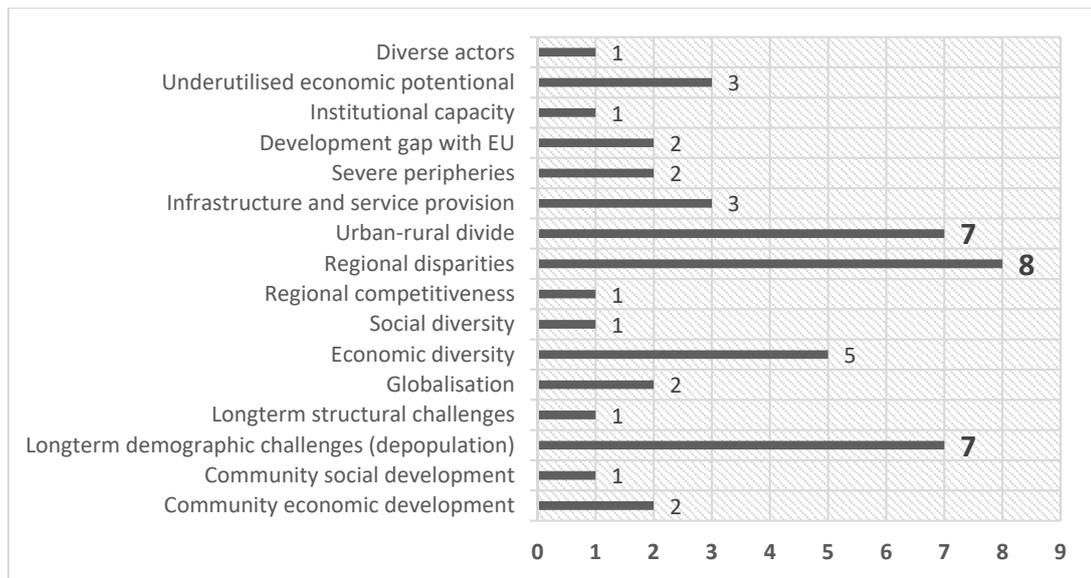


Figure 5-3 Problem recognition in 17 case study countries

Source: Own deduction from literature

From the preceding figure it is highlighted that the three most prominent issues highlighted refers to regional disparities, the urban-rural divide and long-term demographic challenges due to the depopulation of rural and especially peripheral regions. In the recognition of their main problems (the “why?” of resilience questions), each of these countries will subsequently have different objectives, as discussed below. It is often found that the “where?” of resilience is addressed within the problem identification of regional policy, with a pertinent focus on the locality of the identified issues. The problem recognition also highlights the “who?” of resilience, indicating whose resilience is prioritised, or who is included in the specific policy. Note that the three issues highlighted (urban-rural divide; regional disparities; long-term demographic challenges – depopulation) are typical slow-burn processes, rather than a single shock event experienced by the regional system (refer Section 4.2)

5.2.2 Regional policy: Objectives

Regional policy aims to either slow down certain negative aspects of growth and development, or to promote more balanced development across a region (refer Section 3.3), and according to Kuklinski (1970: 272) is strongly focused on furthering the mobility of capital (to encourage economic growth) and furthering the mobility of labour (to encourage inclusive employment), and more recently supported by an aim of regional competitiveness (Capello, 2007; Feiock, 2007; OECD, 2010).

The various policy objectives of regional and / or rural policy relates to the “what?” of resilience. The objectives of said case studies are strongly focused on the latent potential within the lagging regions as identified by the various national strategies. In this instance emphasis is placed on promoting endogenous regional growth and competitiveness in order to lessen the rural-urban divide and inter-regional disparities. A strong theme of competitiveness is visible in various policy objectives (Canada, Chile, Denmark, Finland, Hungary, Ireland, New Zealand, Poland, Portugal and Turkey). New Zealand (Office of the Minister for Economic Development, 2012) specifically calls for a focus on innovation (refer Section 4.4.3.4) and competitiveness for all areas outside of the capital, but especially in lagging areas (“where?”). The supply of basic infrastructure services, especially in rural areas, is also repetitively found within the objectives of regional policy, specifically in Australia (Minister for Regional Development, 2016), Canada (Government of Canada, 2014), Estonia (Government of Republic of Estonia, 2017), Iceland (The Ministry of Industry, 2000), and Portugal (POSEUR Programa Operacional, 2014). Policy objectives often stipulate a definite “when?” in terms of the span in which these objectives should be reached, and are most often planned for over a 5-10-year term, as this is regarded as the typical timeframe in which the results of policy can be observed.

The rural policy approach (instead of a regional policy approach) is prominent in some of the case studies (Chile, Denmark, Estonia, Finland, Hungary, Ireland, Italy, New Zealand, Portugal, Sweden and Turkey), the emphasis is however more on the agricultural component of development, and promotes environmental sustainability and quality of life. In reference to the regional resilience shock-absorbers as identified in Chapter 4, (refer Section 4.4.3.2) the sectoral composition of regions also carries through policy objectives. Estonia (Government of Republic of Estonia, 2017), for instance, places emphasis on the identification of, and focus on, regional economic drivers, whereas Finland (Ministry of Economic Affairs and Employment, 2015) approaches the economic structure from a regional viability approach by supporting multi-centred (refer Section 3.4.2) territorial structure in its regions. Hungary (Ministry of Rural Development, 2014) and Iceland (The Ministry of Industry, 2000) follows a rural economic diversification approach as one of their main objectives. Finland is one of the few case study countries with a resilience approach to its regions, and aims to strengthen resilience to industrial shocks by improving the economic drivers (refer Section 4.4.3.2) of the various regions (Ministry of Economic Affairs and Employment, 2015). Specialisation in key competitive advantage sectors, in the form of clusters of development, as objective is high on the objectives of Estonia, Norway (development in regional strengths) (Angell, et al., 2016), Slovenia (as part of a new industrial policy approach on innovation and smart specialisation in clusters) (Ministry of the Environment, Spatial Planning and Energy, 2004), and Turkey (ensuring development based on local dynamics and internal potential) (Ministry of Development, 2013). Ireland also highlights the importance of

regional specialisation in their support of gateway regions in order to maximise socio-economic development in these regions.

Innovation and business support (knowledge network pillar – refer Section 4.4.3.4) is another strong theme within regional objectives, and more specifically for rural and lagging regions, with different emphases as to which sectors receive such support (also refer Section 5.2.4). Australia and Finland place emphasis on promoting innovation to industries and business support in order to be more prepared for economic shocks (Angell, et al., 2016; Minister for Regional Development, 2016), with Finland highlighting entrepreneurship as one of its main objectives. These two countries are supported in this objective by Italy (with a focus on knowledge transfer in rural areas, but mostly agricultural development), and Poland by means of innovation infrastructure investment. The third pillar, institutions, also feature prominently in various policy objectives as deduced from the case studies. Finland in its rural development policy (Ministry of Agriculture and Forestry, 2014), calls for partnerships with local communities (refer endogenous growth Section 3.5.1) and government regarding democracy issues in a bottom-up approach. In their regional policy Iceland focuses on the capacity building of governance at subnational (regional) level to achieve more balanced regional growth. Estonia (EAS, 2017) also supports improved development capacity at local government (refer Section 4.4.3.5) level in the identification of regional specific clusters. And Turkey (Busra, 2015) has as objective to make regional development policy more effective at the central government level. These are discussed in more detail in Section 5.2.5.

It is important to remember that regional policy objectives are broad in nature and are often focused on reducing inequality, promoting efficiency and societal upliftment (refer Section 3.5.2), and are mostly not place-bound. Whereas a classic growth approach to regional development and regional policy will call for a more spatially focused tactic and definite spatial targeting (refer Section 3.4.2).

5.2.3 Regional policy: Framework

The regional policy framework approach can either be viewed from a pro-active approach (new paradigm) or a reactive approach (old paradigm) (OECD, 2010) (also refer Section 3.5.3). Yuill (2008: 27) recognises that the old paradigm of regional policy approaches is typically characterised by a top-down approach, focused on providing aid in a targeted manner to designated problem areas. In the new framework, the emphasis is on a more balanced approach to regional development (refer Section 3.4.2) with input expected from multi-level government (refer Section 4.4.3.5) and targeted at the entire country, and not just on specific regions (refer

balanced and unbalanced growth Section 3.4.2). Therefore, it can be argued that the spatial focus has shifted from region-specific to an all-region focus with the emphasis on identifying regional strengths and building on that (OECD, 2010) (also refer NEG in Section 3.4.3). The spatial focus of regional policy is in turn related back to the “where?” of resilience (refer Table 5-2), as well as the “who?” of resilience in answering the question, whose resilience is prioritised? The case study countries have a general approach that all regions must be balanced and equalised, but in order to attain this goal, various countries support place-based policies (refer Section 3.6, explicit policy), especially in lagging regions. Canada has a typical “all-region” focus (Savoie, 2003), but it is noted that Regional Development Agencies (RDAs) favour rural and remote areas, similarly Slovenia propagates an all-region focus (Ministry of the Environment, Spatial Planning and Energy, 2004), but gives priority to the least developed regions and regions with specific problems, such as border areas (also classified as peripheral – refer Section 3.2). Regional policy in Poland identifies certain places as “drivers of growth” where the focus subsequently falls, in addition to lagging regions in eastern Poland (Ministry of Regional Development, 2010). Italy (Materiali UVAL, 2014) and New Zealand also indicate a strong focus on lagging regions, with New Zealand placing additional focus on aboriginal economies (Office of the Minister for Economic Development, 2012). Norway, Iceland and Hungary have a strong rural focus, and predominantly supports any development outside of major growth centres – with no specific focus on lagging or peripheral areas. Hungary further promotes development initiatives in pre-identified development poles (refer Sections 3.4.2, 3.4.3) outside of Budapest (The Government of the Republic of Hungary, 2013). Finland prioritises aid to peripheral areas specifically, and aims to develop a polycentric (refer Section 3.4.2) territorial structure between urban growth centres and rural centres (Ministry of Economic Affairs and Employment, 2015).

In terms of the legal or institutional framework of regional policy across the case study countries, the subsequent table provides an overview of the most prominent guiding policy documents.

Table 5-4 Legal / institutional framework of regional policy in case study countries

Country	Rural Policy	Regional Policy
<i>Australia</i>	<ul style="list-style-type: none"> •White Paper on Agricultural Competitiveness (2015) 	<ul style="list-style-type: none"> •No overarching framework at federal level •Regional policy directed by: White Paper on Developing Northern Australia (2015) •Various state, regional and local strategies.
<i>Canada</i>	<ul style="list-style-type: none"> •No overarching framework 	<ul style="list-style-type: none"> •Provincial level strategy making •Regional Development Agencies

Chile	<ul style="list-style-type: none"> •Elements found in National Rural Development Policy (2014) 	<ul style="list-style-type: none"> •No overarching framework •Decree N°18.359 (1985) •Elements found in National Urban Development Policy (2013)
Denmark	<ul style="list-style-type: none"> •EU country – National Strategic Plan 	<ul style="list-style-type: none"> •No overarching framework •Elements found in Business Development Act (2014) •Implementing Proactive Regional and Rural District Policy
Estonia	<ul style="list-style-type: none"> •EU country – National Strategic Plan •Estonian Rural Development Plan (2014-20) 	<ul style="list-style-type: none"> •National Regional Development Strategy (2014-2020)
Finland	<ul style="list-style-type: none"> •EU country – National Strategic Plan 	<ul style="list-style-type: none"> •Act on Regional Development (2014) •Government decision on national regional development priorities 2016-2019 (2016) •Regional Strategy 2020 (2010); •Structural Funds Programme in Finland: Sustainable Growth and Employment 2014-2020"
Hungary	<ul style="list-style-type: none"> •National Rural Development Strategy (2012) •Rural Development Programme (2015) 	<ul style="list-style-type: none"> •National Development 2030 – National Development and Territorial Development Concept (2014) •EU – National Strategic Reference Framework •Act on Territorial Development and Spatial Planning (2016)
Iceland	<ul style="list-style-type: none"> •Four year development plans with growth agreements and cultural agreements 	<ul style="list-style-type: none"> •Strategic Regional Plan (2014-17) •Iceland 2020 (regional action plans) (2011)
Ireland	<ul style="list-style-type: none"> •EU country – National Strategic Plan 	<ul style="list-style-type: none"> •National Spatial Strategy (2002-2020) •National Planning Framework (under development)
Italy	<ul style="list-style-type: none"> •National Strategic Plan for Rural Development 	<ul style="list-style-type: none"> •EU country – National Strategic Plan •National Strategic Framework
New Zealand	<ul style="list-style-type: none"> •New Regional Growth Programme (2014) 	<ul style="list-style-type: none"> •Regional Growth Programme (2014) •Business Growth Agenda (2015)
Norway	<ul style="list-style-type: none"> •White Paper on Rural and Regional Policy (2013-15) 	<ul style="list-style-type: none"> •White Paper on Rural and Regional Policy (2013-15) •White Paper in Transport, Innovation and Agriculture
Poland	<ul style="list-style-type: none"> •EU country – National Strategic Plan 	<ul style="list-style-type: none"> •National Strategy for Regional Development (2010-20)
Portugal	<ul style="list-style-type: none"> •EU country – National Strategic Plan 	<ul style="list-style-type: none"> •National Spatial Policy Programme •Regional Spatial Plans (PROT) •EU – National Strategic Reference Framework
Slovenia	<ul style="list-style-type: none"> •EU country – National Strategic Plan •National Strategy Plan for Rural Development (2014) 	<ul style="list-style-type: none"> •Act on the Promotion of Balanced Regional Development (2012) •Spatial Development Strategy of Slovenia, 2004
Sweden	<ul style="list-style-type: none"> •EU country – National Strategic Plan •National Strategy for Rural Areas •Rural Development Programme for Sweden 	<ul style="list-style-type: none"> •National Strategy for Sustainable Regional Growth and Attractiveness (2015-20) •Regional Development Programmes (RUP) •Regional Growth Programmes (RTP)

Turkey	<ul style="list-style-type: none"> • National Rural Development Strategy (2014) 	<ul style="list-style-type: none"> • Tenth National Development Plan (2014-18) • National Framework for Regional Development (2014)
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Source: Own compilation from policy review

The spatial orientation of policies are also part of the policy framework, where it is found that the old policy approach was targeted at lagging regions, whereas in the new paradigm, an all-region focus is more prominent (OECD, 2010). In terms of the time span of mentioned policies and programmes, various timeframes exist. National frameworks and spatial plans are mostly long-term in nature, focused on a ten to thirty-year vision, whereas regional policies are found to be focused on the medium term (five to ten years). The focus of the case-study countries` policies are found to be dispersed among mainly a rural and regional approach, as illustrated in the subsequent figure.

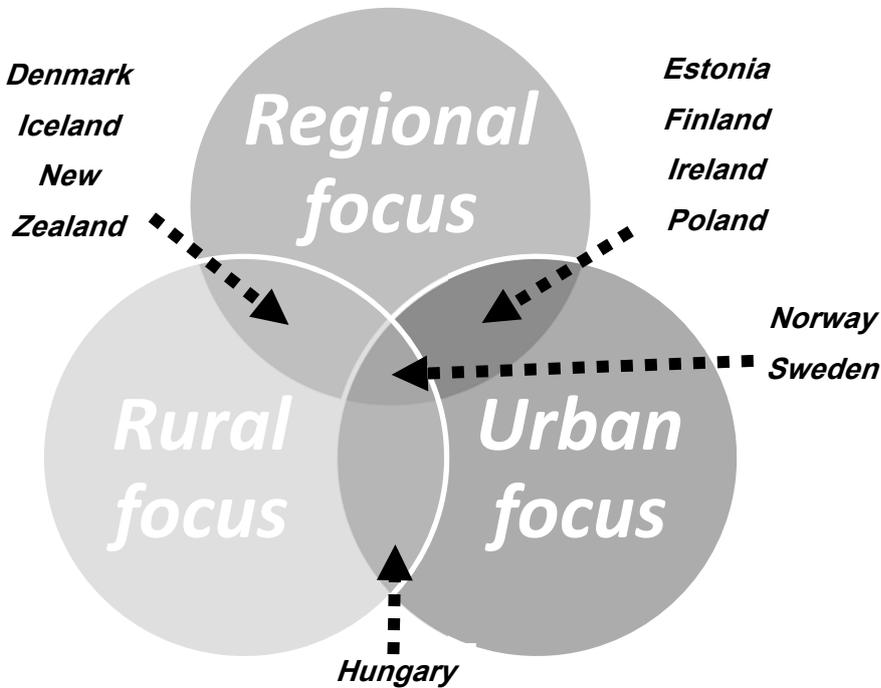


Figure 5-4 Regional, rural and urban focus of national development programmes

Source: Own deduction from policy review

In Australia, Canada, Chile, Italy, Portugal, Slovenia and Turkey the focus of national programmes are distinctly separated in each field (urban, rural, regional), whereas the case study countries indicated above have interspersed focus in two or more areas as indicated.

5.2.4 Regional policy: Instruments

Typical instruments that contribute to regional policy objectives (also refer Section 3.6) as set out above include the former (old paradigm) tools such as regional aid for lagging regions, towards capacitating regions' through networks of support, referring to aspects such as skills training, access to information and access to network infrastructure (OECD, 2010: 19). The most common policy instruments in regional policy, as identified through a thirty-country survey (OECD, 2015), is mainly split between business development and infrastructure, and with the subsequent tools identified:

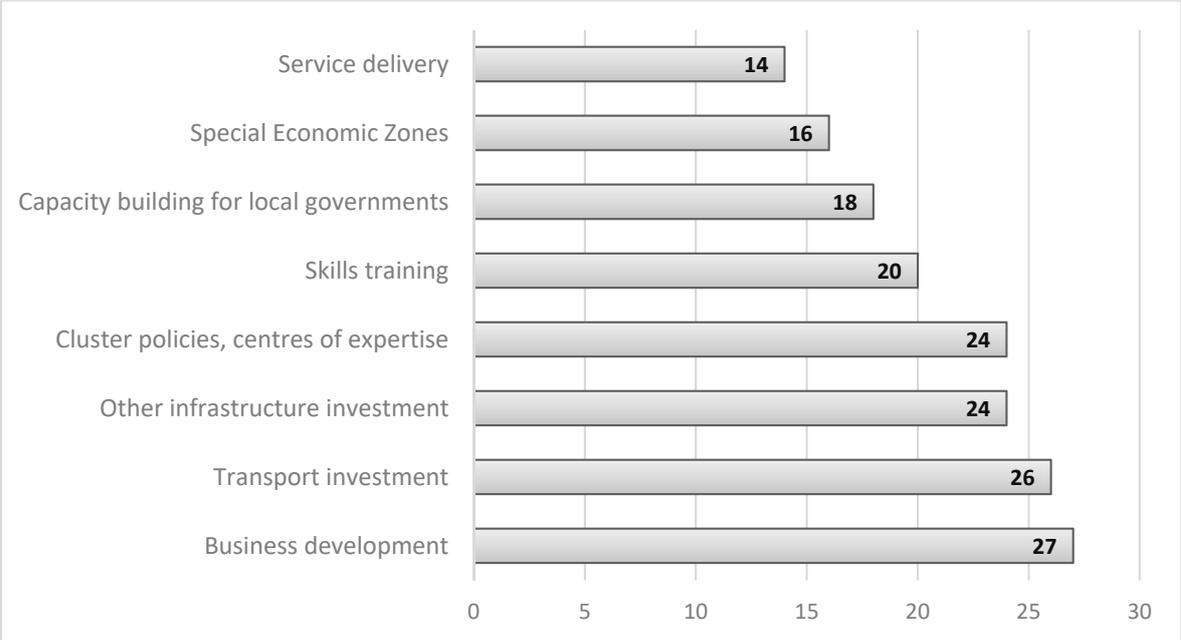


Figure 5-5 Use of policy tools in regional development policy

Source: Adapted from OECD (2015: 104)

The regional policy instruments discussed are directly linked to the “what?” and “where?” questions of regional resilience, as these tools are problem-oriented in their aim to address specific issues of priority within identified locations. Different countries, however, prefer to assist in different manners, especially within the lagging or peripheral approaches and instruments. Each of the tools as identified will subsequently be discussed as applied in regional policy in the case study countries.

5.2.4.1 Regional policy instruments: Business development and innovation support

Innovation (or network growing, refer Section 4.4.3.4) as policy tool is especially prevalent within peripheral regions (refer Section 3.6), and are approached from a stance of network support and capacity building of various actors (institutions) within the region (refer Table 5-5).

Table 5-5 Policies to promote innovation outside of leading regions

Type of policy	Common approaches
<i>Basic business development and innovation support to firms</i>	<ul style="list-style-type: none"> • Targeting firms in specific locations • Targeting firms led by specific population groups
<i>Clusters and centres of expertise</i>	<ul style="list-style-type: none"> • Same programme for all regions (lagging regions included) • 2nd track policy for non-leading regions • Firm-focus versus research-driven
<i>Capacity building for the public sector</i>	<ul style="list-style-type: none"> • Regional innovation strategy development support • Network of professionals across regions
<i>Sectoral research and development programmes</i>	<ul style="list-style-type: none"> • Economic sectors located in lagging regions • Special challenges of targeted places (often rural) • Public facilities or to private firms
<i>Capacity building for innovation actors</i>	<ul style="list-style-type: none"> • Focus on public/quasi-public actors • Co-applicants/ co-sponsors to include lagging regions
<i>Science and industrial parks</i>	<ul style="list-style-type: none"> • University-based • Industrial focus
<i>Venture capital funds</i>	<ul style="list-style-type: none"> • “Public” funds • Public co-financing with “private” support

Source: (Maguire & Weber, 2017)

Business development and innovation support to firms outside leading regions (refer Section 3.4.2) are typically approached from targeting existing firms or industries in specific locations (Maguire & Weber, 2017), as often identified in a national development plan, i.e. New Zealand’s Business Growth Agenda (Office of the Minister for Economic Development, 2012) in the identification of innovation support as one of six key areas of importance. This is frequently referred to as spatial-targeting (World Bank, 2009). Estonia and Hungary specifically, are moving away from an infrastructure focus (DPA), towards an emphasis on innovation and improved competitiveness of regions (SOC), and Finland specifies business development aid as one of their key policy approaches to support innovation (OECD, 2016). Another approach refers to

targeting firms with owners from a particular population group, in an effort to attain a more socially diverse and balanced regional policy, typically in countries with problems of social exclusion and social disparities (indigenous and oppressed groups), including Australia, Italy, and Ireland.

Network-building and innovation support for the public sector is often found within the development of a regional development strategy and highlights the importance of establishing networks of professionals across regions (Maguire & Weber, 2017). In this manner capacity building for the public sector receives attention, where Chile stands out with their focus on building sub-national capacity to take over regional development responsibilities from national government (refer Section 5.2.5). Similarly, Finland implemented growth agreements with the public sector in major cities to establish larger and more effective networks of innovation support.

In the Portugal 2020 (POSEUR Programa Operacional, 2014) national framework an incentive scheme for innovation and entrepreneurship support is prevalent mechanism to assist economic activities, with a strong focus on SME (Small and Medium enterprises) development. Support is mainly provided as a refundable incentive with no interest charged, and possibly as a 50% reimbursement on the refundable incentive, with a base support rate of 35%. The incentive is aimed at strengthening investment in (i) innovative activities (SME and non-SME) in tradable goods and service; activities contributing to the internationalisation of the economy (especially in the advancement of qualified workforce); and (iii) entrepreneurship among the qualified employed (Deloitte, 2015). The Portugal 2020 plan is supported by a national council for innovation. Likewise, Chile regards innovation as a key driver for economic growth in the competing global economy and supports innovation and entrepreneurship in the 2014-2018 Growth, Innovation and Productive Agenda (GIPA) (The Presidency, 2013).

Research and development within peripheral regions are often focused on identifying certain economic sectors of potential within peripheral regions (Maguire & Weber, 2017), and to identify special challenges or needs such regions may exhibit. Iceland utilised the development of an innovation centre (IMPRA) to support regional economic activity by means of technology building research in especially the renewable energy sectors to support emerging businesses and entrepreneurs in the start-up and growth of SME's (ENBRI, 2017). The Icelandic Regional Development Institute, as an independent institution, monitors and researches regional development in Iceland, in an attempt to further regional development through the implementation of regional strategies (The Ministry of Industry, 2000). Incentive schemes for research and development projects in Portugal with an eligible investment amount of at least €10 million (a non-refundable interest free incentive of up to €1 per project) and of particular importance for the diversification and globalisation of the Portuguese economy; and projects of national strategic interest as identified in the Portugal 2020 Framework (Deloitte, 2015).

Maguire and Weber (2017) identifies the provision of science and industrial parks as a further mechanism to support innovation within peripheral regions. Hungary, in its national development plan (The Government of the Republic of Hungary, 2013), recognises the important spinoffs of industrial parks and identify financial support and allocation of funds to the development of industrial parks. The identification of six priority development poles (place-based policy), focused on science and technology is identified in the plan, including a “*Technopolis*”, a “*Biopolis*” aimed at the health and bio-technology industry, a “*Quality of life pole*”, an “*Autopolis*” for the motor and engineering industry. Portugal also launched a “competitiveness and technology hub initiative” within the scope of Portugal, especially in support of arising undertakings in the technological advancement of various rural and “catching-up” regions (OECD, 2010)

It is frequently found that public as well as private funds are used as venture capital in lagging regions (Maguire & Weber, 2017), but that this regularly fails as other elements of the entrepreneurial and business environment are not properly explained to such new ventures. For instance, the state investment Danish Growth Fund (Vækstfonden, 2017) in cooperation with private and financial institutions, provides capital and expertise for small and medium-sized businesses. Similarly, the Enterprise Estonia (EAS) venture capital fund, is a national support fund focused on supporting the establishment of new and upcoming enterprises in regions, it further promotes counselling and training to upcoming entrepreneurs, and the public sector (EAS, 2017). Australia has a strong focus on developing its northern peripheral regions with funding with the Cooperative Research Centres (CRCs) grants with an emphasis on establishing cooperative industry research between the local communities and Australian research organisations (Department of Industry, Innovation and Science, 2017). Finland is one of the few case study countries with a specific focus on peripheral regions and policy support in these areas (Angell, et al., 2016). A local industrial development fund initiative is supported across various municipalities, or jointly between municipalities, in order to support minor investments (firms with less than five employees) and knowledge building. The local development fund initiative is also supported by Innovation Norway and the Research Council for small enterprises wanting to expand. The “Housebuilding in rural areas” Programme was initiated to supply houses in risky housing markets by means of a subsidy assistance, as well as a knowledge sharing platform supported by the Norwegian State Housing Bank and the Centre of Competence on Rural Development (Angell, et al., 2016). The Merkur-programme supports the development of rural shops in order to increase profitability and provide the local inhabitants with a better level of service (Angell, et al., 2016). In this programme rural shop owners are supported with grants to modernise, expand or establish a fuel point. Owners have to complete a part-time one year course in business management to qualify for the grant from the Ministry of Local Government and Modernisation. The “Investing in Regional Diversification” (IRD) fund in Ontario (Canada) also support more diverse and robust economies in regional communities. Their focus is on promoting regional-specific assets through

investment funds, this not only has positive effects on the local community, but on the country as a whole (Federal Economic Development Agency, 2016).

5.2.4.2 Regional policy instruments: Infrastructure and Transport investment

Infrastructure investment, and specifically transport infrastructure, is found to be included in various regional policy approaches across the case study countries (refer DPA in Section 3.6). Norway prioritises peripheral support specifically in transport infrastructure, broadband connections and higher education assistance (Angell, et al., 2016). The coastline and strategic position of Chile for international trade is regarded as a major focus for the Chilean government, placing a strong focus on transport investment for specifically peripheral areas with lacking inter-modal facilities and limited freight rail connections (Ramos, et al., 2015).

In Australia a programme (Northern Beef Roads Programme) aiming to link to northern peripheral areas in terms of agricultural produce, more specifically livestock transport, was launched in 2016. Various other infrastructure programmes are identified as fostering regional integration and regional growth, especially in non-dominant regions, i.e. investment in rail, the Northern Australia Roads Programme, and Western Australia Infrastructure Package, also focused on road and rail transport upgrading and renewal (Department of Infrastructure and Regional Development, 2017). These developments are supported by the Northern Australia Infrastructure Facility Act (Parliament of Australia, 2016), which support and complement infrastructure investment by the private sector, including airports, energy, ports, and rail and water infrastructure.

Investment in social infrastructure (SOC) in peripheral regions is also quite prevalent, with investments in schools, hospitals, public spaces and other public buildings. In Australia, two funding schemes are dedicated to financing infrastructure investment, the Stronger Communities Programme (SCP) with a strong focus on enabling and uplifting community organisation through capital projects. Typical funding projects include community halls, care facilities for young children and the elderly, community computer centres etc. (Department of Infrastructure and Regional Development, 2017). Secondly, the Building Better Regions Fund (BBRF) is focused on regional communities in creating jobs and enabling economic growth through subsidising infrastructure and community ventures. BBRF is focused on regional growth outside of major Australian cities. Italy supports the extension of sustainable transport modes for passengers and freight to less developed regions in the national operational programme OP "Infrastrutture e Reti" (European Commission, 2015).

Infrastructure in terms of telecommunications, and connecting peripheral regions by means of broadband or mobile networks is also a form of innovation support and network building, which is

typically supported in Norway in terms of their Rural and Regional Policy (Norwegian Ministry of Local Government and Regional Development, 2012). Alike, New Zealand proposes infrastructure investment in broadband in the thirty year New Zealand Infrastructure Plan 2015 (National Infrastructure Unit, 2015), which is supported by the Ultra-Fast Broadband (UFB) and Rural Broadband Initiative (RBI) programmes with a special focus on schools in small and rural settlements, by means of infrastructure upgrades and new installations (Ministry of Business, Innovation and Employment, 2015). Broadband investment in Slovenia is by means of the “Development Strategy for the information society in the Republic of Slovenia” aims to provide broadband opportunities and access to all users, with the expansion of infrastructure across all regions, and the improvement of speed in especially rural areas (Government of the Republic of Slovenia, 2007). Sweden supports investment in the deployment of broadband access networks, especially in rural areas as per the National Rural Development Programme (Ministry of Agriculture, Forestry and Food, Agriculture Directorate, 2015).

5.2.4.3 Regional policy instruments: Clusters and centres of expertise

Cluster policies are typically focused on organising support for groups of firms (refer Section 3.6) and emphasising the spillovers between these groups, as opposed to a single firm operating in isolation. Cluster policies include innovation clusters as well as SMME (Small, Medium and Micro-enterprise) development (OECD, 2016). This strongly correlates with the discussion, and various advantages, of agglomeration economics (refer Section 3.4.2) as dynamics observed in regional growth and development. These clusters of development are characterised by manifold local linkages and positive externalities (Porter, 1999), and have been digitised more recently and utilised for decision-making in regional and economic policy.

Business development (or innovation support and network building, refer Section 5.2.4.2) often refers to a focus on specific clusters of specialisation and the implementation of centres of expertise in such areas (Maguire & Weber, 2017), typically forming one of the major policy tools of Finland in an attempt to support regional competitiveness. These are often focused on lagging regions as clusters of specialisation have long been recognised as significant tools (refer Section 3.6) to stimulate multiple local linkages and externalities in regional economies (OECD, 1999; Porter, 1999). Cluster strength have been found to be linked with higher resilience of employment to economic crisis, higher growth in innovation and entrepreneurship and the occurrence of new regional industries (Delgado, et al., 2010; Delgado, et al., 2014; Ketels & Protsiv, 2014). Cluster portals in the form of digital access to regional economies and the geographic impact of various cluster categories are also used as a tool to stimulate innovation and establish strategic regional clusters, in a typical public-private partnership approach (Solvell, et al., 2003). This approach has

recently been highlighted by Canada as a project in process, whereas the European Commission launched its open data cluster portal in 2015, and assist member countries in assessing strengths and opportunities within current and evolving clusters. Chile identified a national competitiveness innovation fund as one of their major policy tools (Ramos, et al., 2015)), typically made available to further business development in sectors with a competitive advantage. New Zealand has a similar “Regional Economic Activity Tool” application and website available to the public which highlights the sixteen main regions of New Zealand in terms of the economic trends, challenges and opportunities, making the comparison of data and the exploration of regions more accessible to entrepreneurs and investors (Ministry of Business, 2016). NZTech is a non-profit organisation aiming to advance the interests of the technology sector in New Zealand (as one of the largest sectors in the country) with a vision of advancing the larger economy in the spillovers effects of a growing sector, and support to government regarding investment decisions pertaining to technology (New Zealand Technology Industry Association, 2017). Similarly, Finland launched a regional innovation and experimentations (AIKO) programme, to ensure higher competitiveness, better utilisation of resources and promotion of growth in various parts of the country (Ministry of Economic Affairs and Employment, 2015). The Denmark Cluster Policy (The Danish Ministry of Science, Innovation and Higher Education, 2013) is strongly focused on innovation support and network-building between various clusters, these clusters however, do not have a specific peripheral region quality, but are located all over the country.

5.2.4.4 Regional policy instruments: Skills training and capacity building for local government

The skills training instrument (refer Section 3.6) is often overlooked in regional policy, as it is deemed to fall outside the scope of policy. The skills training and capacity development of actors within the peripheral institutional environment is however vital for successful policy identification and implementation. It was illustrated previously (refer Section 4.4.3.5.1) how important and crucial strong leadership and timely intervention by competent actors is in being prepared for shocks.

Skills training is also often seen in entrepreneurial development in forms of innovation support (refer Section 5.2.4.1). The Australia and New Zealand School of Government (ANZSOG) typically provides education to government officials and supports research focused on the public sector. A strong focus is placed on developing strategic leadership skill for managers in the public sector through training networks and international partnerships (Australia and New Zealand School of Government, 2017), in support hereto a centre for evaluation runs concurrently with the skills development programme in order to administer progress. In support to the ANZSOG

programme, the University of New England runs a separate Centre for Local Government, focused on involving the public sector with their research initiatives in order to establish better cooperation and enhanced efficiency in local governments (Centre for Local Government, 2017).

Within EU countries (Denmark, Estonia, Finland, Hungary, Ireland, Italy, Poland, Portugal, Slovenia, Sweden) education and training is seen as one of the eleven overarching priorities to be included in Cohesion Policy, which are in turn supported by the European Social Fund (ESF) and the European Regional Development Fund (ERDF). Through these funding programmes, member countries can access finance to support education and skills training, which are in turn utilised in some countries for the skills training of government officials in support of better public service delivery (European Commission, 2015). Most of the EU countries are bound to the development of Operational Plans (OP) for each sector, and Slovenia typically addresses skills training and education as part of their OP for Human Resource Development (Ministry of the Environment, Spatial Planning and Energy, 2004).

In the Action Plan for Jobs (Department of Jobs, Enterprise and Innovation, 2016) the Irish government identifies the need for and implementation of Regional Action Plans for Jobs in order for each region to educate and provide skills for local residents in industries and sectors of competitive advantage. No specific focus is placed on peripheral or lagging regions, as the content of the Action Plans are left to the different regional authorities.

Estonia identifies the improvement of developmental capacity at local government level as one their main policy tools in the utilisation and effective allocation of ESF. The absorption capacity of specifically regional and local authorities are not developed properly, and therefore the degree to which Estonia is able to “effectively and efficiently spend financial resources” (Boeckhout, et al., 2002) from the Structural Funds is regarded as a challenge (Tatar, 2010). The weak financial and administrative capacity of local government (refer Section 4.4.3.5) in Estonia is ascribed to the lack of administrative power at the regional level of government, poor coordination and support from central government and the multitude (226) of small size of local governments (Tatar, 2010). Similarly, Poland attempts to provide better institutional support at central and regional level within its Operational Programme Knowledge, Education, and Development (2014-2020). This Programme focuses on strengthening the involvement and management and implementation skills of national role-players, especially with regard to projects where European Structural Investment (ESI) funds are involved. Furthermore, focus is place on building the capacity of beneficiaries in preparation and implementation of projects (European Commission, 2015).

Finland is currently in a process of total government reform in an attempt to build better governance systems for regional development in all sectors. This will ultimately ensure a more coordinated State administration among the various county-level structures and a simpler

approach to regional development (Ministry of Finance, 2016). In the proposed reform, various statutory tasks of regional state offices are devolved to counties, and a single national authority is proposed to encompass the tasks of existing regional development agencies (also refer Section 5.2.5.2.2).

A programme to build subnational capacity in Portugal (Capacitar), is focused on training of, and knowledge sharing between municipal leaders, municipal officials and managers in the subnational government. The Capacitar Programme runs simultaneously with the Portugal 2020 plan (POSEUR Programa Operacional, 2014) as part of the identification of poor capacity of local and regional administrations. Various aspects form part of the knowledge-sharing network, including training in investment attraction, fiscal competitiveness, encouraging cooperation between companies, strategic leadership, public participation etc. Training programs are supported by a Municipal Transparency Portal which aims to provide a depository of data for local governments on experiences and proposals from other government authorities. Italy has made significant investment in supporting and enhancing the administrative capacity of local and regional governments in the provision of technical support regarding the implementation of programmes and various investment projects (OECD, 2016). Whereas the Association of Irish Local Government (AILG) provides training to councillors and simultaneously addresses capacity building of local government officials (Association of Irish Local Government, 2017). Typical training includes the financial aspects of government expenditure, understanding the National Planning Framework, community development initiatives, and local authority planning. A similar example in Norway is the Centre of Competence on Rural Development (Distriktssenteret), a government agency that provides research and assistance to rural municipalities and regions in order to stimulate growth in these areas (Distriktssenteret, 2017) The Centre co-operates with local and regional governments and offers input in regional policy-making processes and implementation.

In Europe a continent wide need for the development and support of local authorities have been identified over many years, which led to the development of the European LEADER Association for Rural Development (ELARD, 2017). Case study countries part of the LEADER approach include Estonia, Finland, Hungary, Ireland, Italy, Poland, Portugal, Slovenia, and Sweden. The LEADER Approach is based on eight subcomponents, including the area-based approach; bottom-up approach; Local Action Group; innovative approach; integrated- and multi-sectoral approach; networking; cooperation; de-centralised administration.

5.2.4.5 Regional policy instruments: Special Economic Zones

Special Economic Zones (SEZs) are prevalent policy instruments used worldwide to further growth and economic development by means of foreign direct investment (FDI) within demarcated areas in a place-based approach (refer Section 3.6). SEZ's could aim to target people in specific disadvantaged areas, and also to target firms in disadvantaged regions. In Australia the SEZ approach is utilised in order to stimulate and further social inclusion, especially in very remote areas. A Zone Tax Offset is payed to individuals based on the region they live. The further from main towns, the higher the offset tax (Australian Taxation Office, 2016).

Poland utilises a combination of financial and non-financial support to business oriented growth across the country in terms of regional investment in SEZs. Financial support is mainly by means of tax incentives targeted at investment expenditure, whereas non-financial support refers to creating a conducive business environment. Investors and new businesses are also supported in this program, by means of public infrastructure investment, with a focus on specific sectors (OECD, 2015). Norway proposes a more explicit and place-based approach by means of a regional aid map which indicates municipalities and regions with certain levels of remoteness, especially in Northern Norway where a target zone for Northern Troms and Finnmanerk has been identified. These remote regions qualify for investment aid and in some sparsely populated areas a differentiated social security contribution scheme is implemented (OECD, 2015). The Action Zone (initially with a strong dependence on fisheries and the fishing industry) is marketed as a region with attractive advantages for living and working. Current policy measures within the Action Zone include a higher family allowance, lower tax on energy usage, wage subsidies for teachers, lower personal tax and zero social security contributions. These policy instruments have had a positive impact on the initial depopulation of the area, especially among highly educated workers due to a student debt scheme (Angell, et al., 2016). Finland, as part of its regional innovations and experimentation programme (AIKO) identified the establishment of nationally important growth zones as one of three tools to support regional growth (Ministry of Economic Affairs and Employment, 2015). In this programme, a limited number of strategic projects are identified based on proposals made by the local councils. These growth zones are supported by means of strategic agreements to develop the zone in terms of new venture, ease of movement and improved labour mobility. Portugal also identified Projects of National Interest in the Portugal 2020 Programme (POSEUR Programa Operacional, 2014) which provides for refundable incentives for projects of national and strategic importance, especially for exportable goods and services. These projects are not specifically place bound and incentives are provided across the entire country (balanced approach – refer Section 3.4.2).

Turkey implements a model similar to SEZs by means of support to Organised Industrial Zones (OIZs) wherein hard and soft infrastructure is applied to promote industrialisation for more efficient

production of goods and services. This investor friendly environment is most often promoted on municipal level and entails the orderly spatial planning of OIZs. The demarcated zones are supplied with complete business oriented infrastructure, while other benefits include the exemption from tax on land acquisition, and subsidies for telecommunications and other basic services. A total of 211 OIZs are under operation in Turkey, with the number growing annually (Ministry for Investment Support and Promotion Agency, 2017). Turkey further supports a Free Zones (FZ) program aimed at increasing the number of export-focused investments with the provision of tax free zones where administrative and legislative regulations with regards to customs are not implemented (Ministry for Investment Support and Promotion Agency, 2017)

The NUTEK (Swedish Agency for Economic and Regional Growth) regional cluster programme across various regions of Sweden, focused on promoting innovation and technology (VIINOVA cluster), regional economic development by regional agencies as identified in the Regional Growth Plan (RTP), entrepreneurship and SME development (Swedish Agency for Economic and Regional Growth, 2017). Hungary is supporting special enterprise zones in 903 disadvantaged regions with various tax allowances. A development tax allowance for the establishment of new businesses are applicable in certain regions, and a vocational training contribution is also offered by government in these regions in accordance with the Economic Development and Innovation Operational Programme (European Commission, 2015). In Estonia an increased emphasis is placed on region-specific growth sectors, with support from the ESI funds in especially the creative industries (Government of Republic of Estonia, 2017). The Project "Via Hanseatica – Spatial Development Zone in Estonia and Europe" (The VHB ZONE Project) is one of the largest and most successful cross-regional SEZ projects, covering Lithuania, Latvia and Estonia in support of tourism development around a specific tourism corridor (Klimask, 2007).

Australia and Poland provide similar tax incentives, business-friendly environments and public infrastructure for the support of sector-specific growth within sectors with strategic advantage, in an attempt to attract investment to these sectors. In Australia the focus in these growth centres are to remove unnecessary restrictions in the identified sectors, improving research and innovation within the sectors, better management and workforce skills and improved export capacity (Department of Industry, Innovation and Science, 2016).

5.2.4.6 Regional policy instruments: Service delivery

Service delivery within regional policy is not as prominent as in urban policy, mainly due to sparse population in rural areas. In terms of peripheral regions, the focus is most often only on maintaining existing service levels, but this is often to the detriment of regional growth since public

administration and institutional capacity suffers. In Italy the identification of measurable objectives (refer Section 3.6) and targets for the provision of essential services have been identified as a major policy instrument. In order to reach their ultimate objective of both intensive and extensive local development in their “inner areas” (classified according to distance from urban areas and declining demographic, among others) or peripheral areas, the “National Strategy for Inner Areas in Italy”, identifies service delivery (education, health, mobility and connectivity) as one of two tools (Materiali UVAL, 2014). The provision of adequate and quality services within the inner areas is regarded as a “precondition for local development” and the central government recognises that if service levels are not on par with that of major towns and cities, the inevitable decay and depopulation of these areas will continue. The demographic stabilisation (population growth across various age groups) within these areas is regarded an objective across local, regional and national areas, wherein service delivery plays a major role, as a crucial prerequisite for ensuring residents’ willingness to continue to live in the inner areas.

Service delivery in the case of Hungary is one of three ‘axes’ on which the New Hungary Rural Development Programme (NHRDP, 2014) is built. The programme focuses on economic diversification (with the agricultural sector as catalyst), access to basic services and local capacity building (Ministry of Rural Development, 2014). Access to basic services is enhanced by two tools, i.e. (i) establishing multiple service centres through renovation and modernisation; and (ii) micro-transport services focused on disadvantaged and outskirt areas. Multiple services centres refer to the joint supply of specifically administrative services, cultural and communication services, health services and social services, in unexploited buildings. The micro-transport tool is applied through fiscal support to new business owners in the purchase of a new motor vehicle in line with the project and supplementary tools to create a conducive operating environment.

In Australia the Local Government Financial Assistance Grant program provides financial assistance in the form of public service delivery subsidies (provided by different levels of government) are focused on maintaining and increasing accessibility of public services and basic market services in isolated regions (Department of Infrastructure and Regional Development, 2017). A National Water Infrastructure Development Fund and the National Water Infrastructure Loan Facility is focused on the extension of the existing water network, especially to regions with low service levels. A health services approach to peripheral and remote regional support envisages to address the medical shortage through targeted measures identified in the Medical Infrastructure Strategy, whereby general practice and rural medical training in remote Australia is encouraged (Department of Infrastructure and Regional Development, 2017). A funding mechanism for student accommodation and training centres in rural areas ensures that training barriers are overcome, whereas a rural practice incentives program support the establishment costs of new practices.

A Growth Pole Support Program (refer Section 3.4.2) in Turkey is principally designed around culture tourism and improving the historic fabric of cities as well as business and commercial development within these prioritised areas. This program was prioritised in the Tenth Development Program (Ministry of Development, 2013) after its initial success in the Ninth Development Program. Another project regarding service delivery in rural and peripheral areas include the Project for Supporting the Infrastructure of Villages (KÖYDES) which is focused on rural areas (and pertinently excludes the largest municipalities) and aims to eliminate issues regarding the availability of drinking water and the construction of roads. The project further supports small-scale irrigation projects on farms surrounding these villages. The Drinking Water and Sewerage Infrastructure Project (SUKAP) allows for a 50% grant for drinking water and infrastructure expenses for municipalities with a population below 25,000. The National Rural Development Strategy highlights inventive rural service delivery with support for rural centres with a potential to serve their surrounding hinterlands in terms of socio-economic development. Such centres will receive support for sustaining and the upgrading of infrastructure, with a specific focus on low income regions (Busra, 2015). The drive behind the grants is to cultivate conditions which will divert migration to the identified rural growth centres, rather than to major cities.

The Canada 150 Community Infrastructure Program (CIP 150, 2014) is being delivered by regional development agencies across the country. The program supports the renovation, enlargement and upgrading of existing civic and cultural infrastructure, including projects that support a better future for native residents and promote a clean growth economy (as part of the objectives of the most recent funding period). Infrastructure projects eligible are aimed at municipalities and provincial or public organisations for projects that have a positive impact on the environment (improving of green spaces, clean sources of energy, recycling projects etc.) The CIP150 is specifically targeted at Quebec Regions (the most eastern regions of Canada) and regions dependent on natural resources or single industries (Government of Canada, 2014).

Norway utilises a General Purpose Grant Scheme, which distributes income from the central government to local governments to support service delivery. Through the scheme, special grants are given to municipalities in the North, the region Namdal and some Southern municipalities, based on need and the potential for growth. The grants ensure that service delivery is more equal across all municipalities, especially in smaller municipalities with a narrow income base (Angell, et al., 2016). Finland, Estonia and Iceland follow similar grant schemes with differentiated support according to the needs of local government and the objectives of central government (OECD, 2016), which in turn attributes to the presence of policy silos (Froy & Giguere, 2010) across sectors and between levels of government. Estonia and Iceland both provide subsidies for the enhancement and modernisation of public transport services (The Ministry of Industry, 2000; Government of Republic of Estonia, 2017).

5.2.5 Regional policy: Actors

The OECD (2010: 23) identifies a central government (or top-down) approach to regional policy (refer Table 3-4) as part of the old paradigm, and highlights that this manner of regional policy making and implementation typically led to a segregated approach regarding the role of national and regional institutions. The subsequent section reviews three spheres of government and the role each plays in regional policy formation and implementation. The integration of, and coordination between, the three tiers of government is discussed at length due to the pertinent role each has on the success of regional policy (refer Section 4.4.3.5).

5.2.5.1 National government as regional policy actor

The responsible entity for regional growth and development plays a major role within policy formulation and the assignment of funds for certain projects (refer Annexure A). This responsibility is often found in the national sphere of economic affairs, some are found within an infrastructure-oriented department, or within the department of local government (OECD, 2016). In some countries it is found that the task of regional development falls within an interministerial committee or central government. Regional development is not frequently found to be a national department on its own, and is seen as being part of urban or rural development (often agricultural department) ministries, which are often more focused on spatial planning and infrastructure provision, and not as much on encompassing regional development. Within the case study countries an overlap between regional development and urban development departments are found in Estonia, Finland, Ireland and Poland. The regional development and rural development overlap is visible within Denmark, Iceland, New Zealand, and Hungary illustrates an overlap between rural and urban development departments. Finally, Norway and Sweden are subject to an overlap of all three fields of spatial development at central (regional, rural and urban) level (OECD, 2015). The coinciding roles of various departments and the associated issues on national level (refer Section 3.5.3) calls for a new approach towards regional development, wherein the central government plays a role in funding and remains the major authority, but with a stronger focus on creating an enabling environment for subnational authorities (OECD, 2010) through the drafting of guidelines and coordinating mechanisms for regional implementation.

The OECD (2010) identifies the national government as co-ordinators and partners of regional development with six overarching roles fulfilled by this level of government. (i) as unity builder between regions and various national sectors with regard to the spatial vision, time frame and objectives; (ii) as facilitator of discussions among policy makers and acting as central source of data and information for needs and opportunity analysis; (iii) the role as manager of the other role

players by means of legal, fiscal and administrative frameworks; (iv) taking the responsibility for conflict resolution and political responsibility for various sectors; (v) as custodian of all levels of government in the establishment of equal power balance and ensuring capacity building across levels; (vi) and lastly, as evaluator and monitor of policy results and ensuring that decision making at these levels are sound and informed. The role of national government is undisputed, and the recognition that national level coordination plays a vital role in the successes and failures of policy is evident. National level government is the main actor in preventing policy silos (Niklasson, 2007; OECD, 2010) from occurring (refer Section 3.5.3), it attributes to positive engagement and stimulates the emergence of new and heightened capacity on sub-national levels (Regional Australia Institute, 2015).

5.2.5.1.1 Horizontal interaction at national level

In an attempt to more effectively coordinate cross-sectoral integration at the national level, various approaches are evident in the policy review of the case study countries. The need for **dedicated ministries** for regional development planning was evident in Chile, Poland and Slovenia. At present the responsibility for regional development in Chile lies with the Secretariat for Regional Development and Administration (within the SUBDERE – Ministry of Interior). This Ministry has a Regional Development Division focused on a combination of rural infrastructure development, decentralisation of regions, funding for regional development and improved territorial management (SUBDERE, 2017). A Policy and Studies Division is focused on enhanced regional identity and the transfer of competencies to regional government, whereas a third division, Municipalities Division, is focused on urban issues and training of officials. Poland's regional development is driven by the Ministry for Regional Development with a strong focus on the competitiveness of regions and establishing territorial cohesion. This Ministry is responsible for the programming and implementation of regional policy, spatial planning and management as well as the analysis and forecasting on socio-economic regional development (Ministry of Economic Development, 2017). In Slovenia the Regional Development Directorate (under the Ministry of Economic Development and Technology) especially focuses on balanced regional development and prioritises a bottom-up approach based on "Regional Development Programmes". These Programmes are supported and implemented by means of a National Regional Development Fund (Slovenian Regional Development Fund, 2017), focused on support to agriculture projects, building entrepreneurship, promoting indigenous ethnic communities and enhancing municipal capacity.

The Department of Infrastructure, Transport, Regional Development and Local Government in Australia, has a wide range of responsibilities, but places strong emphasis on the importance of

regional development (Department of Infrastructure and Regional Development, 2017). The restructuring of national offices in Finland aimed to combine two ministries responsible for regional development (Ministry of Interior and Ministry of Trade and Industry, Labour, and the Interior) into a single ministry (Ministry of Economic Affairs and Employment) to avoid duplication and ineffective funding for regional development (Ministry of Economic Affairs and Employment, 2015). The Ministry is supported by fifteen Centres for Economic Development, Transport and the Environment (ELY Centres) as discussed in Section 5.2.5.2.3. Within the case study countries, the following dedicated ministries have been identified:

Table 5-6 Horizontal governance mechanism: Dedicated Ministry

Country	Dedicated Ministry
Australia	Department of Infrastructure, Transport, Regional Development and Local Government
Chile	Secretariat for Regional Development and Administration (within the SUBDERE – Ministry of Interior)
Estonia	Ministry of Finance (Regional Development Department)
Finland	Ministry of Economic Affairs and Employment
Hungary	Ministry for National Development and Economy, National Development Agency
Italy	Ministry for Economic Development
New Zealand	Ministry of Business, Innovation and Employment (MBIE)
Norway	Ministry of Local Government and Regional Development
Poland	Ministry for Regional Development
Slovenia	Regional Development Directorate (under the Ministry of Economic Development and Technology)
Sweden	Ministry of Enterprise, Energy and Communications and Tillväxtverket
Turkey	State Planning Organisation

Source: Own compilation from policy review

The use of **territorial proofing** across sectors is found within the governance systems of both Canada and Sweden (rural proofing) and Finland (regional proofing). Territorial proofing entails the monitoring of all government policies in order to assess the impact it might have on other sectors, and implies that “all people in all parts of a country receive comparable policy treatment” (Shortall & Alston, 2016: 35). In Canada a “Rural Lens” approach is followed whereby all federal government plans, policies and subsequent objectives are observed through a rural consideration stance (Government of Canada, 2005). This allows for cross-ministerial cooperation in an effort to ensure that rural and remote regions within Canada receive the necessary consideration as

port of policy processes, this task is found within the Agriculture and Agri-Food Department (AAFC) of the ministry. A similar rural lens approach is advocated across all EU countries with the recent Cork 2.0 Declaration, which calls for "systematically review(ing) other macro and sectorial policies through a rural lens" (European Conference on Rural Development, 2016). In the European Union, the need to develop a methodology for territorial impact assessments have been identified as part of the "Better Regulation Package" under which all EU countries operate (Council of European Municipalities and Regions, 2015). In Finland, the Ministry of Economic Affairs and Employment requires all sectoral policy makers to indicate the impact of all sectoral policies on the regions of Finland (Ministry of Economic Affairs and Employment, 2015). The Regional Development Act is subsequently informed by ten sectoral ministries, attributing to breaking down sectoral policy silos (Froy & Giguere, 2010).

Inter-ministerial committees and commissions provide a very basic form of horizontal coordination and involves all ministries with an impact on regional development policy to engage on a regular basis to assess their varying objectives and the impact these will have on other sectors. Denmark set up a "Committee of the Regions" (CoR) in 1994, with the aim to give sub-national authorities the opportunity to express their views on EU policies and processes (Committee of the Regions, 2012). Consultation is mandatory in ten areas, five as part of the Maastricht Treaty (Treaty, 1992) and a further five in the Treaty of Amsterdam (Treaty, 1997). The CoR's powers implicate that all EU legislation with a regional impact must pass by the CoR for approval, and that the CoR can identify regional projects for implementation within the EU.

Table 5-7 Horizontal governance mechanism: Interministerial Committee

Country	Interministerial Committee
Denmark	Committee of the Regions
Hungary	National Regional Development Council (NRDC)
Ireland	Inter-departmental committee regarding NSS
Italy	National Committee for the Co-ordination and Monitoring of Regional Policy (Ufficio Relazioni con il Comitato delle Regioni (URCR)
Norway	Cabinet sub-committee on Rural and Regional Policy
Portugal	Inter-ministerial committee for NRSF co-ordination
Turkey	Inter-ministerial Committee

Source: Own compilation from policy review

The establishment of the National Regional Development Council (NRDC) in Hungary followed as part of institutional preparations for the country’s EU compliance (Agh & Rozsas, 2004). The NRDC was introduced as part of Act XXI of 1996 on Regional Development and Regional Planning (as amended in 1999). The Council consisted of various role-players on all levels of government, and acted as coordinator of development plans, but has no decision rights on development plans. In Italy the Ufficio Relazioni con il Comitato delle Regioni (URCR) or National Committee for the Relations with the Committee of the Regions, is tasked to follow the CoR’s activities on EU scale in order to determine the impacts of EU policy on Italy. Italian national interests are identified by respective national sectors and presented by the committee to the CoR (Ministry of Foreign Affairs and International Cooperation, 2017). According to Anselmo (2012) a National Committee for the Coordination and Monitoring of the Integrated Regional Policy focuses on national issues (as opposed to cross-national in the URCR’s case) and the aims from the NSRF (National Strategic Reference Framework) as stipulated by the EU. The Committee intermittently meets and discusses policy implementation tools and strategic objectives and measures of the NSRF.

Long-term national frameworks have also been applied with varied success in different countries as these national frameworks or strategies lead to greater coordination at central level. The focus of such frameworks are typically diverse in nature, addressing various objectives of national welfare. Both Italy and Portugal make use of a Partnership Agreement with the EU (2014-2020) (OECD, 2016) as required by the National Strategic Reference Framework in EU countries. The following table highlights the various national frameworks at play in the case-study countries (also refer Annexure A).

Table 5-8 Horizontal governance mechanism: Long-term national framework

Country	Long-term national framework
Australia	<ul style="list-style-type: none"> • No overarching framework, directed by White Paper on Developing Northern Australia (2015)
Canada	<ul style="list-style-type: none"> • No overarching framework – each RDA has own document
Chile	<ul style="list-style-type: none"> • Decree N°18.359 (1985) • National Urban Development Policy (2013) • National Rural Development Policy 2015-2025 (2014)
Denmark	<ul style="list-style-type: none"> • Business Development Act (2014)
Estonia	<ul style="list-style-type: none"> • National Regional Development Strategy 2014-2020 (2014) • National Spatial Plan: Estonia 2030+ (2012)
Finland	<ul style="list-style-type: none"> • Act on Regional Development (2014) • Government decision on national regional development priorities 2016-2019 (2016) • Regional Strategy 2020 (2010)

	<ul style="list-style-type: none"> • Structural Funds Programme in Finland: Sustainable Growth and Employment 2014-2020
Hungary	<ul style="list-style-type: none"> • National Development 2030: National Development and Territorial Development Concept (2014)
Iceland	<ul style="list-style-type: none"> • Parliamentary Resolution on a Strategic Regional Plan for the years 2014-17 • Iceland 2020 (2011)
Ireland	<ul style="list-style-type: none"> • National Spatial Strategy 2002-2020 (2002)
Italy	<ul style="list-style-type: none"> • Partnership Agreement with the EU 2014-2020 (2014)
New Zealand	<ul style="list-style-type: none"> • Business Growth Agenda (2015) • Regional Growth Programme (2014)
Norway	<ul style="list-style-type: none"> • White Paper On Rural and Regional policy (2013)
Poland	<ul style="list-style-type: none"> • National Strategy for Regional Development 2010-2020 (2010)
Portugal	<ul style="list-style-type: none"> • National Spatial Policy Programme • Partnership Agreement with the EU 2014 -2020 (2014)
Slovenia	<ul style="list-style-type: none"> • Spatial Development Strategy of Slovenia (2004) • Law on the Promotion of Balanced Regional Development (2012)
Sweden	<ul style="list-style-type: none"> • National Strategy for Sustainable Regional Growth and Attractiveness 2015-2020 (2015)
Turkey	<ul style="list-style-type: none"> • Tenth National Development Plan 2014-2018 (2014)

Source: Own compilation from policy review

A lesser utilised mechanism for horizontal integration on national level is the appointment of **regional ministers** as the case is in Canada. Each of the three Regional Development Agencies (RDA`s) is represented in the federal Cabinet by its own Ministers. The Ministers of the RDA`s have the same accountability as other Ministers and are accountable for program and policy development in their separate regions (Savoie, 2003). In Finland a high-level “special unit”, the Regional Development Advisory Board, helps to ensure coherent policy across the various national sectors involved in regional development.

Although central government plays a major role in the coordination of all sectoral ministries, the implementation of the well-intentioned strategies and policies are mostly in the hands of the subnational level of government. As previously discussed (refer Section 4.4.3.5.2) the concept of a polycentric, multi-layered government system is preferred as opposed to a strong centralised approach (Young, 1994; Berkes, 2002; Lebel, et al., 2006). Such a complementary layered government system allows for more efficient cross-scale interaction and better results (Hollingsworth, 2000; Williamson, 2000; Boschma, 2015), as subsequently discussed.

5.2.5.1.2 Vertical interaction at national level

Throughout the literature and perusal of various policy documents, it has been found that various horizontal and vertical governance approaches are visible. The OECD (2016) highlights that the interaction between national and regional and/ or local policies are of utmost importance (vertical interaction) in ensuring more effective policy, coupled with the monitoring and evaluation thereof. In this instance the national (central) government plays an integral role in identifying and assisting regional and local government entities with policy making and implementation, even more so in less developed countries and regions. Charbit and Michalun (2009: 20-23) identifies five challenges (gaps) that are problematic for multi-level (vertical) governance systems, i.e. information, capacity, fiscal, administrative and policy gaps. The information gap typically refers to different sources of information, or an unwillingness between levels to share information. In terms of capacity challenges, the lack of human, infrastructure, and financial resources especially in cases where new functions or responsibilities are assigned to another level of government. The dependence of sub-national government on the central government for funding and expenditures (fiscal gap) is one of the major challenges experienced by various governments. Administrative differences, especially in terms of border overlaps, is also a cause of concern for vertical integration due to the mutual dependence between overlapping authorities. Incoherent regional policy needs and national policy initiatives lead to the emergence of a policy gap, especially where ministries approach cross-sectoral policy issues from a vertical stance, for instance water supply (Charbit & Michalun, 2009). This gap calls for action from the central government to determine the needs of lower levels and consult in a cross-sectoral manner with all levels of government. Across the case study countries, these gaps are addressed with differing mechanisms, which include (i) contracts between national and sub-national authorities; (ii) strategic planning used as tool to delegate power from national to regional level; (iii) deconcentrated regional authorities in the form of regional development agencies (RDA); (iv) partnerships between key role-players and national government; (v) a national minister for regional development; and (vi) fiscal incentives for targets reached (OECD, 2010).

Brousseau and Glachant (2002: 5) highlights that the term “**contracts**” in the instance of vertical integration is an abstract concept, rather than a physical agreement. A contract of this sorts binds two role players, in this instance the national and sub-national government levels to the bilateral commitments each has in governing the relationship. In Italy the “Institutional Agreement” (*Intesa istituzionale di programma*) indicates the negotiated public investments in an attempt to direct national budget towards regional priorities. Whereas the Framework Programme Agreement (*Accordi di programma quadro*) is regarded as the implementation instrument of the “Institutional Agreement”, which indicates the intervention initiatives within each region, supported by pre-identified monitoring mechanisms, role-players on regional and local level, as well as financial

resources needed (Konvitz, 2007). Polish government adopted a “voivodship” (regional) contract between the central government and the voivodships, wherein central government is represented by a Council of Ministers in each region. The voivodship contracts allows for input into regional policy design and it further allows for national budgets to be concentrated in areas of need. The contract further regulates EU resources and grants to the regional level. The subsequent figure indicates the position of the voivodship contract in the Polish system of regional development (Kovács, 2006: 28).

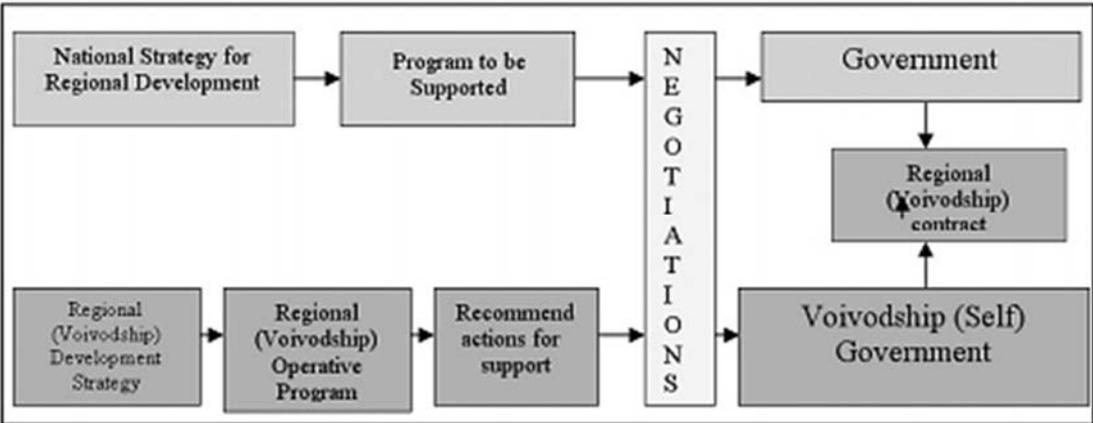


Figure 5-6 Position of the voivodship contract in regional development system of Poland

Source: Kovács (2006: 28)

It is noted that the contract is not only between national and regional level, but also between the Regional Development Strategy and the Regional Operative Program, strengthening input on an intra-regional scale also. Various other similar agreements are visible in the case study countries, as indicated in the subsequent table.

Table 5-9 Vertical governance mechanism: Contracts

Country	Contract between national and sub-national authorities
Canada	Bilateral federal-provincial agreements; Joint federal-provincial funding
Chile	Planning agreements
Denmark	Partnership agreements
Iceland	Regional growth agreements
Portugal	Global growth with municipal associations

Source: Adapted from OECD (2010)

In Finland growth agreements are not between the national and the regional level, but constitutes a contract between national level government and major cities. The contract-based and time-bound (bi-annual agreements) cooperation is initiated from national government (Ministry of Economic Affairs and Employment) with a particular focus on growth corridors, metropolitan regions and the strengths of a particular region. It is envisaged that these agreements will increase competitiveness and enhance economic growth (Ministry of Economic Affairs and Employment, 2015)

Vertical integration and avoidance of the gaps previously identified, are also made more effective through cross-sectoral **strategic planning** at the national level, as previously indicated in Section 5.2.5.1.1 and Table 5-8. In this manner, national government is in direct relationship with the regional authority in identifying regional concerns and setting goals concentrated on resolving these concerns. Portugal, for instance, has identified a need for bottom-up integration (regional to national level) of strategic plans, with the recognition of their regional spatial plans (PROTs) to strengthen ties between these levels of government (Pinto & Antunes, 2009).

In an attempt to deconcentrate national responsibilities to the regional level, **regional development agencies** (RDAs) have been used very successfully across the case-study countries. Canada is a leading example of successful RDA utilisation where the federal government handed over regional decision-making processes to three agencies (Western Economic Diversification Canada; Canada Economic Development for Quebec Regions; and the Atlantic Canada Opportunities Agency) in the mid-1980s. The agencies are represented in the Cabinet by their separate ministers (Government of Canada, 2014), which allows for a more responsive approach by the Cabinet to regional priorities and policies. Similarly, Regional Development Australia consists of 55 local leaders within local governments, and national representation in a partnership for local issues. The Department of Infrastructure and Regional Development (2017) acts as administrator of the initiative, although funding for local projects are from all three spheres of government. Each committee is also bound to compile a regional plan with local priorities, especially focused on sustainable infrastructure and services. Similar central to regional level RDA initiatives are visible in Portugal (17 RDAs covering most of the country); Italy with an agency tasked to administer regional policy; Chile in a territorial management programme; Finland with a regional management committee and Innovation Norway as development agency focused more specifically on innovation clusters and business network support (Angell, et al., 2016). There are two organisations in charge of co-ordinating public vertical interaction for public investment in Sweden, i.e. the Swedish Agency for Economic and Regional Growth and the National Forum for Regional Competitiveness, Entrepreneurship and Employment (Gamper, 2012)

In addressing **partnerships between key role-players and national government** as tool for stimulating vertical integration, Australia once more takes the lead by means of their Regional Development Council (RDC). Together with Regional Development Australia, Ministers and the Australian Local Government Association, the RDC is responsible for sustainable regional development. The focus of the RDC is on closer collaboration and alliance of all levels of government through the identification of regional opportunities in terms of infrastructure projects, change management in communities, eliminating growth barriers in the mining sector and labour shortages (Australian Local Government Association, 2016). Sweden identified various thematic groups, one focused on regional development, to better manage and apply funds from the ESI programme. The thematic groups are more focused on transnational interaction and participation, but the trickle-down effect of active participation in the EU programmes impacts positively on maintaining national to regional relationships (The Swedish EFS Council, 2010). On a more local level, Sweden uses thematic groups (set up by the National Rural Network (NRN)) to encourage rural stakeholders to participate in rural development policy making by identifying rural needs during working group sessions (Stålgren, 2015). A Standing Committee on Local Government and Public Administration within Norway functions within the Ministry of Local Government and focuses on regional and rural policy, and further supports the work of the Ministry (Angell, et al., 2016).

The role that **dedicated regional ministers** have in coordination and integration have been discussed as horizontal mechanism (refer Section 5.2.5.1.1). Similarly, the part they play in vertical alignment should not be overlooked. This is however only visible in Canada, as the only case study country with this mechanism.

The **target setting, incentives and budgeting** approach encourages vertical integration by means of monetary incentives to cooperative regional governments. In essence, national government identifies various targets for regions which are stringently monitored. In the attainment of these targets (usually linked to a timeframe), the regional authorities receive pre-determined incentives. Italy identified a performance reserve system to strengthen community actions in paying an incentive to regional programmes with more efficient management, heightened implementation levels and financial effectiveness (Department of Economic Development, 2016). Various indicators are identified in the operational programmes for each region (for a six-year period) after which incentives are paid in attainment of at least six of the eight goals. The projects are also classified in terms of strengthened public-private partnerships and growing the labour market (Anselmo, 2012). Through the implementation of this system regions are pressured to apply reforms on administrative levels and to ensure higher quality regional projects. The system also makes provision for the assignment of higher responsibilities to local officials, in an attempt to further local capacity building and enhanced monitoring

(Anselmo, 2012). In terms of budgeting as integration mechanism, the national authority in Norway budgets for each sectoral ministry based on the regional development plan set up by regional authorities. In this manner issues within regions are prioritised and ensures a better alignment of national funding across the regions (Angell, et al., 2016).

5.2.5.2 Regional government as regional policy actor

The sub-national level of government acts as the implementer of national plans, and also has a coordinating role in terms of the local level. Angell et al. (2016: 9) highlights that the shift from exogenous to endogenous development strategies (also experienced in the approach to regional growth, refer Section 3.4.3) are initiated and strengthened through the shift from a national policy approach to a regional policy approach – focusing on the communities` and regions` welfare. The subsequent section describes mechanisms for integration on this level in more detail. Similar to the national level, the regional government also has a responsibility towards horizontal (cross-sectoral) integration, for similar reasons as on national level, i.e. to prevent policy silo`s and duplication.

5.2.5.2.1 Horizontal interaction at regional level

Various countries have followed the route of devolving power to the regional levels, especially in terms of strategic level planning and in the allocation of financial resources to recognised projects. This results in a stronger and empowered regional authority with more responsibilities. Differentiation is made between decentralised and deconcentrated regional authorities as discussed in Sections 5.2.5.2.2 and 5.2.5.2.3. Regional level strategic planning is seen across many of the case study countries (OECD, 2010) by different designations, i.e. regional plans and regional strategies (Norway); regional development programmes and regional growth programmes (Sweden); regional agendas (Chile) and regional spatial plans (Portugal).

5.2.5.2.2 Decentralised authorities at regional level

Decentralisation of authorities is improved by an increase in public participation in local public decision making (Ribot, 2003: 53), as downward accountability should lead to local efficiency and development. “Decentralization seems to result in more regional responsibility, at the same time with an increased dependence on the central government for resources” (Bergvall, et al., 2006: 132). As stressed by Oates (2005), decentralisation therefore requires the design of specific

devices to govern the increasing transfers from central to sub-national institutional levels. These devices include (i) regional strategies; and (ii) regionalisation as a tool. **Regional strategies** as tool is often utilised as integrator of economic, social, political, environmental and development goals. The regional strategies are complementary to policies from national government. In this manner the regional authority's role as strategic programmer is strengthened. The subsequent table indicates the case study countries with dedicated regional strategies.

Table 5-10 Decentralised regional government mechanism: regional strategies

Country	Regional Strategy
Chile	Regional Development Strategy
Denmark	Regional Development Plan
Finland	Regional Plan Regional Strategic Framework
Norway	Regional Plans Regional Strategies
Poland	Regional Spatial Development Plan
Sweden	Regional Development Programmes Regional Growth Programmes

Source: Own compilation from policy review

Hudson (2006) argued that regions should be responsible for developing their own strategies to become more active actors in mobilising indigenous resources for optimal growth.

Regionalisation as tool refers to “a top-down move to a regional focus for regional policy” (Campbell, 1996: 2), in an attempt from national government to achieve better efficiency and effectiveness of programs on a regional scale. Central government however retains control and stipulates the directions in which regions will grow, most often through fiscal means. Regionalisation in most EU countries occurred as a natural process as result of EU policy and funding. Poland for instance created sixteen regions in order to more effectively access EU structural funds, these sixteen regions correlate with the NUTS2 regions as identified by the EU. Regionalisation is also often assisted through structural reforms, as is the case in Denmark (OECD, 2010). Sixteen counties were replaced by five regions in an attempt to improve sub-national performance, this resulted in the amalgamation of 271 municipalities into 97 and increased effectiveness of public service delivery. In Sweden, as a drive towards maximum growth potential, two initial pilot regions were identified, i.e. Region Skåne (in 1997) and Västra Götaland (in 1999). Public governance in Sweden was initially based on strong powers on national and local municipal level (Gamper, 2012), but a weak regional component (what is referred to as the “hourglass” system). The identification of the two pilot regions led to a vertically more integrated configuration and these regions' regional assemblies were made permanent in 2010 (Martins, et al., 2014). The success of regionalisation led to the identification of six additional

regions (previously counties with limited responsibility) in 2014, and two more in 2015. Similar regionalisation efforts are also visible in Norway (counties with elected membership, but limited fiscal power) and Italy (regions with both elected membership and fiscal power) (OECD, 2010). In Chile a “decentralisation and development agenda” is underway in an attempt to address regional disparities and to be more sensitive towards regional needs and opportunities. This will entail an institutional reform to allow for regional decentralised authorities (intendentes) to be nationally elected and to claim power of public services within the regions (Ramos, et al., 2015). At a later stage it is envisaged that full power will be devolved to the intendentes.

5.2.5.2.3 Deconcentrated authorities at regional level

Deconcentrated authorities refer to the instance where national government appoints representatives within the regional system to guide regional development. Sayer et al. (2005: 124) refers to this as “the process by which the agents of central government control are relocated and geographically dispersed”, or as Ribot (2003: 56) stated as “a transfer to lower-level central government authorities, or to other local authorities who are upwardly accountable to the central government”. In the case study countries, sectoral agencies and regional development agencies are observed within the deconcentrated authorities’ tool.

Finland is a leading example of utilising **sectoral agencies** in the fifteen “ELY Centres” (Centres for economic development, transport and the environment), these centres were instated to take over tasks from various other centres and central government sectors (Centre for economic development, transport and the environment, 2016). These centres are effectively the regional authority in Finland, together with regional administrative agencies, and aims to promote regional development with the national government’s objectives and programs in mind. Various tasks fall under the ELY centres, including rural development, education and training, employment, immigration, transport and other infrastructure, as well as all matters regarding environmental monitoring and management. The structure of the centres are indicated in the subsequent figure, this allows for a more “strategic, streamlined, cross-administrative and coherent government” (Ministry of Economic Affairs and Employment, 2015)

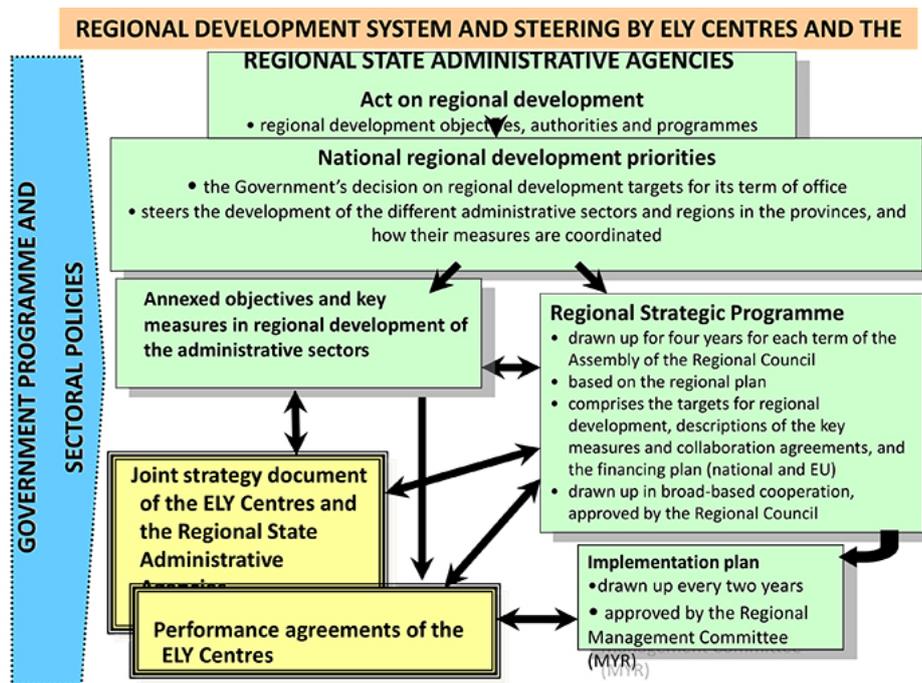


Figure 5-7 Regional development system and steering by deconcentrated authorities in Finland

Source: Ministry of Economic Affairs and Employment (2015)

In Sweden two agencies to execute central regional objectives are found as part of the regional deconcentrated approach to integration, namely the Swedish Agency for Economic and Regional Growth (Tillväxtverket) and the Swedish Agency for Growth Policy Analysis (Tillväxtanalys). The Tillväxtverket is commissioned by the Government to promote competitiveness among companies through channelling EU funds to identified projects promoting growth (Swedish Agency for Economic and Regional Growth, 2017). Tillväxtanalys evaluates and analyse Swedish growth policy in order to assist central government with reviews and restructuring of existing and proposed policy (Tillväxtanalys, 2016).

Regional development agencies (RDAs) are utilised by various countries to instate and organise the delivery of policies within specific target areas. This tool has been discussed within Section 5.2.5.1.2, as a vertical integration tool between national and local government. According to the OECD (2016) these RDAs are typically held accountable by the regional level of government and act separately from the traditional spheres of government, and often focus on a specialised field of business development or innovation in a place-based approach. The RDAs mostly came into existence due to the lack of expertise and capacity at regional level. Canada is one a very few countries having a RDA at national level, supported by provincial / regional

authorities and their subsequent RDAs. These agencies are also found within Iceland (eight independent RDAs), Australia (previously discussed), and Slovenia. RDAs are often found not to be focused on a specific functional region, but on interregional partnerships and spillovers.

5.2.5.2.4 Asymmetric decentralisation

Asymmetric decentralisation refers to a combination of deconcentrated and decentralised governance in different intensities, and are often applied for two main reasons, (i) for political reasons (diffuse regional or ethnic tension), and (ii) for efficiency reasons (to achieve more effective national economic growth) (OECD, 2010). Asymmetric decentralisation for the purpose of better efficiency was applied as part of a pilot project in Sweden (refer Section 5.2.5.2.2) where regional status was assigned to two counties, but national government still remained the responsible authority for the remaining counties (Gamper, 2012). As the programme is rolled out across all counties in the country, the asymmetric decentralisation will make way for an entirely decentralised governance system. Chile instated a Territorial Management Programme (GT) which aims to strengthen partnership and coordination between sub-national government and deconcentrated agencies. In this manner, regionalisation and deconcentration are targeted simultaneously with improved regional capacity resulting from this form of asymmetrical governance and the implementation of the National Management Improvement Programme and the Subnational Management Support Programme (AGES) (SUBDERE, 2017).

Finland has a Regional Management Committee where regional councils and regional administration come together, it also includes representatives from local municipal authorities. These Councils are responsible for regional development as well as regional land use planning, especially in terms of the ESI funds programme implementation (Regional Council of Kainuu, 2017). Between 2005 and 2012 the Kainuu region in Finland experimented with self-governance with great success in the reorganisation of educational, health and social service provision. The experiment was ascribed to issues regarding population out-migration, declining economic growth and slow innovation processed. The experiment was terminated in 2013 due to political disparities and financial disagreements (Regional Council of Kainuu, 2017).

5.2.5.3 Local government as regional policy actor

The importance of local municipalities lie within their role as service provider and employer, both crucial factors for stable economic growth (Official Norwegian Reports NOU, 2004), adding that rural municipalities act as exceedingly active facilitators of new business ventures through

entrepreneurial support. Local municipalities act as provider of public services, administrative services and community development. The latter referring to the initiation of measures to further development, and secondly, as an actor in the implementation of national and sub-national government's policies and strategies (Angell, et al., 2016). Various **inter-municipal cooperation** agreements exist in the case study countries as listed below. Inter-municipal cooperation encourages arrangements among local jurisdictions to jointly provide certain basic services and infrastructure-related projects (Martins, et al., 2014)

Table 5-11 Local government: Inter-municipal cooperation

Country	Inter-municipal cooperation mechanism
Canada	Special agencies, joint boards, commissions (e.g. public service such as hospitals)
Finland	Joint municipal boards (e.g. specialised health care, physical planning)
Hungary	Micro-regions (e.g. regional development)
Portugal	Grouping of municipalities at NUTS 3 level
Sweden	Local federations, common committees (e.g. public services)

Source: Adapted from OECD (2010)

Regionalisation is also visible on local municipal level in the **restructuring** of administrative boundaries and responsibilities of local authorities (often in amalgamation of local authorities), in an attempt to discourage fragmented and ineffective administrative authorities. This will assist better flexibility and an improved capacity to address regional economic growth targets (OECD, 2010). Such restructuring is often forced down from national government, without taking into account local initiatives. This was the case in Denmark where structural reform (also refer Section 5.2.5.2.2) and inter-municipal interaction led to a more effective regional governance system. In Sweden progressive reform also took place when the Turkey the Scale Reform Act (2008) forcibly amalgamated all municipalities with a population of less than 2,000 inhabitants (Martins, et al., 2014). Hungary also followed the same approach regarding small municipalities with less than 2,000 inhabitants.

Regionalism (as opposed to regionalisation) is a more bottom-up approach to regional development, and refers to autonomy at the regional level where strives are driven from the local level, rather than being imposed by the national level. Regionalism is more about “communities coming together to tackle common problems on a scale which is meaningful to them” (Campbell, 1996: 3), often focused on social and environmental issues. Through regionalism (mostly at municipal level) local social and economic development is encouraged. A bottom-up approach was followed in Finland (PARAS project), the 2006 Framework Act for the Restructuring of Local

Government and Services aimed “to create a thriving municipal structure built on economically robust municipalities” (Meklin & Pekola-Sjoblom, 2013: 3). This programme is supported by financial incentives to local municipal mergers. Iceland and Norway also followed a more bottom-up progressive approach, with voluntary mergers in Iceland reducing municipalities from 229 to 74 over a spectrum of 65 years, and 428 municipalities in Norway, as opposed to 744 in the early 1950s (Martins, et al., 2014).

From the lengthy discussion on government actors (institutional pillar) it is apparent that governance is an especially difficult component to manage within any country, as this pillar acts as decision-maker, informant, coordinator and facilitator, as well as financier of regional development. The government system or organisation thereof is also exposed to political interference which reduces the multi-level cross-sectoral integration of any policy a demanding and nearly impossible task.

5.3 Conclusion

Chapter five, as the first of the empirical chapters, aimed “to evaluate the content of international regional policies in terms of the broad outcomes”, in which seventeen case-study countries were identified. The national and regional policy documents of these countries have been extensively analysed, at first aiming to focus on peripheral region initiatives. It was observed that very few of the case-study countries pay any attention to these regions, even though inter-regional disparities are highlighted in almost all the national frameworks as major cause for concern. Due to the lack of peripheral region focus, the components impacting on these regions were further explored, with specific reference to the regional resilience pillars as identified in the preceding chapter, i.e. sectoral composition, institutions and networks. Policy analysis followed on five distinct regional policy components (refer Section 3.6), glancing at problem recognition and objectives of regional policy as these two components are often found to be broad and generic. The analysis of the policy framework of the seventeen countries presented a strong case for more focused regional development policy, as regional development is often found to be part of rural development, or sometimes even urban development. Which was further emphasised by the lack of region-specific or region-exclusive ministries. It was observed that various countries do have a regional policy or region-specific frameworks in place, but that the lack of vertical and horizontal integration on governance level often lead to these policies not being fulfilled.

A more in-depth perusal of policy instruments within the policy environment of the case study countries delivered six pertinent instruments visible across all the countries, i.e. business

development, infrastructure and transport investment, cluster development and centres of expertise; skills training and capacity building at local government level; special economic zones; and service delivery. The tools for policy application is regarded as central to the study as a pragmatic paradigm ultimately strive towards resolving identified issues (refer Section 2.4). Innovation and network-expansion is a very prominent tool in most of the case study countries, with many NGOs and government supported initiatives focused on strengthening the levels and quality of research and development in an exclusive place-based manner. Government investment in broadband networks to lagging regions are also prominent, with the support of local entrepreneurs following closely by means of DPA and SOC. The investment in infrastructure, and especially transport infrastructure for increased regional integration was found to be a strong tool for linking peripheral or rural areas to economic opportunities. Whereas the improved quality of social infrastructure is seen as a device to retain and even entice residents to more remote areas, which is supported by tax incentives in some cases. Another area-specific or place-based tool featuring very prominently is the development of clusters and centres of expertise. Cluster development, and the subsequent specialisation of sectors, in the case study countries are especially promoted in rural areas with a comparative advantage in natural resources. Skills training is regarded as means to attract and retain a qualified and skilled workforce, as answer to the depopulation of many rural regions. In support thereto, the skills training of local government officials is a pressing issue in almost all the countries forming part of the review. Developmental capacity and the absorption capacity of these authorities is essential in identifying opportunities and taking responsibility for regional growth and development in a decentralised manner. This tool is often informed and supported by a strong focus on public participation and community-led growth approaches. SEZs target specific regions and or places based on a disadvantage it experiences. The development and support of these zones are regularly within lagging and peripheral regions, either in support of industrial development, support to innovation and technology and business-oriented growth. SEZs are closely linked to the first tool of business development, but with a more place-specific orientation. Service delivery as the final tool identified within regional policy, is supported by means of large-scale infrastructure investment, as well as incentive schemes and grants to local authorities. The joint supply of specific basic services and multiple service centres, are a “shared facilities initiative” for regions with a limited tax base, often characteristic of remote and peripheral regions.

The chapter further paid attention to the extremely intricate, and at times even muddled, role of the actors in regional policy, as the responsibility of both the identification and the implementation of regional policy are in the control of government institutions across different spheres. Policy integration is highlighted as the main contributor to poor policy implementation (across all the case study countries), which is in turn linked to the lack of coordination between and among different levels of government. This issue was found to be exaggerated in countries where no

clear actor or unit claims responsibility for regional development, but no variation was observed between unitary or federal governments, although federal systems exhibit a stronger level of regional level integration due to decentralisation of national power. Territorial proofing or a lens-approach is found to simultaneously strengthen national horizontal and vertical integration, similar to the presence of inter-ministerial committees. Integrated and aligned national frameworks are utilised by fifteen of the case study countries, but it is noted that these frameworks are often very comprehensive in their focus, and not informed from the bottom-up. With regard to vertical integration, various mechanisms are evident, with the RDA featuring prominently in both a national-to-regional integration approach, as well as a deconcentrated regional authority method. Partnerships between key role-players and national government assigns joint responsibility and fosters a more integrated relationship between the role-players. Regional government is seen as the most important actor in the implementation of regional policy and regional frameworks and decentralised and deconcentrated authority (or a combination thereof) is applied to strengthen the role of this level of government. The establishment of locally informed and nationally supported regional strategies also plays a vital role in the regional milieu as enablers of national objectives and respondents to local needs. Both regionalisation (nationally downwards) and regionalism (locally upwards) as tools for a more robust regional tier supports and reinforces regionally focused governance.

It is observed that no single governance approach is more successful than another, as coordination and integration of government tiers are complex and varies as result of a multitude of factors, including the country's history, structuring and responsibility of government levels, as well as their capacity and accountability. It is highlighted that strengthening the local and regional level through greater decision making power as well as accountability is recognised as an inevitable policy tool for policy creation and application.

CH 5: REGIONAL POLICY



Regional Policy Case Studies

Chapter message:

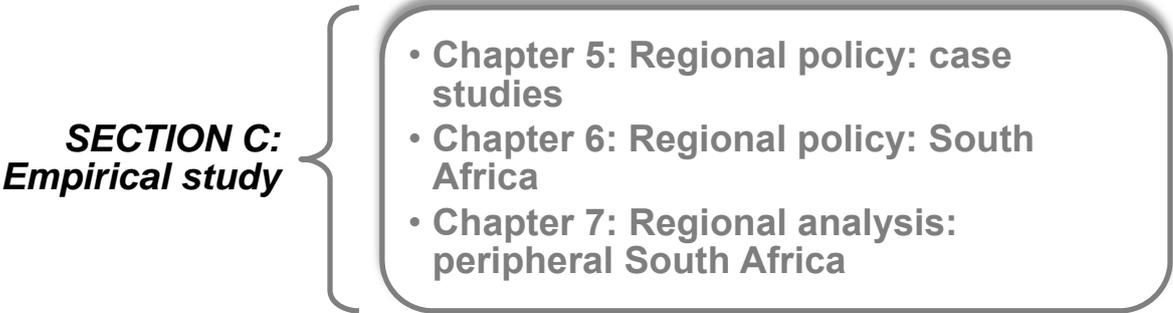
- Peripheral regions are significantly included in the regional policy of the case study countries.
- Regional disparities are highlighted as the main problem area in most regional policy documents.
- Regional balance features as objective of most regional policy documents.
- Only one country highlights “increasing resilience” (to industrial shocks) as objective.
- Competitiveness, infrastructure development and business and innovation support features prominently in the case study countries.
- Most countries have a national policy or framework for regions.
- Regional policy is often found to be integrated with rural policy.
- Very few countries have a specific regional policy contributor on national level.
- Regional policy instruments identified to assist in reaching national targets include. business development; infrastructure and transport investment; cluster development and centres of expertise; skills training and capacity building for local government; special economic zones; and service delivery.
- Place-based instruments are still very prominent tools for regional development, although regarded as an “old” approach.
- Place-based instruments are mostly aimed at lagging and peripheral regions in the case study countries.
- Poor integration between levels of government is a notable inhibitor of policy design and implementation.
- Cross-sectoral coordination and vertical and horizontal integration between multi-level government and other actors is key to strengthening the role and impact of regional policy.

Figure 5-8 Chapter message: Chapter 5

CHAPTER 6: RESILIENCE AND REGIONAL POLICY: SOUTH AFRICA

Chapter six relates to Aim 2 of the study “**evaluate the content of international regional policies in terms of their broad outcomes**”, with a specific focus on the South African context, as host country of the peripheral study area. This Chapter forms the second chapter within the empirical section, Section C, as indicated in Table 6-1. Chapter Six will qualitatively review the existing and past policy initiatives in South Africa, with specific reference to its peripheral regions. These will in turn inform principles for implementing integrated government in terms of policy design, and contribute to proposing a resilience framework for the peripheral region.

Table 6-1 Section C - Empirical Study



Source: Own compilation

The qualitative analysis will indicate the successes and failures of the various policies and plans during the regional planning past of South Africa, which will in turn transpire into potential proposals on successful regional policy (relating to Aim 3 of the study “**determine and propose a developmental policy approach towards more resilient peripheral regions**”) in context with the international case studies as discussed in Chapter 5.

Together with the textual analysis (in the form of spatial policy analysis in Chapter 6) and the spatial and policy analysis of the study area (Chapter 7), the final chapter, Chapter 8, will aim to propose study area specific, as well as internationally applicable, guidelines (pragmatic approach) in the overall aim of the study “**to provide a regional policy framework for a more resilient peripheral region**”.

6.1 Historic overview of South African spatial policy

Throughout the history and evolution of spatial planning and policy in South Africa, three main perspectives became evident. In the latter part of the previous millennium (1960s-1980s), economic growth was regarded as the all-encompassing goal in national development. Although founded on political ideology, national policy was based primarily on industrial development in areas earmarked for concentration. A shift in emphasis occurred in the early 1990s towards a balanced non-spatial policy approach, whereby a participative or people-centred approach replaced the previous 'fordist' approach to development. In the mid-1990s, the principles of resource management or environmental sustainability were also accepted as being part of the spatial planning and policy formulation process. The latter two approaches to development are clearly process driven, since it involves the integration of principles, community participation and environmental sustainability in spatial planning which, by their very nature, are crucial in the development process. By contrast, in South Africa the end result of economic growth and separate development was the main goal in the previous regime's approach to spatial policy formulation until the 1990s. Since 2000, the 'geographical expression' of spatial planning is again focused on social and political drives, with a great deal more focus on specific localities, aiming to balance out the country in terms of economic development. Recently, national planning, as a centralised governmental function, had been pursued, but did not meet with the approval of all stakeholders since, in a sense, it served as a reminder of earlier top-down autocratic planning initiatives. South Africa is currently mostly in a passive strategy phase, juggling between basic service delivery and infrastructure investment. Investment in infrastructure usually only takes place once a bottleneck is dealt with due to private sector investment (Drewes & Van Aswegen, 2013).

At present, the planning and development of cities, towns and rural areas in South Africa are governed by a National Development Plan (NDP) (The Presidency: National Planning Commission, 2011) which aims to improve the manner in which urban and rural areas develop as to increase the efficiency, sustainability and investment potential of a municipality, better the conditions in which people live and conduct their daily lives, and protect valuable resources from irresponsible consumption. This developmental agenda finds expression in numerous sets of national and provincial legislation and policy documents. Section 6.2 will provide an overview of the relevant legislation, policies and planning frameworks from national, provincial, district and local government that impact on, and direct, spatial development in South Africa and in particular in the peripheral regions. Rather than replicating the contents of each piece of legislation, policy or framework, the purpose of this chapter is rather to achieve a concise but clear understanding of the intention and implications of these documents for the formulation of the regional policy framework.

6.2 Regional policy initiatives

The subsequent section will mainly refer to national policy documents currently applicable in regional spatial planning (refer Table 6-2), similar to perused spatial planning policy of the 17 case study countries throughout Chapter 5. This Chapter will follow the same pattern of analysis as in Chapter 5, with five main components of analysis, i.e. (i) problem recognition within South African policy; (ii) objectives of South African policy; (iii) the existing South African policy framework, including the theme coverage, spatial orientation, policy intervention units, time dimension, approach and focus; (iv) the instruments identified in approaching peripheral regions in South Africa and (v) the South African actors responsible for the compilation and implementation of said policy.

Table 6-2 South Africa: National spatial policy documents – a ten-year review

<i>Policy Document</i>	Year	Department
<i>National Industrial Policy Action Plan, 2017/18 – 2019/20 (IPAP)</i>	2017	Department Trade and Industry
<i>Integrated Urban Development Framework (IUDF)</i>	2016	Department Cooperative Government and Traditional Affairs
<i>Rural Development Strategic Plan 2015 – 2020 (RDSP)</i>	2015	Department Rural Development and Land Reform
<i>National Transport Master Plan (NATMAP)</i>	2015	Department Transport
<i>National Infrastructure Plan (NIP)</i>	2012	Presidential Infrastructure Coordinating Commission
<i>National Development Plan (NDP)</i>	2011	The Presidency: National Planning Commission
<i>New Growth Path (NGP)</i>	2010	Department Economic Development
<i>Comprehensive Rural Development Programme (CRDP)</i>	2009	Department Rural Development and Land Reform
<i>National Industrial Policy Framework (NIPF)</i>	2007	Department Trade and Industry

Source: Own compilation

The various national sectoral departments responsible for policy guidance which impacts on regional and spatial planning are also indicated in the preceding table, affirming early on, that integration across these levels will be vital in ensuring the success of such policy. It is

acknowledged and highlighted that no single national policy exclusively focused on regional development currently exists in South Africa. Therefore, applicable policies impacting on regional and rural development will be included in the analysis.

6.2.1 Regional policy: Problem recognition

The various policies in South Africa associated with, and impacting on regional planning necessitated the addition of two new problems to the original analysis of the international case study countries (refer Section 5.2.1), i.e. funding for progressive development, and secondly, land reform and redistribution as a result of earlier Apartheid legislation and land expropriation. From the nine policy documents in the analysis, it is apparent that community economic development comes forth as the main issue. This theme is found recurrently within most policy documents, except for the Integrated Urban Development Framework (IUDF), the Comprehensive Rural Development Programme (CRDP) and the National Transport Master Plan (NATMAP).

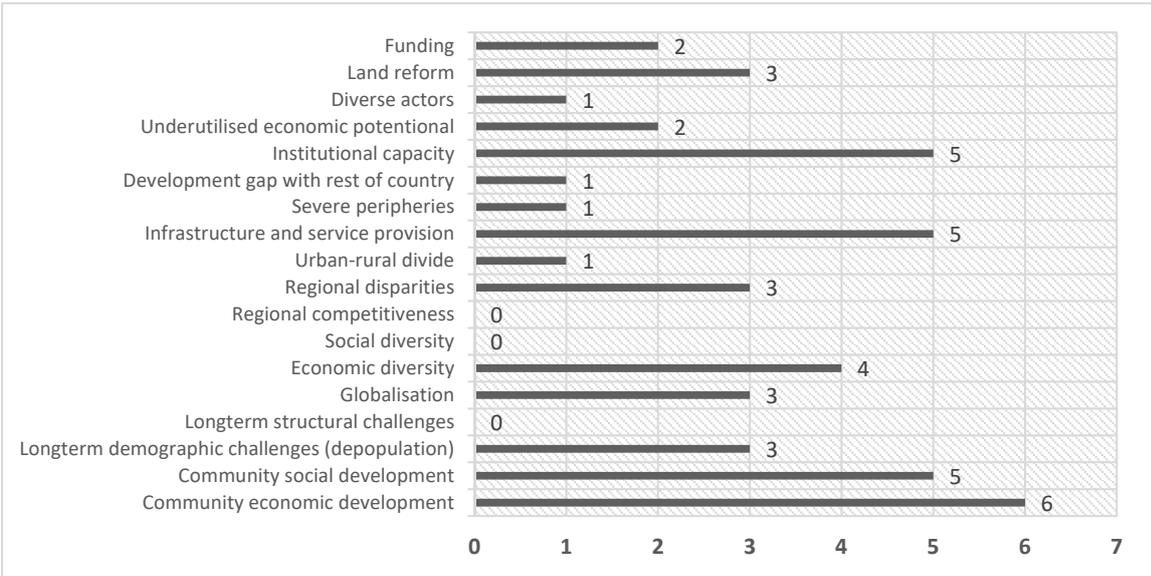


Figure 6-1 Problem recognition across nine policy documents

Source: Own compilation from policy analysis

Lagging community economic development is typical of societies in the developing world, accompanied by poor community social development and a lack of appropriate and reliable infrastructure and basic services. This theme of underdevelopment is visible across all national

policies and is in stark contrast with the 17 case study countries where regional disparities and depopulation of the rural areas, accompanied by a rural-urban divide is most prominent (refer Section 5.2.1). The lagging economic development is prevalent in the various policy documents, whereas the National Industrial Policy Action Plan (IPAP) (Department Trade and Industry, 2017: 4) highlights the persistent unemployment (at 23% according to the narrow definition) as one of the major causes of lagging economic growth, especially in rural areas (Economic Development Department, 2010). The youth employment rate is especially worrying (The Presidency: National Planning Commission, 2011: 248), with the focus being on rapid youth expansion in urban areas. This, coupled with skills shortages (as community social development indicator), also restricts progress in the manufacturing sector. The National Industrial Policy Framework (NIPF) (Department Trade and Industry, 2007: 14) ascribes slow growth in rural and peripheral areas to the geographic distance, associated with escalating transport costs, and a relative small market size, as opposed to the substantial high income markets in urban areas.

The challenge of poor community social development, is coupled with poor economic development, and is highlighted in various policy documents as one of the major setbacks to persistent and robust economic growth. The National Infrastructure Plan (NIP) (Presidential Infrastructure Organising Commission, 2012) itemises various factors contributing to the national skills gap, especially in the engineering and built environment. These include a shortage of professionals, skills shortage within government, neglected training facilities and an absence of retaining knowledge due to high emigration rate of professionals (Presidential Infrastructure Organising Commission, 2012: 39). The NIP is supported in this recognition by the NIPF (Department Trade and Industry, 2007: 14) in a call for more skilled and technology intensive training to keep up with a growing demand in the rapidly expanding quaternary sector.

The lack of proper infrastructure and low levels of basic service provision features conspicuously as one of the principal issues in the national policies of South Africa. The provision of reliable transport infrastructure, as highlighted in the NIPF (Department Trade and Industry, 2007: 14), the NGP (Economic Development Department, 2010) and the NDP (The Presidency: National Planning Commission, 2011). Infrastructure backlogs in logistics, as well as outdated infrastructure in the rail and port logistics, elevated costs in the broadband telecommunication industry, and the lack of cost-effective energy supply in a reliable manner, all contribute to crippling manufacturing and export sectors. The improvement of infrastructure capability and reliability is central to raise foreign investment and exports. Increasing urbanisation of the poor (also referred to as the “urbanisation of poverty” (The Presidency: National Planning Commission, 2011: 238)) and the detrimental effects on the provision of basic services puts service networks in urban areas under great strain, whereas dilapidated service networks in rural areas often lead

to non-provision of basic services. Rapid urbanisation has led to ecological limits to urban growth emerging rapidly, leading to water shortages, power outages and food insecurity.

Coupled with the aforementioned main issues, institutional capacity is considered a major hindrance to successful policy implementation within five of the nine policies. The skills shortage is also prevalent within the government structures, especially in terms of planning specialists in community and economic development (The Presidency: National Planning Commission, 2011: 245). The National Development Plan (NDP) states that tension in the political-administrative interface at all levels of government magnifies the poor performance of institutions, coupled with skills deficit, lack of accountability, meagre organisation and minimal staffing levels (The Presidency: National Planning Commission, 2011: 364). Incoherent policy due to weak government capacity in the industrial sector has prevented the roll-out of information and communications technology (ICT) infrastructure (Department Trade and Industry, 2017: 4), impacting negatively on the establishment and expansion of knowledge networks (refer Section 4.4.3.4). The NIPF further ascribes the lack of overriding authority and coordination for strategic policy decisions and those related to tactical projects as a particular constraint within the government structure. The lengthy decision-making processes and accompanying administrative burdens often deter firms from engaging in business with the state. The National Transport Master Plan (NATMAP) (Department Transport, 2015) regards the improvement of enhanced coordination between spheres of government in multi-sectoral developments as critical to avoid resource duplication and conflicting efforts. This is reiterated by the NDP (The Presidency: National Planning Commission, 2011: 248) stating that “many of the challenges are not a result of a vacuum in policy, but rather insufficient institutional capacity and lack of strong instruments for implementation”. Although a Constitutional Court judgement passed in 2010 clarified municipal planning responsibilities, the lack of capacity at this level does not allow the actors to fulfil their roles and responsibilities (Department Cooperative Governance and Traditional Affairs, 2016: 48).

The disadvantages of an economy dependant on a small number of economic sectors are also visible within the recognition of **economic diversity** (refer Section 4.4.3.3) as an obstacle for development, especially in South Africa being strongly dependant on primary sector exports, visible in the sizeable dependence on the minerals value chain (Economic Development Department, 2010: 15). This, in turn, increases the country’s dependence on electricity and impacts negatively on emissions and escalates rent-seeking to the detriment of industrial diversification and consumers. Such strong dependence on resources lead to the overvaluation and short-term volatility of the currency, and although spurring on GDP growth during economic upturn, also translates to substantial shocks to the entire economy during a downturn (Department Trade and Industry, 2017: 4), resulting in less resilient economies. The NIPF (Department Trade

and Industry, 2007: 14) warns that South Africa becomes increasingly more vulnerable to external shocks and deters FDI, especially in non-resource based exports. The NGP argues that the revenue from these commodities should be utilised more effectively by the state to diversify the economy and enhance skills development, but instead is channelled back into the primary extracting sectors (Economic Development Department, 2010: 15). The continued elevated levels of concentration in a few key economic sectors encourages monopoly in these sectors and restricts new entrants into the economy (Department Trade and Industry, 2017: 4).

Regional disparities are highlighted in three of the policy documents as problematic, as is the case with the depopulation of rural areas, which in turn adds strain to urban areas and amplifies the rural-urban divide. The NDP aptly describe that the “national accounting system understates the importance of rural areas to South Africa's future” (The Presidency: National Planning Commission, 2011: 240), due to the dependence on rural resources. The productive rural economy is dwindling and has led to a decrease in agricultural employment, in turn aggravating previously discussed issues of lagging community economic and social development, skills shortage in rural areas and increasing urbanisation levels, as illustrated in Figure 6-2. It is observed from the South African analysis that in terms of problem recognition, regional competitiveness, social diversity and long-term structural challenges are not as prominent.

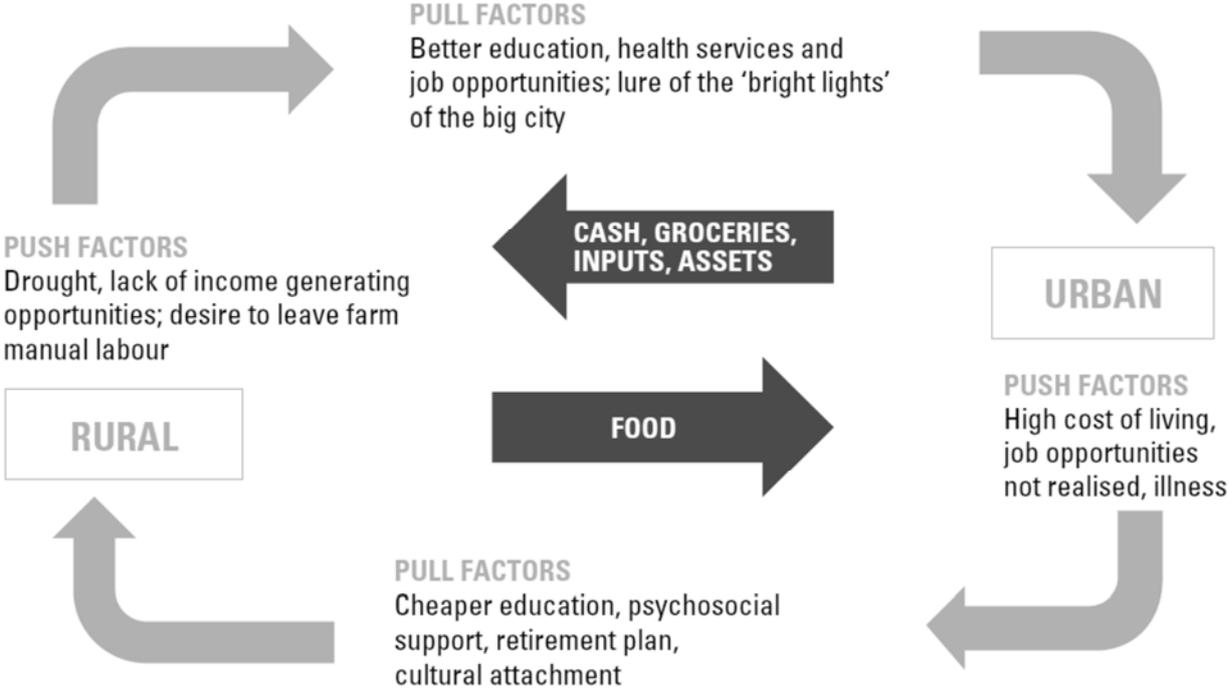


Figure 6-2 Rural-urban push-and-pull factors

Source: Department Cooperative Governance and Traditional Affairs (2016: 28)

Due to the migration patterns, it is identified by COGTA that a “spatial intermingling” (Department Cooperative Governance and Traditional Affairs, 2016: 29) is occurring in especially the peri-urban areas (between the urban and rural areas). This intermingling is heightened by better accessibility to economic centres, increase in ICT and production flows, allowing a middle-ground between the rural and the urban in an attempt to balance urban environment disadvantages and rural benefits.

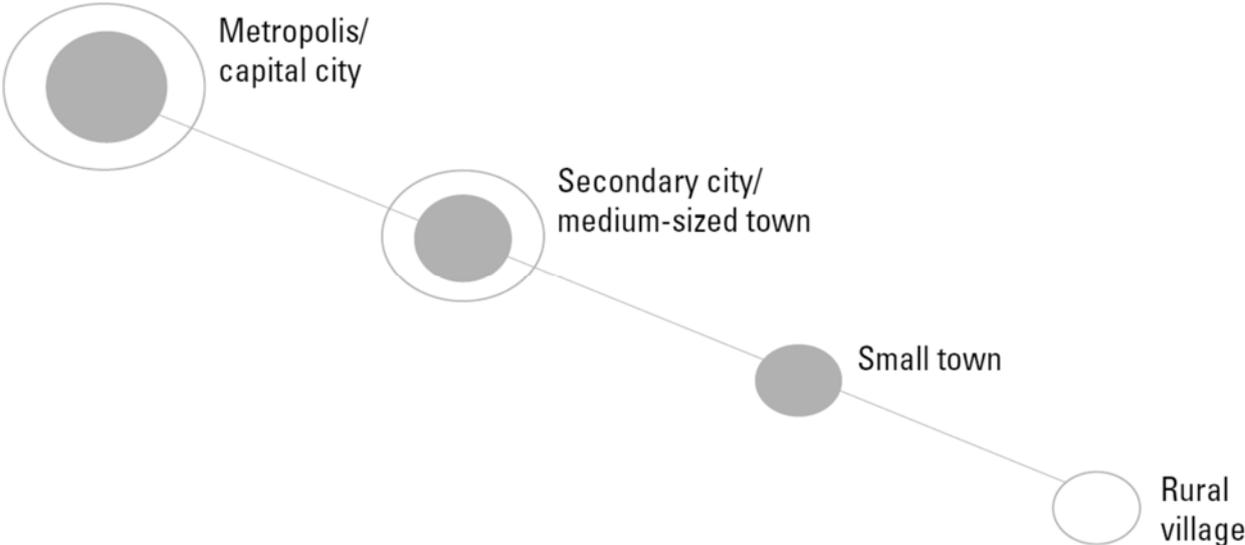


Figure 6-3 Rural-urban continuum

Source: Department Cooperative Governance and Traditional Affairs (2016: 29)

COGTA acknowledges that finding a similar balance between urban and rural areas, by focusing on the linkages between these “opposites”, can positively reframe development across the rural-urban divide, by facilitating the flow of resources among the linkages.

National policy in South Africa also stresses the role of highly competitive global conditions as potentially problematic, especially with regard to current global over-supply and “dumping” in developing economies. This in turn transpires in additional strain on industrial development and industrial strategies (Department Trade and Industry, 2017: 5), especially resulting from outsourcing of sections of the value chain to the lowest cost countries. The impacts of trade liberalisation, enhanced ICT systems and rapidly improving logistics fosters a more competitive environment in which developing countries often fail to meaningfully compete (Department Trade and Industry, 2007: 14). The NGP calls for actively seeking new opportunities with African as well

as global partners in an attempt to ensure sustainable prosperity and socially desirable conditions for the larger region (Economic Development Department, 2010: 12).

Resulting from the various problems identified across South African policy documents, the medium to long term objectives to address the identified issues will subsequently be elaborated upon, naturally focusing on overcoming the obstacles.

6.2.2 Regional policy: Objectives

The policy objectives observed are largely coupled with the responsible department's sectoral focus, with the **rural focus** appearing quite conspicuously across the various policies. The national transport authority envisions improved rural development with a focus on the thirteen presidential rural development nodes (as identified in an earlier Integrated Sustainable Rural Development Strategy, 2010). NATMAP identifies the creation of linkages between rural nodes and inaccessible areas, to the main economic centres as central to the plan (Department Transport, 2015). This will improve the mobility of rural residents and give access to economic opportunities. Similarly, the NDP places strong emphasis on the provision of rural infrastructure and services. In an attempt to encourage a more inclusive rural economy a strong focus is placed on resource-critical regions (The Presidency: National Planning Commission, 2011: 250) in terms of the proposed national schema for spatial targeting. The NDP further foresees the compilation of "small-town development strategies" to stimulate the developmental role these play in the rural economy as well as address issues of migration, public services, skills development and infrastructure development. The Rural Development Strategic Plan (RDSP) and Comprehensive Rural Development Programme (CRDP) similarly focuses on the promotion of sustainable rural livelihoods (strategic goal four) and sustainable rural enterprises (Department Rural Development and Land Reform, 2009) in an attempt to enhance rural capabilities and job opportunities. Both the NIP and NIPF has a specific focus on marginalised, lagging and distressed regions, whereas the latter aims to more specifically focus on a "broader industrialisation path" (Department Trade and Industry, 2007: 7). The NGP in turn, identified spatial development as one of five "job drivers" in the country (Economic Development Department, 2010: 35), stipulating that enhancing rural employment through spatial development perspectives, will not only increase rural livelihoods, but also stimulate employment in other sectors. The spatial perspectives are to be aligned in terms of government spending on infrastructure, housing and economic development in rural communities.

Another evident economic objective, linked to the challenge of low economic diversity, is the facilitation of **broadening of economic sectors**, especially by means of identifying "new

economies". In this instance two job drivers of the NGP (Economic Development Department, 2010: 29-31) are applicable, i.e. "Jobs Driver 2: Main Economic Sectors", and "Jobs Driver 3: Potential of new economies". Within these two drivers of employment, growth focus is on agricultural development, fabrication, manufacturing, tourism and to a lesser degree, exploitation of mining reserves. New economies are to be pursued through more efficient and renewable energy sources, greening the economy, SME development, renewed support for research and development (R&D) as well as improved access to broadband across the country, stimulating knowledge networks. The intensification of the industrialisation process (or reindustrialisation) is strongly envisaged by the two industry and infrastructure sector policies (Department Trade and Industry, 2007; Presidential Infrastructure Organising Commission, 2012), with support vouched to support to various industries including tradeable services, component manufacturing, pharmaceutical and agro processing. IPAP (Department Trade and Industry, 2017: 6) commits to the "strengthening of ongoing efforts to build a less concentrated, more competitive economic and manufacturing structure in which barriers to entry for new entrants are lowered across key sectors of the economy".

The concept of inclusion and access by means of quality **connected infrastructure and basic service** delivery is another repetitive objective found in the analysis of these policies (Department Rural Development and Land Reform, 2015), supported through enhanced connectivity of rural nodes to national centres of economic significance (Department Transport, 2015). The Presidential Infrastructure Organising Commission (2012: 9) strongly encourages any form of infrastructure development in order to promote more balanced economic development, addressing socio-economic needs, fast-tracking job-creation and unlocking economic opportunities across the country. In the NIP 18 Strategic Integrated Projects (SIPs) have been identified to support the more than 645 infrastructure projects across the country, to be discussed in more detail (refer Section 6.2.4). This approach is reaffirmed in the NDP (The Presidency: National Planning Commission, 2011: 247) in the proposal of a spatial investment framework to guide and prioritise long-term infrastructure investment. The unlocking of development potential through targeted investment in both social (SOC) and economic infrastructure (DPA) will further assist in improving economic stability in the targeted settlements (refer Section 3.4.2). The NGP also accentuates investment in social capital and public service infrastructure as one of the Jobs Drivers, focusing on youth employment in this sector (Economic Development Department, 2010: 34).

Another prominent objective within the national sectoral policies in South Africa is the strong focus on building a capable state with better **institutional capacity** (refer Section 4.4.3.5), this links to the identification of problems in the various policies (refer Section 6.2.1). The most common objectives regarding institutional capacity refer to sufficient human capital (NATMAP), enhanced

intergovernmental relations (NATMAP, IUDF, NGP), and skills development (NATMAP, NIP, NGP). The NGP identifies three institutional drivers to transform government into a more productive and accountable entity (Economic Development Department, 2010: 61-65). It is recognised that government should encourage a (i) developmental state through careful associations, leveraging its resources and supporting market outcome with a focus on development needs. The NGP envisions that various state agencies on all levels of government, supported by universities, science councils and investors will have to come together to achieve this vision. Further emphasis is placed on the (ii) institutional drivers outside of the state, including building relations with business, civil society and organised labour. Finally, (iii) it is proposed that the NGP must encourage “active, noisy democracy” (Economic Development Department, 2010: 64) by means of social dialogue, encouraging grassroots discussions and inputs. The IPAP has a more direct approach regarding institutional capacity, referred to as “clearing house” (Department Trade and Industry, 2017: 6) in an attempt to streamline programme alignment between departments and to ensure that all departments are “pulling in the same direction”. The integral role state owned companies play in the establishment of a developmental state is reiterated. The RDSP (Department Rural Development and Land Reform, 2015: 25) built their approach to institutional capacity around two strategic goals, i.e. (i) corporate governance and service excellence; and (ii) improved land administration for sustainable growth and development with a bias towards rural areas. Whereas the NDP believes that spatial policy could play a pivotal role in enhancing coordination between various government spheres, sectors and other agents (The Presidency: National Planning Commission, 2011: 247)

The impact of globalisation on policy objectives is visible in the NDP, where the role of South Africa in the region and the world plays a prominent part. Measures such as improved cross-border infrastructure, strengthening a wider network of human settlement and better integration and sharing of economic resources is put forth to strengthen relations with neighbouring regions (Department Trade and Industry, 2007; The Presidency: National Planning Commission, 2011). Spatial policy, in the form of a transnational spatial framework for Southern Africa, is indicated as a possible vehicle to assist in this vision. IPAP, in turn, puts emphasis on the role of foreign investment by creating a more integrated and development-friendly investment framework in an attempt to stimulate capital inflow (Department Trade and Industry, 2017: 6). IPAP further stresses that the South African industry is not globally as competitive to partake and withstand threats of the Fourth Industrial Revolution, which calls for a more integrated and robust approach from government.

The lack of appropriate skills conundrum is proposed to be addressed by a strong focus on skills development, especially in critical categories (Presidential Infrastructure Organising Commission, 2012), such as engineering, pharmaceuticals and ICT. The Department Trade and Industry (2017:

6) identified a “buy-back SA” campaign focused on expats in key sectors as identified by the PICC, which will further be enhanced by a project of the CSIR to support ‘home-grown’ research and development in key sectors.

A final objective with an environmental focus support the greening of the economy with the promotion of energy efficient production, environmental sustainability, environmental resilience and skills development in the green sector (The Presidency: National Planning Commission, 2011; Presidential Infrastructure Organising Commission, 2012; Department Trade and Industry, 2017). The NDP devotes a chapter to the national approach to environmental sustainability and the promotion of the green sector and the importance within the larger economy is stressed across various sections in the plan, including rural development, housing, infrastructure provision and employment.

6.2.3 Regional policy: Framework

The South African policy environment has moved through various approaches to development, from stringent targeting on industrial development zones during the first National Physical Development Plan (NPDP) (Department of Planning and the Environment, 1975) through the use of a targeted growth centre strategy, to more broad social inclusive and equality driven policies after 1994. The NPDP was predominantly focused on peripheral economic areas and the sparsely populated rural areas, with the ultimate objective of a more balanced national physical space. This plan, however, posed political development based on separate development, and although being a spatially sound and active approach, was socially exclusive. Industrial development did bloom in the decentralisation-oriented growth centres. Further unbalanced and top-down development was spurred on in the Good Hope Plan (Department of Foreign Affairs, 1981), this time with a focus on “deconcentration points” and “industrial development points”, but due to the impractical locations and the sheer multitude (combined to 58) of these points in border areas (previous homelands) the plan failed in promoting deconcentration. Following these strict top-down approaches the Regional Industrial Development Programme (Office for Regional Development, 1991) claims to be the first apolitical plan and was primarily based on incentives for industrial development, according to the location and distance of nodes from the economic core areas, in an attempt to stimulate locational freedom amongst industries in a *laissez-faire* approach to economic development. The newly elected African National Congress (ANC), 1994) undertook to ensure more equal and balanced access through the Reconstruction and Development Plan (RDP), which was “an integrated, coherent national socio-economic policy framework” (Drewes & Van Aswegen, 2015). The RDP was followed by a quick succession of frameworks, i.e. the National Spatial Development Framework (1995), which didn’t

make it past the mapping phase, and the Growth, Employment and Redistribution Strategy (GEAR) (Department of Finance, 1996), as one of the first strategies to focus on grassroots participation, but still with top-down implementation. A National Urban Development Framework (Department of Housing, 1997a) and a National Rural Development Framework (Department of Housing, 1997b) was published in 1997, each with its own unique focus on the rural and urban areas. The succession hereto included the Spatial Development Initiatives (SDIs) (Department Trade and Industry, 1999), with a renewed focus and recognition of the economic and developmental advantages of spatial targeting by means of identifying and facilitating investment based on locality. This was done in terms of investment in economic infrastructure, SMME development and sectoral diversification. Targeted unbalanced development from the national government was further ensued by the Integrated Sustainable Rural Development Strategy (The Presidency, 2000) with the identification of 13 Nodal Development Points, which still receive attention to date (refer NATMAP in Section 6.2.2). The RIDP, RDP, NSDF, GEAR, SDI and ISRDS were all heavily reliant on sectoral development, whereas the National Spatial Development Perspective (NSDP) (The Presidency, 2003; The Presidency, 2006) and the policies to follow the two versions of the NSDP has more an integrated approach to spatial planning in the country (Drewes & van Aswegen, 2015: 25).

Policies and plans forming part of this empirical analysis (post-1994), with a focus on the past decade, follow mostly a balanced approach in terms of their economic application, but has both balancing and distorting impact in terms of their spatial influence. Therefore, it can be assimilated that the overall approach of spatial plans and policies in South Africa is to ultimately attain a more balanced socio-economic environment (economically unbalanced), while having a spatial unbalanced impact. A typical top-down approach is prevalent in the national spatial environment, whereas grassroots input is more applicable in the development of local spatial plans. Table 6-3 provides an overview of the spatial orientation and the associated main focus of each of the spatial documents forming part of the policy analysis (refer Section 6.2.5.3).

Table 6-3 Spatial orientation and focus of spatial plans and policy in South Africa

POLICY	SPATIAL TARGETING	FOCUS
IPAP	Unbalanced	Sectoral
IUDF	Unbalanced	Urban-Regional
RDSP	Unbalanced	Rural
NATMAP	Balanced	Sectoral All region
NIP	Unbalanced	Sectoral
NDP	Unbalanced	All region
NGP	Unbalanced	Rural-Regional
CRDP	Unbalanced	Rural
NIPF	Balanced	Sectoral All region

Source: Own compilation from policy analysis

The subsequent figure illustrates the focus of each of the spatial plans and policies forming part of the policy analysis, in a similar manner as with the seventeen case study countries (refer Figure 5-4).

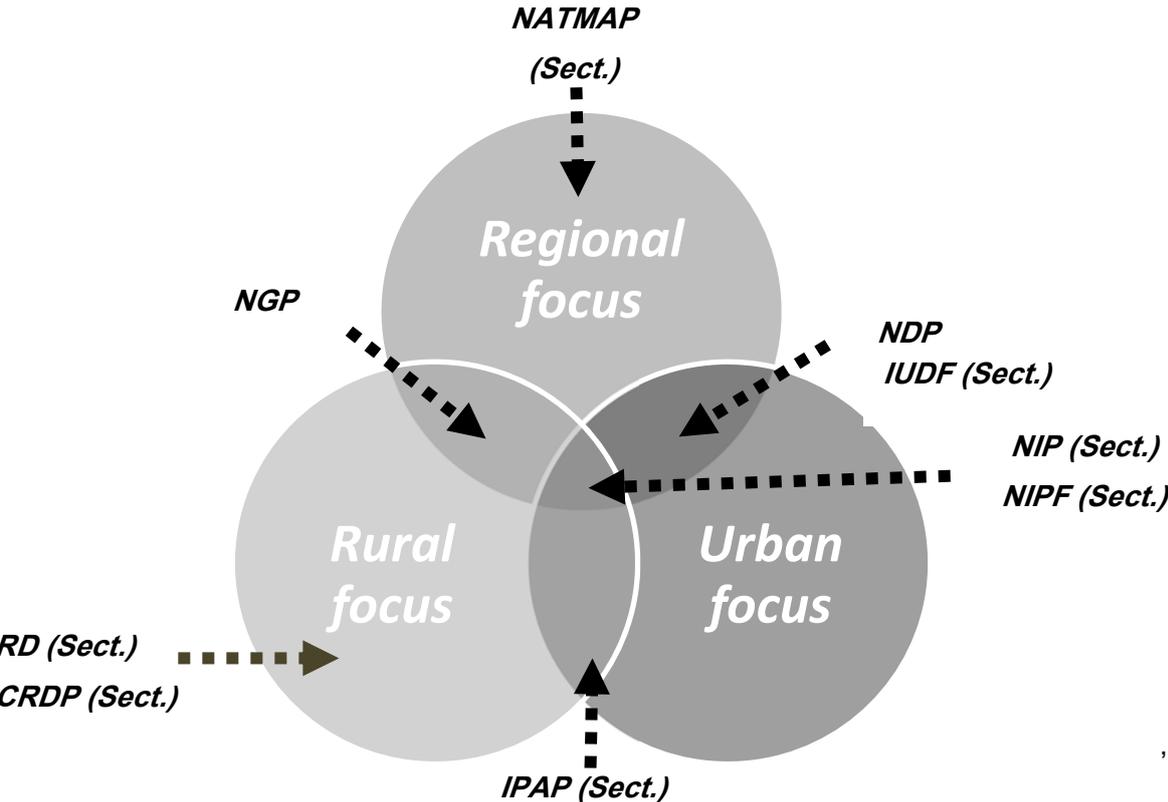


Figure 6-4 Regional, rural and urban focus of national development programmes in South Africa

Source: Own deduction from policy review

It is evident that the only plans in near attainment of a three-pronged approach to plan and policymaking is the NIP and the NIPF, but being sectoral plans (with an infrastructure and industry focus) are not all-encompassing in their all-inclusive cross-sectoral national focus. The NDP in turn, as the national guiding spatial plan is more focused on regional and urban development, than on rural development, although addressing rural planning, but in an isolated manner. The various instruments identified to assist regional policy in attaining its goals, will subsequently be discussed. Surprisingly, the IUDF (as urban policy document) recognises the need for rural development and urban development policy framework “that connect with each other” (Department Cooperative Governance and Traditional Affairs, 2016: 30) in an attempt towards more inclusive economic development. In this manner, the marginalised rural economy can partake in the national economy more actively.

6.2.4 Regional policy: Instruments

Instruments available to policy makers were identified in Section 5.2.4 and include nine broadly defined tools which assist in meeting the spatial and economic objectives of any given spatial policy. From Figure 6-4 it is evident that the tools utilised most frequently correlate with the problems and objectives of the stipulated plans. Infrastructure development (excluding transport investment) is referred to as the main policy tool used in eight of the nine policy documents. This is followed by business development and skills training as found within seven of the nine policies. The least utilised mechanism is that of cluster policies in the form of centres of expertise, which were found to be much more prevalent in the case study countries (refer Section 5.2.4.3).

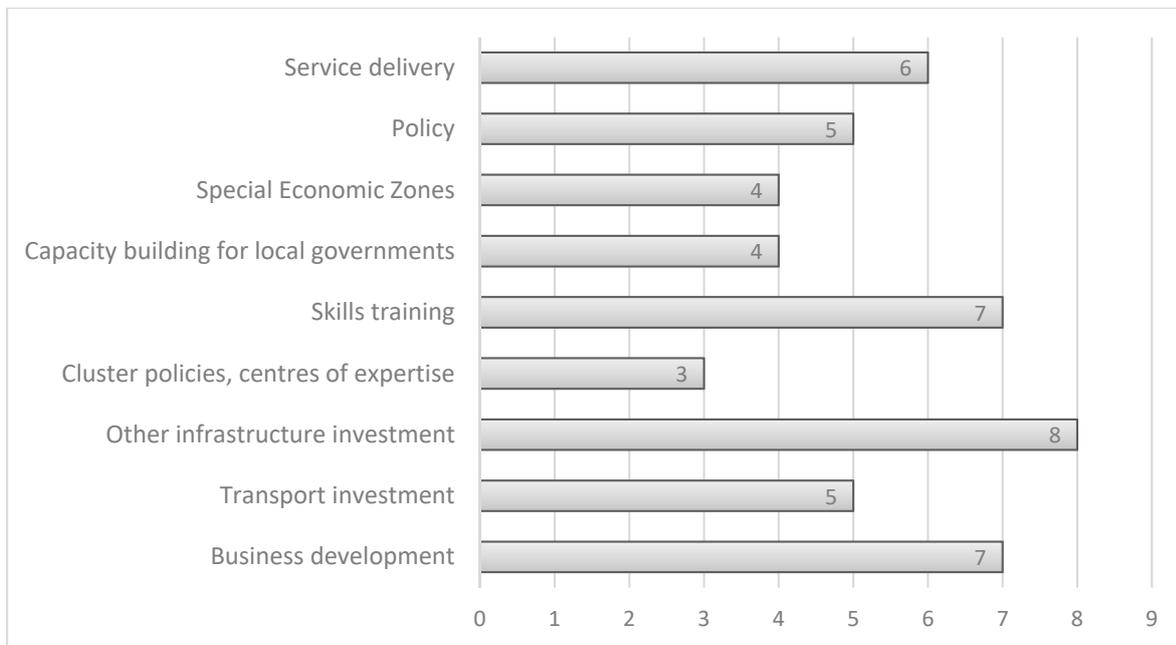


Figure 6-5 Use of policy tools in regional development policy in South Africa

Source: Own compilation from policy analysis

It is noted that although the issue of local government capacity was identified as the second most prevalent within these policy documents, contrarily, the tools for capacitating government are not as prevalent. The subsequent sections will guide more attention to the detail of each of the regional policy instruments and how they are applied within South African spatial policy. Specific reference will be made to any instrument pertaining to peripheral (or rural) areas, in accordance with the main objective of the study (refer Section 1.3.).

6.2.4.1 Regional policy instruments: Business development and innovation support

Business development, as regional policy instrument, is frequented in most of the policy documents with various applications in accordance with the sectoral approach of the strategies. In Table 6-4 the most frequently observed policy initiatives for business development and innovation support is listed, together with the policies applicable in South Africa specifically.

Table 6-4 Policies to promote business development and innovation in South Africa

Type of policy	Common approaches	South African Policy Application
Basic business development and innovation support to firms	<ul style="list-style-type: none"> Targeting firms in specific locations Targeting firms led by specific population groups 	IPAP; NGP; RDSP; CRDP; NDP; NIP; NIPF
Clusters and centres of expertise	<ul style="list-style-type: none"> Same programme for all regions (lagging regions included) 2nd track policy for non-leading regions Firm-focus versus research-driven 	NDP; NATMAP; NIP; NGP; IPAP
Capacity building for the public sector	<ul style="list-style-type: none"> Regional innovation strategy development support Network of professionals across regions 	IPAP; NGP; CRDP; RDSP; NIP; NIPF; NDP
Sectoral research and development programmes	<ul style="list-style-type: none"> Economic sectors located in lagging regions Special challenges of targeted places (often rural) Public facilities or to private firms 	NGP; IPAP
Capacity building for innovation actors	<ul style="list-style-type: none"> Focus on public/quasi-public actors Co-applicants/ co-sponsors to include lagging regions 	NGP; IPAP; NIP; CRDP; NDP
Science and industrial parks	<ul style="list-style-type: none"> University-based Industrial focus 	IPAP; NIP; NGP
Venture capital funds	<ul style="list-style-type: none"> “Public” funds Public co-financing with “private” support 	RDSP; NGP; IPAP

Source: Adapted from Maguire & Weber (2017), informed by policy analysis

Basic business development and innovation support for firms are employed by IPAP (Department Trade and Industry, 2017: 13) with the InvestSA intergovernmental facilitation initiative, aiming to assist investors with starting a new venture, registration, cross-border trading and the enforcement of contracts. It is envisaged that this initiative will remove much of the unnecessary red tape associated with especially foreign investment. The NGP (Economic Development Department, 2010: 46) similarly supports the elimination of red tape, promotion of SMME and government’s commitment to pay SMMEs in their employ within a 30-day period. Targeting firms led by specific population groups is a further common approach as identified by Maguire and Weber (2017), and is found to be especially prevalent in South African policy and programmes. The Department Trade and Industry (2017: 18) identified a Black Industrialist Development Programme specifically providing support for development by black partners. The Recapitalisation and Development Programme (RADP) as identified by the Department Rural Development and Land Reform (2015: 15) builds a case for the promotion of black empowerment in especially the agricultural sector in the shape of land reform policies and practices.

Sector-specific investment and business support in the clothing, textiles, leather and footwear industry is also identified by the IPAP (Department Trade and Industry, 2017: 14) as part of their

initiatives to strengthen the manufacturing sector in South Africa. The green industries in South Africa have also been targeted as investment opportunities through the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), adding to enterprise development and employment opportunities together with wind and SVP farms across the Northern Cape Province. These initiatives will assist in the diversification of the economic base. Other sector-specific support and investment is found in the Automotive Investment Scheme (AIS) and the Manufacturing Competitiveness Enhancement Programme (MCEP). Further investment in the agro-processing sector (including the production of chicory, wine exports, hops farmers and grain staples) is also supported. The RDSP (Department Rural Development and Land Reform, 2015: 24) has a definite focus on the development of rural enterprises and supporting farmers by means of financing, infrastructure and technical means, as identified in the Rural Enterprise and Industry Development (REID) programme. This initiative is focused on both smallholding farmers and in commercial practices (also supported in the NIP as one of the main Job Drivers), especially in localities where strong rural-urban linkages exists. Technology support in the provision of GIS and cadastral data to these farmers are also highlighted. The agricultural sector is also supported by the CRDP in their quest to facilitate business initiatives in agro-industries and cultivating the use of modern technology in farming activities (Department Rural Development and Land Reform, 2009). The NIPF foresees sectoral diversification opportunities within five sectors, i.e. (i) Natural-resource based sectors; (ii) Medium technology sectors (including downstream mineral beneficiation); (iii) Advanced manufacturing sectors; (iv) Labour intensive sectors; and (v) Tradable services sectors (Department Trade and Industry, 2007: 19). Whereas the NDP has a specific focus on the agricultural sector, more specifically for increased local production networks (The Presidency: National Planning Commission, 2011: 258)

Industrial financing by the Industrial Development Corporation (IDC) in several sectors have benefited especially infrastructure development as well as the basic metals and mining sector (Department Trade and Industry, 2017: 18). Science and industrial park development and upgrading by the Department Trade and Industry (2017: 19) in six industrial parks located in five of the nine provinces is regarded as another mechanism for innovation support and business development. A proposal for a national observatory for spatial data lending towards a more integrated approach than the existing available private spatial data is regarded as an innovation support mechanism in terms of policy mechanisms (The Presidency: National Planning Commission, 2011). The NGP identifies the potential of new economies through technological innovation and research and development support as opportunities for employment creation, supported by various other initiatives (Economic Development Department, 2010: 31). These are, however, not definitive tools being implemented, but rather indications of opportunities.

6.2.4.2 Regional policy instruments: Infrastructure and Transport investment

The Department Rural Development and Land Reform (2015: 21) identified a Rural Economy Agrarian Transformation System addressing various components of the transformation of this sector. Economic and social infrastructure play an important part in this model, with a specific focus on agri-parks, processing plants, smaller industries, and ancillary needs such as abattoirs, animal handling facilities, dams, silos etc. A Rural Infrastructure Development (RID) programme is identified in support of rural economic transformation. Correspondingly, SIP 11 from the PICC (2012: 21) focuses on agri-logistics and rural infrastructure, particularly with regard to the provision of transport links to main road networks. The National Infrastructure Plan (Presidential Infrastructure Organising Commission, 2012) understandably identifies the largest amount of strategic infrastructure projects (SIPs), in five categories, i.e. (i) geographically focused SIPs; (ii) spatial SIPs; (iii) energy SIPs; (iv) social infrastructure SIPs; and (v) knowledge SIPs. These are based on a national analysis of areas of potential and areas of greatest need. Figure 6-5 illustrates the context of the eighteen SIPs on a national map, indicating the extent of these projects with their focus on the four areas of greatest need. The focus on transport infrastructure is apparent in various of the projects, i.e. SIP 1: Unlocking the Northern mineral belt, which foresees investment and upgrading of the rail water pipeline, energy generation and transmission infrastructure. This will enable a shift from road to rail infrastructure in the Mpumalanga province and create thousands of direct employment opportunities. Similarly, the Durban-Free State-Gauteng logistics and industrial corridor is focused on mass transit facilities, i.e. a new port in Durban and the planned Aerotropolis in Gauteng. The development of the south-eastern quadrant is dependent on a new dam, various highway upgrades, a new refinery and improved railway capacity. Rural infrastructure in the North-West province is regarded as generally dilapidated and forms part of SIP 4 as a drive towards enabling beneficiation opportunities in the province, as well as diversify the economy with a renewed focus on tourism, agriculture and mining related infrastructure (Presidential Infrastructure Organising Commission, 2012: 19). One of the most important geographic SIPs identified is the Saldanha-Northern Cape development corridor, focusing on an integrated approach towards rail and port expansion, supported with the IDZ in Saldanha (also refer SEZ development in Section 6.2.4.5). This development corridor will also increase the capacity for oil and gas along the West Coast.

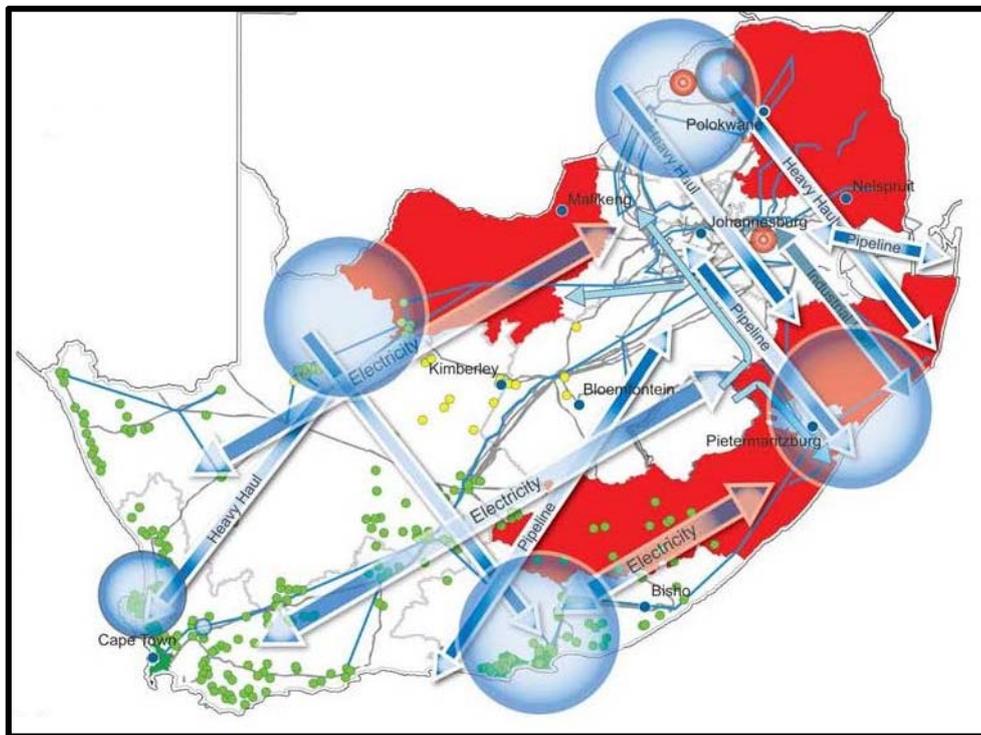


Figure 6-6 Overview of the 18 Strategic Infrastructure Projects

Source: Presidential Infrastructure Organising Commission (2012: 16)

Three SIPs are also identified to increase and ensure stable energy provision in the wake of the South African electricity crisis. These include support for sustainable energy initiatives, building of new power stations and expanding distribution networks. Rural infrastructure and agri-logistics are also identified as a SIP, especially in terms of upgrading rural roads and irrigation schemes to marginalised areas. Social infrastructure is correspondingly addressed in the NIP with a focus on public hospitals and health facilities, a national school building programme, i.e. Accelerated School Infrastructure Delivery Initiative (ASIDI) and infrastructure for higher education, with two new universities being proposed in the Northern Cape and Mpumalanga. The expansion of the fibre networks across the country (SIP 15), with the aim of penetrating even the most rural areas, will provide broadband coverage for all households.

The Department Transport (2015) identifies extensive infrastructure investment (DPA, refer Section 3.4.2) across all modes of transport and the entirety of the South African space economy, especially in light of the various problems identified regarding the maintenance of especially rural infrastructure and the over-exposure of all road infrastructure to heavy haulage (refer Section 6.2.1). The Department Transport (2015: 6-9) aims to be more demand-driven with a developmental approach, proposing interventions for national road network infrastructure (Moloto

road, N1-N2 Winelands highway; N3 Durban-Pietermaritzburg capacity improvements; Pongola and eDumbe upgrade; N3 toll road; N2 Wild Cost highway) which includes expansions, upgrading and new roads construction. Provincial-specific infrastructure also forms part of the strategy towards accessing and distributing resources. The upgrade and revitalisation of the railway infrastructure is a major focus within NATMAP in an attempt to move away from mass transport on roads, to making use of existing rail infrastructure (Department Transport, 2015). Emphasis is placed on the Sishen-Saldanha ore line as an important contributor to the national GDP. Within the existing rural network, various strategies are proposed to increase passenger transport and increase access to major economic nodes. The strategies within NATMAP is also supportive of the identified SIPs and strengthens these with subsidiary projects. Further aviation related projects include the development of an Aerotropolis in Gauteng, making the existing OR Tambo International Airport more globally connected. Aerotropolis development is also encouraged in Durban and Cape Town (Department Transport, 2015: 6-24). In terms of maritime infrastructure, the existing ports of Durban Richards Bay, Ngqura, Port Elizabeth, East London, Cape Town and Saldanha Bay, are part of the strategic focus to increase exports and speed up the handling process. The potential of utilising these ports as liquid bulk ports (oil and gas) depending on their locality. The national pipeline network is identified as operating below potential, and expansions and upgrading are part of the numerous strategies of NATMAP.

The two main infrastructure plans, NATMAP and NIP, are supported by the NDP (The Presidency: National Planning Commission, 2011) in its quest to activate rural economies through improved infrastructure and service delivery. The CRDP is in turn focused on providing both economic and social infrastructure (Department Rural Development and Land Reform, 2009). Similarly, the Economic Development Department (2010: 27) places attention on the infrastructure sector as main jobs driver in an attempt to eradicate unemployment and inequality. The multiplier effect of public investment in infrastructure can greatly contribute to economic opportunities across the country. The NIPF in turn, highlights the importance of industrial infrastructure provision in fostering industrial clustering, especially outside the traditional Infrastructure Development Zones (Department Trade and Industry, 2007: 27) (refer Section 6.2.4.5). The Critical Infrastructure Programme (CIP) is identified as pivotal in supporting local municipalities in attracting and sustaining industrial investment and proposes an industrial development strategy to enhance industrial development outside the traditional three metros, supported by underlying potential advantages.

6.2.4.3 Regional policy instruments: Clusters and centres of expertise

Various forms of spatial targeting, similar to cluster development, is visible in the National Development Plan and the National Transport Master Plan, being focused on special intervention areas, nodal development and also corridor development. The proposed National Schema for Spatial Targeting (The Presidency: National Planning Commission, 2011: 250) as illustrated in Figure 6-6 refers to special intervention areas (job intervention zone; growth management zones; green economy zone), national competitiveness corridor, various nodes of competitiveness, rural restructuring zones, resource-critical regions and transnational development corridors, as part of spatial targeting.

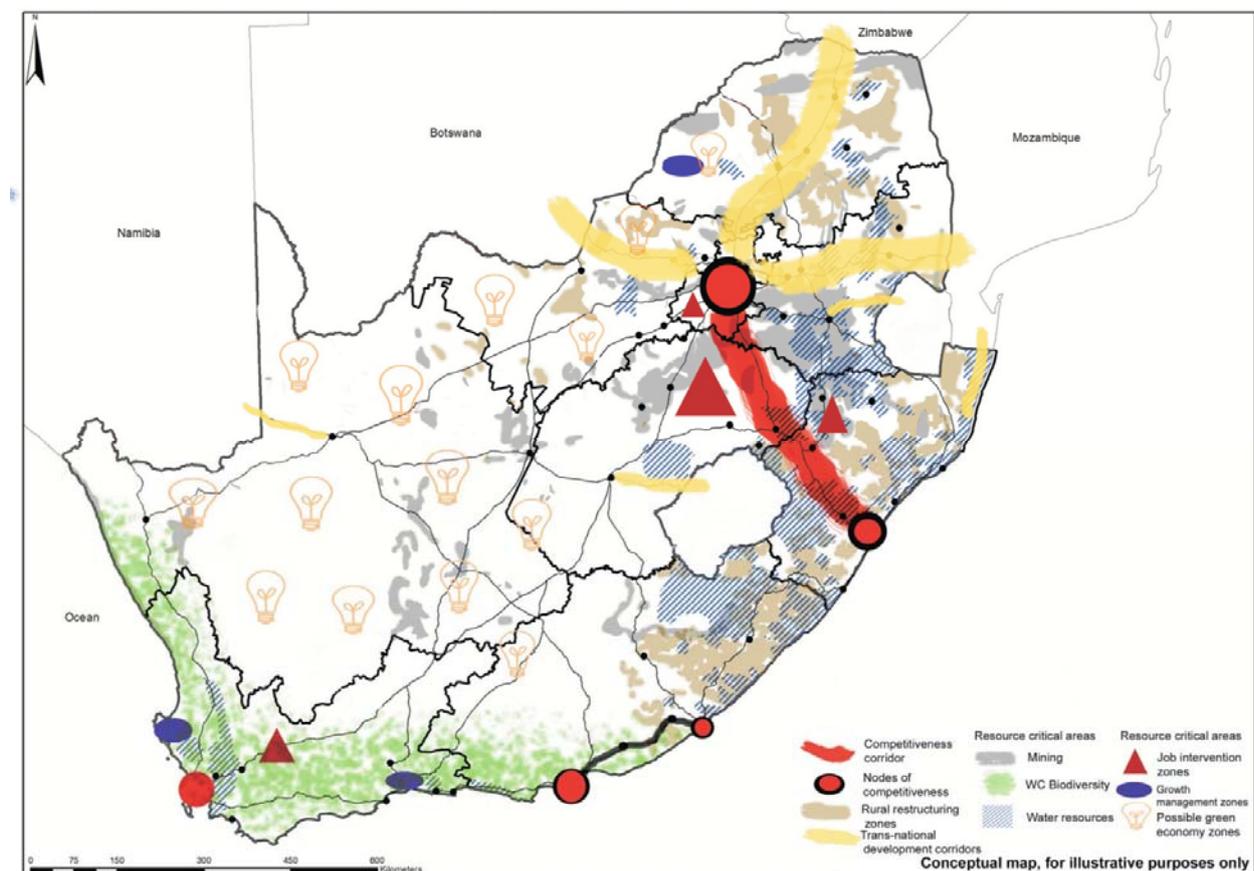


Figure 6-7 Proposed national schema for spatial targeting

Source: The Presidency: National Planning Commission (2011: 250)

The proposal still has to be finalised within a National Spatial Development Framework (NSDF) currently in process. NATMAP also encourages development of clusters along regional corridors,

national corridors, emerging economic nodes and emerging corridors (Department Transport, 2015: 5-4), stating that transport network planning and transport services implementation should align with, and support, the strengthening of the identified corridors and nodes, as well as existing SDIs. The alignment of transport infrastructure with other national policies such as the NIP, CRDP and NDP is illustrated in Figure 6-7.

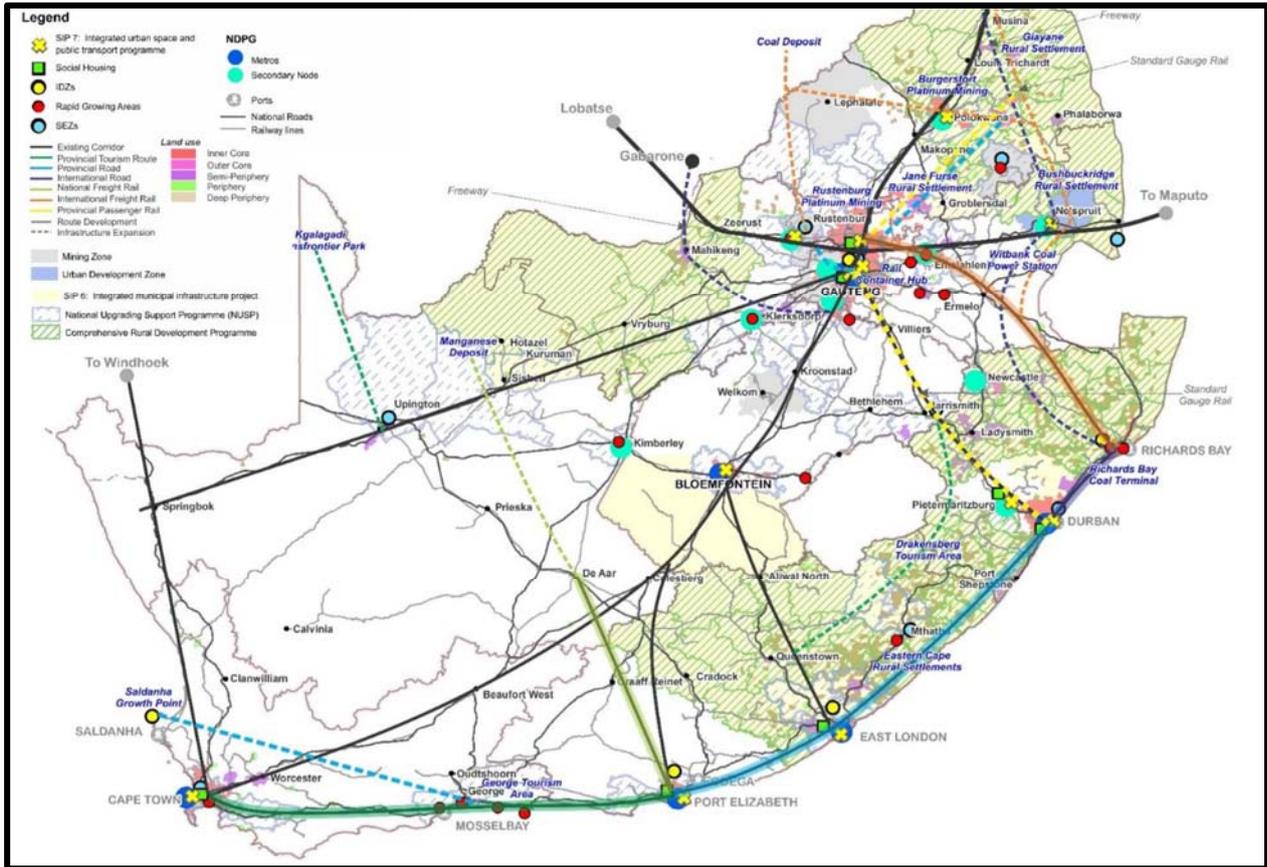


Figure 6-8 National spatial and development areas initiatives

Source: Department Transport (2015: 5-9)

The various SIPs as discussed in Section 6.2.4.2 in terms of the NIP are also regarded as cluster-type developments as regional policy instrument.

The Square Kilometre Array (SKA) and MeerKAT projects in the Northern Cape (as SIP 16) are internationally acknowledged radio-telescope facilities with accompanying research infrastructure and high-speed ICT capacity, providing research and development opportunities and economic

infrastructure to this former fringe area (Presidential Infrastructure Organising Commission, 2012: 23).

A focus on the resurrection of a Mining Hub as a centre of excellence at the Council for Scientific and Industrial Research (CSIR) specifically for research and development in the mining sector (Department Trade and Industry, 2017: 13). The National Cleaner Production Centre of South Africa (NCPC-SA) is a further initiative supporting research in, and the implementation of, more resource efficient methodologies. Large-scale investment in a national, and four regional clusters in the clothing, textiles, leather and footwear industry is also included in the IPAP, with additional jobs created and boosting exports in this sector. A Cluster Development Programme (CDP) in specifically the medical devices sector, composites, non-automotive, advanced manufacturing, pharmaceutical and creative industries also form part of initiatives in the IPAP.

6.2.4.4 Regional policy instruments: Skills training and capacity building

Capacity building and institutional development is found to be one of the key projects within the SEZ programme of the Department Trade and Industry (Department Trade and Industry, 2017: 27). Officials across all levels of government will be trained in the planning, development and management of SEZs. A renewed focus is apparent on optimising technology transfer and commercialising 'home-grown' research and development within the main competitive sectors.

As part of their Business Process Services (BPS) the Department Trade and Industry also funds training centres for youth in the Monyetla Work Readiness Programme (Department Trade and Industry, 2017: 17, 26). A Master Toolmaker Qualification has been adopted by various colleges across South Africa as part of the National Tooling Initiative. Apprenticeships, shop floor skills training and advanced technology training within the automotive industry also provides training opportunities. The Moving Ideas programme aims to assist entrepreneurs in furthering their innovations and making these into businesses (Department Trade and Industry, 2017: 28). The NGP in turn identifies the microeconomic package of education and skills development, leaning towards targeting engineers and artisans and supporting FET as part of their drive towards a more skilled workforce (Economic Development Department, 2010: 46). The NIP has a direct focus on the skills training of the youth in the fields of project management and engineering. This involves the development of a Skills Plan for each of the eighteen identified SIPs, with correlating training and employment opportunities (Presidential Infrastructure Organising Commission, 2012: 46). Scarce skills development is also targeted in addition to promoting immigration in infrastructure linked scarce-skills categories. Private sector training, government apprenticeships and partnerships with universities is indicated as playing a pivotal role in the National Skills Accord.

Rural skills enhancement as indicated in the CRDP will be mostly by means of leadership training and the provision of Adult Basic Education and Training (ABET) centres in fringe areas (Department Rural Development and Land Reform, 2009). The focus of the NIPF is on sector specific skills and education in support of industrialisation (Department Trade and Industry, 2007). Whereas the NDP has a system wide approach by means of early childhood development centres and enhanced schooling opportunities across

Institutional capacity building as regional policy tool receives attention across various policy documents and aims to increase the level of service and skills of government employees, in the instance of the RDSP, placing emphasis on especially rural governance structures (Department Rural Development and Land Reform, 2015: 29). Local government support in this instance is focused on improved land administration and spatial planning for integrated development. The Government Capacity Building Programme identified in the NIP (Presidential Infrastructure Organising Commission, 2012: 30) focuses on building project related planning, implementation and monitoring skills in all spheres of government. A similar local government skills initiative regarding capacity building for improved implementation of the industrial policy is promulgated in the NIPF (Department Trade and Industry, 2007: 28). In conclusion to this tool the NDP has identified a dire need for reforms to especially the current planning system for improved coordination across government spheres (The Presidency: National Planning Commission, 2011: 289). The NDP identifies various programmes to “make public service a career of choice” in order to address the multitude capacity issues experienced across government.

6.2.4.5 Regional policy instruments: Special Economic Zones

A Special Economic Zone Act (The Presidency, 2014) in South Africa supports and accelerates industrialisation and acts as an important tool to attract FDI, as well as creating employment opportunities, improving infrastructure and identifying new industrial centres (Department Trade and Industry, 2017: 21). The SEZ's identified by the Act include Dube Trade Port, Maluti a Phofung, Coega, East London Saldanha Bay, Richards Bay and Musina located in five of the nine provinces (refer Figure 6-8). The Minister of Finance established a SEZ Fund to support the promotion and development of SEZs, which can according to the Act include free ports (duty free areas adjacent to a port area), free trade zones (distribution and storage facilities within a recognised SEZ), an industrial development zone (IDZ) or a sector development zone (focused on a specific sector) (The Presidency, 2014: 22). SEZ development is further encouraged by the NIPF in terms of the industrial clustering proposed, in additions to existing IDZs (Department Trade and Industry, 2007: 27), with the locality of the proposed clustering based on a previous

spatial planning policy, viz. National Spatial Development Perspective (2006) with a focus on areas of potential and areas of need.

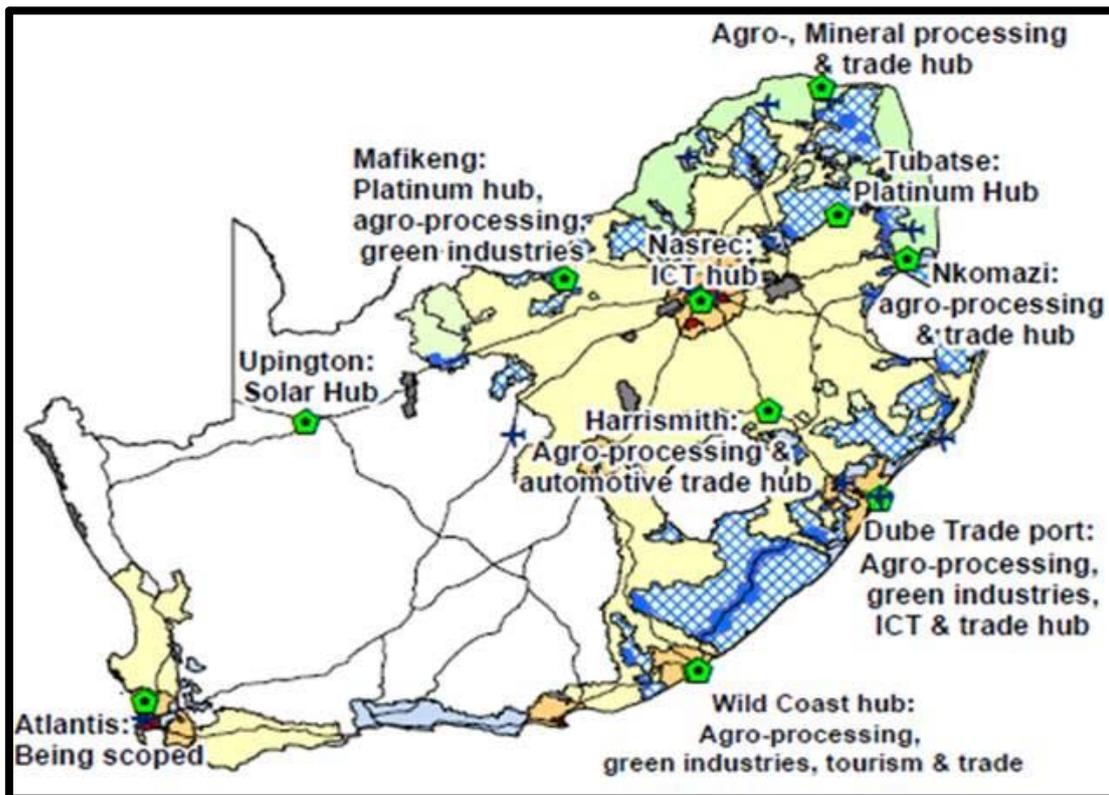


Figure 6-9 Special Economic Zones in South Africa

Source: (Matchdeck, 2017)

Various incentives are made available to initiate, support and ensure growth within the identified SEZs. Enterprises situated within these zones may apply for a business tax relief (15%) in terms of the SEZ Act and the Income Tax Act (Act No. 58 of 1962), as well a building allowance. An employment tax incentive can provide further tax relief in the identified SEZs. The 12I Tax Allowance Incentive (12I TAI) in turn, is directed at supporting both greenfield and brownfield development by means of direct investment, dependent on the location of the site and subject to being in the manufacturing sector. Investment allowances range from R350 million (Brownfield projects) to R900 million (Greenfield projects), depending on the number of requirements as met by the envisaged project (The Presidency, 2014)

6.2.4.6 Regional policy instruments: Service delivery

The Department Trade and Industry (2017: 41) identifies four service delivery projects for attention, i.e. (i) a water desalination plant, (ii) the usage of desalination in the manufacturing sector, (iii) a next generation sanitation cluster development, and (iv) utilising wastewater technologies in the manufacturing sector. The NIP identifies the provision of basic services as a top priority with both SIP 6 and SIP 18, focusing on eradicating all maintenance backlogs, and upgrading water, sanitation and electrical bulk infrastructure deliver in the 23 districts with the lowest access to these services (Presidential Infrastructure Organising Commission, 2012: 21). Water and sanitation infrastructure provision, rehabilitation and upgrading across the entire country, but especially rural areas, is crucial to meet the social needs and support economic growth of the nation (Department Rural Development and Land Reform, 2015: 24). This is reiterated in the NDP, also identifying the need for exclusive guiding principles for infrastructure provision in rural areas (The Presidency: National Planning Commission, 2011: 250). Basic infrastructure is also referred to as part of strategies of the NGP (Economic Development Department, 2010) and the CRDP (Department Rural Development and Land Reform, 2009). Service delivery as definite tool should be more visible on local municipal level than on national level as this task is assigned to the lower sphere of government as per the Municipal Systems Act (The Presidency, 2000).

6.2.5 Regional policy: Actors

As one of the three pillars identified within the resilience literature (refer Section 4.4.3.2), the actors or institutions within regions are central to the implementation of regional policies and plans. It was established that the institutional capacity within South Africa is regarded as one of the principal detriments to enhancing economic growth and exploiting development opportunities (refer Section 6.2.1). The subsequent section will guide attention towards the functioning of these actors and the institutional composition in South Africa. In studying and understanding existing processes and structures, proposals will be made that could enhance the effectiveness of these arrangements (refer Chapter 8). As illustrated in Figure 6-9 the various levels of spatial planning include National, Provincial and Local Municipal institutions, each with accompanying spatial policies and/or programmes.

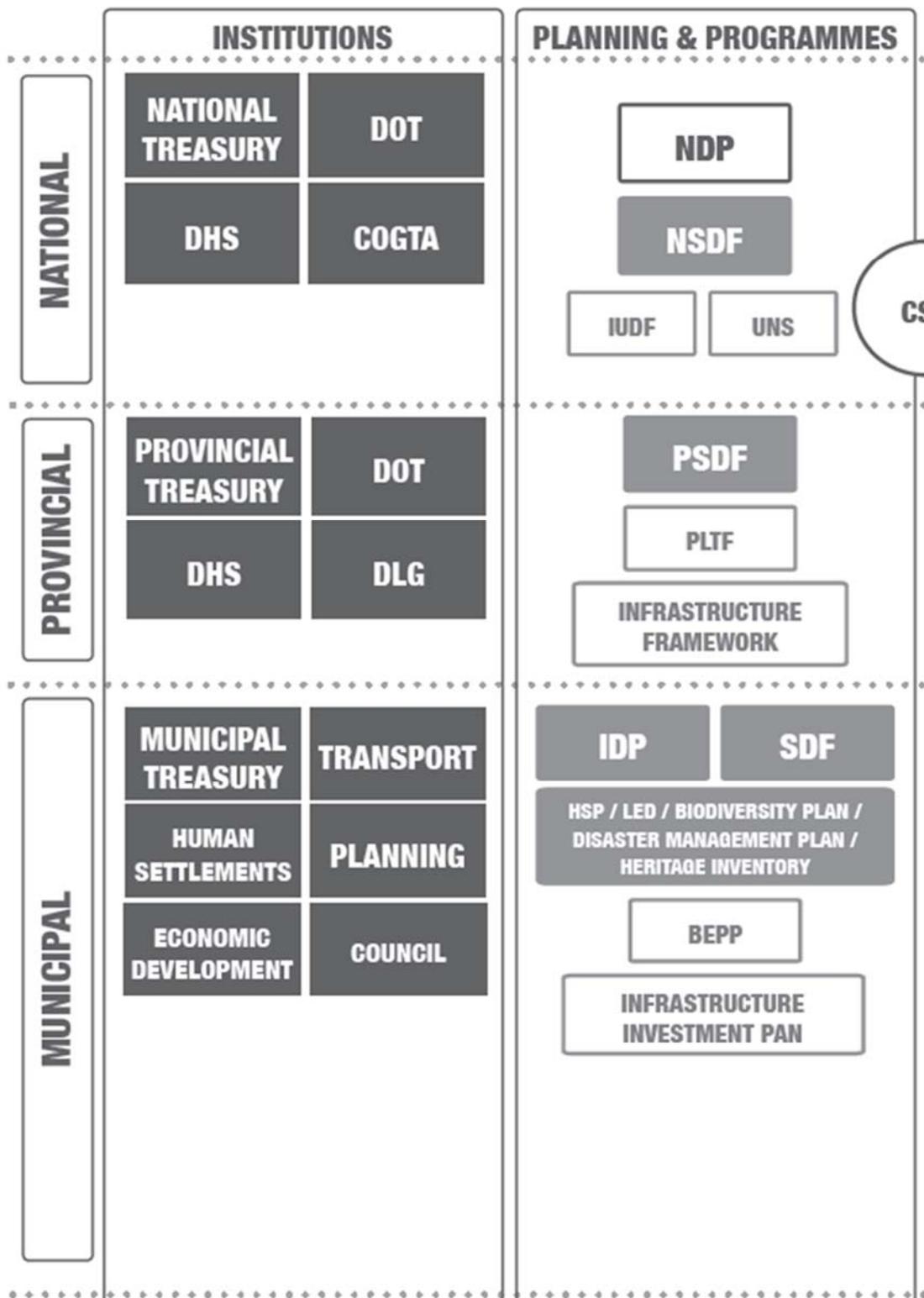


Figure 6-10 Spatial planning context in South Africa: Relationships between institutions and planning programmes

Source: Department Rural Development and Land Reform (2014: 9)

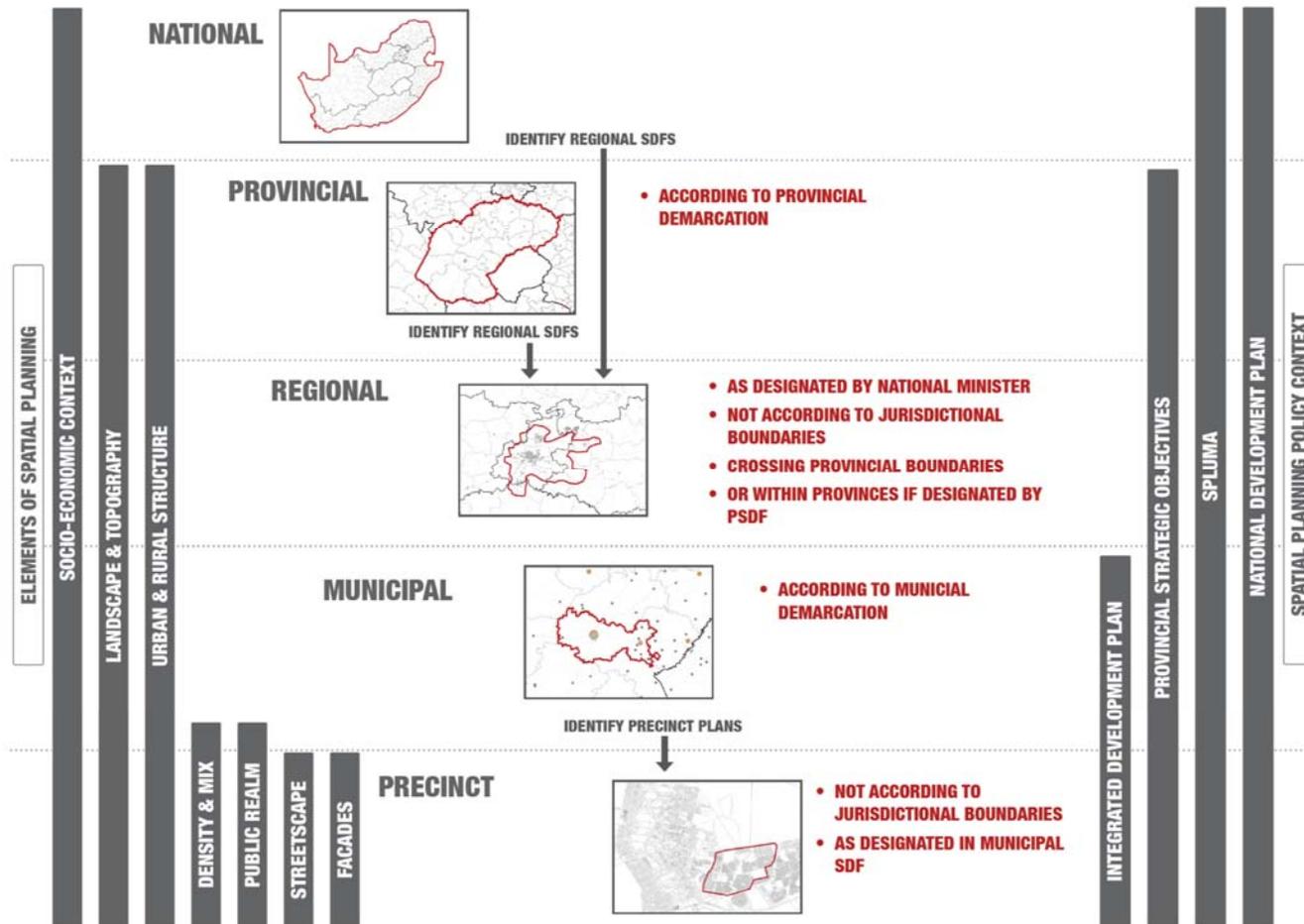


Figure 6-11 Differentiating the different scales of planning according to the relevant elements, policy contexts and legislative demarcations

Source: Department Rural Development and Land Reform (2014: 15)

Each of the actors illustrated in Figure 6-10 has different authorities and responsibilities regarding their jurisdictional area as stipulated in the Constitution, Sect. 156 (1) (The Presidency, 1996), this figure also indicates the proposed vertical interaction that should take place between these levels (The Presidency, 1998), which will be further discussed in Sections 6.2.5.1, 6.2.5.2, and 6.2.5.3. The Intergovernmental Relations (IGR) Framework Act (The Presidency, 2005) establishes IGR structures at all three levels of government, aimed at setting strategic direction and playing an overseeing and monitoring role. The “coordination” role of the IGR, rather than the direct responsibility of ensuring mechanisms for delivery, is however, regarded as adversarial to the application and success of the IGR structure.

6.2.5.1 National government as regional policy actor

As discussed in Section 5.2.5.1 national government plays a pivotal role in the identification of regional policy instruments, and even more importantly, in the implementation of these instruments through various mechanisms in horizontal as well as vertical manner. It has been highlighted that a top-down approach to governance forms part of an old paradigm to spatial planning and policy (refer Section 5.2.5.1), whereas the grassroots approach and distributing power among sub-national authorities are part of a modern approach to ensure better absorption of these initiatives. It is, however, acknowledged that an overarching governance framework is crucial to ensure continued support to the lower institutional levels. In terms of the identified horizontal interaction and cooperation mechanisms between sectoral divisions in national government (refer Section 5.2.5.1.1), the South African government utilises various of these approaches, i.e. (i) interministerial committee; (ii) strategic planning and programming; and (iii) a comprehensive budget, through six policies as indicated in Figure 6-11.

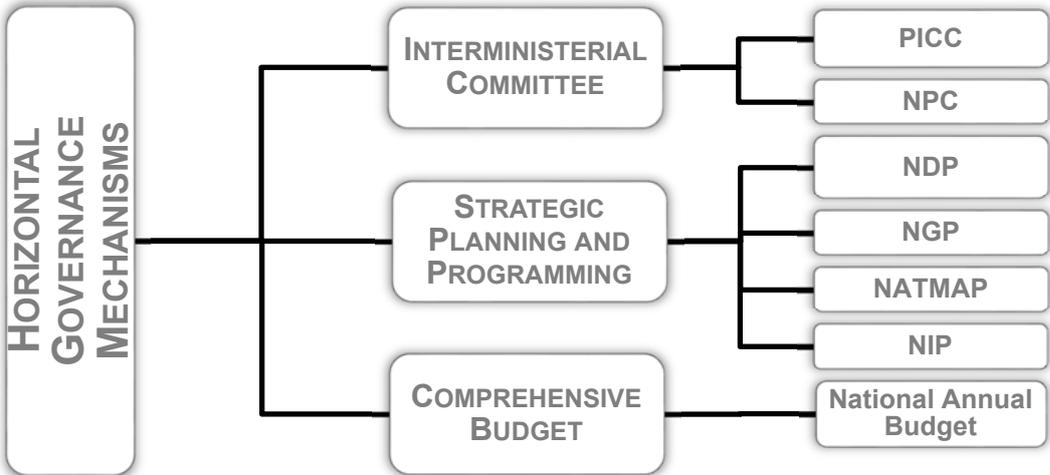


Figure 6-12 Horizontal governance mechanisms in South Africa

Source: Own compilation from policy analysis

In terms of the interministerial committee mechanism to stimulate horizontal interaction on a national level, the Presidential Infrastructure Coordination Commission (PICC) (resorting in the Economic Development Department) and the National Planning Commission (NPC) (located within the Department Planning, Monitoring and Evaluation) are the only mechanisms closely resembling an interministerial committee. The NPC was established in 2010 with the vision to develop a national plan for long-term strategic development across all sectors (Department of Planning, Monitoring and Evaluation, 2017). The NPC consists of specialists not employed by government, tasked with critically evaluating the country in terms of social and economic development and proposing concrete solutions to the identified challenges, which resulted in the NDP (The Presidency: National Planning Commission, 2011). The Presidential Infrastructure Committee has a similar cross-sectoral approach in their operation, taking a stance that “economic infrastructure is the foundation of social and economic development” (Economic Development Department, 2017: 85), therefore cutting across most social and economic challenges within the country and involving various sectors in their planning.

Strategic planning and programming as mechanism to increase horizontal cooperation between sectors are frequently observed within the nine planning policy documents forming part of the policy analysis (refer Section 6.2). The NDP, NIP, NATMAP and NGP are highlighted as the policy documents aimed all-encompassing development, and not as singularly focused on each separate department within which they are established. The NIP (Presidential Infrastructure Organising Commission, 2012), for instance, addresses much more than only infrastructure in their plan, as with the NATMAP (Department Transport) and NGP (Economic Development Department). The NDP, as the only true national strategic plan in terms of striving towards parallel interaction between the various national sectors, adopts input from all sectors and subsequently addresses a multitude of social, economic, infrastructure, globalisation, employment, international relations etc. within the strategic vision.

Lastly, a comprehensive national budget is annually put forth by the Department National Treasury (2017), and takes cognisance of all national ministries and needs in the budget process. Accordingly, all national departments are annually urged to indicate their budgetary needs, and prioritise spending before submission to the interdepartmental budgetary committee. After scrutinising and prioritising needs of the various departments, the Minister of Finance delivers a Medium Term Budget Policy Statement to indicate the upcoming budget proposals to the national Cabinet for deliberation and adoption, and finalisation by the President. This process is aimed at directing spending traversing the various departments and allowing each to participate in growing the national economy and enhancing social development across the country.

The vertical mechanisms available to strengthen interaction between national and sub-national level as identified (refer Section 5.2.5.1.2) are equally as important as the horizontal cooperation

on this level. Vertical mechanisms are utilised to delegate responsibilities from national to provincial authorities, as well as to ensure that fixed national targets are reached (further discussed in Section 6.2.5.2) and transpires into the spatialisation of national objectives.

6.2.5.2 Regional government as regional policy actor

The South African institutional arrangement allows for nine provincial authorities to take responsibility for sub-regional development and implementation of programs to reach national development goals. This responsibility is most often found in the form of “strategic planning” across the provincial departments, names can differ slightly between provinces and in some provinces departments are combined. Some of them include: Finance; Economic development; Tourism; Housing; Education; Health; Social Development; Transport; Public works; Planning and Environment; Sport, recreation, art and culture; Agriculture; Local government; Safety and security or Community Safety. As stipulated in the Spatial Planning and Land Use Management Act (SPLUMA) (The Presidency, 2013) each province is responsible for developing a spatially oriented mechanism on provincial level, i.e. the Provincial Spatial Development Framework (PSDF), focusing on the where and how of physical development initiatives informed by the NDP as well as sectoral strategies applicable. Through these mechanisms Provincial authorities are in a position to contextualise national requirements, and inaugurating them within the unique provincial realities, while guiding development and implementing provincial and local plans. This is regarded as a form of decentralisation of authority, as visible in the 17 case study countries (refer Section 5.2.5.2.2). The PSDF is supposed to be reinforced by a Provincial Land and Transport Framework (PLTF) and an Infrastructure Framework, although these are still lacking in most provinces (Department Rural Development and Land Reform, 2014: 9). The PSDF is regarded as a long-term strategy which are to be revised every five years. The IUDF recognises that the Provincial governance level has two centres of coordination, one being from the Offices of the Premier and then the various provincial departments responsible for local government. The Office of the Premier takes responsibility for vertical planning across departments, and the latter for intergovernmental planning between the provincial authority and local authority. This results in insufficient interaction at the horizontal level (provincial) of planning.

A further SDF initiative on a regional level is the Regional Spatial Development Framework (RSDF) which are compiled to the discretion of the Minister, based on spatial challenges and needs for cross-provincial and cross-municipal boundaries (Department Rural Development and Land Reform, 2014). It is conveyed that these discretionary RSDF boundaries may or may not

coincide with the administrative boundaries, based on the distinctive economic, social or natural features of the geographical area at stake. The RSDF is indicated as a medium to long term strategy, over a period of five to ten years, with a specific aim of “cross-sectoral” focus (Department Rural Development and Land Reform, 2014: 16), as opposed to the PSDF which does not specifically call for cross-sectoral integration, but rather focuses on translating national priorities into provincial priorities and aligning this with municipal planning. The RSDF is the only type of spatial planning programme with a specific regional focus, taking into account “regional issues and characteristics based on urban vs. rural context”, which are guided by demographic trends, the natural environment and economic growth trends. The RSDF also indicates a goal of “spatial targeting” as a response to unique circumstances or even urgent spatial issues and will consequently require much more integrated vertical as well as horizontal and cross-sectoral interaction than a PSDF. Cognisance is taken that none of these policies or spatial directives specifically identifies the course through which and by which authority these development frameworks should be compiled, for instance, starting from a national SDF downwards (Laubscher, et al., 2016: 127). This is regarded as a major hindrance in the successful implementation of these frameworks.

6.2.5.3 Local government as regional policy actor

Local municipalities in South Africa have a multitude of responsibilities, as identified within the Municipal Systems Act (The Presidency, 2000) and Municipal Structures Act (The Presidency, 1998), pertaining to budgets, service delivery, identifying development plans within the municipal area etc. The three types of local municipalities in South Africa are established in terms of Section 156 of the Constitution, identifying Category A, B and C municipalities as indicated in Figure 6-12.

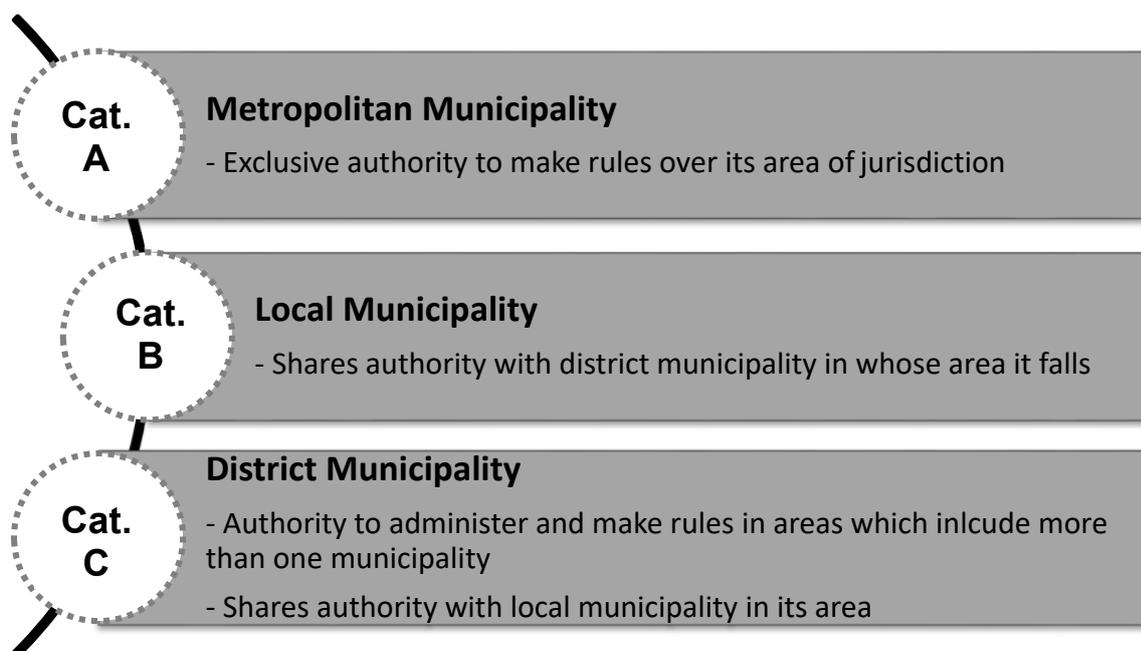


Figure 6-13 Types of municipalities in South Africa

Source: Adapted from The Constitution (The Presidency, 1996: 106)

Each Category C municipality will have varying numbers of Category B municipalities within its jurisdiction, adding an additional layer of authority between national and local level government. The amalgamation of various Category B municipalities has been visible over the past ten years, in an attempt to delegate power to stronger municipalities and to assist other Category B municipalities in addressing their responsibilities. This is similar to the regionalisation concept discussed in Section 5.2.5.3. Each of the local government levels are required by law (Municipal Systems Act (The Presidency, 2000)) to undertake a five-yearly process of Integrated Development Planning (IDP). The IUDF reiterates that the five-year horizon of the IDP is too limited to address the various developmental elements, i.e. infrastructure, transport and housing, thus resulting in a perception that the mechanisms are not functional, and even abandoning projects before results are visible (Department Cooperative Governance and Traditional Affairs, 2016: 45). The IDP process is regarded as a method to ensure local participation into the future planning of a local community, and entails (as one of many components) the establishment of a SDF for the municipal area, indicating areas of future growth, development potential and status quo of land use (Department Rural Development and Land Reform, 2014). The SDF informs the IDP, the budget, the various departments (i.e. housing, infrastructure etc.) and the land use management of each municipality and is therefore regarded as an important vertical integration (between Category B and C municipalities, provincial as well as national government) as well as

horizontal integration mechanism (between sectors within the Category C municipality, i.e. economic development, community development, infrastructure, health, education etc.). In this manner, it is possible to give outing to national and provincial strategies and to target spatial development, but is not always enacted. In an attempt of deconcentration of national responsibilities to a local level, the NDP identifies the compilation of “small-town development strategies” to stimulate the developmental role these play in the rural economy (refer Section 6.2.2).

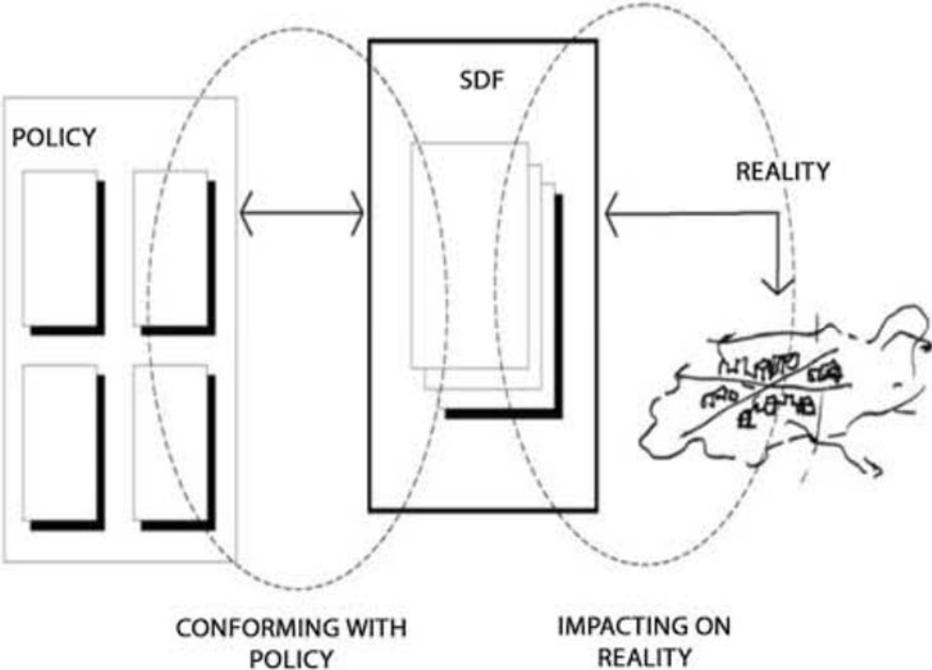


Figure 6-14 Gaps between policy, SDF and reality

Source: Department Rural Development and Land Reform (2011: i)

It is recognised (Department Rural Development and Land Reform, 2011) that SDFs across municipalities in South Africa are not effectively addressing spatial inequalities and efficiencies, even though a number of laws and policies addressing these issues exist (Department Cooperative Governance and Traditional Affairs, 2016). The SDFs therefore are regarded as positively reflecting the policies made, but fails to impact on the reality, which is mainly ascribed to poor implementation, poor alignment between sectors in the municipality, impractical SDFs with immeasurable targets and not giving necessary consideration to higher level spatial policies. The NDP does, however, mention the possibility of regionalisation in response to uneven capacity, which will give a more focused role to provincial authorities (The Presidency: National Planning Commission, 2011: 386). To conclude, the IUDF states that “integrated urban

development needs to look beyond administrative boundaries, and so coordination across municipalities and regions is critical” (Department Cooperative Governance and Traditional Affairs, 2016: 102)

In recognition of the preceding section on regional policy initiatives in South Africa, the subsequent chapter will shift focus to a peripheral region in South Africa, this will be done to determine the spatial as well as socio-economic state of this specific peripheral region, as well as evaluate policies pertaining to this circumscribed region.

6.3 Conclusion

Chapter six, with a focus on regional policy specifically in South Africa, followed a textual analysis of nine nationally recognised policy documents, although not all with a regional focus. This chapter served to strengthen the problem statements as stipulated in Section 1.2, more specifically referring to problem statement (2) *“Area-specific and context-specific policies have not been adopted in regional development initiatives in South Africa”*; and problem statement (3) *“Regional policy for resilient peripheral regions have not been adopted in South Africa”*.

As part of the qualitative analysis in Chapter six, the same approach as with the case study countries (Chapter five) was followed, with an initial focus on policies directly addressing peripheral regions within the country. It was, however, found that the peripheral region, and regions in general, does not feature prominently in the policy documents identified. The focus of South African policies are found to be mainly sectoral, with very few addressing the overlap between rural, regional and urban focus (refer Figure 6-3). The concepts of marginalised, lagging or peripheral regions are noted within IUDF, and the rural sectoral plans (CRDP, RDSP).

Analysing the nine policy documents rendered the economic development of communities as the most prominent issue in South Africa (refer Section 6.2.1). This, coupled with the issue of community social development, are partly ascribed to the historic policies of segregated development and are intensified by the issue of poor infrastructure and service provision. Institutional capacity prominently features as hindrance to an improved developmental state. The objectives of the identified policy documents are in line with the issues identified. It was further determined that the South African policy environment is inherently a top-down approach to spatial planning with a largely unbalanced impact on the spatial environment. From the policies forming part of the analysis, the conclusion can be made that the (predominantly) sectoral approach to policy-making leads to a typical “silo” focus of national policies, with the most prevalent focus on either rural or urban development. The urban population of South Africa far exceeds the rural population (65 % urban to 35% rural), and also attributes to economic growth considerably more,

and the overall focus of policy making in South Africa is therefore found to be more on stimulating economic development within urban areas. These policies do, however, take cognisance of the dire need and lagging development of rural areas, but it is treated as separate to urban development. Through this analysis it is palpable that it is essential for a regional approach in merging rural and urban across all scales to address the combined opportunities across the urban-rural divide – which does not feature prominently as an issue in the policy analysis.

With the focused analysis of the policy instrument identified within Section 5.2.4 in the nine policy documents, it was found that innovation in the form of cluster policies and centres of expertise (as component of knowledge networks, refer Section 4.4.3.4), does not feature notably, as with SEZs, and capacity building for local government. Infrastructure investment, business development and public skills training are prevailing in most of the tools identified to assist in economic growth and national development. It can be concluded that spatial targeting as tool for development is not observed as frequently, and is more visible in terms of a SOC approach, than a targeted DPA approach.

In the final section of this Chapter, the actors (or institutions) impacting on, and responsible for, policy implementation was discussed, bringing to attention that government (on all three levels as identified within the institutional framework) has a multitude of exceptionally designed mechanisms for spatial development at hand, but that the lack of integration across the various levels are problematic. This, in turn, coupled with lacking institutional capacity, results in an immense void in the implementation of various well-intentioned spatial policies. National government in South Africa mainly utilises the strategic planning and programming tool to influence regional development, as well some form of inter-ministerial committees and national budgeting. The lack of a dedicated regional ministry is highlighted as a gap in regional policy making and implementation at this time. Currently, there are no concrete plans for regionalisation or a deconcentrated authority, although mention is made of regionalisation as possibility for the future in the NDP. On a regional level, the regional strategies (RSDF) proposed are the only visible tool for regional policy implementation as of form of both vertical and horizontal interaction, as opposed to RDAs and other forms of decentralisation and deconcentration as found in the 17 case study countries (refer Section 5.2.5.2).

Provision is made in terms of SPLUMA (The Presidency, 2013) for four levels of spatial development frameworks, although at present, only two levels are compiled (provincial and local). The national SDF is currently in process, whereas a lack of regional SDFs are ascribed to the discretionary nature thereof. The regional level of SDF could potentially bridge the gap in the urban-rural divide in policymaking (to be elaborated in Chapter 8), prevent future sectoral silo policies and unify levels of government in a common vision of a developmental regional state. It is further noted that the three overlapping levels of local institutional power and associated

confusion regarding responsibilities and accountability lead to poor spatial planning and implementation. It can be concluded that there exists a definite need for an overriding authority with more input and power in specifically regional planning and regional policy to ensure better implementation and coordination among levels of authority.

CH 6: REGIONAL POLICY



South Africa

Chapter message:

- Regional policy and spatial planning in South Africa is strongly influenced by past spatial planning approaches and injustices.
- Current planning policy is mainly focused on “righting the wrongs” of previous policy.
- The main guiding policy documents are mostly sectoral in nature.
- Regional policy per se, does not feature in South Africa.
- A pertinent focus on urban policy and rural policy as separate mechanisms are visible.
- Rural policies are mainly focused on land reform and basic service delivery.
- The top-down approach to these frameworks are apparent.
- Regional development does not receive focused attention by means of a dedicated national ministry, and national regional policy.
- The lack of implementation and monitoring of national, provincial and local policies and plans are challenging.
- Sectoral development and subsequent silo policies are found within most of the national frameworks.
- Knowledge network development, in terms of innovation, is not as prominent.
- Various strong and noteworthy spatial initiatives do exist, but are not implemented and utilised to their full potential.
- Strong sectoral objectives are present, which may be ascribed to the lack of regional directive.
- The strong resource dependent economy impacts on the environment, institutions, infrastructure and ultimately leads to unbalanced development.
- Streamlining and even a “clearing of house” within the different institutional layers are deemed inevitable.

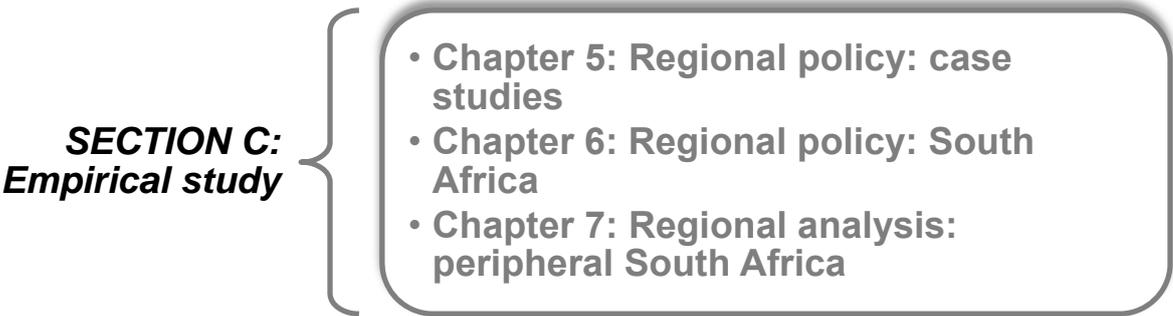
Figure 6-15 Chapter message: Chapter 6

CHAPTER 7: REGIONAL ANALYSIS: PERIPHERAL SOUTH AFRICA

7.1 Introduction

Chapter seven relates to Aim 2 of the study “**evaluate the content of international regional policies in terms of their broad outcomes**”, with a specific focus on the South African context, as host country of the peripheral study area. This Chapter forms the final chapter within the empirical section, Section C, as indicated in Table 7-1.

Table 7-1 Section C - Empirical Study



Source: Own compilation

Chapter 7 will turn the focus to a quantitative socio-economic and spatial analysis of the study area, i.e. peripheral South Africa, as well as a qualitative overview of the spatial planning policy related to the study area. Together with the textual analysis (in the form of spatial policy analysis in Chapter 6) and the spatial and policy analysis of the study area (Chapter 7), the final chapter, Chapter 8, will aim to propose study area specific, as well as internationally applicable, guidelines (pragmatic approach – refer Section 2.4) in the overall aim of the study “**to provide a regional policy framework for a more resilient peripheral region**”.

7.2 Peripheral South Africa

The South African national space is recognised to have five distinct types of regions, based on their spatial extent, economic activity and population, i.e. (i) the inner core, (ii) the outer core; (iii) the semi-periphery; (iv) the periphery; and (v) the deep periphery as indicated in Table 7-2.

Table 7-2 Regional classification in South Africa

Category	Characteristics	Examples
Inner Core	Consisting of the large metropolitan agglomerations and secondary cities	<i>The Gauteng City-Region, Western Cape Urban Agglomeration, KwaZulu-Natal Coastal Urban Agglomeration, Nelson Mandela Bay, Mangaung, Buffalo City, The Msunduzi, Polokwane, Free State Goldfields, Mbombela, Polowane, Sol Plaatje, Cape South Coast Tourism Belt</i>
Outer Core	Consisting of large towns with major service functions, medium-sized mining centres, peri-urban agglomerations around the inner core, and large agglomerations around previous homeland capitals	<i>Newcastle, Kroonstad, Grahamstown, Phalaborwa, Mthatha, Thoyohandou</i>
Semi-periphery	Consisting of medium-sized towns with an established infrastructure, secondary mining outliers and the more densely settled parts of the previous <i>Bantustans</i> with local economies producing more than R1 billion per year	<i>Vryheid, Kuruman, Springbok</i>
Periphery	Consisting of small service centres with established infrastructure, small mining economies and previous <i>Bantustan</i> economies with output of more than R0.4 –R1 billion	<i>Calvinia, Dannhauser</i>
Deep periphery	Comprising very marginal local economies with outputs of less than R0.4 billion per year	<i>Jansenville, Tarkastad, Boshof, Harding, Poffader, Warrenton</i>

Source: Harrison & Todes (2013: 18)

The study area, in relation to the main aim of this study “to provide a regional policy framework for a more resilient peripheral region”, will refer to the three peripheral regions as identified in Table 7-2 and illustrated in Figure 7-1, i.e. semi-periphery, periphery and deep-periphery, with a specific focus on the local municipalities of the Northern Cape as the most represented province regarding peripherality in the country.

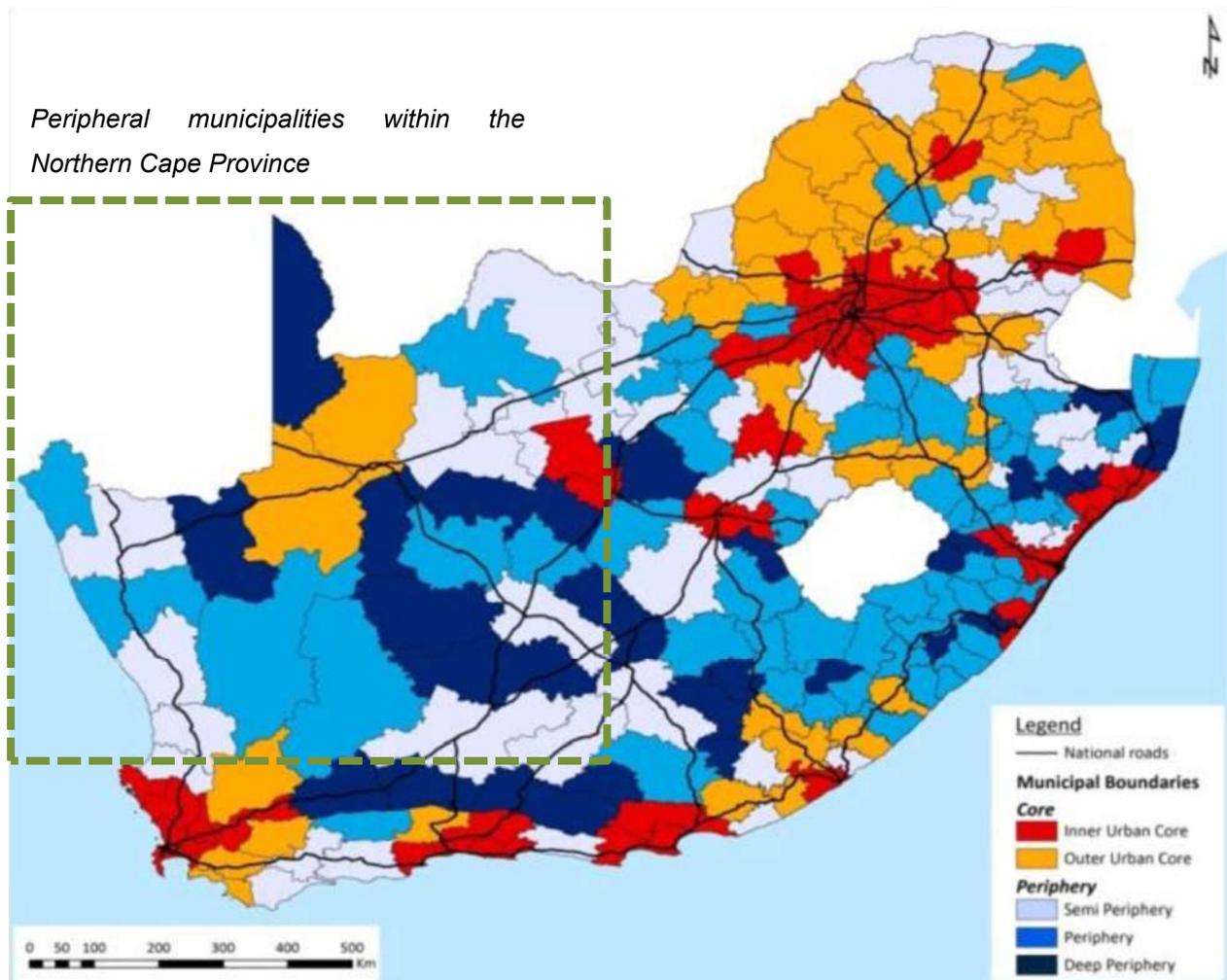


Figure 7-1 Classification of South Africa's regions

Source: Department Planning, Monitoring and Evaluation (2014: 20)

The Northern Cape Province consists of five District Municipalities, as indicated in Figure 7-2, and 27 local municipalities, with the main regional settlements being Springbok, Upington, De Aar, Kuruman, Calvinia, Kimberley and Colesberg. The Northern Cape Province extends over 30.5% of the total land surface of South Africa, bordering both Namibia and Botswana, which renders this a strategic province for cross-border interaction (refer Figure 7-2).

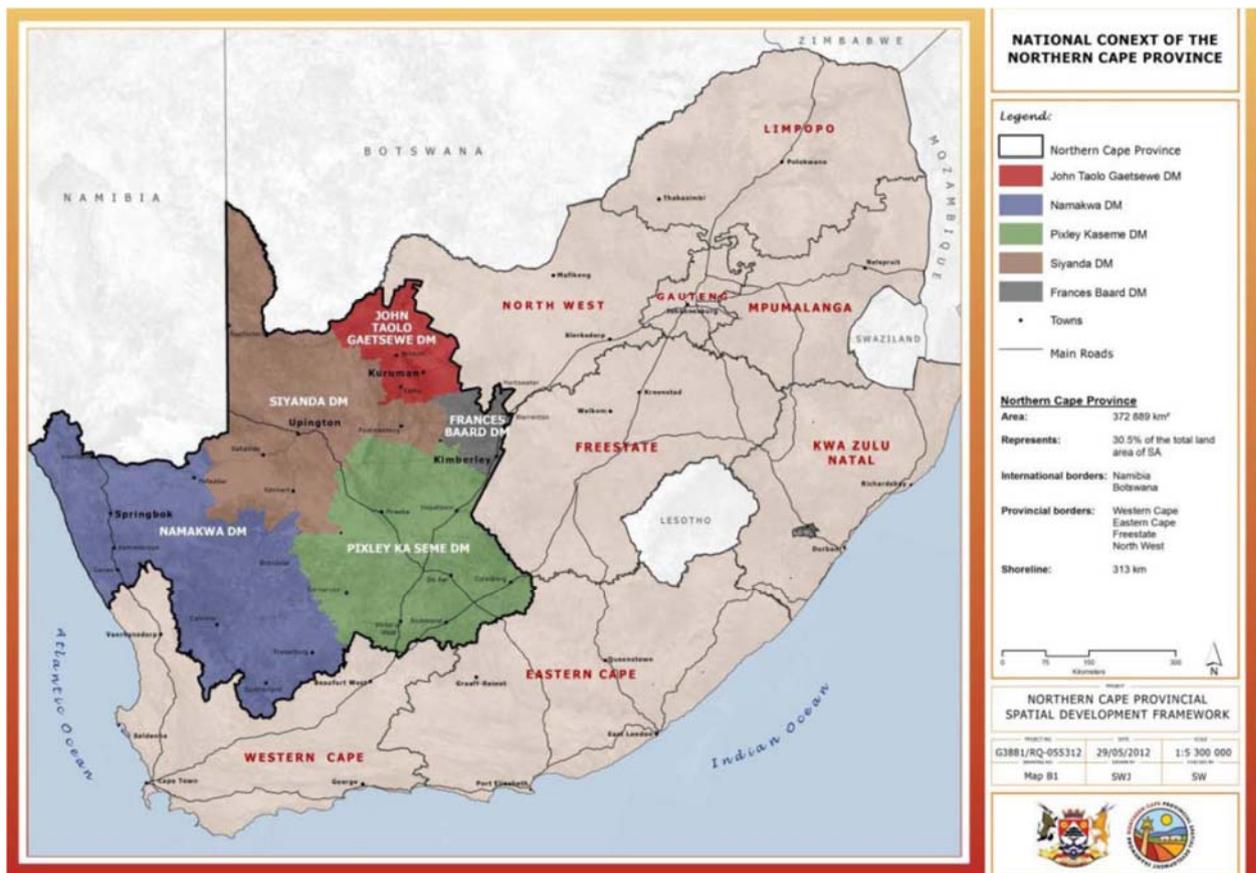


Figure 7-2 National context of the Northern Cape Province

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 27)

The Northern Cape Province is primarily considered a rural province, made up of smaller urban and service type settlements. The total population of the province is 1,175,780 at a density of 3.2 persons per km², in relation to an average density of 45 persons per km² in South Africa. The Province has the lowest population density in the country (Quantec, 2017). From Table 7-3 it is evident that only four of the 27 local municipalities are not classified as peripheral (also refer Section 3.2 and Figure 3-3) .

Table 7-3 Municipalities of the Northern Cape

District Municipality			Local Municipalities		
Name and Number	Admin Capital	Area km ² and % of the Province		Number	Classification
Namakwa DC6	Springbok	126 900 (34%)	Richtersveld	NC061	Periphery
			Nama Khoi	NC062	Semi periphery
			Kamiesberg	NC064	Periphery
			Hantam	NC065	Periphery
			Karoo Hochland	NC066	Periphery
			Khai Ma	NC067	Deep periphery
Pixley ka Seme DC7	De Aar	103 500 (27,8%)	Ubuntu	NC071	Deep periphery
			Umsobomvu	NC072	Deep periphery
			Emthanjeni	NC073	Deep periphery
			Kareeberg	NC074	Deep periphery
			Renosterberg	NC075	Deep periphery
			Thembelihle	NC076	Periphery
			Siyathembe	NC077	Periphery
			Siyancuma	NC078	Deep periphery
Siyanda DC8	Upington	102 500 (27,5%)	Mier	NC081	Deep periphery
			Kai !Garib	NC082	Outer urban core
			//Khara Hais	NC083	Outer urban core
			!Kheis	NC084	Deep periphery
			Tsantsabane	NC085	Semi periphery
			Kgatelopele	NC086	Periphery
Frances Baard DC9	Kimberley	12 800 (3,4%)	Sol Plaatjie	NC091	Inner urban core
			Dikgatlong	NC092	Inner urban core
			Magareng	NC093	Deep periphery
			Phokwane	NC094	Deep periphery
John Taolo Gaetsewe DC45	Kuruman	27 300 (7,3%)	Joe Morolong	NC451	Periphery
			Ga-Segonyana	NC452	Semi periphery
			Gamagara	NC453	Semi periphery

Source: Own compilation from Demarcation Board (2017) and Harrison and Todes (2013)

The Northern Cape Province has been established as a peripheral region in South Africa, with various accompanying issues as subsequently discussed (refer Section 7.3.1). This region will consequently be analysed in-depth to determine the status of policy of this peripheral area, to illustrate the socio-economic status quo of the region and to provide for a more resilient approach to regional policy within this specific region, as well as applicable proposals for other peripheral regions across the world. In Section 7.3, the policy analysis on the study area will be done in a similar manner than the analysis of the 17 case study countries (refer Section 5.2), and the

national analysis (refer Section 6.2) to maintain consistency in the qualitative evaluation of the indicated policy documents.

7.3 Policy analysis

In terms of the policy analysis of the study area, reference will be made to two main policies, i.e. the Northern Cape PSDF (2012), the Northern Cape Growth and Development Strategy (2011). The Northern Cape PSDF comprises comprehensive plans and strategies, which collectively indicate which type of development and investment should be promoted in the province, where it should take place, and how such development and investment should be undertaken. Both the NCPSDF and NCGDS are compiled in terms of the Northern Cape Planning and Development Act (Northern Cape Provincial Government, 1998). The Act provides a single set of procedures and regulations to accelerate development, and ensure more effective and integrated land development and planning. The principles identified within the Act guides the preparation and implementation of integrated land development plans in rural as well as urban areas subject to land use management schemes.

7.3.1 Study area regional policy: Problem recognition

Nel (2005) recognises that especially the smaller settlements in the Northern Cape have undergone a myriad of changes due to the impact of an ever-changing global economy, especially due to the Province's main dependence on manufacturing, agriculture and the mining sectors (refer Section 7.4.1). The collapse of once prosperous mining settlements, decline in agricultural output, displacement of the roles of smaller service centres due to advances in transport infrastructure, dependence on state welfare and the loss of local government status resulting from various amalgamations are put forth as some of the main issues facing the province (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 30). The NCGDS (Northern Cape Province, 2011) recognises the extent of poverty as the most significant issue facing the province, accompanied by the various societal challenges due to the effects of poverty. These include (i) the backlog in provision of basic needs and services; (ii) improved access and quality of health, education and social services; (iii) decreasing the prevalence rate of HIV/AIDS; and (iv) creating opportunities for employment (Northern Cape Province, 2011: 9).

7.3.2 Study area regional policy: Objectives

Through the PSDF, the Northern Cape Government aims to enhance a 'developmental state' (The Presidency, 1996), to create an enabling, functional and statutory environment to promote sustainable socio-economic development. Such a state incorporates and builds upon principles of empowerment, value addition, rural development and industrialisation (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 6). The PSDF follows a strict bioregional planning approach, taking into account the unique and sensitive environment with the various protected areas, a sensitive coastal zone, a myriad of critical biodiversity areas and the Orange River Mouth Wetland within the province. Miller (1996: 11) describes bioregional planning as a structured method that empowers society to function together, taking into consideration the unique issues and opportunities of their region. In this approach the whole community acts together in identifying goals and objectives, defining endeavours, and implementing projects. The bioregional planning approach allows for the evolution of the process, continuously measuring progress made and correcting or adjusting the process accordingly. This approach reiterates the traditional regional policy approach as identified in Section 3.5.3 and illustrated in Figure 3-9 (Armstrong & Taylor, 2000). The purpose of adopting these principles is to provide a coherent and place-specific methodology for the planning of the Northern Cape as a distinct and unique environment and to facilitate its management in accordance with local and global best-practice. Bioregional planning as adopted for the PSDF revolves around five broad dimensions, i.e. (i) Efficient Resource Management; (ii) Integrated Environmental Planning and Management; (iii) Building Human capacity and ability; (iv) Institutional integration and cooperation; (v) Information and performance management. These themes are found recurrently throughout the PSDF and allows for all aspects of provincial forward planning to be included.

7.3.3 Study area regional policy: Framework

It has been extensively discussed (refer Sections 3.5, 4.4.3.5, 5.2.3, 5.2.5, 6.2.3, 6.2.5) that the success of regional policy strongly depends on the extent and success to which all spheres of government co-operate and co-ordinate their activities. Accordingly, the PSDF is based upon, and gives effect to, the concept of integrated development planning, which is understood as 'a participatory planning process aimed at integrating sectoral strategies, in order to support the optimal allocation of scarce resources between sectors and geographic areas and across the population in a manner that promotes sustainable growth, equity and the empowerment of the poor and marginalised' (Forum for Effective Planning and Development, 1995). An integrated and universal approach to policy preparation and management requires that the correlation between economic undertakings and development within the social, financial, demographic, institutional,

infrastructural, and environmental features are cautiously reflected in terms of a generalised framework. The PSDF recommends that spatial planning and management in the Northern Cape must be facilitated by a 'package' or 'hierarchy' of Spatial Development Frameworks (SDFs) prepared in terms of a standardised format and with a common vision and focus. It is pertinently put that the standardisation should not undermine the autonomy and status of the various government spheres. The PSDF is the highest order of such 'package' of plans and serves as a guidebook for the groundwork of the district and local municipal SDFs, refer Figure 7-3.

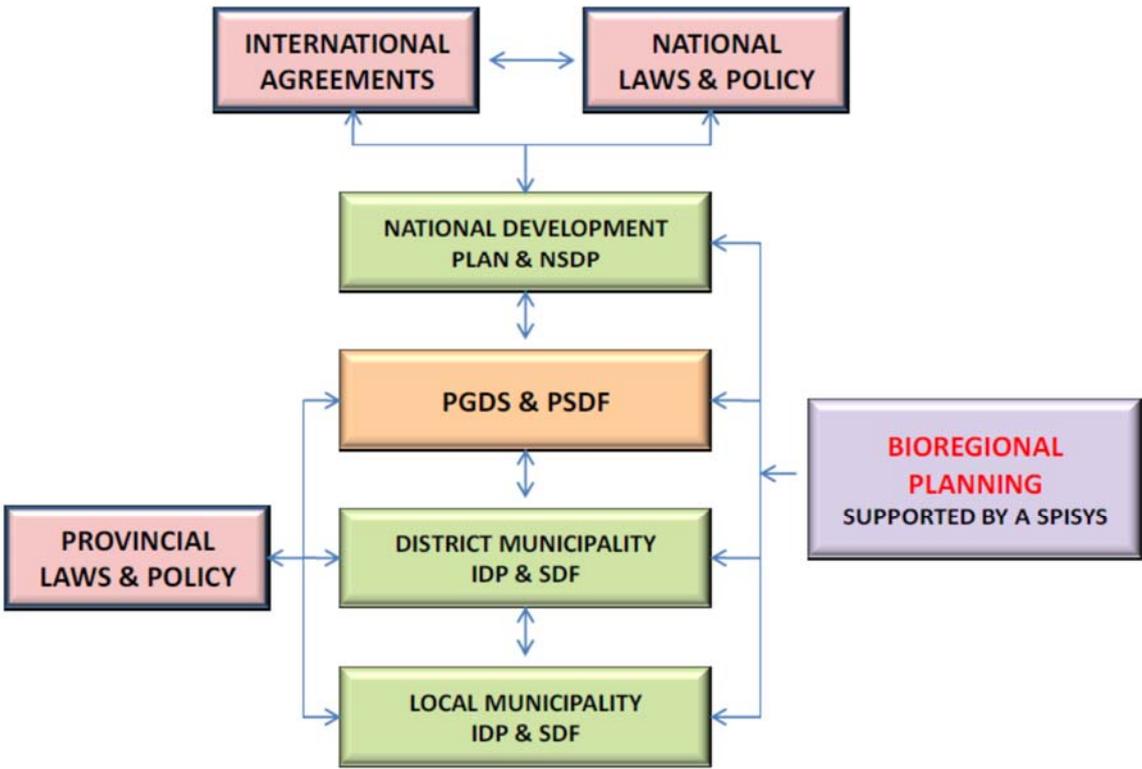


Figure 7-3 The NCPSDF as part of a hierarchy of plans

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 8)

The Northern Cape PSDF recognises that the province cannot function in isolation and forms an integral part of the global and national biosphere, informed by, and aligned with, the various statutes, agreements and policies on all levels. The nested approach to provincial planning is illustrated in Figure 7-3 and Figure 7-4, which allows for more effective vertical integration between the levels of government as well as horizontal interaction between sectoral departments in the provincial and local spheres (refer Sections 4.4.3.5.2, 5.2.5.2, 6.2.5.2.).

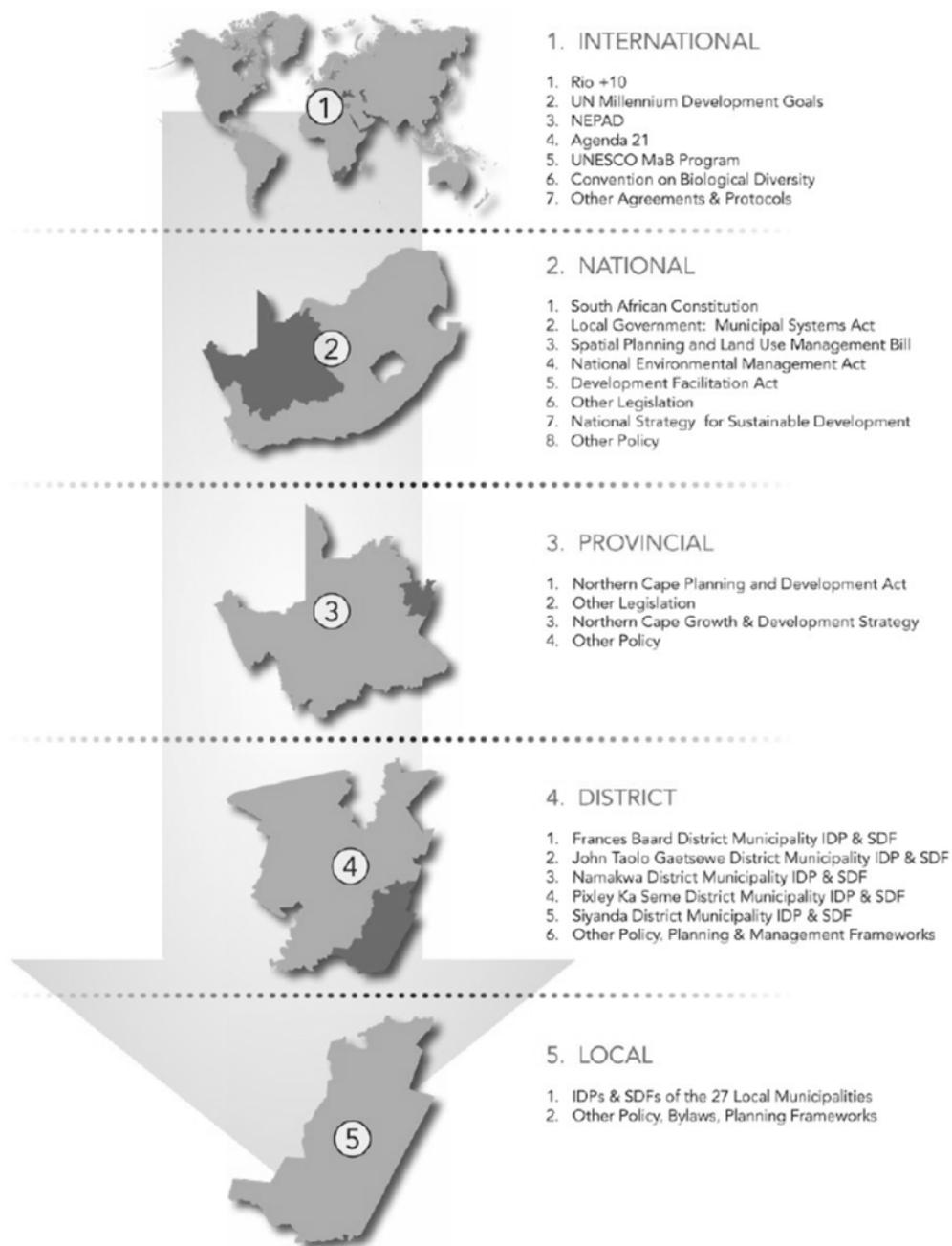


Figure 7-4 Legislative and policy context for the Northern Cape PSDF

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 3)

Accordingly, the PSDF serves as a manual for the integration and standardisation of planning documentation of the various spheres of government in the Province, with a strong focus on facilitating “cross-boundary co-operation and co-ordination between district and local municipalities, adjoining provinces, and bordering countries in respect of issues that are of mutual

interest for their respective areas of jurisdiction” (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 73).

7.3.4 Study area regional policy: Instruments

The spatial approach followed by the PSDF is based on the United Nations Educational, Scientific and Cultural Organization`s (UNESCO) biosphere reserve zoning model, providing for three broad land-use categories (UNESCO, 2017), i.e. (i) a core conservation area (SPC A), (ii) a conservation-focused buffer (SPC B); and (iii) a transition area (SPC C – F). The focus of the subsequently discussed instruments will be on the transitional areas (SPC D - F) as areas where the main consumptive land-use types occur, including settlement development, industry, mining, and other disruptive land-uses that represent the bulk of the economic activities of the province. In this zone, local communities, administrative agencies, scientists, nongovernmental organisations (NGOs), cultural groups, economic interest groups and other stakeholders should be working together to manage and develop the area's resources in a sustainable manner (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 74).

In the Spatial Context of the PSDF a host of indicators together with three Composite Indices (Resources Index, Infrastructure Index, and Economic Index) were used to classify the 32 district and local municipalities and 115 settlements of the Province into typologies and an Index of Development Potential. This is regarded as the main drive behind all other instruments within the PSDF, as discussed within the remainder of Section 7.3.4. The municipalities and settlements were accordingly classified in terms of the classes or typologies summarised in Table 7-4. The indices are utilised for various purposes, i.e. (i) prioritising government spending and Local Economic Development (LED), (ii) preparing and monitoring IDPs; (ii) highlighting types of development and investment for each local and district municipality to plan and budget accordingly; and (iv) performance measurement on all levels of governance.

Table 7-4 Index of Development Potential

CLASS	DEVELOPMENT POTENTIAL	DESCRIPTION
1 & 2	'Very Low' and 'Low' growth potential	These settlements possess limited economic and human resources, devoid of the potential to stimulate the urban economy in a significant way.
3	'Medium' growth potential	These settlements' development indices are roughly in line with the average value of the provinces' aggregate on the 115 settlements. Consistent and moderate growth prevails in these settlements and certain sectors of the economy show signs of growth, or have the potential for it.
4 & 5	'High' and 'Very High' growth potential	These settlements experience sustainable growth on the positive side of the provincial average. They already have an established and proven track record to operate as 'growth engines' at a certain level. They have the potential to grow at a sustainable and powerful rate in line with the capacity of their resources and to operate as service providers to a relatively extensive hinterland. The difference between 'High' and 'Very High' status only lies in the diversity and intensity of the town dynamics.

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 123)

The municipalities were further classified according to their “Human Development Need”, focused on features of susceptibility or development need. By integrating the Development Potential Index with the Human Needs Index, municipalities (27) and settlements (115) were classified into a Typology for Investment to provide a deeper comprehension into the development potential and the development needs of the various local municipalities and settlements. This is believed to enhance the future investment policies necessary to manage settlement growth and development in the province. Figure 7-5 illustrates the general approach to the investment of government and private funds in terms of the corporate principle that investment should be focused on where the highest return on such investment can be accomplished.

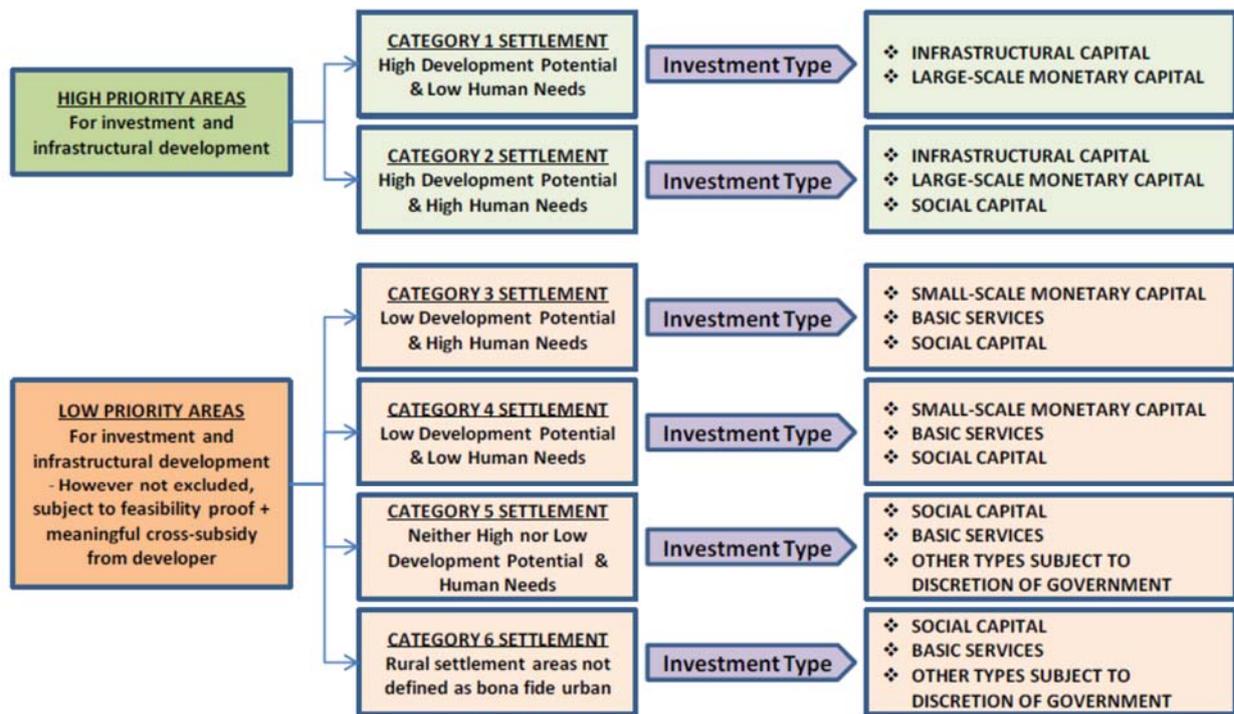


Figure 7-5 Approach to investment of funds

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 127)

The PSDF aims to facilitate the employment of the various forms of ‘development capital’ vested in the province in order to reach its goals and objectives pertaining to sustainable development in the settlements. The development capital identified includes (i) human capital; (ii) social capital; (iii) infrastructure capital; (iv) natural capital; and (v) financial capital.

In Figure 7-6 the urban areas categorised in terms of their relative levels of human need and economic potential and, in particular, the investment typology required and proposed, are visible. These are typically areas supported by the various forms of “development capital” as highlighted above. It is envisaged that the local and district spheres will utilise the provided maps and classifications in their individual development plans and budgeting processes. This will ensure better alignment across all three spheres, as directives from the provincial government will feed down to the local municipal level.



Figure 7-6 Spatial Plan for SPC D: Urban related areas

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 128)

In reference to the “Infrastructure and transport investment” instrument, recurrently highlighted in international and national approaches (refer Sections 5.2.4.2 and 6.2.4.2), the most prominent within the PSDF is investment in the physical development corridors within the province. The existing economic development opportunities within the province, responding to available environmental and infrastructural capital, has largely determined the settlement patterns of the province. Economic development focal areas including potential industrial development nodes as indicated in Figure 7-7, are identified in the PGDS (2011).

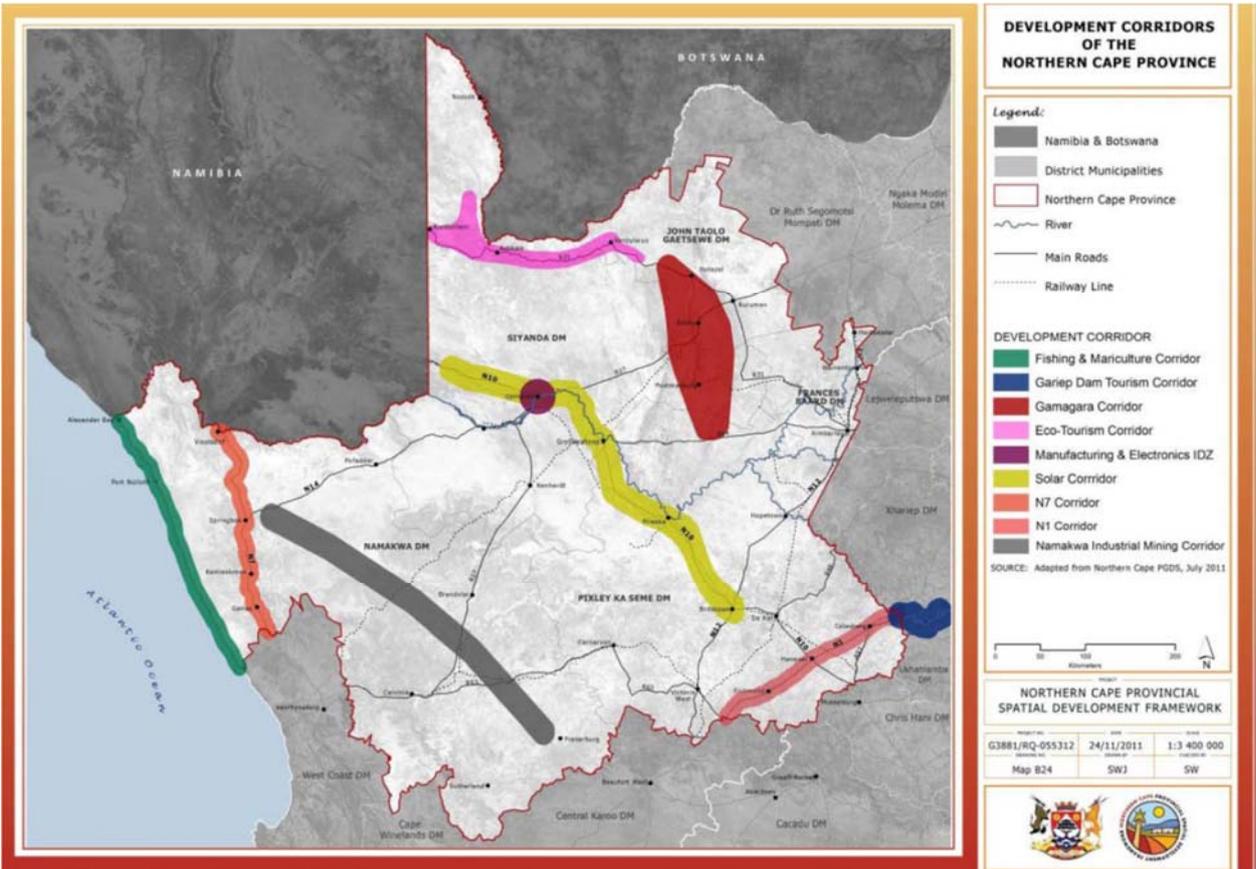


Figure 7-7 Development corridors of the Northern Cape Province

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 68)

The identified regions and corridors, particularly refers to the development corridors along which the main mining, industrial and energy sectors (as main economic contributors, refer Section 7.4.1) are concentrated, as stipulated in Table 7-5. These established corridors will greatly influence the future planning and potential for expansion of the province.

Table 7-5 Development regions and corridors of the Northern Cape

REGION AND CORRIDOR	DESCRIPTION
FISHING AND MARICULTURE	The Namaqualand coast is the centre of the fishing and mariculture sector. This corridor has its primary node at Port Nolloth and secondary nodes at Hondeklip Bay and Alexander Bay.
GAMAGARA CORRIDOR	This corridor comprises the mining belt of the John Taolo Gaetsewe and Siyanda districts and runs from Lime Acres and Danielskuil to Hotazel in the north. The corridor focuses on the mining of iron and manganese.
KIMBERLEY FOOD CORRIDOR	This corridor constitutes the food producing area from Hartswater and Jan Kempdorp through to Prieska, Hopetown and Douglas.
NAMAQUA INDUSTRIAL MINERALS CORRIDOR	The Namakwa district has a multitude of industrial minerals such as granite, slate, mica, clay, etc. The intention is to develop a central processing and logistics hub in the Springbok area for the mining
SKA CORRIDOR	This corridor centres around Carnarvon and Williston and extends to the proximity of De Aar and Upington.
SOLAR CORRIDOR	This corridor centres around Upington and extends from roughly Kakamas in the north to De Aar in the east.
TOURISM: LAKE GARIEP	This corridor centres around Lake Gariep and has significant tourism potential. It is a potential interprovincial hub for tourism which affects the Northern Cape, the Free State and the Eastern Cape.
TOURISM: N1	This corridor connects Gauteng, Free State, Eastern Cape and Western Cape. Colesburg, Richmond and the other settlements along this route are the key beneficiaries and tourism hubs along this route.
TOURISM: N7	This corridor stretches from Cape Town through Namaqualand up to Namibia. It is renowned for its unique aesthetic appeal and periodic

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 68)

These corridors are illuminated as areas for continued investment for especially the economic diversification of the province. The PSDF further emphasises the pivotal role that the Northern Cape plays in relation to Namibia, Botswana, and the remainder of South Africa (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 88). In order to utilise this status, it is foreseen that transport linkages are important in order to advance the existing relationships, especially with regard to tourism linkages and spillovers in neighbouring countries.

Strategies in support hereto include the use of Upington as cargo hub and international access point between Namibia and Botswana; the upgrading of access roads to the Kgalagadi Transfrontier Park, and enhanced opportunities for vehicle testing (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 88) along the Upington corridor. The Ais-Ais-Richtersveld national park traversing the South African and Namibian border is of further importance.

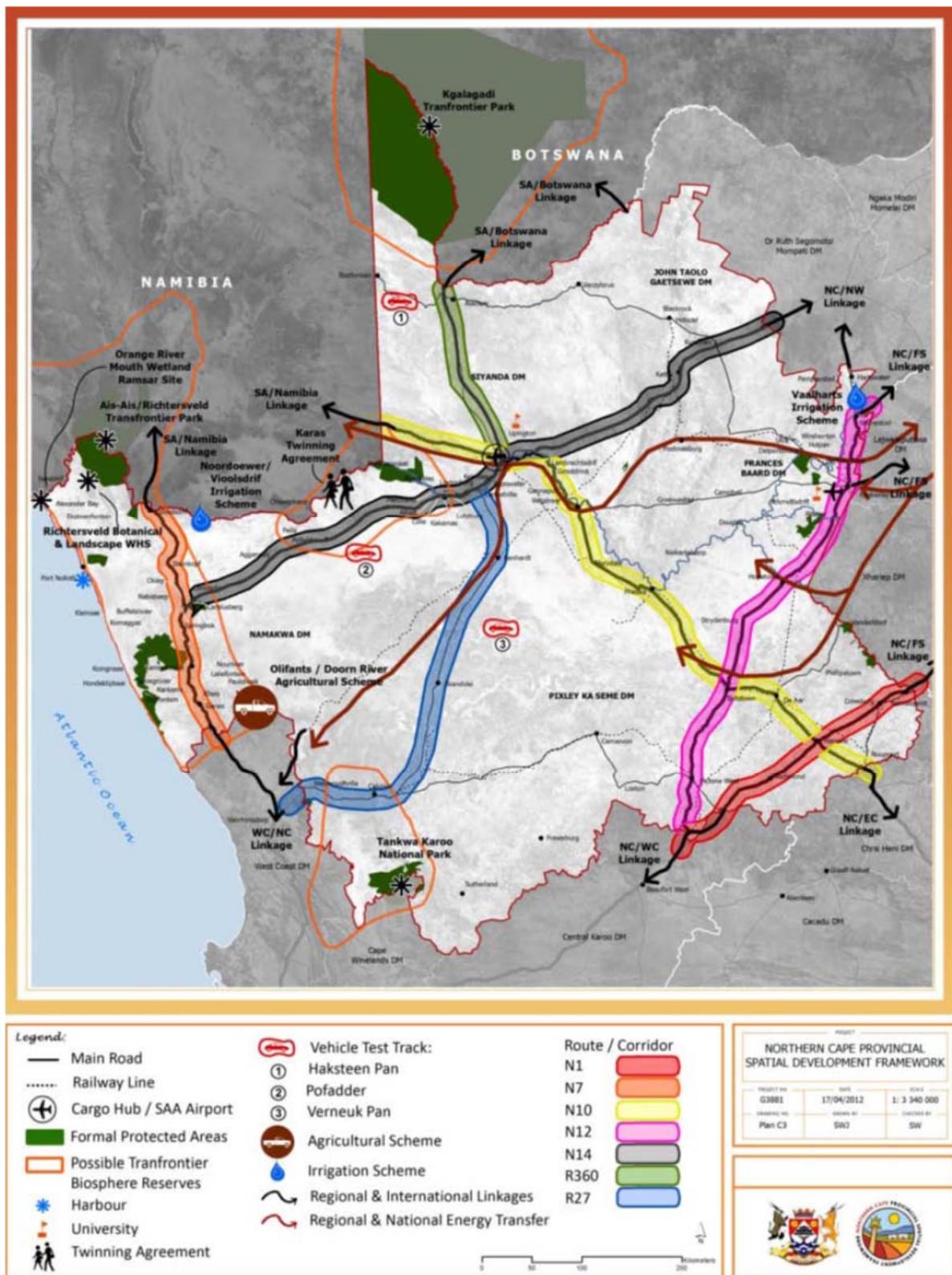


Figure 7-8 Spatial plan for the Northern Cape as a pivot between surrounding provinces and countries

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 89)

Innovation support within the Northern Cape as regional policy instrument is most visible within the globally acknowledged Square Kilometre Array (SKA) project, with the town Carnarvon as main settlement in the area. The SKA features prominently in the PSDF as an “astronomy reserve” covering the larger central part of the province (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 81) as illustrated in Figure 7-9.

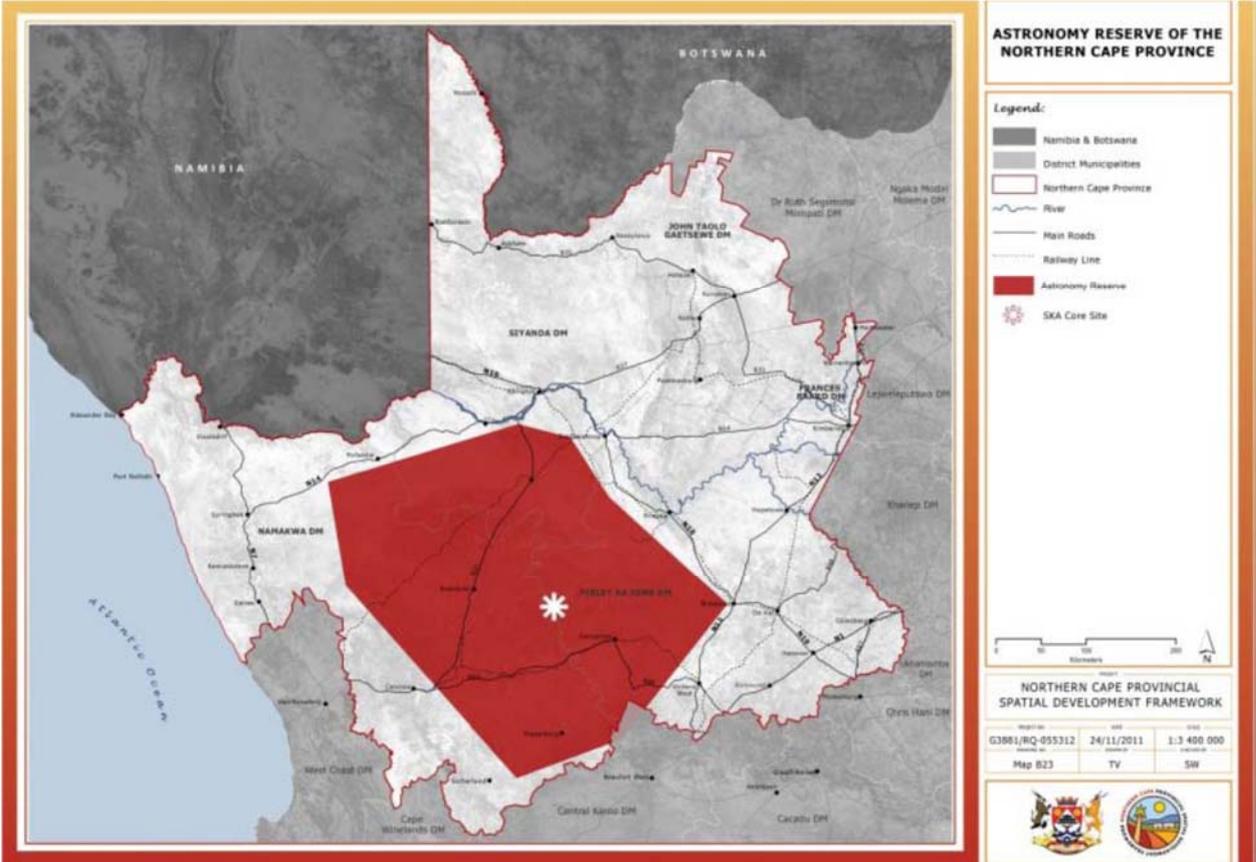


Figure 7-9 Astronomy reserve in Northern Cape Province

Source: SKA Africa, 2017

The SKA provides renewed interest in R&D within the province and support various national and international opportunities for research in science and engineering by means of bursary schemes. Skills development for artisan students and primary school opportunities (schools programme) in virtual robotics contribute to the local community’s skills training. The SKA projects further assists in SMME development and provides funding for community upliftment (SKA Africa, 2017). SKA is supported by the Karoo Array Telescope (MeerKAT) initiative as one of the largest and most powerful telescopes in the world.

The Northern Cape Province shows particular comparative advantage in terms of the mining, manufacturing and agricultural sectors (refer Section 7.4.1). Special economic zones (as regional policy instrument) within the PSDF are addressed by means of industrial development areas, as indicated in Figure 7-10. The PSDF categorises five industrial types as priority industrial areas, i.e. (i) agricultural industry (e.g. packing facilities, silos, wine cellars); (ii) industrial development zones (e.g. port-linked export-orientated industrial estates); (iii) light industries (e.g. service industry related industries); (iv) heavy industries (e.g. abattoirs, stone crushing, chemical works, brewery); and (v) extractive industries (e.g. mining and related settlements and infrastructure). The four main industrial areas are located in the surrounding areas of Kimberley, Kuruman, Upington and Concordia (refer Figure 7-10).

Through these initiatives, the PSDF aims to establish and reinforce the second economy, in essence magnifying the opportunities within the province and increasing the GDP. The renewable energy sector also features pertinently as generator of economic activity, and assists in counteracting the detrimental environmental impact associated with large manufacturing and extracting sectors (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 136) as part of a climate-neutral approach.

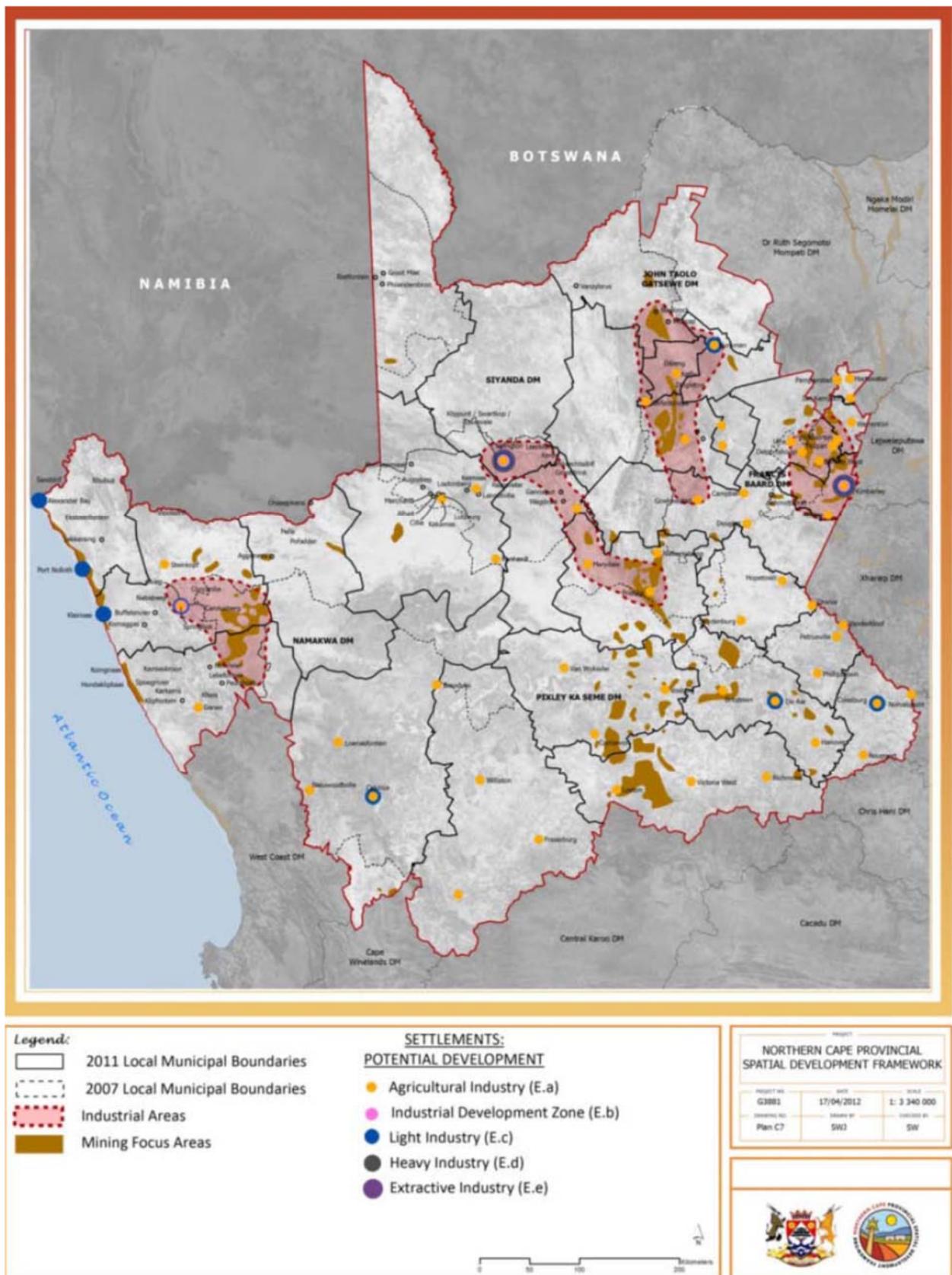


Figure 7-10 Spatial plan for SPC E: Industrial areas

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 137)

The Northern Cape Province exhibits long traveling distances and remote localities due to the focus on natural resources (refer Section 7.4.1), resulting in a dependence on infrastructure for export purposes, and reaching national and international markets. The PSDF recognises (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 138) that the institutional and financial capacity of local municipalities alone are not sufficient to support the expansion and maintenance of transport and bulk infrastructure (refer Section 7.4.3).

The service delivery instrument of regional policy within the study areas is visible in the Province's emphasis on bulk services, main access routes, and infrastructure required to sustain the economic sectors that support the economy of the province (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 140). A focus is visible on particularly the use of existing railway lines, i.e. De Aar junction as a possible intermodal terminal for freight, the Sishen-Saldanha railway line in terms of the export of mineral resources, and the Upington cross-border railway line to Namibia to potentially stimulate regional exports. Harbour redevelopment of both the Port Nolloth and Hondeklipbaai harbours is seen as crucial to revitalise the local economies of these settlements through the fishing industry.

The PSDF recognises the lack of telecommunications infrastructure (refer Section 7.4.2.4) to the rural areas as crucial for long-term growth and proposes an e-skills development programme and e-awareness programme targeting the most rural communities in the deep-peripheral areas (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 146). The maintenance and continuous upgrading of both provincial airports (Kimberley and Upington) is also pertinently discussed, involving the support of the Airports Company of South Africa (ACSA) from a national perspective. Supporting the sustainability focus of the PSDF, emphasis is placed on enforcing the national building codes with regard to household services (water and energy consumption, renewable building material). The coastal area between Port Nolloth and Kleinsee is earmarked as possibility for wind-energy, in support of the solar potential for renewable energy across the province (refer Figure 7-11).

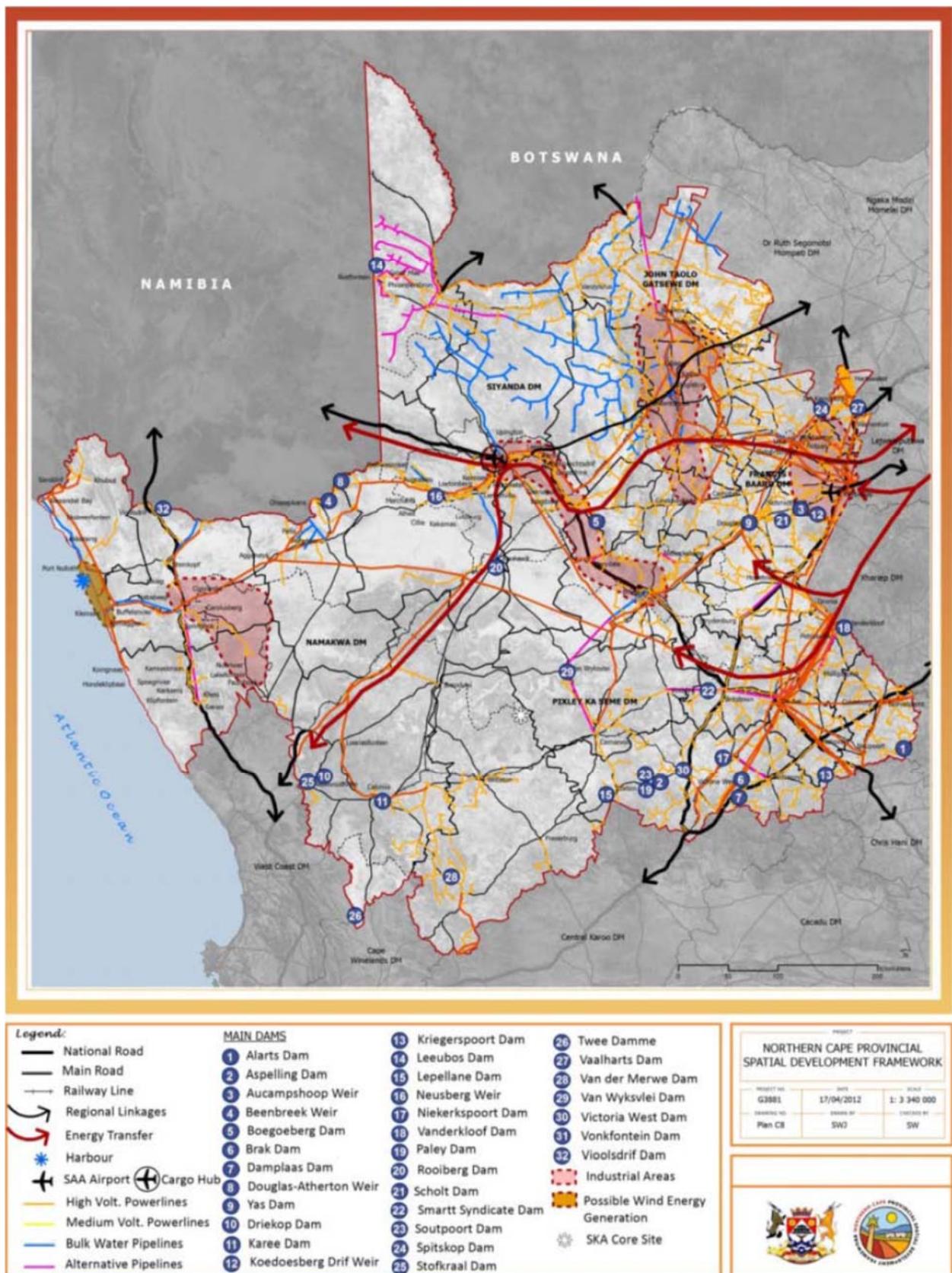


Figure 7-11 Spatial plan for SPC F: Surface Infrastructure

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 148)

7.3.5 Study area regional policy: Actors

Administrative responsibility for the PSDF falls within the Directorate Spatial Planning and Land-Use Management in close association with the Department of Rural Development and Land Reform, the Northern Cape Planning and Development Commission (as stipulated in Chapter II 4(1) of the Northern Cape Planning and Development Act 7 of 1998) and the Forum for Cooperative Planning and Development (established in terms of terms of Chapter III 9(1) of the Northern Cape Planning and Development Act 7 of 1998). The PSDF recognises that the bioregional planning approach that have been adopted will only be successful through institutional integration, integrated development planning, and a cooperative government. The Intergovernmental Framework Act (The Presidency, 2005) and The Constitution (The Presidency, 1996) is put forth within the PSDF as mechanisms to enforce better integration. The Forum will be responsible to facilitate integrated development planning, cooperative governance and institutional integration, in cooperation with the identified Head of Department (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012: 23). An annual audit (refer Section 7.4.3) with regard to compliance and implementation of the directives is carried out, and it is identified that all HODs, within the recognised departments, will be held responsible for enacting the directives (refer Table 7-6).



Figure 7-12 PSDF as a spatial and principles framework for institutional governance

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 24)

Within the PSDF various sectoral strategies are identified to form part of an initiative towards more integrated cross-sectoral planning, as stipulated in Table 7-6.

Table 7-6 Key sectoral strategies and plans forming part of the PSDF

Strategy	Responsible entity
Provincial Growth and Development Strategy	Provincial Government
Comprehensive Growth and Development Programme	Department of Agriculture, Land Reform and Rural Development
Fishing and Mariculture Sector Development Strategy	Department of Economic Development and Tourism
Land Transport Framework	Department of Roads and Public Works.
Local Economic Development (LED) Strategy	Department of Economic Development and Tourism.
Mineral Sector Strategy	Department of Economic Development and Tourism.
Northern Cape Manufacturing Strategy	Department Economic Development and Tourism
Northern Cape Province Coastal Management Plan	Department of Environment and Nature Conservation.
Northern Cape Sport and Recreation Plan	Department of Sport, Arts and Culture
Roads Plan and Strategy	South African National Roads Agency Limited (SANRAL)
Small Micro Medium Enterprises (SMME) Development Strategy	Department of Economic Development and Tourism.
Tourism Strategy	Department of Economic Development and Tourism
Water Plan and Strategy	Department of Water Affairs

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 25)

These strategies are all subject to scheduled and continued revision, ensuring that sectoral strategies and plans are aligned with the PSDF, which in turn, is also subject to alignment with the sectoral strategies.

The PSDF propagates a process of 'adaptive management' among the three government spheres to enhance flexible decision-making, in a process of learning while doing. Williams et. al. (2009) defines this as an continuing, instantaneous learning and knowledge creation in terms of the adaptive process itself. Evaluation of previous management actions, creates an environment of learning, which in turn are utilised to inform future courses of action (refer Figure 7-13).

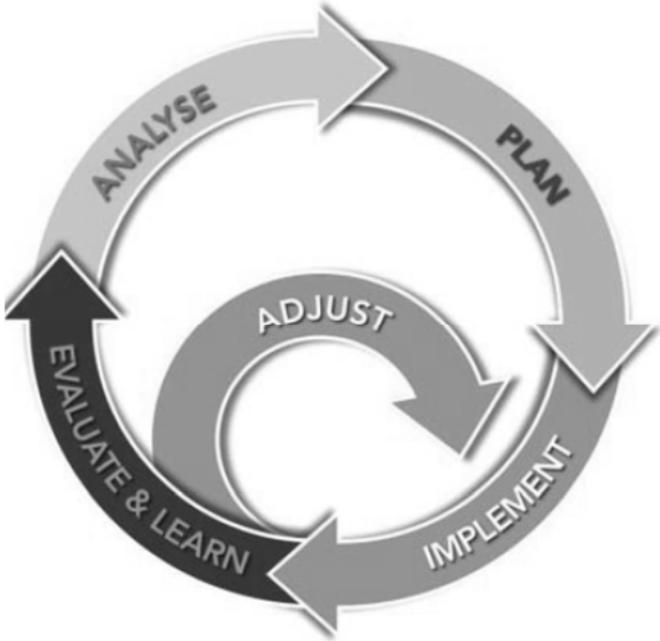


Figure 7-13 Model for adaptive management approach

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 158)

It is believed that continual learning-based research management will strengthen institutional interaction and encourage incessant collaboration, with a focus on negotiation and discussion between key managers. Both the IDP and SDF processes should follow the steps of adaptive management to assist in improving the governance structure, illustrated in Table 7-7 for each sphere of government (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012).

Table 7-7 Adaptive management applied to various spheres of government

	<i>Provincial Planning Sphere</i>	<i>Sectoral Department Sphere</i>	<i>District and Local Municipality Planning Sphere</i>
<i>Planning</i>	To be achieved through the preparation of the PGDS and the PSDF	To be achieved through the preparation of the sectoral strategies which are to be aligned with the PGDS and the PSDF	To be achieved through the preparation and revision of the municipal IDPs and SDFs and associated programmes and projects which are to be aligned with the PGDS and the PSDF
<i>Implementation</i>	To be achieved through the implementation of the identified PGDS interventions and projects and the supporting and enabling contextualisation of the PSDF	To be achieved through the implementation of the sectoral strategies and associated programmes and projects in alignment with the PGDS and the PSDF	To be achieved through the implementation of the municipal IDPs and SDFs and associated programmes and projects in alignment with the PGDS and the PSDF
<i>Evaluation</i>	The Directorate Spatial Planning and Land-Use Management will prepare and submit to the HOD Forum a composite state of the environment report for adjudication	The various sectoral departments and functionaries are to submit a bi-annual sectoral audit report to the Directorate Spatial Planning and Land-Use Management for adjudication	The local municipalities are to submit a bi-annual audit report to the relevant district municipality for adjudication. The district municipalities are to submit a bi-annual composite report to the Directorate Spatial Planning and Land-Use Management for adjudication
<i>Analysis and revision</i>	Efficiency of the rectification measures are to be measured and assessed through an appropriate audit per Toolkit.		
<i>Adjustment and continual improvement</i>	To be achieved through the scheduled revision of the PGDS and the PSDF and the incorporation and implementation of the findings of the auditing process.	To be achieved through the scheduled revision of the sectoral strategies and the incorporation and implementation of the findings of the auditing process	To be achieved through the scheduled revision of the municipal IDPs and SDFs and the incorporation and implementation of the findings of the auditing process

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 158-159)

In terms of the role RDAs play in the region (refer Section 5.2.5.2), the Northern Cape Economic Development, Trade and Investment Promotion Agency (NCEDA) was established in 2010 in cooperation with the Department Trade and Industry, as a response to the challenge of targeting investment into realistic business operations (NCEDA, 2017). The NCEDA is made up of two units, i.e. an economic development unit, and a trade and investment promotion unit. It aims to identify strategic partnerships with international, national and provincial role-players in pursuing investment funding, and establishing the Northern Cape as national and international export market and sound business partner. The main focus is on the agriculture and tourism sectors, in utilising existing locational advantages of the province. NCEDA specifically facilitates investment through information on incentives, marketing support and site location. The agency places strong emphasis on aftercare and retaining existing investors to grow their investor base. Export development is a further key programme with a focus on skills development to access and understand the export market through an Exporter Development Programme (EDP) (NCEDA, 2017). Through research on this agency, it is noted that the agency does not function very actively and is fairly unknown to major role-players (e.g. mining companies) in the province.

From a rural development perspective DOCKDA (Development of Community Knowledge and Direct Access) Rural Development Agency work in rural villages of the province, with a focus on four distinctive programmes, i.e. (i) Women`s leadership programme (ii) Girl`s right to health and education programme; (iii) Gender based violence programme; and (iv) Wellness programme (DOCKDA Rural Development Agency, 2017). The Agency has been actively involved in the Northern Cape since 1994, working towards more sustainable change in the rural communities, with a focus on women-led community initiatives.

The final section of this empirical analysis of peripheral South Africa, and more specifically the Northern Cape province as delineated in Section 7.2, will have a more quantitative approach to the analysis, based on the research approach identified in Section 2.5, where quantitative methods are used to embellish a primarily qualitative study (also refer Figure 2-2).

7.4 Study area analysis

The subsequent analysis will provide an overview of various composite indexes, with reference to the general well-being of residents of the province, connectivity, spatially related indicators of zones of advantage, economic diversification indicators, as well as institutional measures. The analysis will be based on the five District Municipalities, as identified in Table 7-3, in accordance with the regional approach of the study (refer Figure 7-14). The five district municipalities are regarded as the “planning regions” in this study, in relation to the definitions provided in Section

3.2., thus a region defined according to the purpose of one’s analysis and regarded as whatever spatial unit one needs to identify and solve a specific problem linked to a locality (Klaassen, 1965; Keeble, 1969; Glasson, 1978).

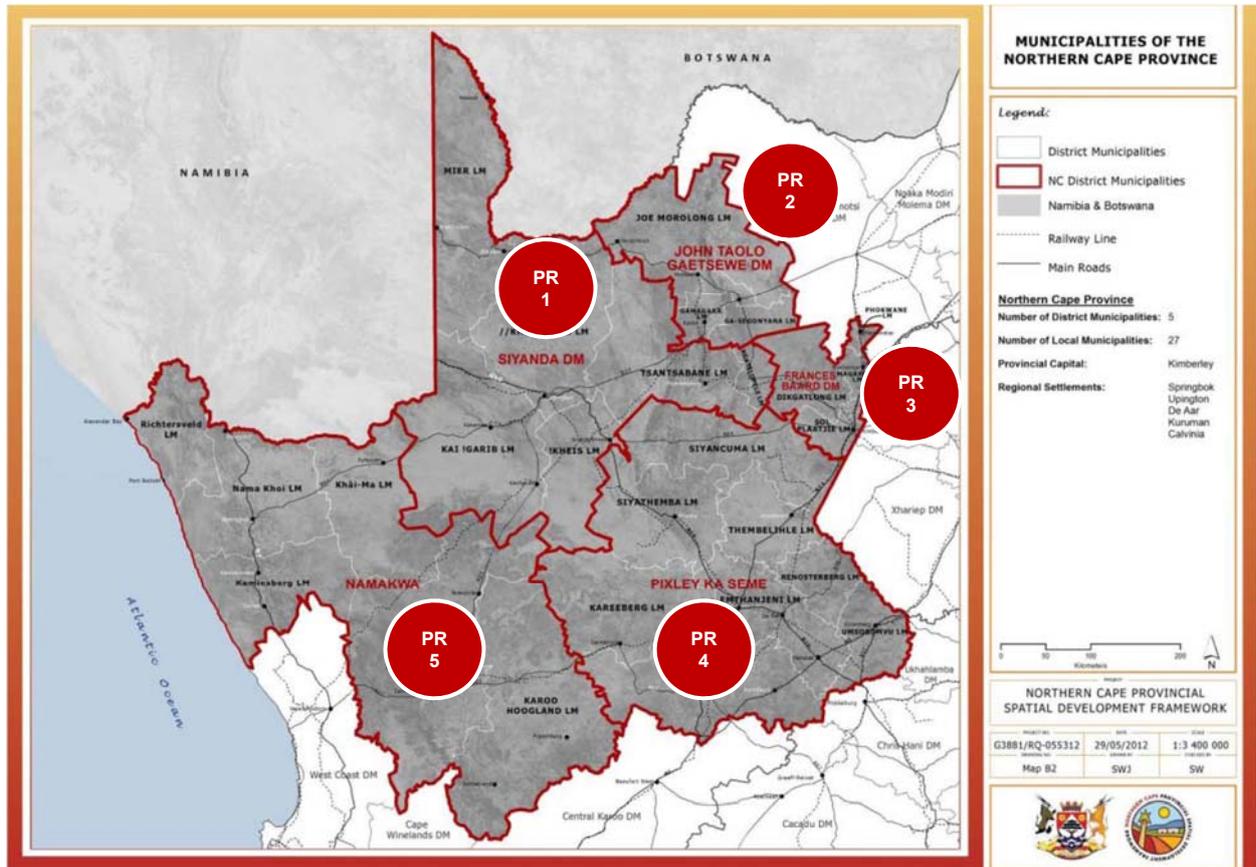


Figure 7-14 Municipalities of the Northern Cape Province

Source: Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012: 358)

The analysis will continuously evaluate the five planning regions (PRs) (refer Table 7-8 and Figure 7-14) against each other, as well as state the association with the province as the larger entity. The aim of this analysis is to link back to the three pillars of regional resilience, as identified in Section 4.4.3.2 (also refer Figure 4-12), and with the pragmatic aim of the study being to “determine and propose a developmental policy approach towards more resilient peripheral regions”.

Table 7-8 District Municipalities translated into Planning Regions

<i>District Municipality</i>	<i>Planning Region</i>
<i>Siyanda DM*</i>	Planning Region 1 (PR1)
<i>John Taolo Gaetsewe DM</i>	Planning Region 2 (PR2)
<i>Frances Baard DM</i>	Planning Region 3 (PR3)
<i>Pixley ka Seme DM</i>	Planning Region 4 (PR4)
<i>Namakwa DM</i>	Planning Region 5 (PR5)

Source: Own compilation

**The Siyanda DM's name recently changed to ZF Mgcawu DM.*

This section makes use of Standardised Regional Metadata from a private statistical resource, EasyData (Quantec, 2017). The data sets relate to an annual time series projected for the period 1995-2015, for 269 local municipalities/ward based-regions (2011 demarcation). The data sets have been projected using various sources of statistical information (Quantec, 2017) (refer Annexure B). Considering that this data is estimated with desktop studies based on the best official data available, EasyData projections should not be used for absolute values and interpretation or cyclic analysis, but rather for comparative study of the profiles of local municipalities and regions inside metros and of changes over time (Quantec, 2017).

7.4.1 Sectoral profile

The sectoral profile (refer Section 4.4.3.3) of the five planning regions will be analysed by means of three indicators, i.e. (i) regional output by industry; (ii) tress-index; and (iii) comparative advantage. The general public and policymakers commonly rely upon the Gross Domestic Product (GDP) as a primary measure of the well-being of a nation, defined as “the total value of all final goods and services produced within the economy in a given period” (International Monetary Fund, 2017) It is also possible to estimate the total value of production in other geographic areas such as different regions or provinces. The regional output and GDP as gross value added (GVA) at basic prices in Rand millions for the five planning regions for the period 1995 - 2015 are illustrated in Figure 7-15, highlighting the worldwide economic downturn in 2008-09.

It is emanated from Figure 7-15 that only PR2 experienced a slight discourse from its original growth path after the economic shock experienced, after which it reverted to its original growth path. In terms of the equilibrium-based approach to resilience of the five regions, it is highlighted that PR1, PR3, PR4, and PR5 deemed to be so-called “shock-resistant” regions (refer Section 4.4.2.2), with specific reference to the 2008-9 crisis, and allowed for sufficient adaptation during this phase of downturn (refer Section 4.4.3.1).

PR2, in this instance, experienced a temporary discourse from its original growth path, followed by a return to its original growth path, as described by (Hill, et al., 2011) as a resilient economy, referring to the equilibrium-based approach (refer Section 4.4.2). For the evolutionary approach to regional resilience to be visible, the region should recover from the original shock, as well as allow for greater adaptability to identify and follow a new growth path superior to its initial growth path (refer Section 4.4.3.2).

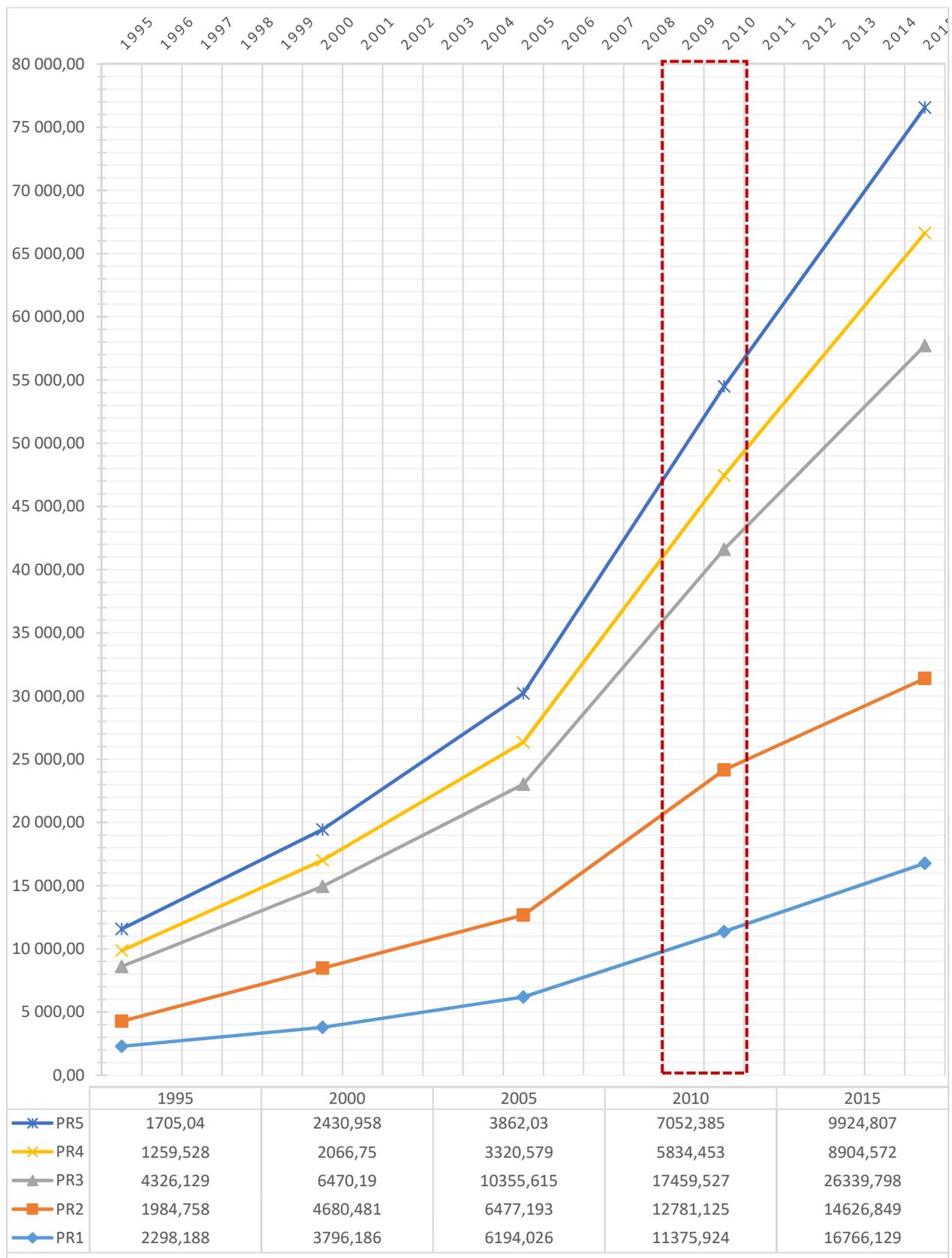


Figure 7-15 Regional Output and GVA at basic prices by industry, 1995- 2015

Source: Own compilation, adapted from (Quantec, 2017)

The sectoral composition and regional dependence on the three main sectors has been established as pivotal to regional dynamics (refer Section 3.4), regional resilience (refer Section 4.4.3.3) and regional policy approaches (refer Sections 5.2.4, 6.2.4, 7.3.4) in all three analyses. The five planning regions' sectoral GVA composition for the 20-year period is subsequently illustrated as percentage value for each of the main sectors, i.e. primary, secondary and tertiary (refer Figure 7-16, Figure 7-17, Figure 7-18, Figure 7-19, Figure 7-20).



Figure 7-16 PR1: GVA % contribution per sector, 1995 – 2015

Source: Own compilation from (Quantec, 2017)

Within PR1 (Figure 7-16) it is noted that over the 20-year period, very little in terms of the composition of the three main sectors have changed, with similar sectoral contributions visible in this state of prolonged adaptation (refer Section 4.4.3.2). Whereas PR2 (Figure 7-17) demonstrates a notable trend towards a larger contribution of the tertiary sector, and decline in the primary sector GVA over the same period. This can be interpreted as PR2 being in a state of adaptability (refer Section 4.4.3.2) in an attempt to be less vulnerable to the shifts in the primary sector. The primary sector has on overwhelming contribution to the GVA (50% in 2015). Latent potential is visible in the small role of the secondary sector within the region.

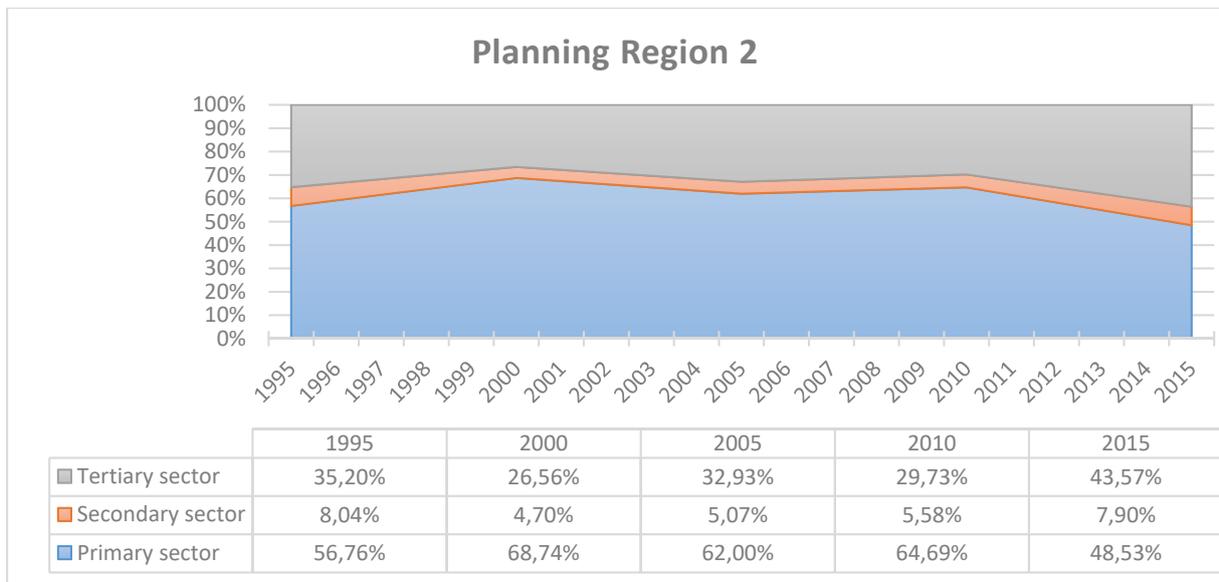


Figure 7-17 PR2: GVA % contribution per sector, 1995 – 2015

Source: Own compilation from (Quantec, 2017)

The GVA contribution from the individual sectors in PR3 (Figure 7-18) is quite visibly different to that of the previous two PRs, with a pertinent focus on the tertiary sector, which has followed a stable path over the analysis period. The contribution made by both the primary and secondary sectors are minimal, which could also be indicative of lower levels of adaptability, and a strong adaptation mentality, potentially noting a phase of stagnation, or lock-in (refer Section 4.4.3.1).

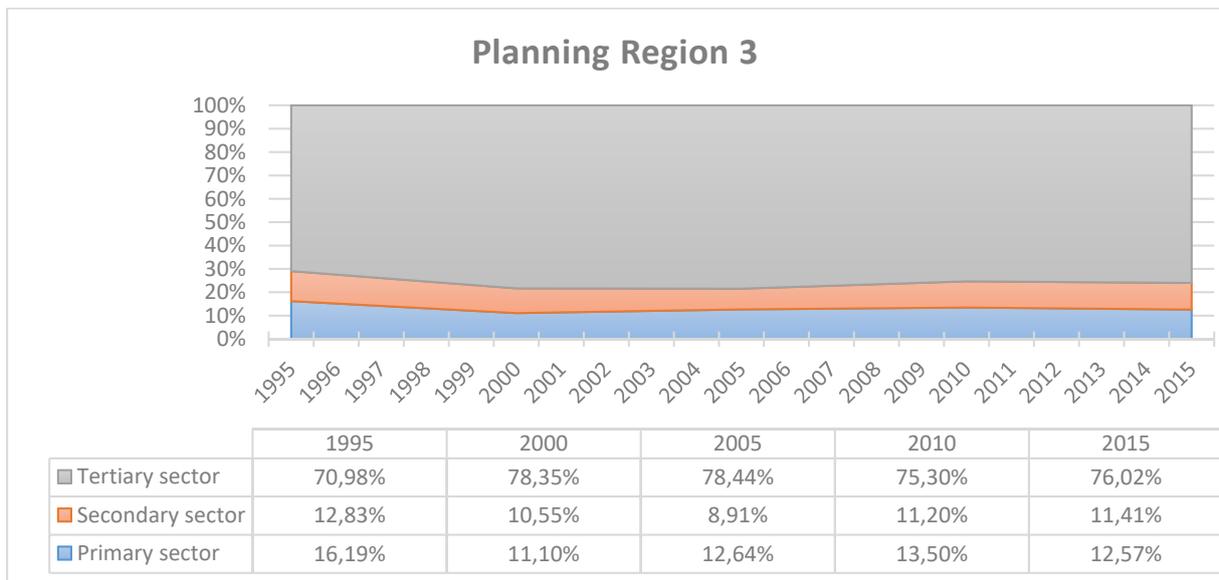


Figure 7-18 PR3: GVA % contribution per sector, 1995 – 2015

Source: Own compilation from (Quantec, 2017)

PR4 (Figure 7-19) shows a similar distribution to PR1, with a continued and large dependence (30%) on the tertiary sector, followed by a primary sector contributing around 20% to the GVA, and the secondary sector at more or less 10%.

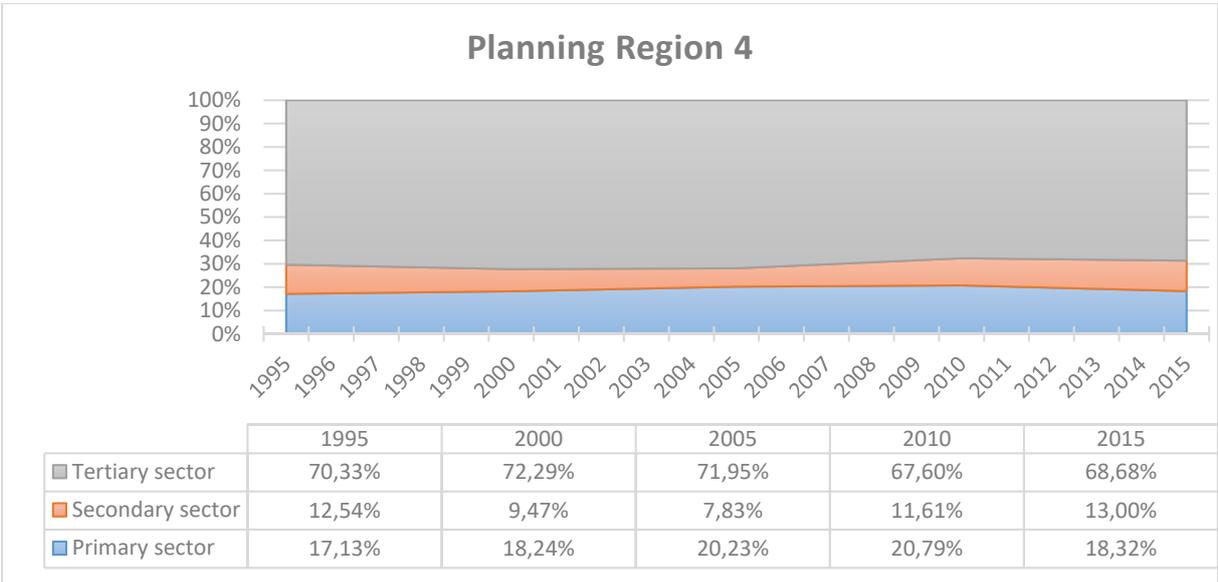


Figure 7-19 PR4: GVA % contribution per sector, 1995 – 2015

Source: Own compilation from (Quantec, 2017)

In the final PR, a miniscule change in the secondary sector over the 20-year period is visible, whereas the contributions by the primary and tertiary sectors are almost inverted for this period.

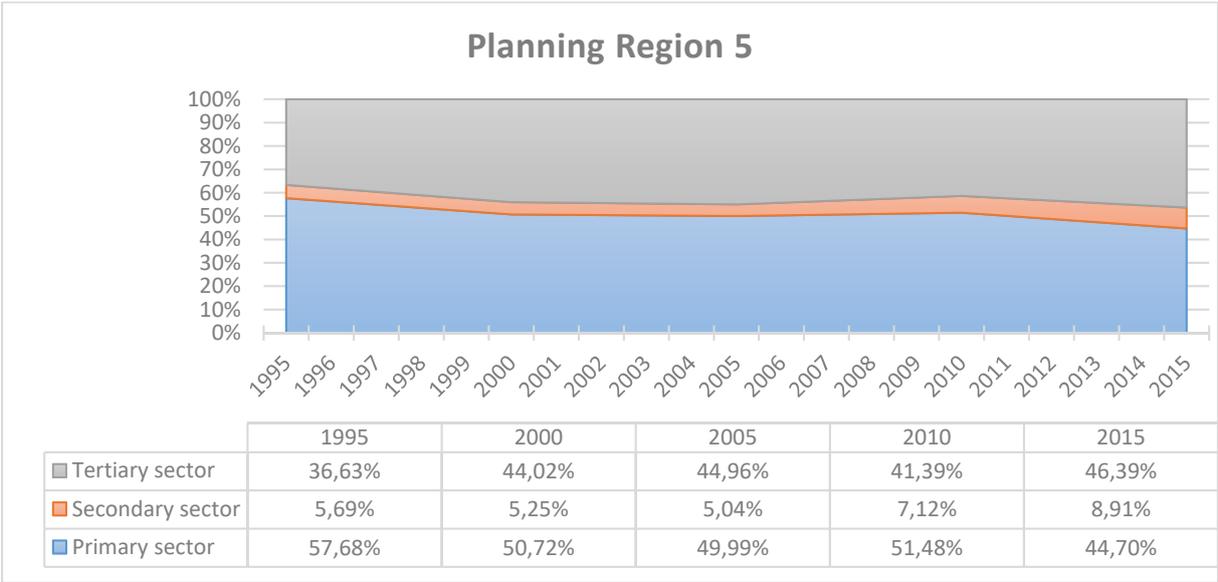


Figure 7-20 PR5: GVA % contribution per sector, 1995 – 2015

Source: Own compilation from (Quantec, 2017)

The extent of the various sectors in PR5 are very similar to that of PR2, with a strong focus on the primary sector, and similar dormant potential of the secondary sector. The subsequent discussions on the tress-index and location quotient will shed more light on this particular issue.

The tress-index (Development Bank of South Africa, 2001: 12) gives an indication of the level of diversification or concentration of a town's or region's economy. The tress-index indicates the totally diversified economy as 0, and a concentrated economy as 100. The increase of the tress-index of a region reflects an increase in the dependence of the local economy on a single or a few economic activities. The tress index of each of the Planning Regions is illustrated in Figure 7-21.

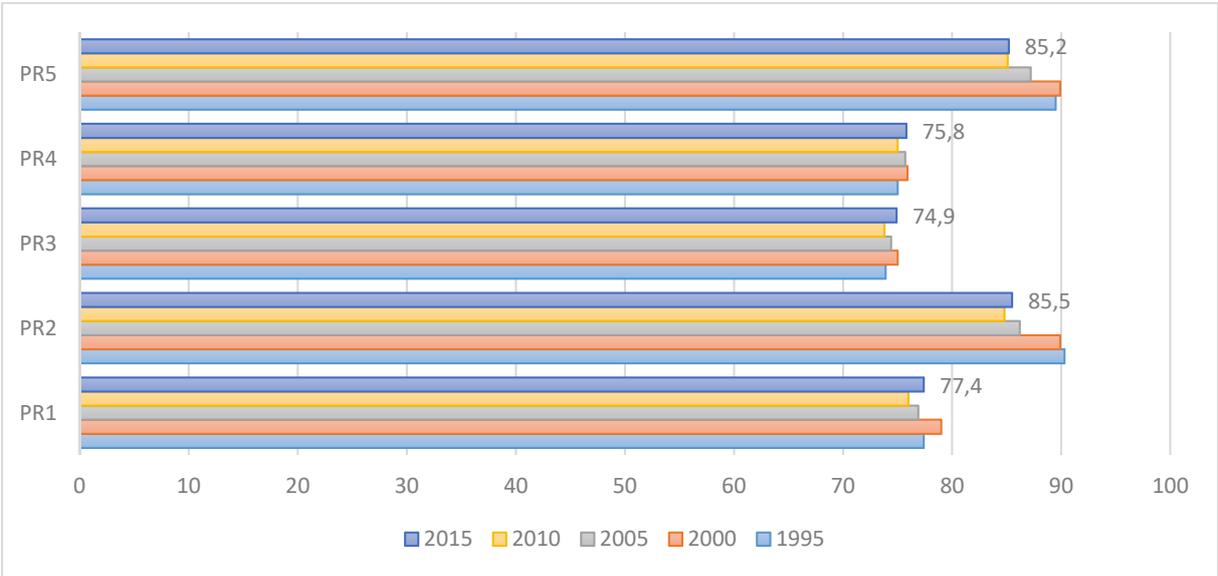


Figure 7-21 Tress-index for PR1-5 based on GVA for 22 industries

Source: Own compilation from (Quantec, 2017)

The sectoral composition of an economy is a useful measure to determine the stability of the local economy as well as the welfare of the community. This, in turn, provides a useful indicator of economic stability in the region since centres mainly dependent on the primary sector are more vulnerable to international demand and supply shocks. It can consequently be assimilated that the closer the PR's economies are to 100, the less resilient they are to shocks, especially a single-sector shock (refer Section 4.4.3.3). From Figure 7-21 the lack of diversification in all five PRs are clearly visible, with especially PR5 and PR2 with particularly specialised economies, rendering these more vulnerable to sector-specific shocks. Some improvement is visible over the 20-year period, but very limited. This reiterates the depictions and discussion of the GVA per sector (refer

Figure 7-15 - Figure 7-20), both illustrating heavy reliance on the primary sector. PR1, PR3, and PR4 are slightly better off, but still in a danger zone to economic shocks.

“The comparative advantage (CA) of a region indicates relatively more competitive production function for a product or services in that specific economy than in the aggregate economy” (DBSA, 2001). In the case of a region (or town) with a comparative advantage of one production function, the specific region or town will concentrate on producing the specific product. The comparative advantage of a region or town is measured by means of a location quotient. According to the DBSA (2001: 14) “a region’s economy, for instance, has a location quotient larger than one or a comparative advantage in a particular sector when the share of that sector in the specific economy is greater than the share of the same sector in the aggregate economy”. The CA indicator is subsequently utilised to determine and investigate each PR’s sectoral strengths and weaknesses in relation to the larger economy, in this instance the provincial level (refer Figure 7-22), and the national level (refer Figure 7-23). The 22 industries forming part of this indicator is indicated in Table 7-9.

Table 7-9 22 Industries applicable to location quotient analysis

Primary Sector industries	<i>01: Agriculture, forestry and fishing</i>	<i>02: Mining and quarrying</i>
Secondary Sector industries	<i>03: Food, beverages and tobacco</i>	<i>04: Textiles, clothing and leather goods</i>
	<i>05: Wood and paper; publishing and printing</i>	<i>06: Petroleum products, chemicals, rubber and plastic</i>
	<i>07: Other non-metal mineral products</i>	<i>08: Metals, metal products, machinery and equipment</i>
	<i>09: Electrical machinery and apparatus</i>	<i>10: Radio, TV, instruments, watches and clocks</i>
	<i>11: Transport equipment</i>	<i>12: Furniture; other manufacturing</i>
	<i>13: Electricity, gas and water</i>	<i>14: Construction</i>
Tertiary Sector industries	<i>15: Wholesale and retail trade</i>	<i>16: Catering and accommodation services</i>
	<i>17: Transport and storage</i>	<i>18: Communication</i>
	<i>19: Finance and insurance</i>	<i>20: Business services</i>
	<i>21: General government</i>	<i>22: Community, social and personal services</i>

Source: Own representation

From Figure 7-22 and Table 7-10 it is evident that PR2 and PR5 are the slower performers within the larger Provincial region, with very few sectoral location quotients larger than 1, each with a comparative advantage in only two sectors. As opposed to PR1, PR3 and PR4, with a much greater amount of industries within which they experience a comparative advantage, i.e. PR1 with 10 sectors, PR3 with 17 sectors, and PR4 with 12 sectors. Notable in Figure 7-22 are the outliers in PR4 in industry 9 (electrical machinery and apparatus), as well as PR1 in industry 10 (radio, TV, instruments, watches and clocks).

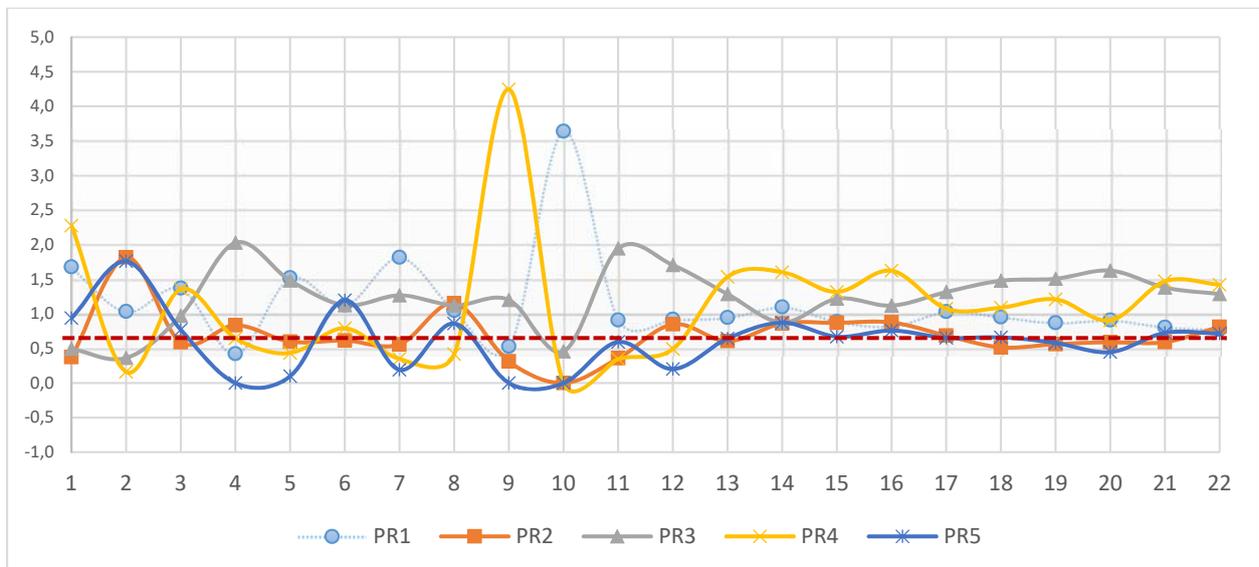


Figure 7-22 Location quotient in relation to Provincial context

Source: Own compilation from (Quantec, 2017)

Table 7-10 Comparative advantage in relation to Provincial context

	INDUSTRY	PR1	PR2	PR3	PR4	PR5	
PRIMARY	01: Agriculture, forestry and fishing	X			X		
	02: Mining and quarrying	X	X			X	
SECONDARY	03: Food, beverages and tobacco	X			X		
	04: Textiles, clothing and leather goods			X			
	05: Wood and paper; publishing and printing			X			
	06: Petroleum products, chemicals, rubber and plastic	X		X		X	
	07: Other non-metal mineral products	X		X			
	08: Metals, metal products, machinery and equipment	X	X	X			
	09: Electrical machinery and apparatus			X		X	
	10: Radio, TV, instruments, watches and clocks	X					
	11: Transport equipment			X			
	12: Furniture; other manufacturing			X			
	13: Electricity, gas and water			X		X	
	14: Construction	X				X	
	TERTIARY	15: Wholesale and retail trade			X	X	
		16: Catering and accommodation services			X	X	
17: Transport and storage		X		X	X		
18: Communication				X	X		
19: Finance and insurance				X	X		
20: Business services				X			
21: General government				X	X		
22: Community, social and personal services				X	X		

Source: Own compilation from (Quantec, 2017)

Table 7-10 indicates the CA of each PR within the various industries, but also highlights the specific sector in which each industry is found. From this table, it is emulated that 70% (7 of 10) of the industries in which PR1 illustrates an advantage are found within the secondary sector. PR2 has equal comparative advantage within the primary (one industry) and secondary (one industry) sectors. Whereas, PR3, as the PR with the highest number of CA-industries, is 53% represented in the secondary industry, and 47% in the tertiary industry. No advantage is shown in the primary sector within PR3. The tertiary sector within PR4 is the strongest with regard to the CA, with 7 of the 12 industries in this sector, followed by the secondary sector, and lastly the primary sector. PR5 has one industry of CA in both the primary and secondary sector.

The subsequent figure is included to indicate possible advantages that the PRs in question might have in the South African context.

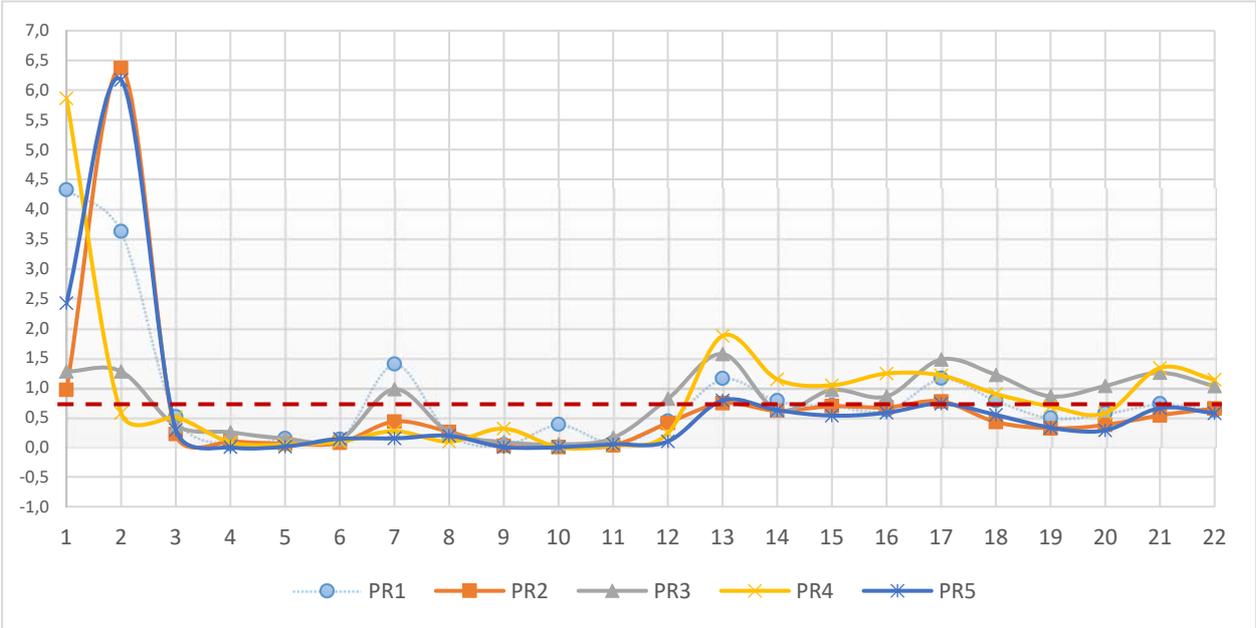


Figure 7-23 Location quotient in relation to National context

Source: Own compilation from (Quantec, 2017)

Especially notable advantages (Figure 7-23) to be pointed out is that of the agriculture, forestry and fishing industry within PR1, PR4, and PR5. The mining and quarrying industries are also indicated as having high CA in PR1, PR2, PR5. It is brought to attention that both the industries in which a strong CA is visible, resort under the primary sector.

Table 7-11 Comparative advantage in relation to National context

	INDUSTRY	PR1	PR2	PR3	PR4	PR5
PRIMARY	01: Agriculture, forestry and fishing	X		X	X	X
	02: Mining and quarrying	X	X	X		X
SECONDARY	03: Food, beverages and tobacco					
	04: Textiles, clothing and leather goods					
	05: Wood and paper; publishing and printing					
	06: Petroleum products, chemicals, rubber and plastic					
	07: Other non-metal mineral products	X				
	08: Metals, metal products, machinery and equipment					
	09: Electrical machinery and apparatus					
	10: Radio, TV, instruments, watches and clocks					
	11: Transport equipment					
	12: Furniture; other manufacturing					
	13: Electricity, gas and water	X		X	X	
14: Construction				X		
TERTIARY	15: Wholesale and retail trade				X	
	16: Catering and accommodation services				X	
	17: Transport and storage	X		X	X	
	18: Communication			X		
	19: Finance and insurance					
	20: Business services			X		
	21: General government			X	X	
	22: Community, social and personal services			X	X	

Source: Own compilation from (Quantec, 2017)

From Table 7-11 it is noted that even though PR3 outperformed all other within the provincial context, PR4 comes forth as an equally strong region on a national level, with eight industries with a CA. The sectors with values higher should, however, not be regarded as the only sectors worth developing as latent potential in other sectors has not been addressed by this technique (Quantec, 2017). In an attempt to take advantage of sectors within which a CA is visible, the impact-level should be clearly established, i.e. in terms of the larger region (refer Table 7-10) or within a national context (refer Table 7-11), within the regional policy approach.

7.4.2 Knowledge Network profile

The extent of the knowledge network within the peripheral region has proved to be pivotal in the overall resilience of such region, refer Sections 4.4.3.4, 5.2.4.1, 6.2.4.1. The knowledge network distribution and effectiveness is most often measured in terms of social interactions between local role-player and other regions, cognitive proximity, learning capability, adjustment capability and innovativeness. Knowledge networks are regarded as being non-linear with a multitude of complex interactions, proving to be difficult to measure due to the multitude of impacting factors

(Wagner & Leydesdorff, 2006: 1). Indicators of science, technology and innovation (STI), indicators of information communication technology (ICT), as well as indicators of research and development (R&D) are regarded as important tools for policy makers in ‘developing evidence-based policies, assessing the impacts of investments in S&T and identifying the strengths and weaknesses in the innovation systems’ (Chaturvedi & Srinivas, 2012: 1640). The OECD is a major role player worldwide in the development of STI indicators, and their manuals for compiling these serve as a basis for the development of composite R&D, ICT and STI indicators for the South African environment (Godin, 2003: 673; Wagner & Leydesdorff, 2006; Mhula, et al., 2013). According to Gillwald et. al. (2012: 2), a national ‘digital divide’ (Avgerou, 2003) is visible in the presence of two very distinct economies, one having characteristics of wealth and technological advances, the other poorer and not connected as intricately to new innovation.

7.4.2.1 Higher Education Indicators

The provision of post-school education and training (PSET) plays a substantial role in the extent and quality of the knowledge network system, with various PSET institutions providing learning opportunities. The PSET environment consists of 26 Higher Education Institutions (HEIs), 50 Technical and Vocational Education and Training (TVET) colleges, and 9 Community Education and Training (CET) colleges (one in each province) (Department Higher Education and Training, 2017). The Northern Cape province only recently (2014) established their first HEI, the Sol Plaatjie University located in Kimberley (PR3). The subsequent figure illustrates the intake of students and the various main fields of study.

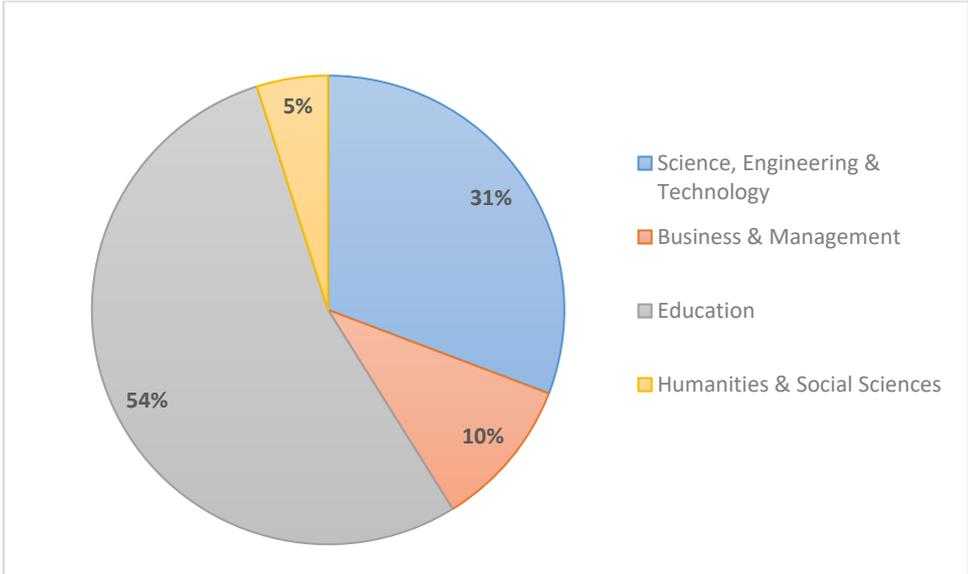


Figure 7-24 Major field of study at PR3 HEI

Source: Adapted from Department Higher Education and Training (2017: 10)

A total of 328 students are enrolled at this HEI, of which 151 (46%) are enrolled for undergraduate certificates and diplomas, and a further 177 (54%) for undergraduate degrees. From Figure 7-24 it is apparent that the major field of study is education, followed by 101 students (31%) in the SET field.

Two of the 50 national TVET colleges are found within the Northern Cape province, one in PR1 and the other in PR3. The NC Rural TVET College Upington (PR1) had 7,559 students in 2015, and the NC Urban TVET College in Kimberley (PR3), had 5,347 students (Department Higher Education and Training, 2017: 37).

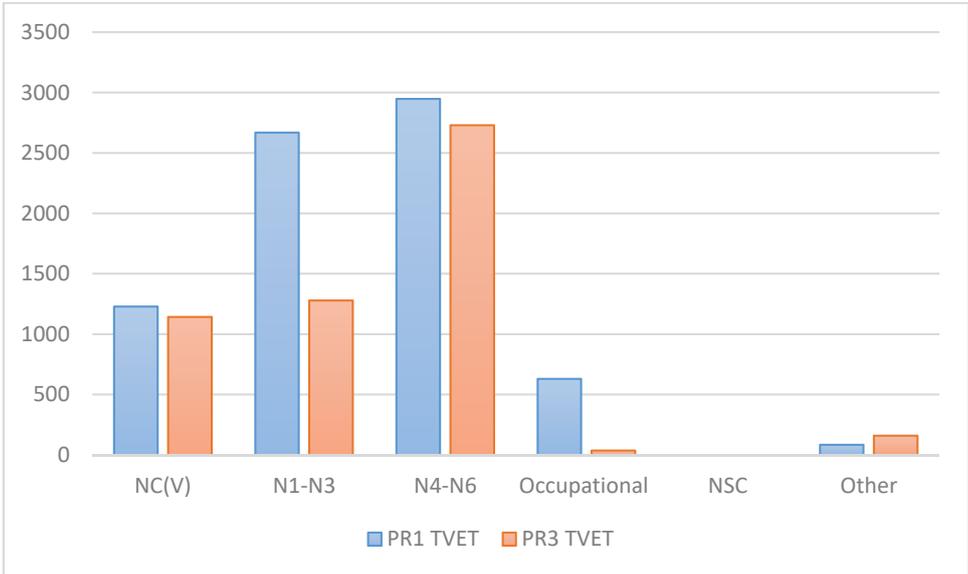


Figure 7-25 NC TVET Colleges and qualification category

Source: Department Higher Education and Training (2017: 31)

Figure 7-25 highlights the larger number of students in PR1 focusing on lower qualification levels (N1- N3 or NQF levels 2 to 4) than in PR3, indicative of a stronger focus on certificates on a level below the national certificate level (NQF4). Similar enrolment for the N4-N6 levels are visible for the two TVET colleges. NC(V) refers to the National Certificate (Vocational). N1 to N6 refers to the National Technical Education (NATED programmes), with N1-N3 equivalent to NQF levels 2 to 4, and N4-N6 equivalent to NQF level 5. “Occupational Qualifications” refer to qualifications associated with a trade, occupation or profession resulting from work-based learning and consisting of knowledge unit standards, practical unit standards, and work experience unit

standards. NSC refers to the old National Senior Certificate (which is equivalent to Grade 12). “Other” in colleges refers to all other skills development programmes.

The Northern Cape Province has one CET college with a total of 20,107 learners enrolled in the 295 Community Learning Centres (CLC). The CET enrolment far outweighs the other types of PSET within the province, as illustrated in Figure 7-26.

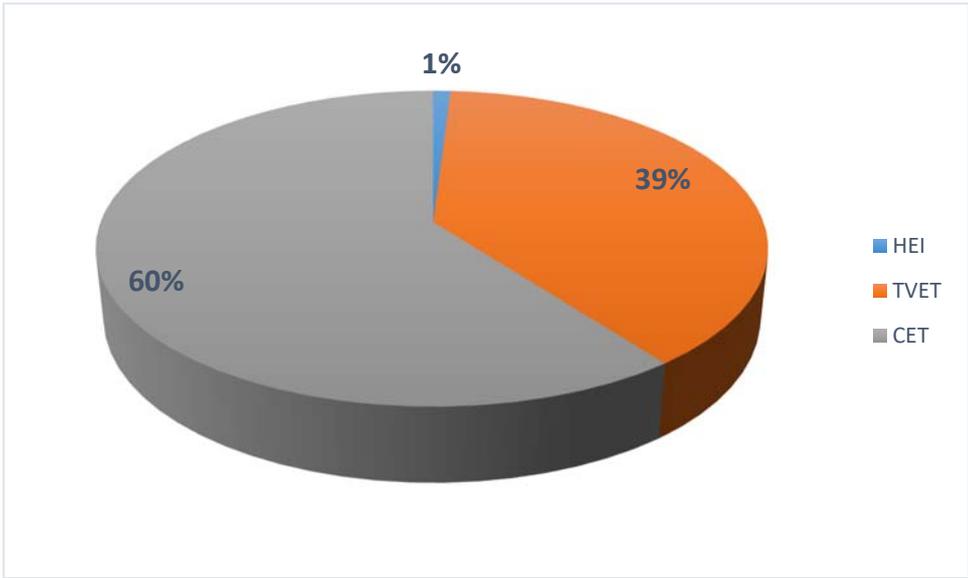


Figure 7-26 Total PSET students enrolled in Northern Cape province

Source: Adapted from Department Higher Education and Training (2017)

Although the province exhibits a large amount of PSET students, only about 40% are enrolled for specific diploma, certificate of degree courses. Of the 60% enrolled in CET programmes (20,107 learners), only 868 are focused on programmes above AET Level 4 (NQF level 1).

7.4.2.2 ICT Indicators

Statistics South Africa released a report in 2013 with regard to the ICT infrastructure and number of composite indices down to local municipal level (Statistics South Africa, 2015). Data used in the report include General Household Surveys (GHS) and Census data, and refers to various indicators as measured in these surveys as subsequently discussed and illustrated. Statistics South Africa developed the ICT Access Index (IAI) based on a composite international index (ICT

Development Index (IDI)) developed by the International Telecommunications Union (ITU), but adapted to the availability of input variables in South Africa. The IAI combines 12 access indicators into a single benchmark measure, grouped in three sub-indexes, i.e. active, passive and readiness (Statistics South Africa, 2015: 68). The Active sub-index measures the level of households' access to relatively technologically advanced ICT assets (telephone, internet and computers). The Passive sub-index measures the level of households' access to basic broadcasting services (television and radio) and mail. And finally, the Readiness sub-index measures households' relative skill levels and the ability to utilize ICT (literacy, education). Figure 7-27 illustrates the 12 indicators as combined within the three sub-indexes. The active sub-index attributes to 65%, the passive sub-index to 20% and the readiness index to 15% of the IAI.

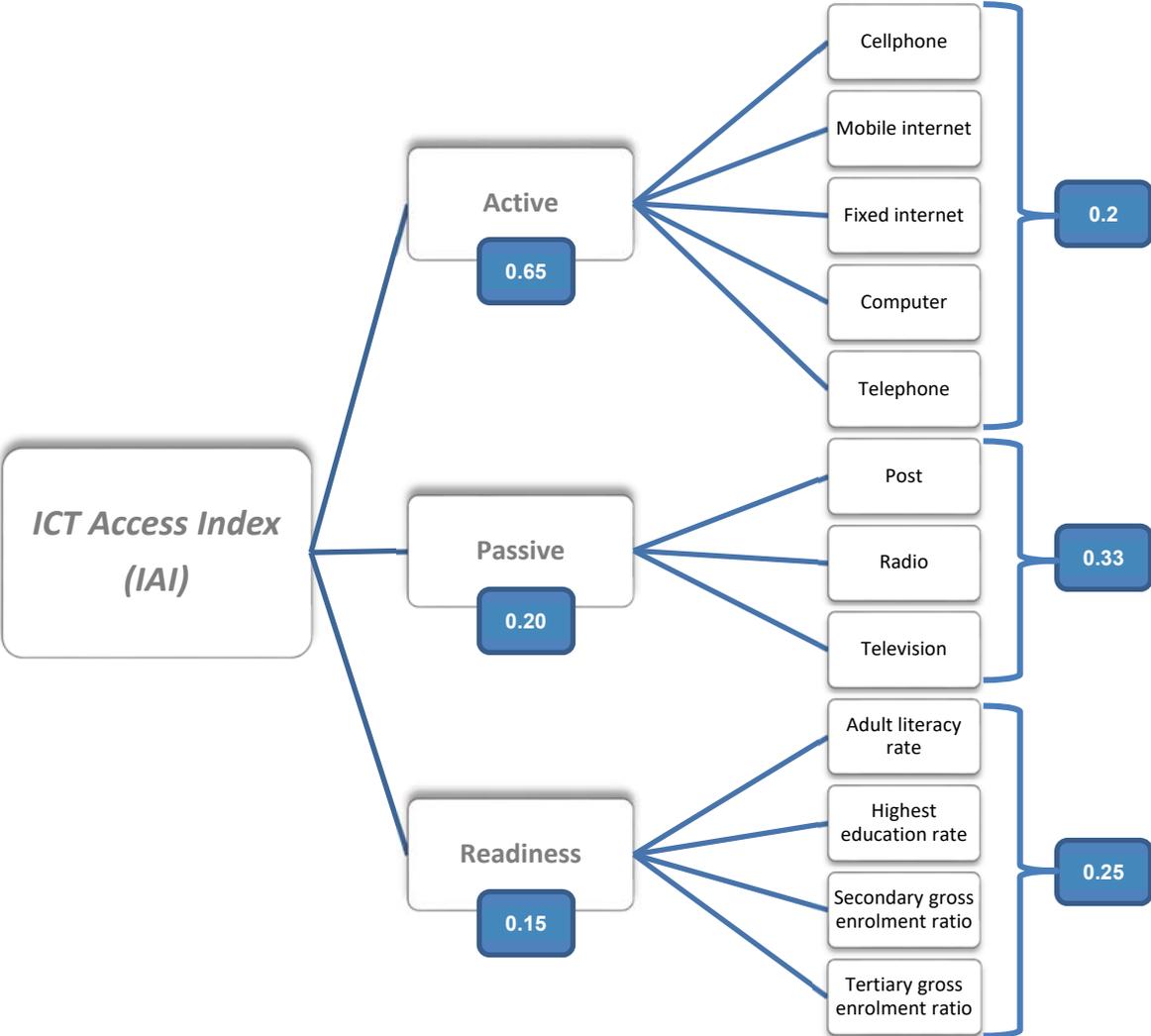


Figure 7-27 Diagram of the IAI index

Source: Statistics South Africa (2015: 69)

The subsequent figure illustrates the five PRs in relation to the rest of the district municipalities in South Africa for the purpose of comparison. The average IAI score for South Africa is 4.13, with none of the PRs in question above this average. In terms of the 44 district municipalities and the eight metropolitan municipalities in the country, PR3 is ranked 18th, PR5 as 25th, PR1 as 32nd; PR4 as 34th and PR2 as 39th in South Africa.

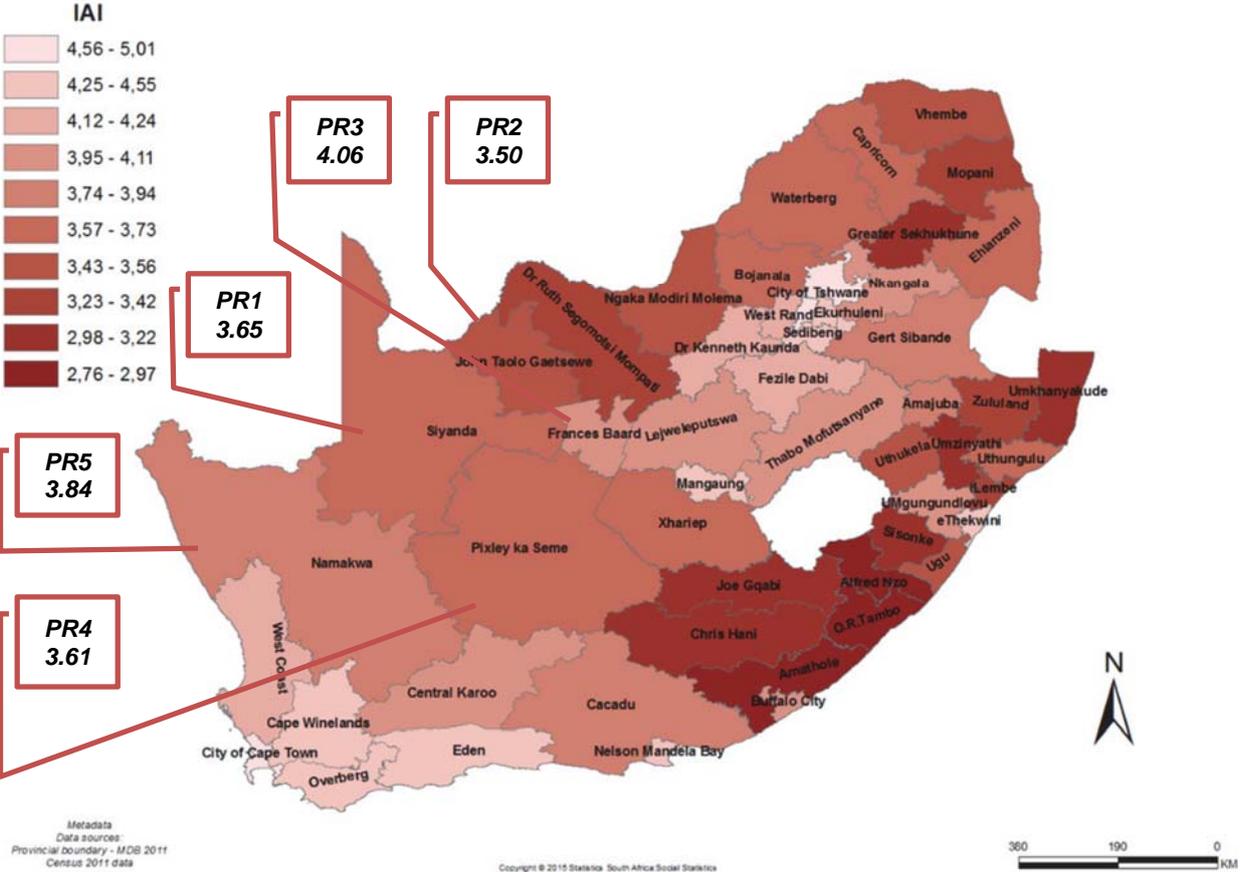


Figure 7-28 District Municipality ICT index

Source: Statistics South Africa (2015: 76)

The provinces with the lowest dispersion of IAI in their district municipalities are Northern Cape, Mpumalanga and Limpopo, these provinces do not contain metros. The scores provided in Figure 7-28 is further broken down into the composite weighted scores for sub-indices in Figure 7-29, allowing to determine the relative contribution of each of the sub-indexes to the total score. All five PRs show similar levels of Active access varying between 2.36 – 2.69, whereas PR3 and PR5 has remarkably more focus on the Passive access indicators (post, radio, television). PR3 is highlighted as the PR with the highest Readiness-index composition.

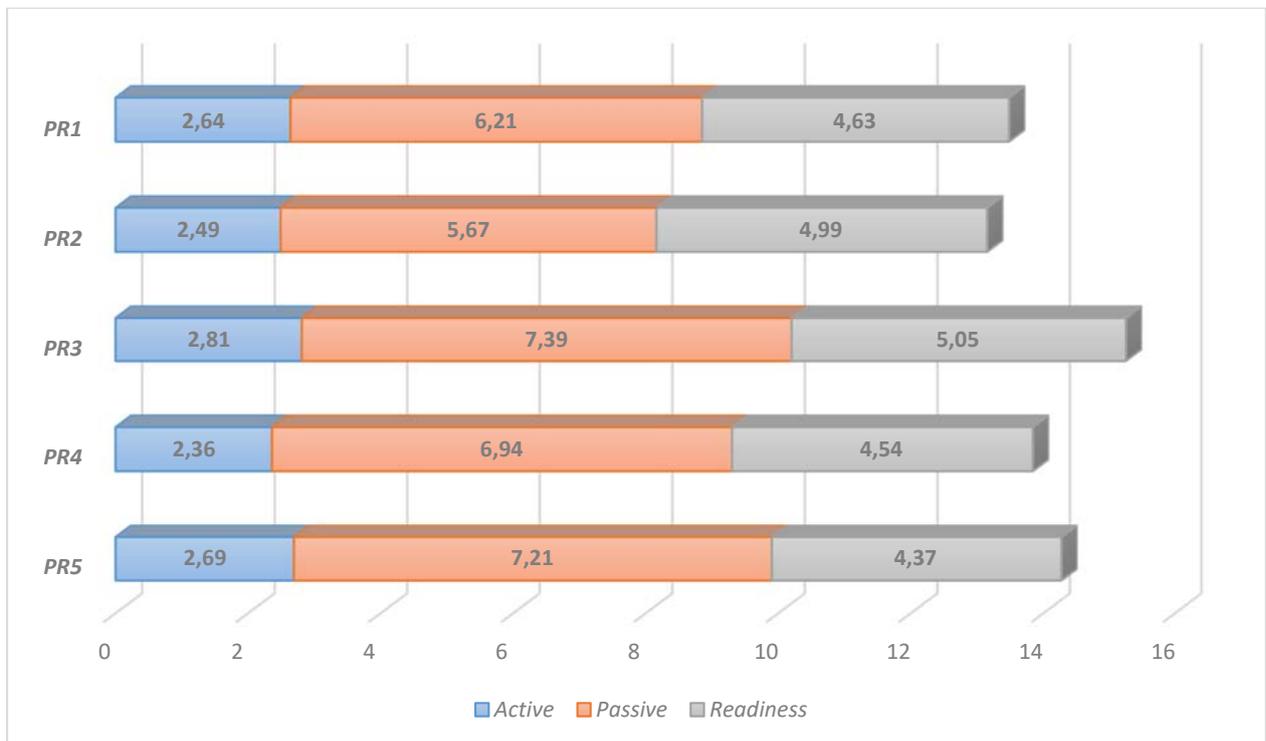


Figure 7-29 Composite index of access to ICT for PRs

Source: Statistics South Africa (2015: 79)

This IAI provides a basis for policy making to focus on maximising the opportunities in ICT in the study area. The NDP (The Presidency: National Planning Commission, 2011: 190) envisions that “ICT will continue to reduce spatial exclusion, enabling seamless participation by the majority in the global ICT system, not simply as users but as content developers and application innovators”.

7.4.3 Institutional profile

The institutional pillar and actors within the government spheres, as final contributor to evolutionary regional resilience, is pertinent throughout the research study (refer Sections 4.4.3.5, 5.2.5, and 6.2.5). Leadership within the institutional milieu have been highlighted as one of the main impacting factors, as well as institutional arrangement, the adaptive capacity of government, their responsiveness to demand and cautious spending of budgets (refer Section 4.4.3.5). These will subsequently be utilised to assess the five PRs within the Northern Cape province.

The Auditor General annually audits all local, district, metropolitan and provincial government levels in terms of three indicators, i.e. (i) the quality of their financial statements; (ii) their annual performance reports; and (iii) their compliance with legislation (Auditor General South Africa,

2014). Movement of more than 5% over the audit period is regarded as an improvement or a regression (refer Figure 7-30).

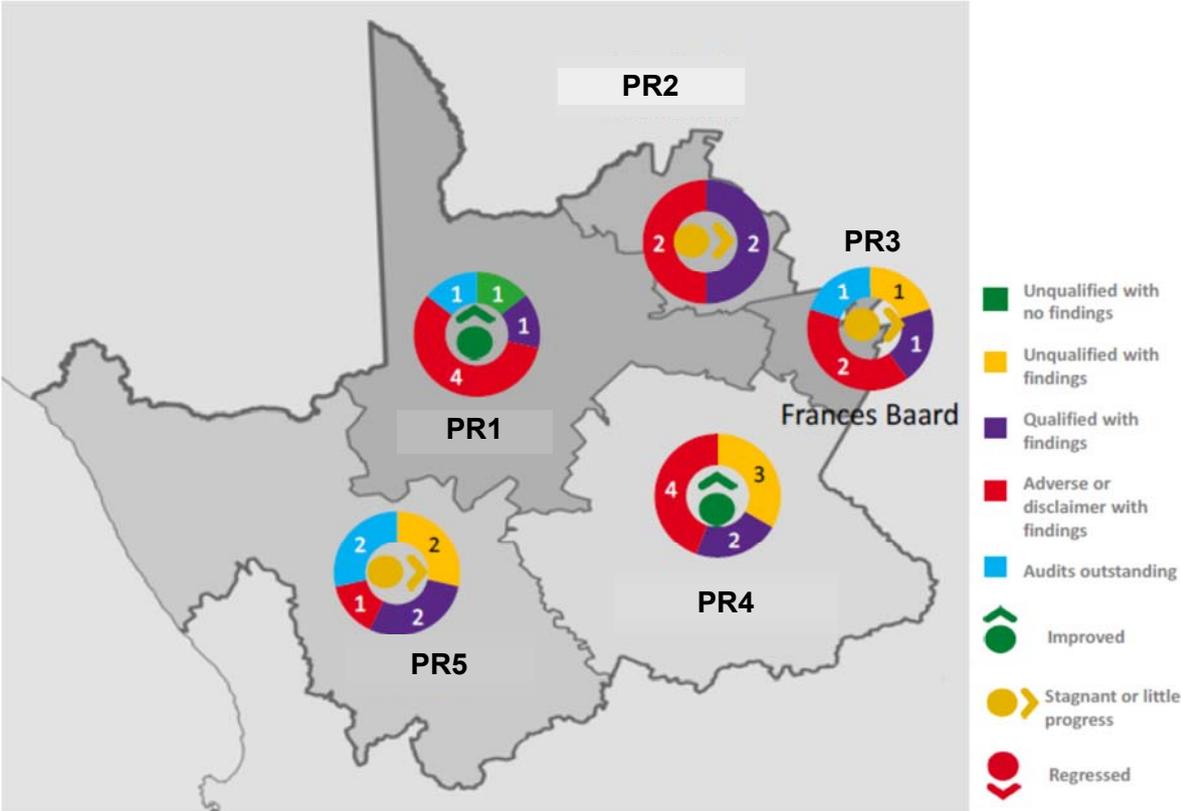


Figure 7-30 Municipal audit outcomes per PR

Source: (Auditor General South Africa, 2014)

Improvement for the period is visible within PR1 and PR4, with PR1 the only municipality within the Province receiving a clean audit for this period. The Audit Report highlights that the main reason for the improvement within PR1 is because the Municipality employed an expert to administer the municipality’s performance management system. This specialist brought necessary abilities and experience to address the concerns identified in the preceding year’s audit report (Auditor General South Africa, 2014: 15). The political leadership and competencies and skills of the municipal manager, as well as other heads of department is further emphasised and recommended to be incorporated in the other municipalities. PR1 and PR3 are the only municipalities with no material findings reported against them, this is ascribed to action plans being allotted to specific individual’s and linking this with each responsible staff member’s

individual performance agreement. Assigning responsibility and measuring individual performance proved to be a very successful approach for these regions.

In the submission and quality of financial statements, both PR1 and PR3 are once again highlighted as the more successful regions. Within PR1 the process of drafting, finalising and quality checking the statements were finalised through four levels of responsible entities, ensuring consistency and accuracy of the reports. PR3 is commended for appointing an experienced chief financial officer and assistance from an external consultant.

The Auditor General (2014: 12) identifies six key risk areas for all municipal areas in South Africa in need of improvement for audit outcomes to be positively influenced, i.e. (i) quality of submitted financial statements; (ii) quality of annual performance reports; (iii) supply chain management; (iv) financial health; (v) information technology controls; and (vi) human resource management. Service delivery within the PRs have been extensively discussed as an instrument of regional policy (refer Sections 5.2.4.6, 6.2.4.6, 7.3.4). For each of the five PRs a summary graph is provided indicating how the levels of basic service delivery have changed over the period 1996, 2001 and 2011 (years in which national Census was carried out). The audit further addresses key drivers of control which should be in place within each municipality, with the focus on leadership, financial and performance management, and governance.

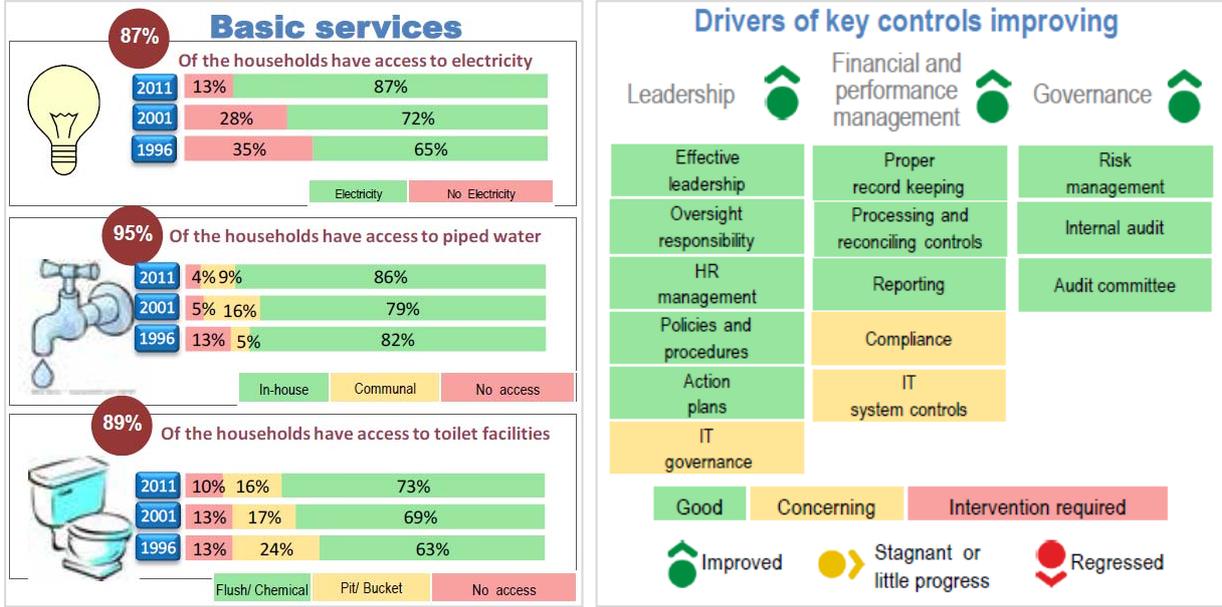


Figure 7-31 PR1: Audit highlights

Source: Auditor General South Africa (2014: 132)

PR1 exhibits improvement in both the provision of basic services, as well as the overall drivers of key controls. Of the six leadership indicators, only IT Governance is indicated as concerning. Other areas of concern within the financial and performance management driver, is compliance and IT system controls. Access to electricity, water and toilet facilities have drastically improved over the 15-year period between the base year (1996) and the last available Census (2011).

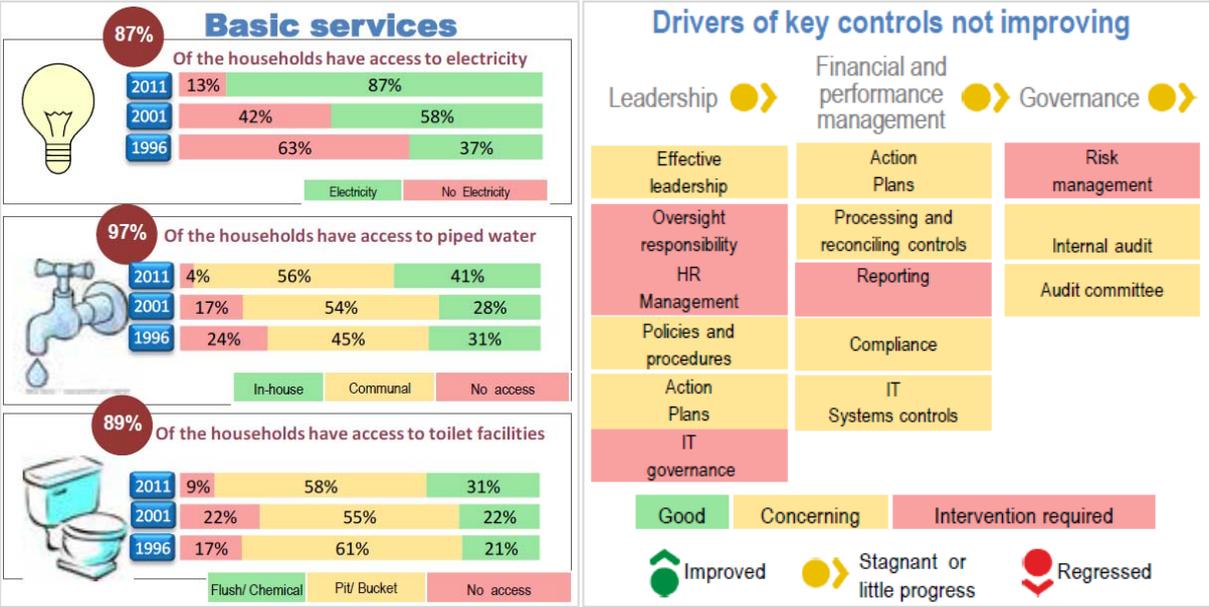


Figure 7-32 PR2: Audit highlights

Source: Auditor General South Africa (2014: 56)

In contrast to PR1, PR2 performs quite differently in terms of the three key controls, none of which is shown to have any noteworthy improvement. There seems to be quite a significant concern within the leadership control, with three indicators highlighted as requiring intervention. With a vacancy in the position of chief financial officer, the PR struggles to improve its position. The report highlights an over-dependency of the PR on consultants to complete tasks for which the PR has the available resources, but lacking in skills and competencies (Auditor General South Africa, 2014: 58). Furthermore, the poor performance of staff members and ineffective human resource management escalates the management problem. In comparing the provision of basic services with PR1, it is apparent that much slower progress has been made, especially in terms of in-house water services and flush/chemical toilets.

In PR3 a general stagnation in the audit outcome is visible, with concerns highlighted regarding two leadership indicators (oversight responsibility and policies and procedures not in place), as well as within the financial and performance management control regarding regular processing and reconciling controls. Progress in basic service delivery within PR3 is generally good, but observed as slower than progress made in PR1 over the same time-period.

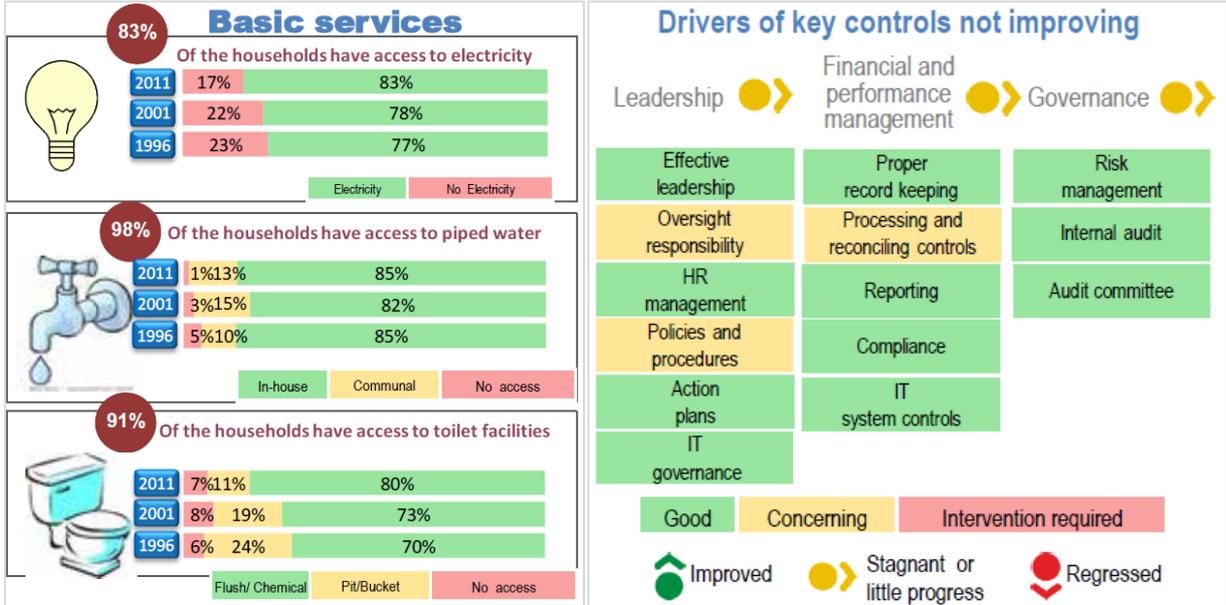


Figure 7-33 PR3: Audit highlights

Source: Auditor General South Africa (2014: 40)

PR4 has similar levels of basic service provision then PR3, showing remarkable improvement in especially the provision of electricity. The drivers of key controls within PR4 does not show significant improvement, with leadership and governance remaining stagnant.

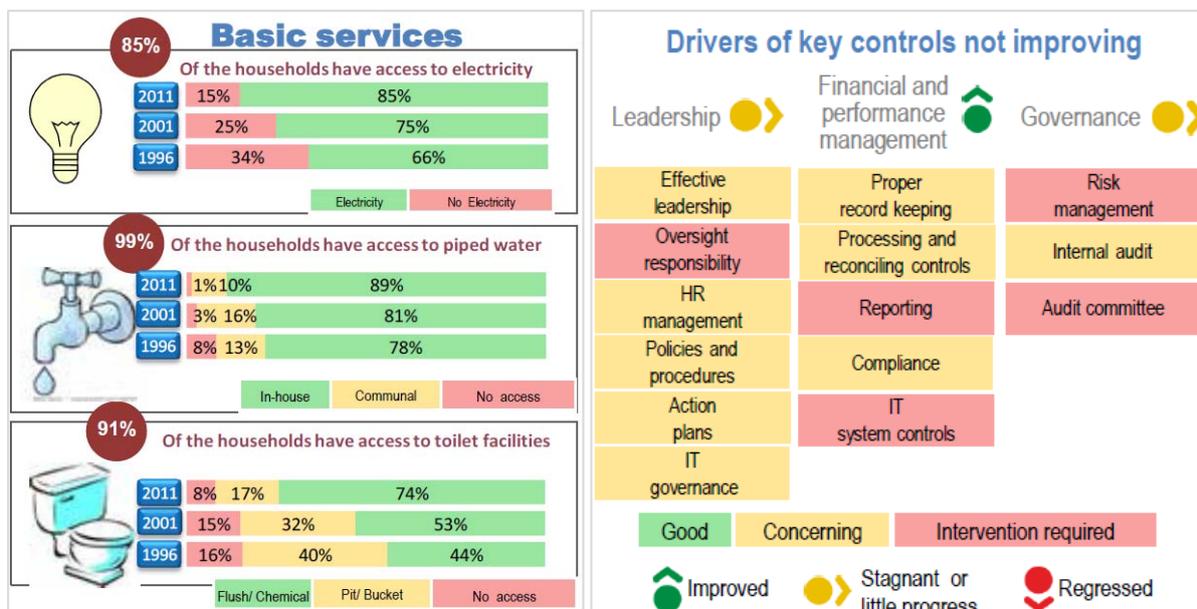


Figure 7-34 PR4: Audit highlights

Source: Auditor General South Africa (2014: 95)

The governance driver in the case of PR4 is indicated as especially worrisome with two indicators requiring urgent intervention, i.e. risk management and audit committee. At the time of the audit the position of municipal manager was vacant, which can clearly be seen in the poor performance of leadership and governance controls. The report highlight that the lack of improvement can solely be ascribed to the “leadership`s unwillingness to take ownership of improving audit outcomes” (Auditor General South Africa, 2014: 96). The root causes of the poor audit outcomes is indicated in more detail in Table 7-12.

Within PR5 the financial and performance management control is indicated as having regressed for the period in question. Leadership and Governance controls or also very much stagnant or not indicating much progress. Similar key control patterns as with PR2 and PR4 are visible. Basic service delivery shows continuous improvement within this PR.

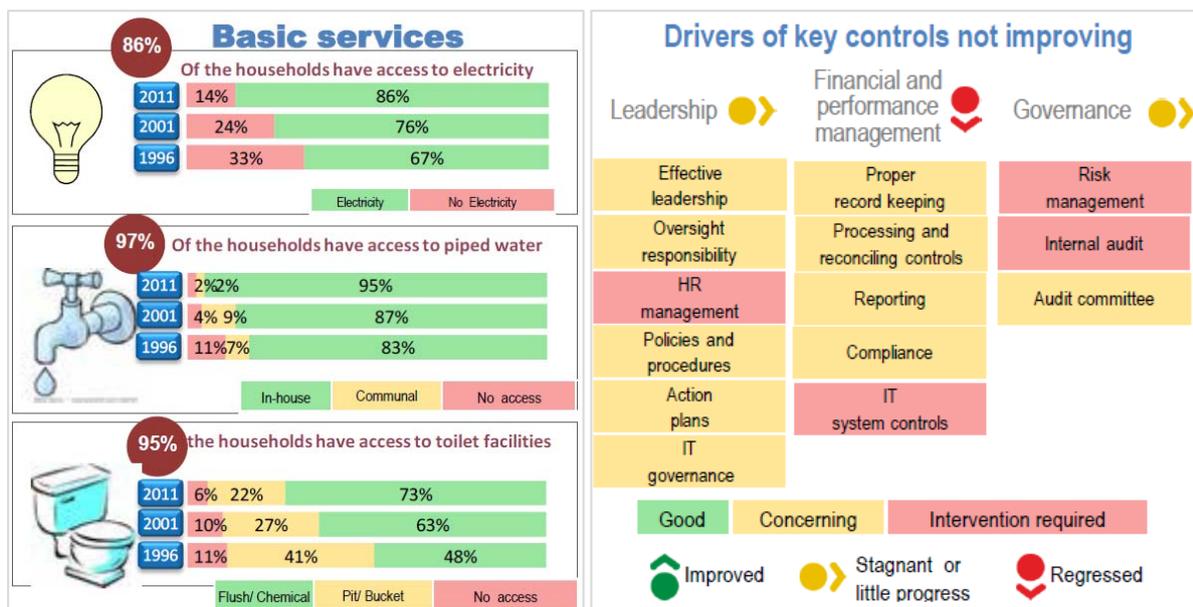


Figure 7-35 PR5: Audit highlights

Source: Auditor General South Africa (2014: 74)

The report indicates that this PR has a debt collection period of 3,102 days, thus limiting its available revenue for service provision, with debt levels at 67% of the revenue (Auditor General South Africa, 2014: 76). The root causes of poor audit reports are indicated in Table 7-12, which could provide for direct solutions to each of the three issues.

Table 7-12 Root causes to be addressed in PRs

Root causes to be addressed	PR1	PR2	PR3	PR4	PR5
Key positions vacant or key officials lacking appropriate competencies					
Lack of consequences for poor performance and transgressions					
Slow response by political leadership in addressing the root causes of poor audit outcomes					

Source: Adapted from Auditor General South Africa (2014)

It is evident that PR2 and PR4 suffer from each of the identified causes resulting in the poor audit reports. PR1 is the only PR indicated as having progressed in terms of its audit and not presenting any immediate issues to be addressed. The lack of competencies and vacant positions is evident,

resulting in several other issues, visible in PR2, PR4 and PR5. Leadership and the rate at which leaders respond to poor audit outcomes is further visible within PR2, PR3, and PR4.

The audit report takes into account the level of assurance the key role players provide regarding performance and compliance to legislation. The assurance levels for each PR per role player is indicated in Table 7-13. The levels of assurance refer to the trust put in each role player to effectively address the causes identified within the audit report.

Table 7-13 Assurance levels to be improved in PRs

Assurance levels		PR1	PR2	PR3	PR4	PR5
1st level of assurance	<i>Senior management</i>	Green	Orange	Green	Orange	Orange
	<i>Municipal manager</i>	Green	Orange	Orange	Vacant	Orange
	<i>Mayor</i>	Green	Orange	Green	Orange	Orange
2nd level of assurance	<i>Internal audit</i>	Green	Orange	Green	Orange	Red
	<i>Audit committee</i>	Green	Orange	Green	Red	Orange
3rd level of assurance	<i>Municipal Council</i>	Orange	Red	Green	Red	Red
	<i>Municipal Public Accounts Committee (MPAC)</i>	Red	Red	Red	Red	Red
Key: Colour coding		Provides assurance	Provides some assurance		Provides limited / no assurance	

Source: Adapted from (Auditor General South Africa, 2014)

All five PRs exhibit some lack in assurance within the third level of assurance (Municipal Council, and MPAC). PR1 is the only PR with full assurance within both its first and second levels of assurance. PR2, PR4 and PR5 has similar poor levels of assurance across all levels.

7.5 Conclusion

This chapter, as the final empirical chapter to the study, has attempted to illustrate the chosen peripheral study area within South Africa, by means of a qualitative policy analysis, followed by a quantitative analysis of spatial composition and elements observed in the five planning regions. The quantitative analysis further identified and measured various indicators forming part of the three pillars of evolutionary resilience (refer Section 4.4.3.2).

Spatial planning and policy within the Northern Cape is mainly guided by the PSDF, from which various indicators was established as potential mechanisms to regional resilience, i.e. the regional classification of Local Municipalities (refer Sections 7.2 and 7.4), the development potential and need of 115 settlements (refer Section 7.3), physical development corridors (refer Section 7.3.4), regions of industrial potential (refer Section 7.3.4) and regions with international linkages (refer Section 7.3.4). In Figure 7-36 it is illustrated that PR4 is by far the most peripheral of the five regions, with 75% of its municipalities classified as ‘deep periphery’. PR1 has an even distribution of four of the five types of regions, whereas PR3 illustrates extremes of two ‘inner core’ municipalities, and two ‘deep periphery’ classified municipalities. PR2, PR4 and PR5 does not exhibit any form of core municipal areas.

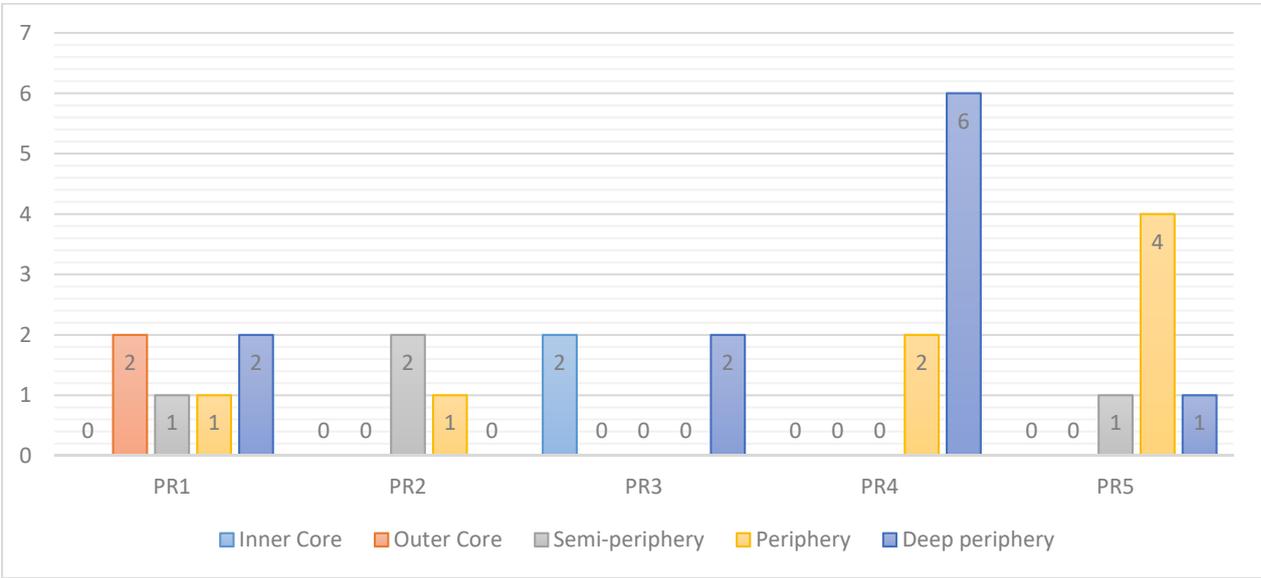


Figure 7-36 Regional classification of LMs in PRs

Source: Own representation from Department of Cooperative Governance, Human Settlements and Traditional Affairs (2012)

From the analysis of development potential and need within the PSDF, the subsequent figure illustrates the combined development potential and human need within the 115 settlements in the province, per PR.

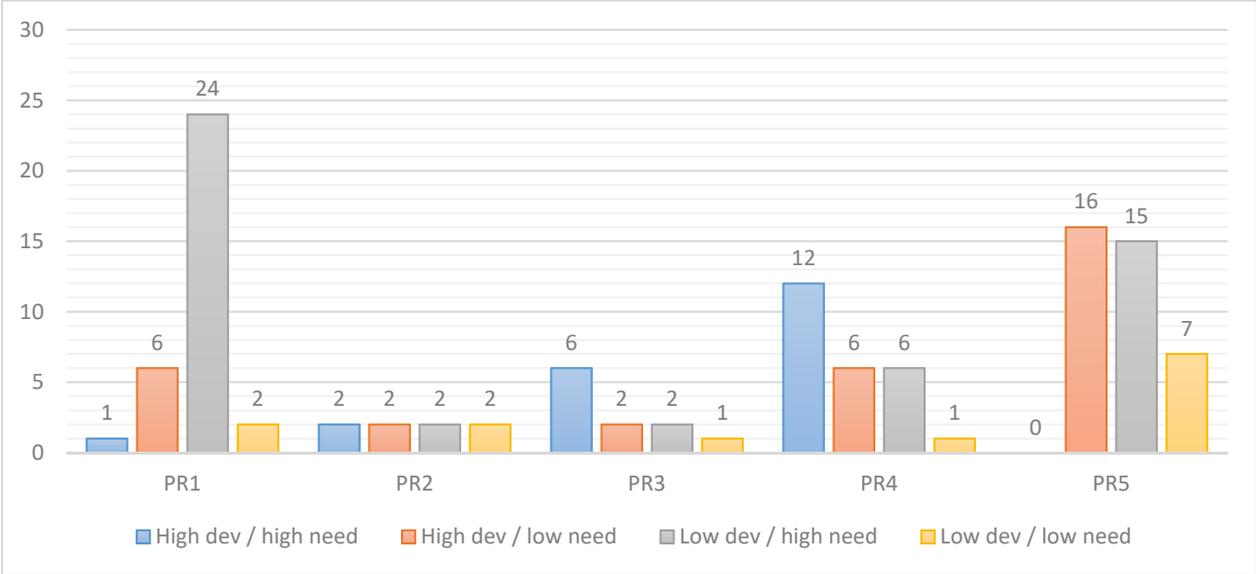


Figure 7-37 Development potential and human need per settlement

Source: Own representation from (Department of Cooperative Governance, Human Settlements and Traditional Affairs, 2012)

73% of the settlements within PR1 is classified as having low development potential, but high human needs, which is particularly interesting as this region has two municipalities within the outer urban core. It can be established that the 24 settlements of low potential and high need does not experience the positive spillovers from the six settlements with high development potential and low need.

PR2 exhibits an even spread of settlement types, with two towns in each of the four classification types. Within PR3 it is evident that more than half the settlements have both high potential and high need, which could be utilised to strengthen the entire region. 12 of the 25 settlements within PR4 also shows both high potential and high need, followed by six settlements with low need, but high potential and 6 of low potential and high need. Within PR5 it was established that 16 of the 28 settlements has high potential with low need, rendering these settlements ideal for small interventions, but with powerful impact.

In terms of development corridors in the various PRs, both PR1 and PR5 is in the privileged position of three development corridors traversing the regions, which could potentially attribute to strengthening the economies of these two PRs. The PSDF further identifies four main industrial areas for the province, with PR3 the only region with more than one opportunity for industrial expansion. Lastly, in terms of spatial locality, PR1 shows significant potential for linking with two neighbouring countries, followed by PR4 and PR5 with potential linkage to one neighbouring country each.

The first evolutionary resilience pillar (refer Sections 4.4.3.3 and 7.4.1), sectoral composition, within the study area was measured in terms of three indices, i.e. GVA, Tress index, and Comparative Advantage. The sectoral composition of PR1, PR3 and PR4 is less dependent on the primary sector, which is also visible in their lower Tress-Index. PR2 and PR5 has a very high dependence on the primary sector as largest contributor to the regional GVA, with similarly skewed Tress-index. The CA indicator illustrates that on a provincial level, PR3 has the highest number of industries (17 out of a possible 22) in which it has an advantage, followed by PR2 (12) and PR1 (10). On a national level it is highlighted that PR3 and PR4 shows significant advantage in 8 industries each, followed by PR1 with 5 industries of comparative advantage.

The knowledge network pillar was informed by indicators of PSET and ICT access. PR3 is the only PR with both a HEI and TVET, with PR1 having the only other TVET. The ICT combined access indicator for each of the PRs revealed PR3 as the most advanced in terms of ICT, but it is highlighted that a large portion of the ICT infrastructure is currently passive. PR3 is scored the highest for readiness, followed by PR2, PR1, PR4, and lastly PR5.

The final analysis on the three pillars of resilience was on the institutional component of the three PRs, informed by the general audit outcome, the progress made in terms of basic service provision, the level of improvement of key controls, presence of root cause issues in each PR and finally the level of assurance across seven levels of institutional role-players. In terms of the general audit outcome (encompassing all of the subsequent indicators), PR1 and PR4 is indicated as having improved in the period since the previous audit, whereas PR2, PR3, and PR5 have remained stagnant. The subsequent Figure illustrates the percentage of households within each PR with no access to basic services. PR1 has the highest aggregate lack of services (27%), followed by PR2 (26%), PR3 (25%), PR4 (24%) and PR5 (22%).

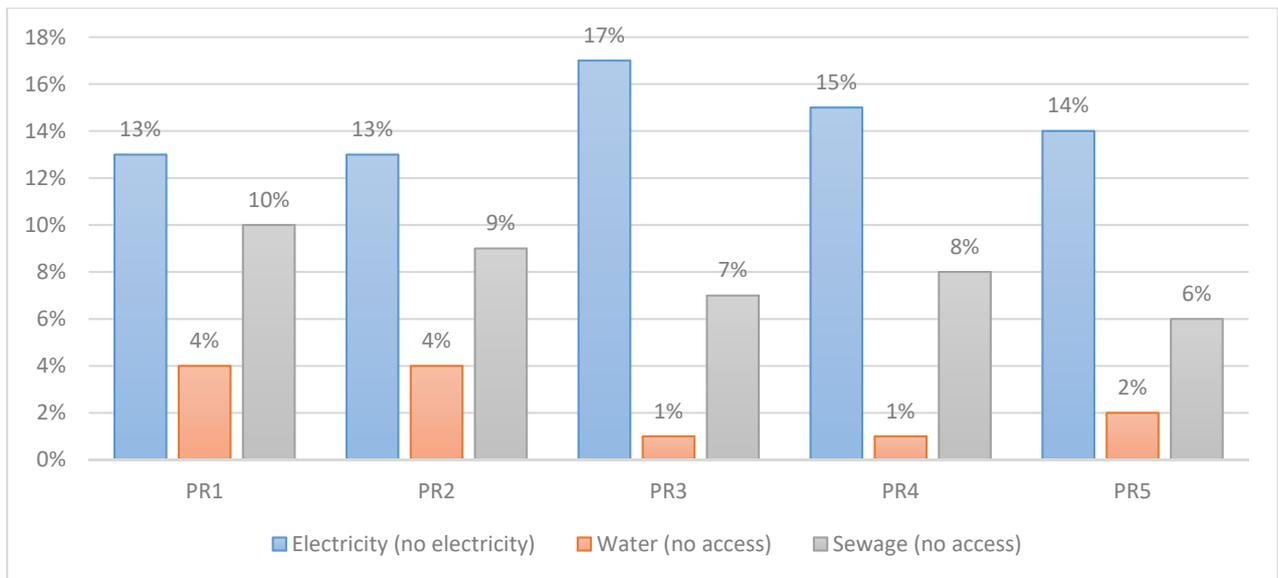


Figure 7-38 Percentage of households with no access to basic services

Source: Own representation from (Auditor General South Africa, 2014)

The key controls as measured by the Auditor General includes leadership, financial and performance management and governance. PR1 is the only region with improvement on all three controls, PR3 only improved in the financial and performance management control, with PR2 and PR3 remaining stagnant in all three control areas. PR5 is the only PR having regressed, in the financial and performance management control, and remaining stagnant in the other two. The presence of the root cause issues as identified in the Auditor's report is illustrated in Figure 7-39.

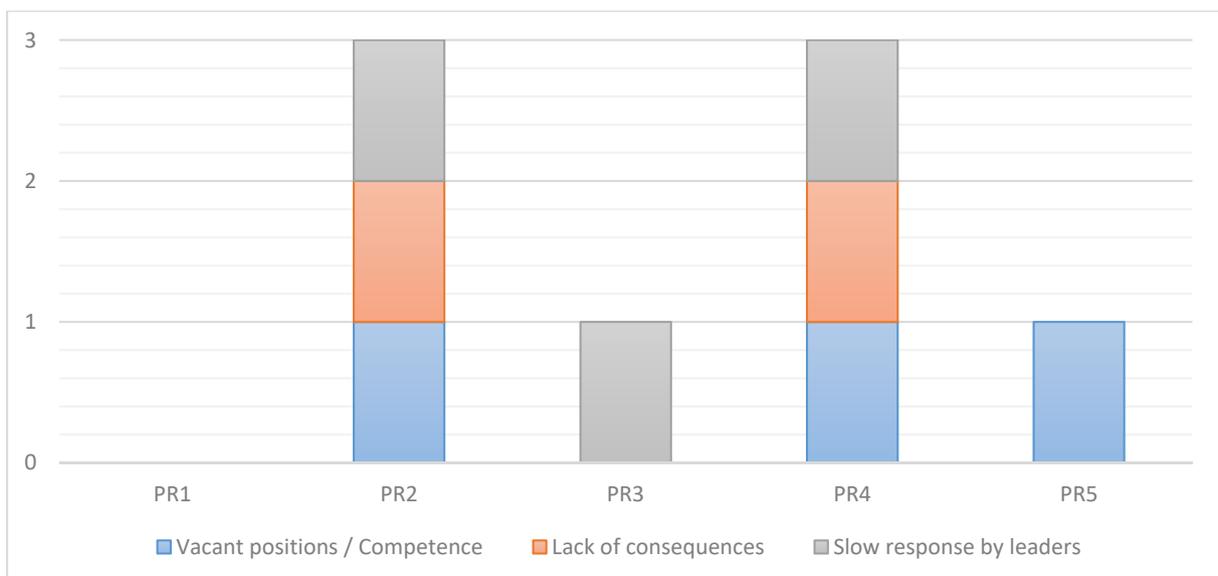


Figure 7-39 Root causes of poor institutional performance

Source: Adapted from (Auditor General South Africa, 2014)

PR2 and PR4 is indicated as demonstrating all three of the causes of poor audit outcomes, whereas PR3 shows inadequate leadership as main cause for the lack of performance, and PR5 with vacant positions and lack of competencies to blame for its poor operation.

The final institutional indicator discussed was the level of assurance the public, as well a higher government spheres has on the seven role-players within each PR. Within PR1 and PR3, five role-players in each were observed as providing assurance. PR4 received the highest number (4) of levels within which no or limited assurance is found, followed by PR5 with three levels not providing sufficient amounts of assurance. PR2 did not fare well, with only five levels providing some assurance, and two levels not providing any assurance.

The comparative analysis to follow will attempt to illustrate the link between peripherality and each of the pillars as discussed throughout the chapter. The aim is to establish if there is any relationship between the extent of peripherality and the sectoral composition, between the extent of peripherality and the knowledge networks indicators and finally between the extent of peripherality and the institutional indicators.

Figure 7-40 illustrates the relationship between the regional types and the % GVA per sector. PR4, as the most peripheral represented PR shows the second highest tertiary GVA, which is comparative with PR3, the only PR with two inner core regions (thus the least peripheral). It is further assimilated that the secondary sector is not prominently influenced by the peripherality of the individual PRs. No discerning patterns regarding peripherality and the primary sector is visible, as this sector is typically solely dependent on locational advantage.

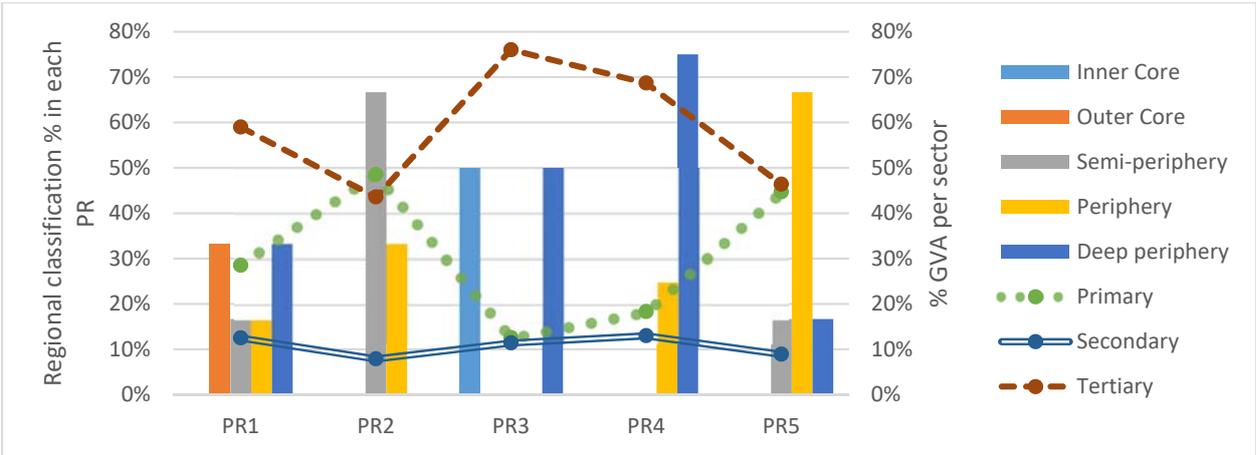


Figure 7-40 Superimposing number of peripheral regions with %GVA per sector

Source: Own compilation

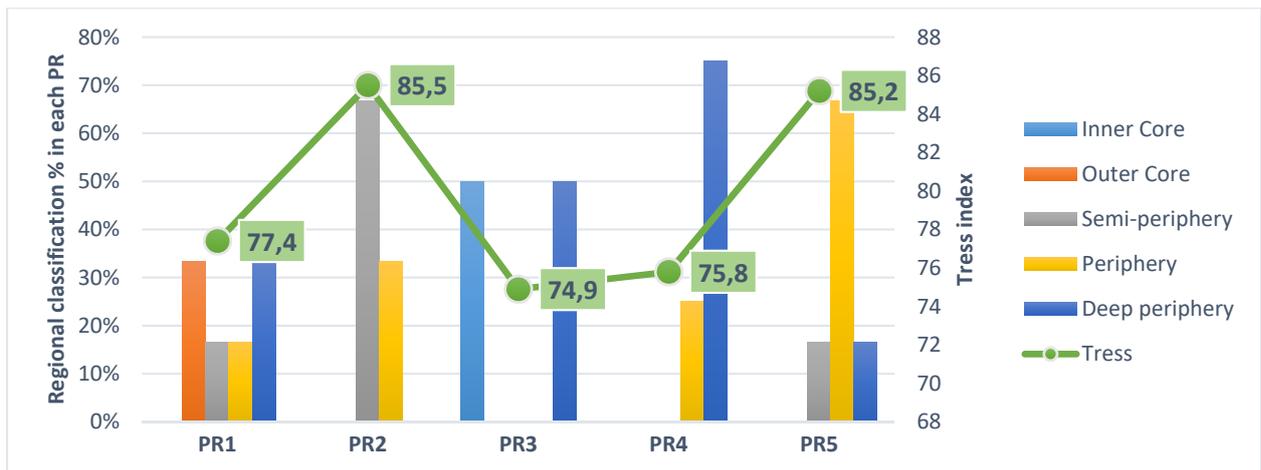


Figure 7-41 Superimposing number of peripheral regions with Tress index

Source: Own compilation

From Figure 7-41 it is noted that the PR with the highest tress-index (low diversification) is found within the most peripheral regions with reference to PR2 and PR5. It is further observed that although PR4 is made up only of periphery and deep periphery municipalities, the PR still has a better diversification than PR1, even though it includes an urban core. It is deduced that the level of peripherality within the PR does not demonstrate a direct relationship with the level of economic diversification.

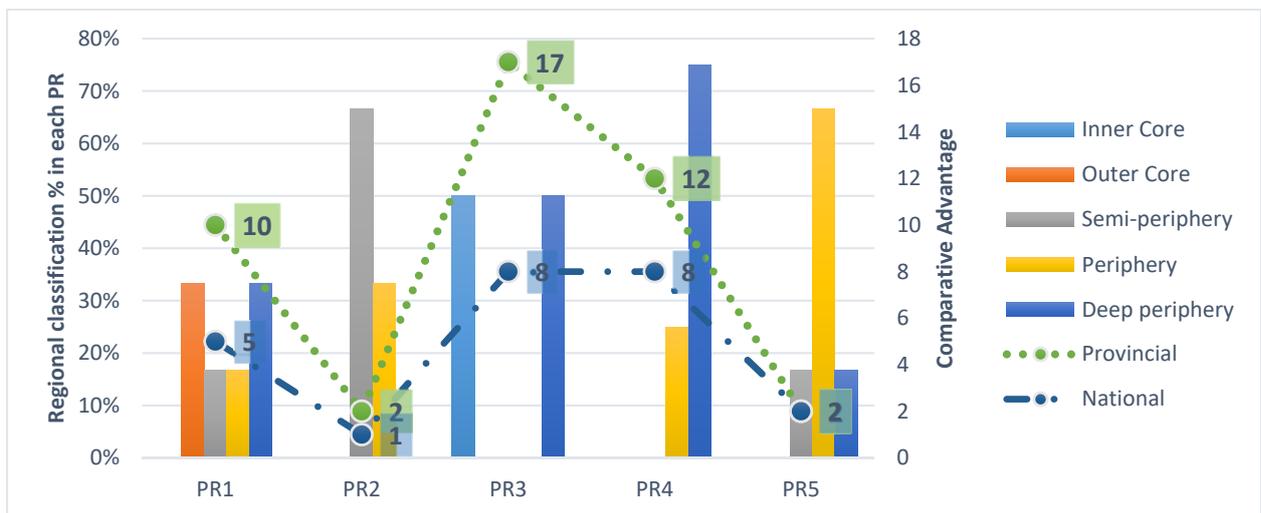


Figure 7-42 Superimposing number of peripheral regions with Provincial and National comparative advantage

Source: Own compilation

The representation in Figure 7-42 illustrates the number of industries within which a comparative advantage is experienced on both the provincial aggregate level, and the national aggregate level. PR2, PR4, and PR5 as PRs with only peripheral municipalities depicts very different incidence of comparative advantage. Both PR2 and PR5 barely has comparative advantage on provincial and national levels, whereas PR4 illustrates a very high advantage on provincial as well as national level. PR1, with outer core characteristics, does not show a remarkable advantage above PR4, with only peripheral characteristics.

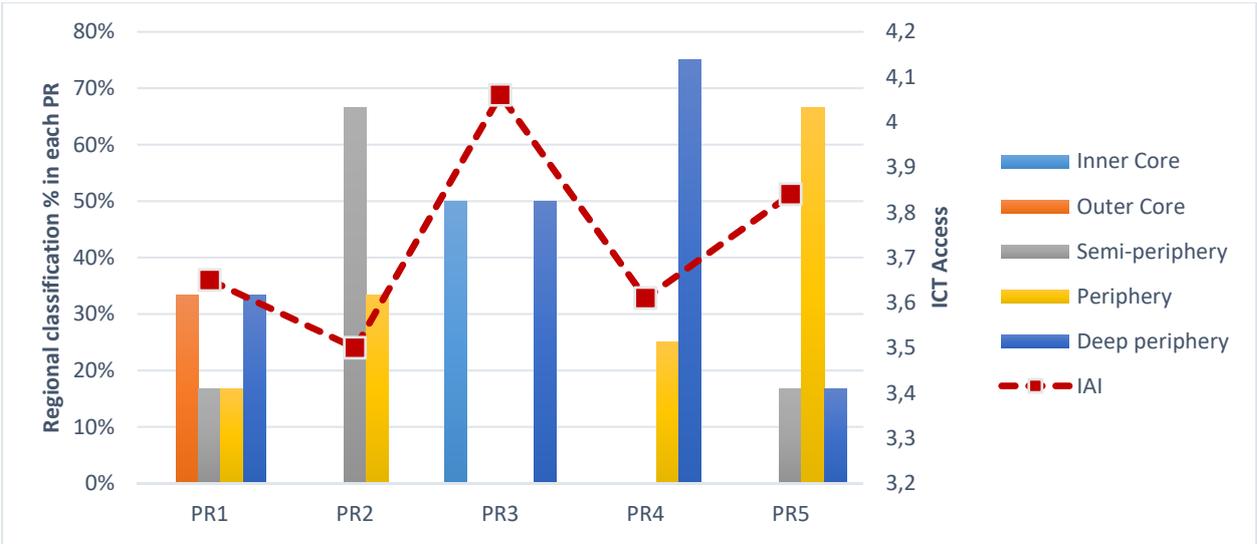


Figure 7-43 Superimposing number of peripheral regions with ICT access

Source: Own compilation

The subsequent figure illustrates the % of households with no access to basic services, in relation to the different levels of peripherality in each PR. It is found that PR1, with outer core municipalities, and thus the more urbanised region, has the highest % of households with no access to both water and sewage services. A possible explanation could be that the urban settlements cannot keep up with the high urbanisation rates in terms of service delivery. PR5 is highlighted as the region with the least % of households suffering from a lack of basic services, but also a PR with 100% peripherality.

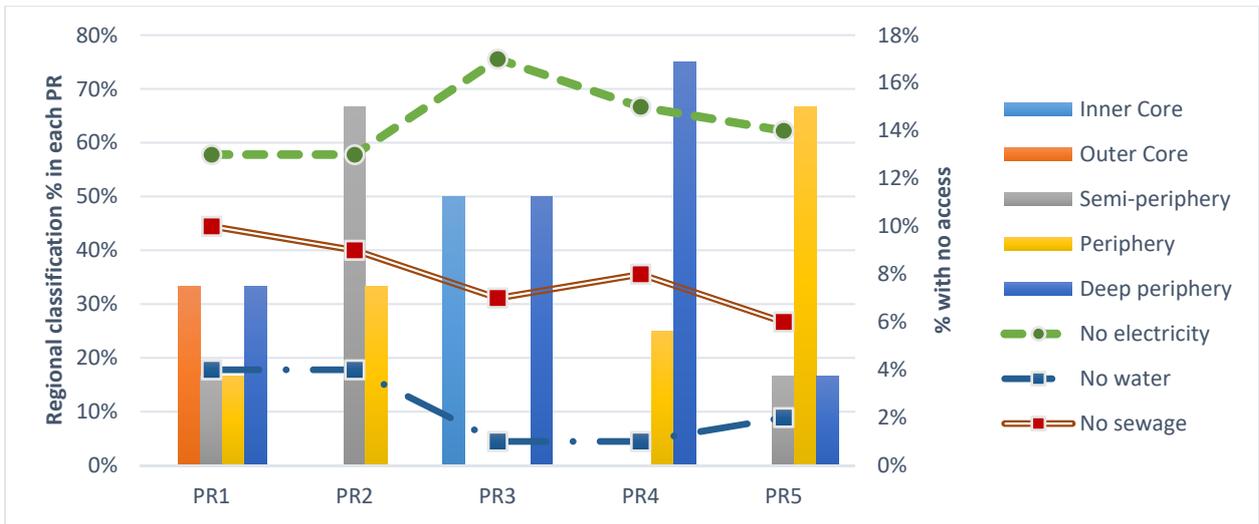


Figure 7-44 Superimposing number of peripheral regions with % households with no access to basic services

Source: Own compilation

The assurance indicator within the institutional pillar is graphically illustrated below in an attempt to indicate if a relationship exists between peripherality and poor institutional assurance across seven levels of role-players. In this instance it is found that there is a strong relationship between the level of peripherality and lack of assurance in the institutional structure. The regions with only peripheral municipalities, are also the regions with low levels of assurance.

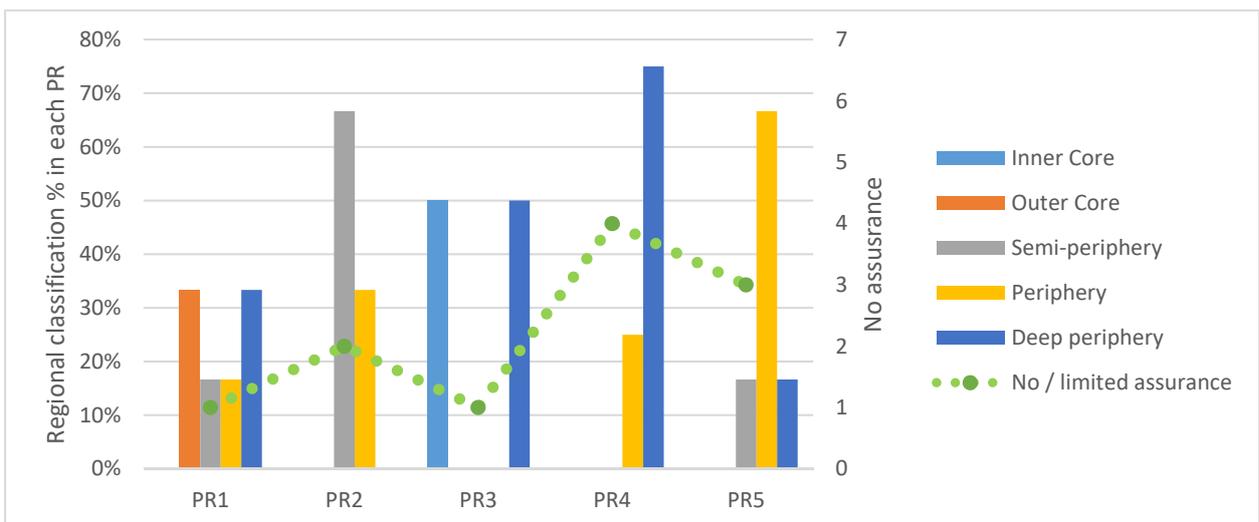


Figure 7-45 Superimposing number of peripheral regions with no assurance in institutional role-players

Source: Own compilation

CH 7: PERIPHERAL SOUTH AFRICA



Study Area Evaluation

Chapter message:

- The Northern Cape Province is regarded as the most rural and most peripheral province in South Africa.
- Regional Policy in the Province is mainly guided by the PSDF (as required by law).
- The NCPSTDF reiterates the importance of active participation of the various levels and sectors of institutions.
- The unique bioregional planning approach in the province is indicative of a region with a developmental and adaptability approach.
- The sectoral profile of the PRs revealed a province much too specialised and focused on the primary sector.
- The secondary sector within the province is largely underdeveloped and unexplored.
- National comparative advantage within the province is visible.
- The PSET sector in the PRs is not as developed as in the rest of the country.
- Education as main field of study is prominent, with a lesser focus on SET.
- CET focus is on low-skilled qualifications.
- Low levels of active ICT are visible across all five PRs, with passive ICT featuring prominently.
- ICT readiness indicators are high in all PRs, leaving room for rapid absorption of technology.
- Poor institutional performance is evident from the audit report.
- Poor leadership, lacking financial and performance management and ineffective governance are put forth as main reasons for mediocre performance.
- No apparent correlation is found between level of peripherality and sectoral composition, tress-index or CA.
- No apparent correlation is found between level of peripherality and ICT access.
- An inverse correlation is visible between level of peripherality and levels of institutional assurance.

Figure 7-46 Chapter message: Chapter 7

CHAPTER 8: SYNTHESIS AND RECOMMENDATIONS

8.1 Introduction

The study at hand was initiated with three research problems identified (refer Section 1.2), which was in turn linked to three research aims, as listed in Figure 8-1. The study was approached on the basis of three main sections (refer Table 1-2, Figure 8-1), i.e. (i) Literature review in Chapters 3 and 4, (ii) Empirical review in Chapters 5, 6 and 7; and (ii) Synthesis and Recommendations in Chapter 8.

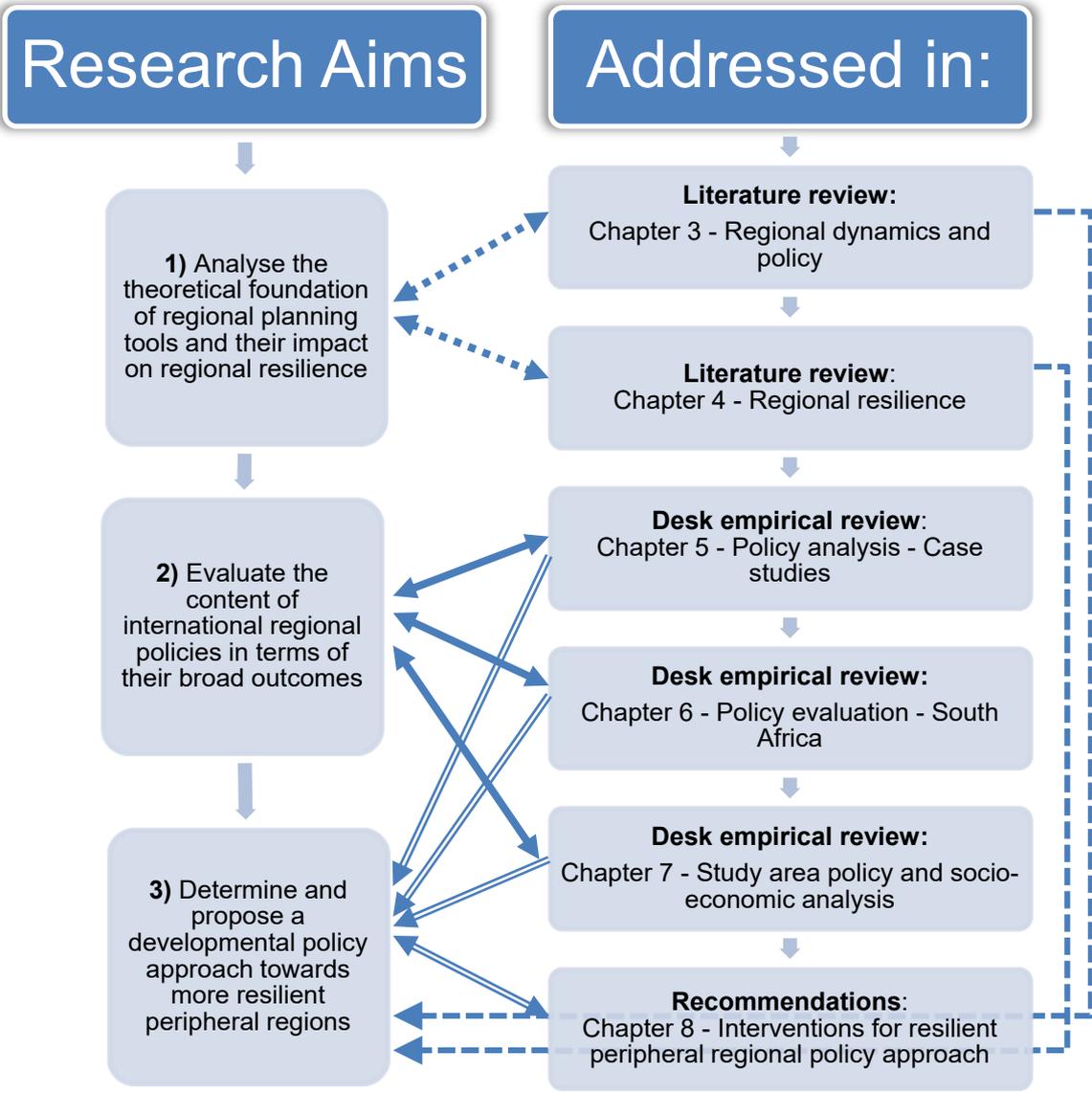


Figure 8-1 Research aims linked to chapters

Source: Own compilation

Within the synthesis to follow (refer Section 8.2) research Aims 1 and 2 and their linked chapters (Chapters 3-7) will be summarised and main contributions applicable to the study will be highlighted. Section 8.3 contains proposals (or outputs) with direct reference to Aim 3 as permeated through the analysis and evaluation of the policy context of peripheral regions across the case-study countries, as well as within the local study area context.

The subsequent table highlights the steps and approaches followed throughout this study, which was constructed on three main processes, i.e. (i) inputs, (ii) processing; and (iii) outputs. This allows for a pragmatic permutation of existing knowledge (literature review) in a pure research context as input to the study for the purpose of providing a sound and supported foundation for the research. The inputs are followed by interpretation and processing of mixed data (qualitative and quantitative) in both the applied and pure realm of the disciplinary spectrum of spatial and regional planning (refer Section 2.1). The processing phase of the research study allows for interpretation of theoretical grounding within an applied regional policy environment.

The processing phase mainly refers to the empirical analysis within Chapters 5, 6 and 7, supported by methods of evaluation (refer Sections 5.2, 6.2, 7.3) and visualisation (refer Section 7.4) with the purpose of intervention (refer Section 8.3) as output of the pragmatic research paradigm. A mixed-method approach is visible, with a qualitative analysis of case-study countries' regional policy approaches and instruments (refer Sections 5.2, 6.2, 7.3), supported by the quantification of the resilience pillars (refer Section 4.4.3.2) in the peripheral South African region (refer Section 7.4). The research will conclude with generic applied, practical and area-specific proposals (outputs), both for the peripheral region in general, as well as the PRs as identified within peripheral South Africa. Table 8-1 further illustrates the data collection sources used throughout the various phases and chapters, as well as the types of data applicable.

Table 8-1 Research process

Phases	Sections	Research Context	Research Purpose	Research Paradigm	Data collection	Type of data		Research method	Chapter	Research Design Types			
INPUTS	A - Literature Review	Pure (Hard & Soft)	Descriptive	Pragmatic	Desk reviews - Non-field based analysis and synthesis to articulate new findings	Qualitative	Secondary	Meta research: Theoretical desktop	Chapter 3	Literature review			
									Chapter 4	Literature review			
PROCESSING	B - Empirical	Applied & Pure	Interpretive		Research Analysis and Evaluation - Non-field based analysis and evaluation	Qualitative	Secondary	Evaluation Research: Policy Analysis and Evaluation	Chapter 5	Case studies (Int.) Purposive paradigm non-probability sampling	Policy Analysis	Document Analysis	Content Analysis - Objectives; Problem recognitions; Framework; Instruments; Actors
									Chapter 6	Case study (Local)	Policy Evaluation	Document Analysis	
					Chapter 7	Study Area (Local)	Policy Evaluation	Document Analysis	Content Analysis , Socio-economic Analysis				
OUTPUTS	C - Proposals	Applied (Hard & Soft)	Formative		Desk reviews- Recommend policy for implementation	Qualitative	Primary	Intervention Research: Identify new policy approach	Chapter 8	Interventions for policy change	Identify enablers for change		
										Policy options	Notional Scorecard		

Source: Own compilation

The field of spatial-, and specifically, regional planning has been highlighted as unique in its research approach due to the combination of pure and applied sciences within the dualistic spectrum of science-oriented and humanities-oriented disciplines (refer Section 2.1). The study at hand is therefore unique in its compilation, complexity and approach, with the view of finding some kind of balance within its multifaceted and rare locality in broad-spectrum science. It is believed that the approach followed, as illustrated in Table 8-1, will inform and support the study's research vision to **“provide a regional policy framework for a more resilient peripheral region”**.

8.2 Synthesis

The study was formed upon the three main components of the research, reflecting on the region (refer Chapter 3), resilience of the region (refer Chapter 4), and policy within the region (refer Chapter 5, 6 and 7). Each of these components have been found to interact with one another, and builds upon each other chronologically.

The regional component established the subjective planning region (refer Section 3.2) as main component of the study, reiterated in Section 7.4 with the various PRs identified and establishing the PR as a tool to reach desired growth and development patterns, as well as establish a preferential spatial form or hierarchy (refer central-place theory with specific reference to K-places and A-places). In the establishment of such hierarchical classification of economic dominant and non-dominant centres or settlements, various agglomeration advantages (and disadvantages) comes to play, which in turn impacts on the development patterns and potential of regions and settlements (refer Sections 3.2, 3.4.2, 3.4.3). The dominance of such settlements are mostly ascribed to locational advantages, especially within regions focused on, and dependent on the primary sector, or extraction and utilisation of natural resources. It is highlighted that both the classical (refer Section 3.4.2) and neo-classical (refer Section 3.4.3) approaches to regional development, taking cognisance that not all regions (especially in the developing world) have reached the a phase of technological innovation (or the 4th industrial revolution) as pronounced in the new growth theories (focused primarily on endogenous regional growth). This research study upholds the integration of both exogenous and endogenous growth approaches in the recognition of the three pillars of regional resilience and prosperity (refer Section 4.5). Regional growth and development is therefore linked to characteristics and distribution of the settlements found within its boundaries, be it based on homogeneity, functional interdependence or development planning delineation (refer Figure 3-2). The planning region as focus of the study is further filtered based on various characteristics, which established the peripheral region (as focal area of the study) as a typical underdeveloped region with a declining population, experiencing social and economic

depression and lacking sectoral diversification (refer Section 3.2). It is recognised that the classification of planning regions according to Friedmann (refer Figure 3-3) differs from studies, or viewpoints, or objectives. The region within the larger spatial environment is bound to certain regional dynamics, pertaining mainly to economic growth and development, but continuously taking into account the impacts and influences of spatiality. Development and growth are found to be inextricably linked to location either within the diversified-relational space (being dependent on growth from within the region) or within the diversified-stylised space (being interdependent on influences beyond conventional physical boundaries). The classic and neo-classic approaches to economic and growth and development theories are both exemplified within the study area, with a strong dependence on spatially-induced growth (locational advantages), but with an equally diversified and multi-faceted territorial dependence on exogenous influences, as well as local productive capacity, competitiveness and innovativeness (which was found to be lacking within the peripheral regions of the Northern Cape province (refer Section 7.4.2). Early theories of growth (refer Section 3.4.2) and development were based on the notions of balanced and unbalanced approaches to growth to encourage spatial efficiency, which are again transpired in the various regional policy approaches in terms of the old and new paradigms visible in regional policy. The old paradigm (refer Section 3.6, Table 3-4) finds itself promoting equity through a balanced approach to regional development initiatives, which have been found to be an unrealistic and unattainable state. Unbalanced regional development and growth through regional policy is visible across all 17 case-study countries (refer Section 5.2), throughout the South African space economy (refer Section 6.2) and within the five PRs (refer Section 7.3). This unbalanced approach propagates space as a more diversified and multi-faceted entity, taking into account the numerous frictions within regions, and guiding these from a subjective regional viewpoint. Although all nations, and regions strive to attain better balance, it is acknowledged that not all settlements and regions can be equal in economic concentration (refer central-place theory), but rather that all settlements and regions should have similar access and opportunities for development. This in turn, raises the question of local capacity and ability (refer Sections 4.4.3.4, 5.2.4.4, 6.2.4.4, 7.3.4, 7.4.2) to utilise these opportunities (spatially induced growth potential) and build upon that foundation provided by such policy assistance, be it through DPA or SOC (refer Section 3.4.2) in areas of potential (refer Hirschman). The ever present intra-regional spatial differentiation and spatial interaction has proven to be determinants of the zones and levels of specialisation within a regional economy, which in turn influences aspects such as economic diversification and exports of regions. These endogenous and exogenous factors impacting on regional development, is recurrent in the analysis of the policy documents throughout the empirical sections (refer Chapters 5, 6 and 7). The fact that regional development (and regional resilience) is dependent on both influences from inside the region, and influences from outside the region, puts forth the notion that policy addressing regional resilience should similarly focus on both

endogenous and exogenous assistance and initiatives (refer Section 3.4.3). A typical endogenous policy approach recognised is that of sectoral comparative advantage (refer Sections 3.4.2, 4.4.3.3, 7.4.1) in providing for a big-push from within the region, rather than being dependent on extra-regional factors. Regional growth stages as dependent on the sectoral composition of the economy (refer Section 4.4.3.3), have been criticised in the literature, but one can't move past the argument that each region (and regions within regions) move through various levels of economic growth, or social integration, or political composition (refer Table 3-2 and Section 4.4.3.5), and even in approaches towards innovation, or openness to adaptability and change (refer Section 4.4.3.1). It is acknowledged that regions cannot be classified as simply finding itself in a single stage of development along a linear path, but that through the integration of stages theory and hierarchical characteristics thereof, policy should take cognisance of the spatiality of singular regions in order to arrive at an approach for more robust regions. Figure 8-2 aims to illustrate an overlap of stages of regional growth (Rostöw) in relationship with spatial appearance of settlements in a typical core-periphery setting (refer Figure 3-6), and linked to a general policy approach as being factor-driven, efficiency-driven or innovation-driven.

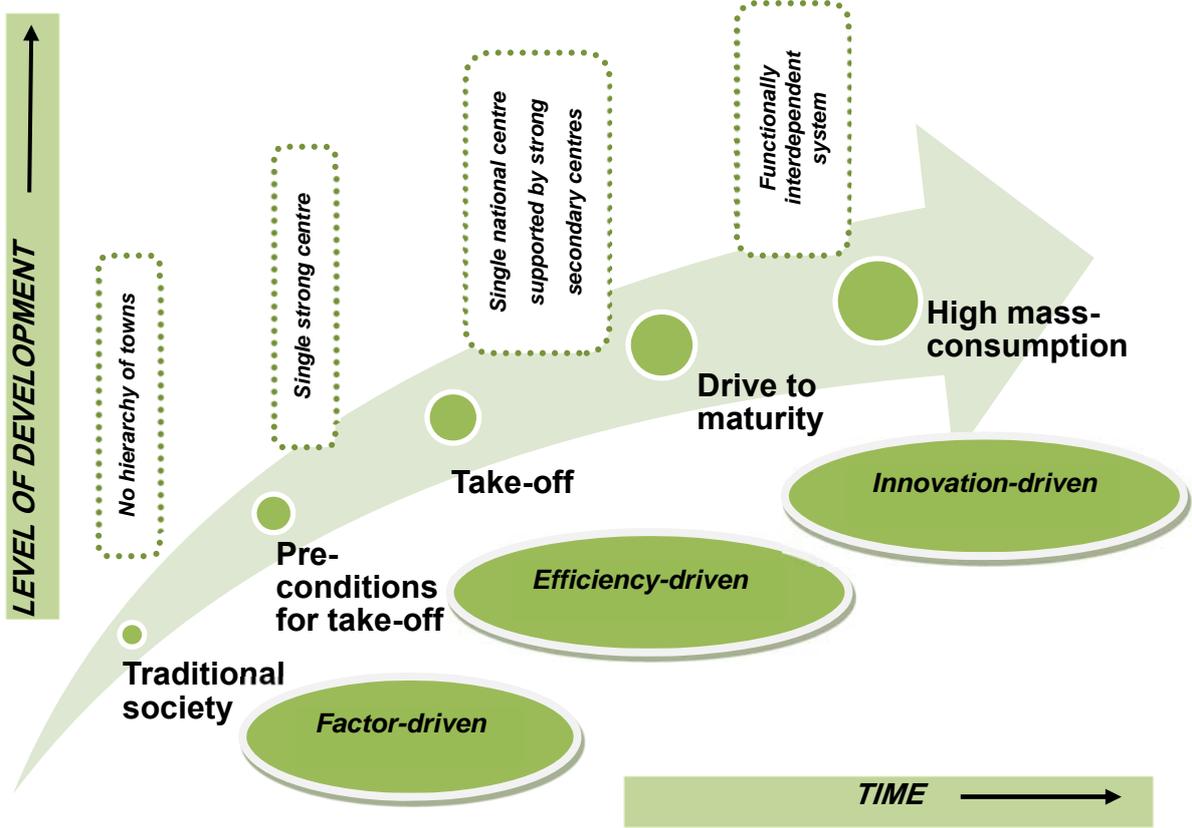


Figure 8-2 Integrated stages theory

Source: Own compilation

The illustration aims to indicate that, although stages-theory tends to box in phases of development, an overlap is visible across the spatial scale (in recognising the NEG) and should therefore also be adopted within the policy approach. The PRs within the Northern Cape province exhibit various of the characteristics (refer Section 7.4) linked to the different growth levels as illustrated (refer Section 3.4.2), and shows a strong core-peripheral appearance of settlements, and of regions (refer Section 7.2). In accepting the limitations of both stages-theory and the core-periphery structure, but focusing on the pure practicality thereof, regional policy design will be able to firstly recognise the unique stage of development, and secondly, utilising this knowledge to inform policy approaches (refer Section 3.5.2). In adopting a stages approach to regional policy making, it is not to be confused with a one-size-fits-all approach to every region with similar characteristics, but should rather be taken as indicative of the broader spectrum of available policy interventions available for such a stage. The regional stage and core-periphery continuum will greatly impact on the style and objective of regional policy (refer Section 3.6), as being ameliorative, allocative, exploitive or normative in its approach and with the associated instruments.

Concepts of stagnation and backwardness of regions are visible from the earliest understanding of regional interaction (refer Section 3.4.2), finding its way within the resilience literature (refer Sections 4.3, 4.4.3.1) as the ability of regions and their actors in welcoming change, and exhibiting a certain level of readiness to adapt and grow to become “sticky places” (Markusen, 1996). This ability to resist stagnation, but also to balance readiness (refer Sections 6.2.4, 7.4.2) with stability, is what is found to be central to the resilience capabilities of a region (refer Section 4.5), not only absorbing shocks, but recovering in such a manner that the entirety is better off as a result of a shock (refer Section 4.4.3.2), ultimately turning the negative shock into a positive. In accordance with growth-pole theory, and supported in the new economic geography, it is emphasised that placing a more pertinent focus on local interactions between a region’s core and periphery (and the myriad of settlements in between) in a conceptual polarised-region, and lesser so on external influences, a region will be able to revitalise itself from stagnation, and only then will be more compliant to exogenous factors (or more focused on adaptability). In this manner, the locational advantages of regions are explored, with a focus on strengthening intra-regional interaction (as a form of localised regionalism, refer Section 3.4.3) through concentration and clustering, in an attempt to overcome negative regional externalities (refer Section 3.4.3). Accordingly, this will enhance the region’s ability to attract and attain knowledge (as a primary driver of regional growth), and positively impacting on the innovation readiness of these regions – ultimately aiming to find dynamic stability. In establishing a knowledge-rich region, a region with higher adaptability is established (refer Section 4.4.3.4), rendering a region more open for change, new technology and innovation. An innovative peripheral region will typically become less dependent on single sector primary development, pushing itself into a new development stage of secondary and

tertiary sector focus through diversification (refer Section 4.4.3.3), lessening its vulnerability to external shocks and disturbances (refer Section 4.5) and impeding regional lock-in.

The non-linearity of regional growth and development and the “organised complexity” of spatial entities are recurrent in classic (refer Section 3.4.2) and neo-classic (refer Section 3.4.3) regional theories of regional growth, and makes its way into the system-within-systems approach of both resilience and its spatial application in the panarchy model (refer Section 4.3). The panarchy adaptive cycle metaphor recognizes that any system has two opposing modes, i.e. a fore loop and a back loop, the former referring to the phase of development (r) and the latter to the phases of release (Ω) and reorganization (∞). During the fore loop resistance to management attempts are experienced, whereas the back loop is typically more susceptible to management intervention. From this conceptual model of complex and dynamic organisation in the SES, it was assimilated that similar characteristics are visible in the hierarchical and complex structure of urban systems and regions (refer Sections 4.3, 4.5).

The concept of nested panarchy (refer Section 4.3) is brought into context with evolutionary regional resilience, indicating that for a new growth path to be followed, the downturn (or back loop) of the panarchy allows for threshold opportunities of intervention and transformation to push the region onto a new growth path – typically during the release (Ω) and reorganisation (∞) phases. If intervention and transformation is actively sought during these phases, a probability exist that the downward trajectory will follow an evolutionary new growth path. If these threshold opportunities are ignored or passes by unnoticed, the trajectory will exit the adaptive panarchy cycle into a non-resilient downward trajectory.

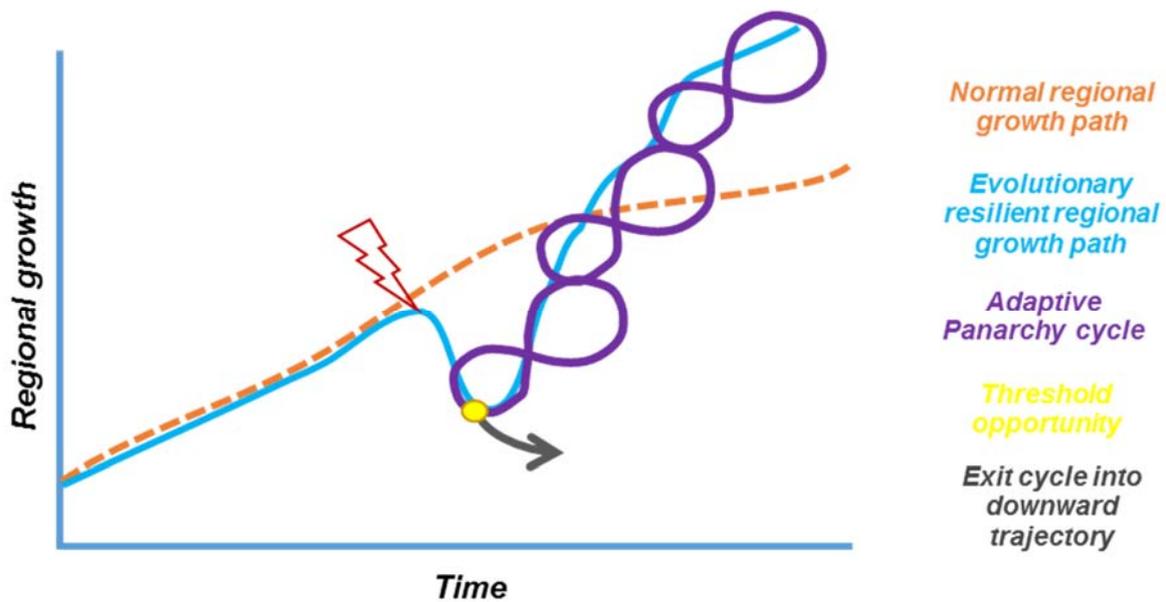


Figure 8-3 Evolutionary regional resilience growth path after disturbance within a nested adaptive panarchy cycle

Source: Own representation

Similarly, it is argued that within the larger urban system (or region) the focus of more explicit policy interventions on smaller units (i.e. peripheral settlements) will render faster results, whereas interventions on the intermediate and core regions, will take longer to have a lesser impact. This “organic process” from within will in due course render long-term results, as opposed to a strategy enforced upon the region. The preceding figure illustrates the threshold opportunity within the adaptive panarchy cycle as the turning point towards an evolutionary new growth path, with this critical crux calling for some kind of intervention to prevent the system from exiting the panarchy cycle into a downward trajectory. This strongly reminds of a similar tipping point between adaptation and adaptability (refer dynamic stability, Section 4.4.3.1) within evolutionary regional resilience and the simultaneous intervention opportunities that could be created by a three-pronged approach of a preferred sectoral composition, cognitive distance as opposed to cognitive proximity in knowledge networks, and the layered cross-sectoral institutions headed by strong leadership and exhibiting adaptive capacity. The literature study led to the identification of three prominent “pillars of regional resilience” (refer Section 4.4.3.2) or “regional resilience shock absorbers”, with reference to the sectoral compositions of the economy, the presence, extent and quality of knowledge networks within the region, and finally, the institutional role-players` (viz. government level) capacity and willingness (refer Figure 4-4). The sectoral composition of an economy was found to be intricately linked to the concepts of adaptation and adaptability, which are in turn influenced by the related and unrelated variety of the sectors. The more concentrated and specialised an economy is, the higher the levels of adaptation and the lower the levels of

adaptability. Related variety within a regional economy is put forth as associated with the long-term capacity of a region to push itself onto a new growth path (refer Section 4.4.3.2). The role of knowledge networks in regional resilience (refer Section 4.4.3.4) and the extent of the 'knowledge network structure', is coupled with the core-periphery structure, posing that the core of the knowledge network should be loosely tied to the periphery of the knowledge network. The better the regions` network structure is developed, with an inward-looking local regional approach, the higher the level of adaptation will be, but also the higher the probability is for lock-out of other actors. This reiterates the need for a strong core, loosely tied to the periphery, and the importance of local actors (institutions) impacting on a region`s balancing act between adaptability and adaptation (refer Section 4.4.3.5). To a large extent, the institutional pillar is critical for the success of the chosen policy approach. It was established that without a strong and capable institutional leader (refer Section 4.4.3.5.1), with a certain degree of horizontal and vertical interaction (refer Section 4.4.3.5.2) and a balance in its adaptive capacity (refer Section 4.4.3.5.3), the other two pillars are not sufficient enough to carry a regional economy through an external shock as effectively as with this actor in place.

An overlap of the three shock-absorbing pillars within the region is subsequently illustrated (refer Figure 8-4) as coinciding with the threshold opportunity (or previously referred to as a window of opportunity) for intervention and transformation.

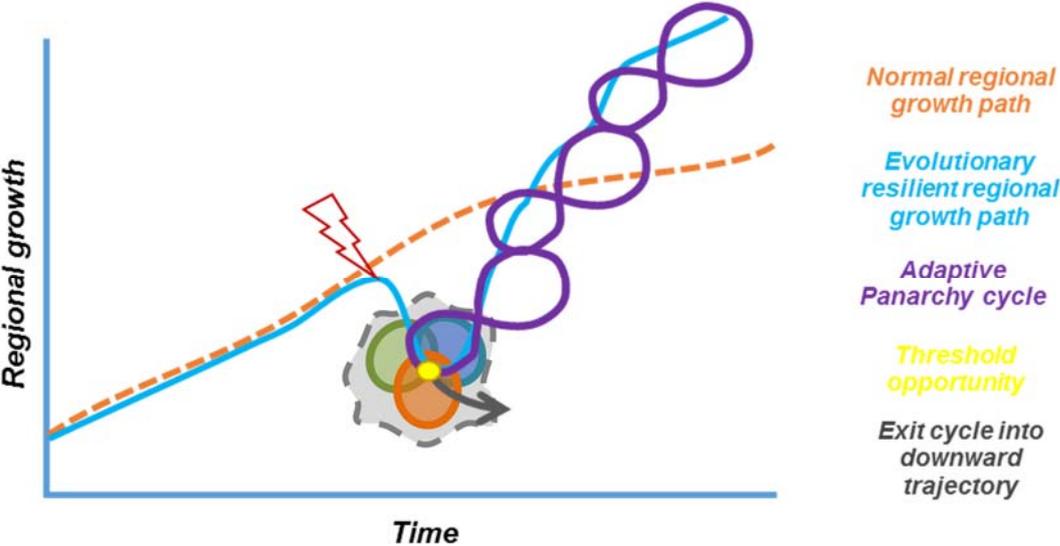


Figure 8-4 Evolutionary regional resilience pillars coinciding with an adaptive panarchy cycle resulting in a new growth trajectory

Source: Own representation

The threshold opportunity in the instance of this research study, will be for the implementation (or readiness of the regional system for the implementation) of appropriate, development-phase-specific and region-specific policy, with reference to the economic sectoral composition, the density and openness of the knowledge network, and the prowess of a strong and capable institutional influence. For the threshold opportunity to be utilised to its full potential, the study finds that timeous and place-specific regional policy, enforced and supported by both local and regional authorities in institutional collective action, under the umbrella of a capable and responsible national overseeing authority is prevalent in many of the 17 case-study countries (refer Section 5.2). The 'processing' section of the study (refer Table 8-1) focused on a national regional policy analysis and evaluation across 17 OECD countries, some of which forms part of the EU, across federal and unitary governance approaches, chosen based on a purposive sampling method. The policy analysis and evaluation (refer Sections 5.2, 6.2, 7.3) formed the qualitative basis for the empirical study. This consisted of the case-study countries, followed by a more intense focus on the South African policy environment. Ultimately arriving at the study area at hand, with reference to five Planning Regions. It is emphasised that the qualitative regional policy analysis was not meant to be quantified and to provide direct comparison between countries' approaches and instruments. Rather, the focus was on assimilating on the various approaches, determining the peripheral application (if any) and emphasising any outstanding and unique peripheral initiatives within the case study countries. Annexure A provides a concise summary of the main issues addressed in the analysis, based on the five main areas of evaluation, i.e. problems, objectives, policy framework, instruments and actors. These five areas of evaluation were continuously integrated with the three shock-absorbing pillars and in an attempt to answer the five fundamental questions related to the resilience field (refer Table 4-2). From the evaluation of the various national policy directives in the case-study countries, it was assimilated that seven countries have an exclusive regional policy focus (refer Figure 5-4), supported by separate urban and separate rural policy initiatives. The other ten countries mostly combine the regional component of policy either with the rural or with the urban policy of the specific country. This intermediate level of the core-periphery continuum (refer Section 6.2.1) across traditional functional boundaries are lacking in most countries. It is found that the countries exhibiting efforts of sole-regional policy and planning, are also those with a dedicated national ministry and / or regional development agency (refer Section 5.2.5.1, 5.2.5.2), focusing their efforts on planning regions, rather than traditional functional or formal regions (refer Section 3.2). In the instance of the case-study countries, rurality was utilised as replacement for peripherality, as definitions and measures of peripherality differ across countries. The main issues within these countries were found to be linked to inter-regional disparities (refer Section 5.2.1), all aiming to balance out the disparities through targeted programs and measures focused on the marginalised areas. It is apparent that most of the instruments (refer Section 5.2.4) within the various

international policy approaches are found to focus on the upliftment and support of lagging areas. Several instruments were highlighted as most applicable and influential on the regional policy level (refer Section 5.2.4) across all three shock absorbers for enhanced resilience. Instruments referred to are all place-based, or explicit in their spatiality. The national non-sectoral plans within South Africa mostly exhibit no spatial application, especially for the period between 1994 and 2012 (refer Section 6.1), where a general approach to service delivery and social upliftment was the common focus. Even in the most recent national development plan (refer Section 6.2.4), only wide-ranging guidelines to spatiality is provided, with much more attention on the issues of land reform and restitution (refer Section 6.2.1), as well as funding for development support. This is a unique issue to the South African context, as opposed to the case-study countries, in recognition of the historical political environment, the focus is explained. The South-African focus for policy-making is either strongly on the urban context, or on the rural context, with very little application on the combined regional milieu. With closer inspection of the South-African regional policy environment (refer Section 6.2) it was acknowledged that a regional level of spatial development planning is identified within the national legislation, but that the application of these RSDFs have not been fully adopted across all levels. The main issue identified, is that an RSDF will only be raised as an option in extreme cases of cross-boundary needs (refer Section 6.2.5.2), and will be within the power of the provincial authorities in question. This brings to attention a pertinent issue of horizontal interaction across provincial authorities, also visible and identified as challenging and problematic within the case-study countries (refer Sections 5.2.5.2.1, 6.2.5.2.). In the instance of the local study area, a RSDF will typically be focused on a cross-boundary area with notable interaction between provinces, i.e. PR5, exhibiting a high human need (refer Section 7.3 and Figure 7-6), which spills over into the adjacent Western Cape Province, and could potentially be addressed by combined provincial efforts by means of a planning region demarcation. It is apparent that governance is an especially difficult component to manage within any country, as this pillar acts as decision-maker, informant, coordinator and facilitator, as well as financier of regional development. The government system or organisation thereof is also exposed to political interference (refer Section 6.1) which reduces the multi-level cross-sectoral integration of any policy a demanding and nearly impossible task. The issue of poor governmental interaction is continuously found within case-study countries (and in South Africa) and associated with a lack of a strong and competent regional authority with exclusive authorisations of a specific region (refer Sections 5.2.5.2, 6.2.5.2). Not only was horizontal interaction deemed a notable indication of institutional success, but also vertical integration and cooperation on all levels of government, which is especially lacking in the South Africa context (refer Sections 6.2.5, 7.3.5). The sectoral focus (refer Section 6.2.3) and silo approach to policy making is continuously blamed for poor unification and implementation of otherwise constructive policy directives (refer Sections 5.2.5.1.2, 5.2.5.2.3, 6.2.5.1, 6.2.5.2, 7.3.5). In this instance regional strategies (e.g. RSDF in the

case of South Africa) could play a vital tool as part of a regional decentralisation of authority (refer Section 5.2.5.2.2). Regionalisation (top-down) and regionalism (bottom-up) approaches are utilised with varying success, depending on the capacity and involvement of various actors on the regional and local levels (refer Section 5.2.5.2.2, 5.2.5.2.3, 5.2.5.3.). Policy instruments (business development, infrastructure and transport investment, cluster development and centres of expertise; skills training and capacity building at local government level; special economic zones; and service delivery) identified to address regional problems as evaluated across the international, national and local peripheral space include various place-bound activities and financial support (refer Sections 5.2.4, 6.2.4, 7.3.4), made possible by actors across all levels of government, as well as local involvement. These instruments were assessed internationally, within the South African context, as well as on local study area level.

The performance of PRs in terms of their resilience approach was measured by means of the three pillars of shock absorbance towards more resilient peripheral regions, using available data within the study area (refer Section 7.4). The main indicators with the associated results per PR is indicated in the subsequent figures (refer Figure 8-5, Figure 8-6, Figure 8-7, Figure 8-8, Figure 8-9). PR1 (67% peripheral) is acknowledged as the most stable and resilient of the five PRs, based on the quantitative measurement in Section 7.4. This PR has been established to have comparative advantage in 10 provincial and 5 national economic sectors, with an upward GVA (even after the economic recession in 2008/9) and is the only PR with overall improved institutional indicators and highest institutional insurance levels. One of two PSET institutions is found within PR1.

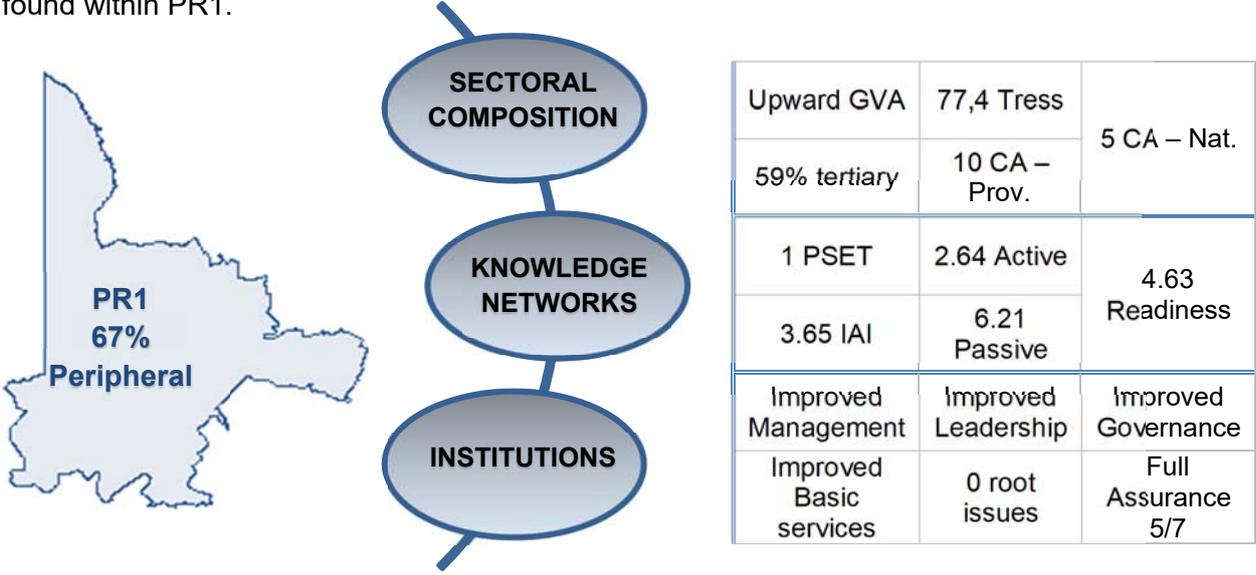


Figure 8-5 PR1 - Peripheral resilience pillars and indicators

Source: Own representation

PR2 (100% peripheral) is highlighted as the only PR experiencing and economic downturn during the economic recession, which was scribed to the high dependence on the primary sector (85,8 Tress). The region exhibits limited comparative advantage and an overall stagnant institutional environment. Relative low levels of active CTI access id visible, supported by high levels of readiness.

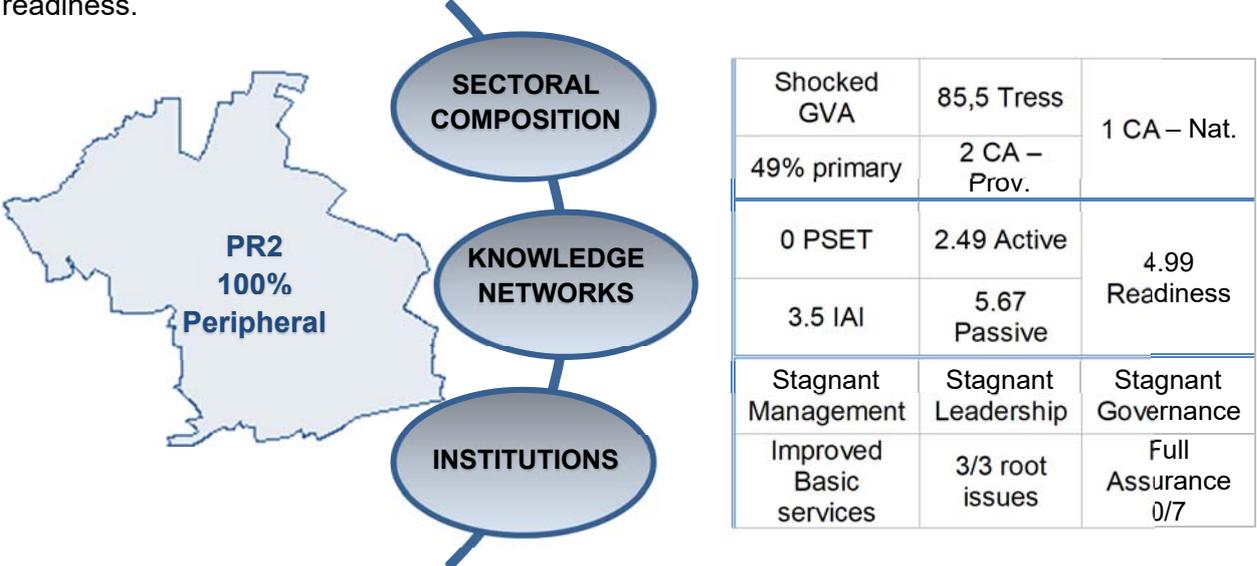


Figure 8-6 PR2 - Peripheral resilience pillars and indicators

Source: Own representation

Within PR3 (the least peripheral of the regions) a strong dependence on the tertiary sector is highlighted, and although the institutional pillar is perceived as stagnant, the sectoral pillar exhibits strong national and provincial advantage. The innovation indicators are the highest of the PRs, but a very large passive access is visible.

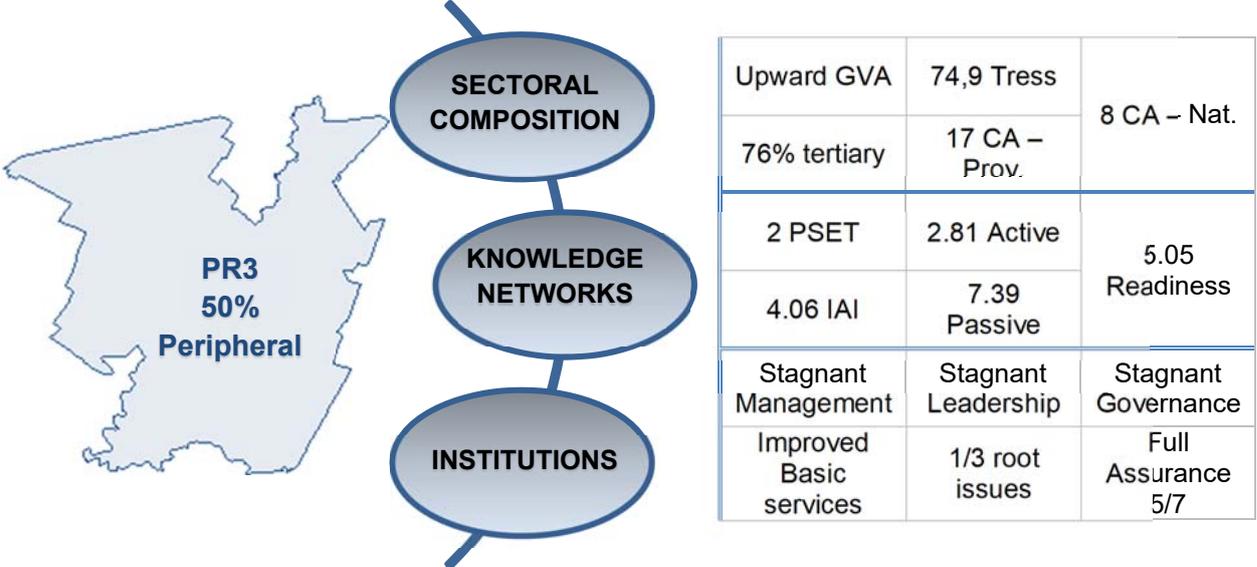


Figure 8-7 PR3 - Peripheral resilience pillars and indicators

Source: Own representation

Within PR4, a 100% peripheral region, a similar national comparative advantage is experienced as in PR3, also with a large passive access to technology, and low levels of active access. Although improvement is visible on the management front of the institutional pillar, the PR exhibits a worrying level of zero assurance and 100% of the root causes identified.

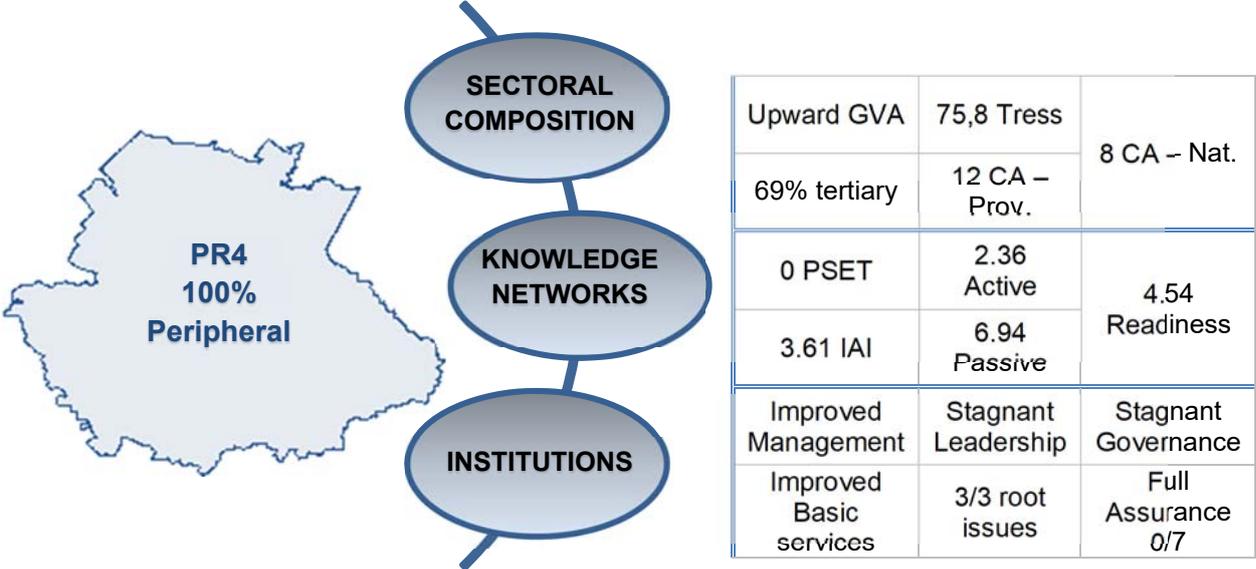


Figure 8-8 PR4 - Peripheral resilience pillars and indicators

Source: Own representation

PR5 is the third 100% peripheral region within the study area with the highest tress index (low level of diversification) and large passive access to innovation networks. This PR is the only exhibiting regression in its institutional management and zero level of assurance in the government pillar. It can be assimilated that this PR is the worst off in terms of all three pillars of shock absorbance, and thus the least resilient of the five.

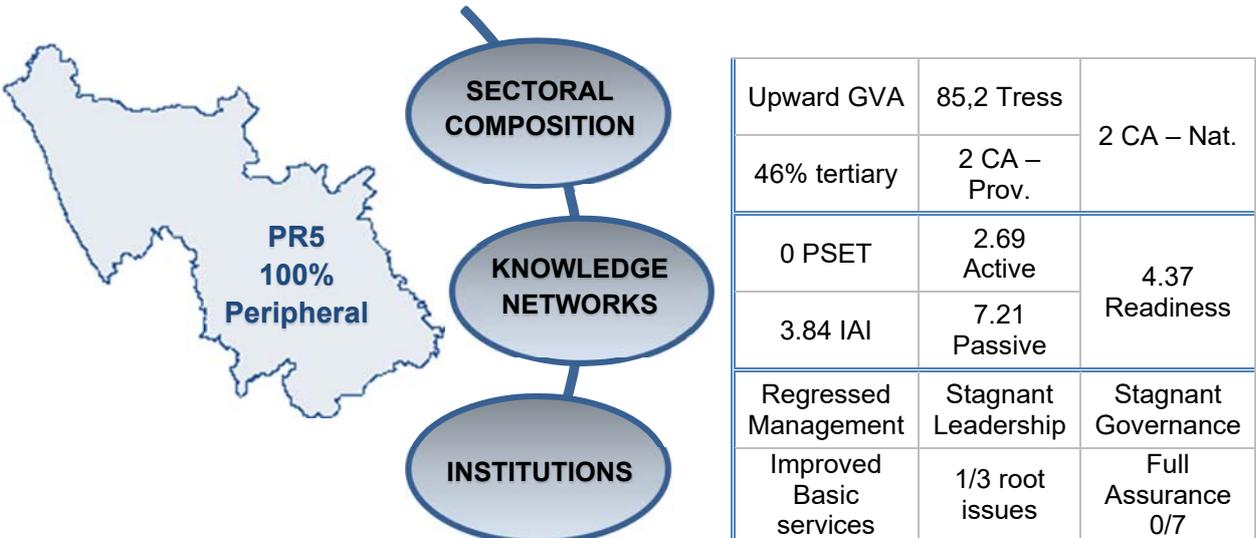


Figure 8-9 PR5 - Peripheral resilience pillars and indicators

Source: Own representation

To reiterate the findings of the quantitative analysis (refer Section 7.4), no apparent relationship is found between level of peripherality and sectoral composition, tress-index or CA. No apparent relationship is found between level of peripherality and ICT access. An inverse relationship is visible between level of peripherality and levels of institutional assurance.

8.3 Recommendations

The recommendation section will follow a three-pronged approach, based on the various levels of discussion followed throughout the study. It is acknowledged that a solely South African specific, or study-area specific approach is not applicable to the peripheral regions of the world, and therefore generic and globally applicable recommendations will form the first part of this section. This will be followed by practical and study-area specific proposals (refer Section 8.3.2) to apply the aforementioned generic guidelines (refer Section 8.3.1).

8.3.1 Generic proposals: resilient peripheral regions

In the establishment of a policy framework for more resilient peripheral regions, this study proposes that a “progressive peripheral regional resilience” (PPRR) lens approach be recognised. Rather than only proposing a single set of rules for peripheral resilience, this approach will be universally applicable in the sense that a resilience lens will allow for a high level of adaptability depending on the unique region, the level of peripherality and the strength of each of the three pillars for regional shock absorbance.

This approach can be compared to the way in which progressive optical lenses work, as opposed to the traditional bifocal and trifocal lenses with two or three separate levels of vision, near, intermediate or far. A progressive lens design allows for near, intermediate and distant vision, within a progressive and blended manner, as not to allow for an either/or situation (refer Figure 8-10), but rather varying levels or intensity of focus, based on individual preference and need. The anatomy of the progressive lens design will be transposed and applied to the composition of the planning region, with its urban core (near), the transitional region (intermediate) and the peripheral (distant) region (refer Sections 3.2, 7.2).

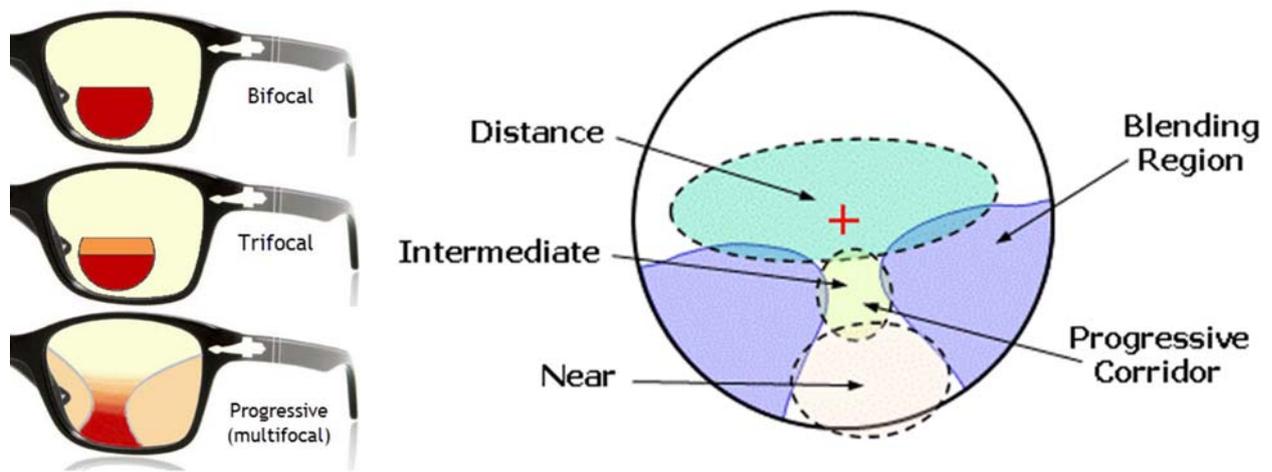


Figure 8-10 Anatomy of a progressive lens

Source: Meister & Fisher (2008: 254)

The PPRR-lens approach is aimed at providing a desired resilience view without breaks, ledges or lines between regional boundaries, through allowing for a zone of transition between core and periphery along a progressive corridor. In this manner, the nearer region (urban core) will remain the anchor of long-term resilience, with a maintenance-approach to the urban core through a muted focus of policy instruments and initiatives. It is acknowledged that the urban core forms the main drive of economic growth and acts as nodal core within the larger urban system (national). For any core to be strengthened it has to be coupled with another node, in this instance within the periphery, through a robust link – in this instance the progressive corridor across the core-periphery continuum. This proposed targeted-interventions approach will stimulate medium-term development and enhance connectivity and interaction between the core and the periphery. The progressive corridor will thus receive marginally more investment and targeted focus, than the core region, progressively increasing up to the connection with the identified peripheral node. Thus, the closer to the peripheral node, the higher and more intense investment and focus will be. The short-term focus will consequently be on balancing out the periphery (through growth-pole identification) and lifting the deep periphery into a more resilient spatial unit (through envisaged economic and social spillovers) over the medium term.

It is **proposed** that peripheral regions focus on the identification of programs emphasising the region's specific competitive advantage. This will entail spatial place-based actions to establish and support propulsive industries in selected growth poles. This spatially concentrated and unbalanced approach will ultimately improve the socio-economic composition of the larger region. More effective use of resources through investment concentration will enhance the region's probabilities of producing external economies.

The subsequent Figure provides a diagrammatic illustration of such an approach.

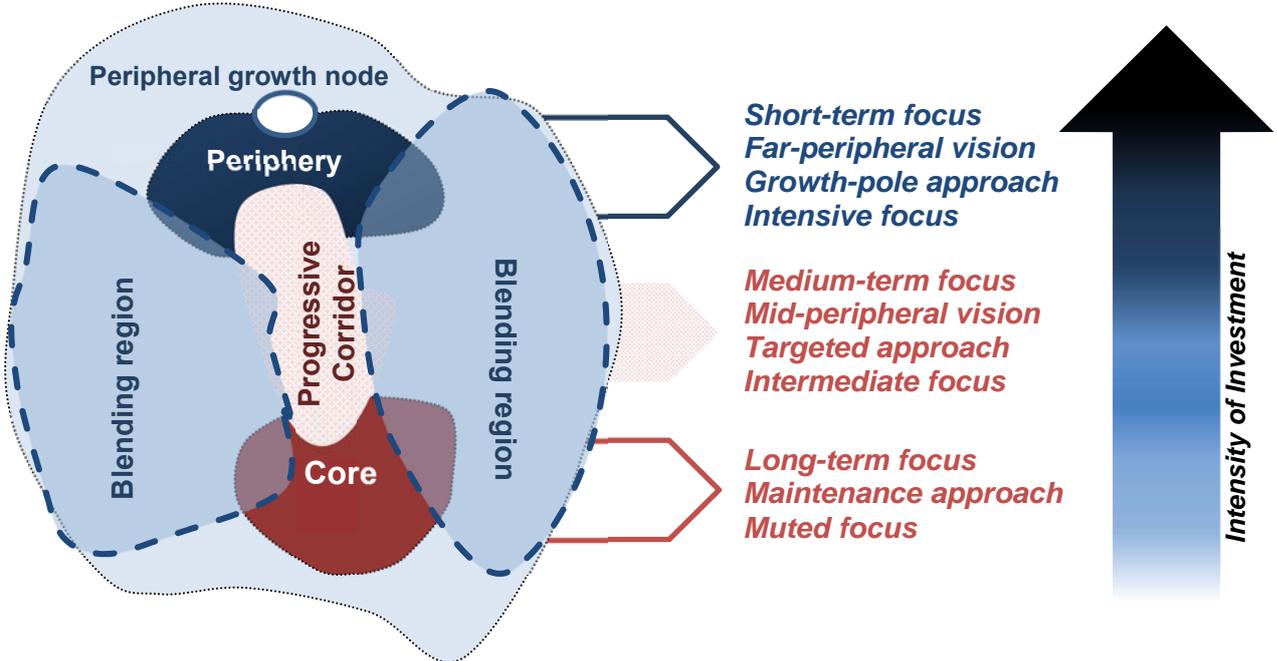


Figure 8-11 Structure of PPRR lens

Source: Own representation

This PPRR lens allows for a continued maintenance approach on the stronger core area, but with the pertinent focus of regional policy and regional instruments of support on the peripheral areas, in a stepwise approach towards the periphery along the progressive corridor. The PPRR takes into account that the core and periphery cannot function in isolation, and for the periphery to reach a state of improved resilience, its connection (be it physical, network-related or trade-related) with the core must be persistently nurtured and enhanced. It has been established that regional policy is the main tool available to spatial planners to structure this type of economic and spatial resilience (refer Sections 3.5, 3.6, 4.4). The subsequent Figure (refer Figure 8-12) aims to link the peripheral region with the three identified pillars of resilience, through proposed policy actions and resilience actions. This lens approach accepts that all growth is unbalanced, but attempts to reconcile unbalanced growth and inclusive development as main policy target, allowing for better spatial integration

It is **proposed** that the resilience pillars of peripheral regions be measured in a similar manner, with the available data in different contexts, to firstly determine the structurally most vulnerable pillar. In focusing attention on the weakest pillar, the entire region`s strength and robustness will be enhanced. The stability of all three pillars are key to enhanced resilience.

This will subsequently be illustrated in the study-area specific proposals (refer Section 8.3.2).

The first resilience pillar (sectoral composition) is believed to be mainly derived from the constant tension between the levels of adaptation and adaptability (refer Section 4.4.3.1, 4.4.3.3) in the main economic sectors in the peripheral region. This tension is further complicated through the presence of related and unrelated variety within the 22 economic subsectors.

The policy focus should typically support maintenance of the sectors and industries of comparative advantage on the regional scale, but strongly focusing on sectoral comparative advantage within the **national** scale (if present). This will establish and strengthen the identified peripheral growth centres as centres of national competitiveness. Primary policy actions available for such intervention include, but is not limited to, (i) broadening the sectoral base through focusing on industries with potential, (ii) stimulating and supporting local economic development in diverse sectors; (iii) support and enhance regionalism; and (iv) targeting investment on locality-specific and nationally acknowledged and supported regional growth poles.

The second resilience pillar, knowledge networks, is dependent on the extent and quality of the innovation network within a region (refer Section 4.4.3.4). It has been established that the mere presence of infrastructure cannot specifically be associated with high levels of innovation and technological advantage, but rather a mind-set of change, being open to possibilities and ready for innovation injections.

The primary policy actions in support of the knowledge network pillar includes DPA and SOC investment, through the establishment and support of special economic zones in a spatially targeted manner, providing opportunities and infrastructure for skills training, with a focus on activities in support of the industries related to the dominant sectors in the specific region in an attempt to enhance adaptability and prepare better for potential shocks. The establishment of centres of expertise (in a targeted spatial approach) to support entrepreneurial ventures through training and providing business support and venture capital in industries of highest potential are further policy actions to consider. Actively utilising the innovation readiness within regions illustrating innovation potential will further strengthen this pillar of shock absorbance.

The final resilience pillar, institutions, which will further attribute to wearing a PPRR-lens within global peripheral regions, are supported by the resilience actions of local leadership, institutional arrangement and adaptive capacity within the governance structure. Leadership and ownership of policy actions and instruments are crucial and the most significant of the three pillars. Without strong and adaptive leadership integrated with supporting governance structures in a vertical and horizontal manner, the strength of the other pillars is diminished, essentially rendering the region vulnerable and exposed to shocks.

Primary policy actions postulated by the PPRR-lens to be incorporated in peripheral regions include (i) capacity building of all levels of government; (ii) institutional layering; (iii) horizontal and vertical integration to prevent a silo-approach to policy making and implementation; (iv) dedicated Ministry focused only on regional development and planning; (v) Regional Development Agencies as mid-tier development specialists translating national goals into local opportunities, and vice versa; (vi) Territorial proofing of all national and regional policy documents across all sectors with a typical PPRR-lens approach to determine and foresee any cross-sectoral impacts and implications; and lastly (vii) regionalisation in a top-down manner to achieve better efficiency and effectiveness of programs on regional scale, with specific reference to peripheral regions. This will further allow for improved execution as regional authorities will be accountable to a higher level of control.

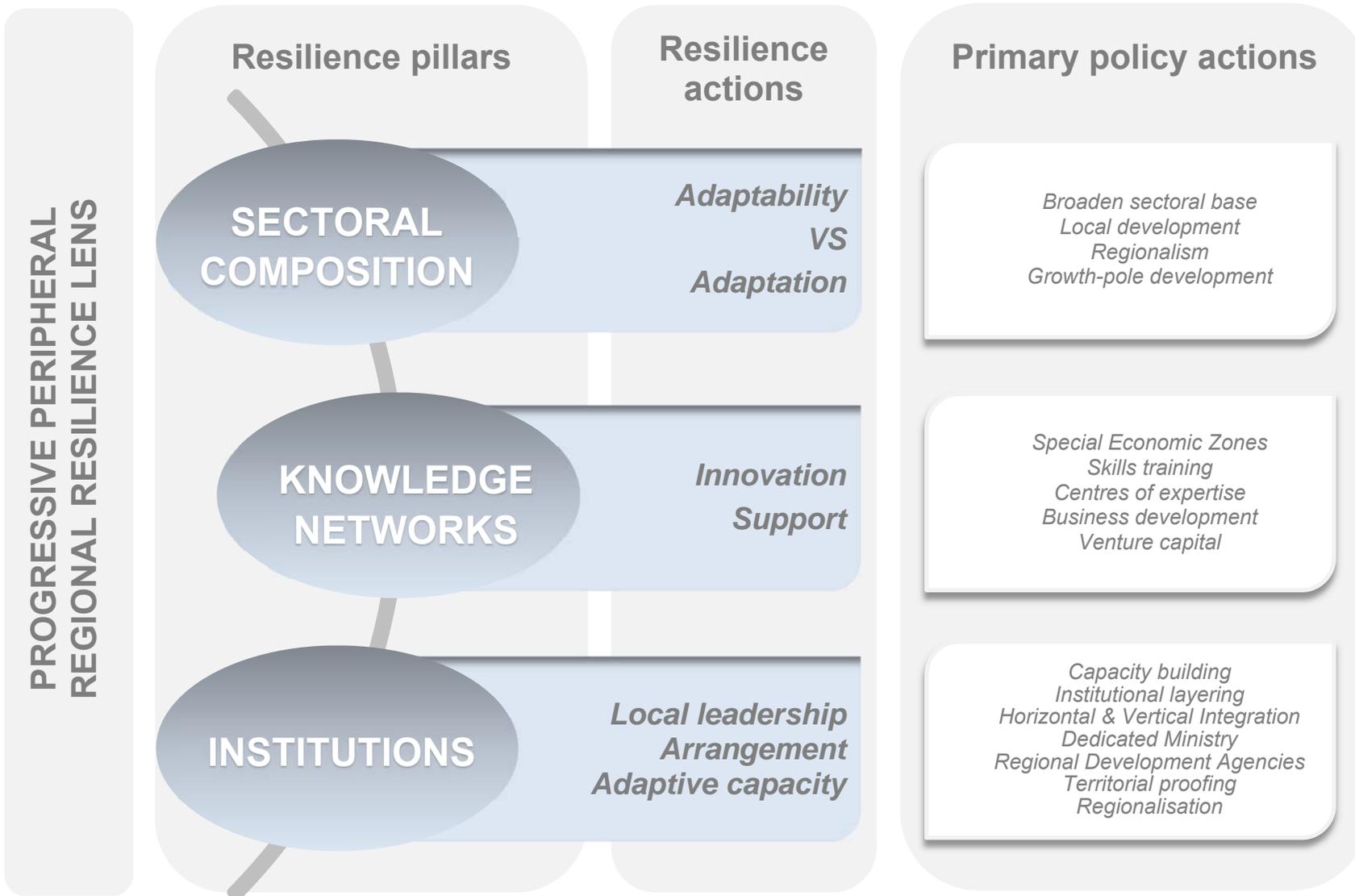


Figure 8-12 Progressive peripheral regional resilience lens

The abovementioned proposals are informed by the best-practice approaches identified through the in-depth international policy analysis of the 17 case-study countries, as well as regional policy approaches and regional development theories studied. The subsequent section will be focused on the practical implementation of the PPRR-lens approach, based on the five peripheral PRs as example for application.

8.3.2 South African peripheral regions

The quantitative analysis provided insight into unique challenges of each PR as identified (refer Section 7.2) within peripheral South Africa. The analysis of indicators of the resilience pillars allows for a more specific and practical approach to strengthening the single pillars of each PR into an inclusive more robust peripheral region. Before any specific recommendations are made, each of the PRs are plotted on the proposed “integrated stages theory” continuum, illustrating the pertinent relationship between the stages of regional growth (refer Section 3.4.2), the hierarchical distribution of the associated settlements based on peripherality (refer Section 3.4.2) and the coupled economic drive (refer Sections 3.5, 3.6, Table 3-3) in relation to the stage of economic development and the level of regional interaction over time. In accordance with the World Bank’s approach (refer Table 3-3) to calibrating a policy response for economic integration, the extent and focus of the PPRR-lens policy response will be based on the complexity of the challenge posed to the three pillars (refer Figure 8-13). Deriving from the categorisation of the World Bank, South Africa, and more specifically the five PRs within the study area, is recognised as a region with a “three-dimensional predicament” (refer Section 3.6). The PRs exhibit characteristics of local areas with advanced levels of urbanisation that have within-settlement divisions (in this instance due to political agendas), with an elevated occurrence of lagging settlements and domestic backwardness, accompanied by their national and global setting distant from world markets, and finally with minor economies in relation to the South African space economy and the world economy.

The subsequent figure illustrates the level of peripherality (as recognised in South Africa) of regions in context with the stage of development (according to growth stages theory) and the appearance of spatial hierarchy (according to core-periphery theory). It is argued and proposed, that similar to economic development phases (accepted as not having definite borders) the various peripheral regions move through similar phases with characteristics similar to the stages-theories (refer Section 3.4.2, 3.4.3).

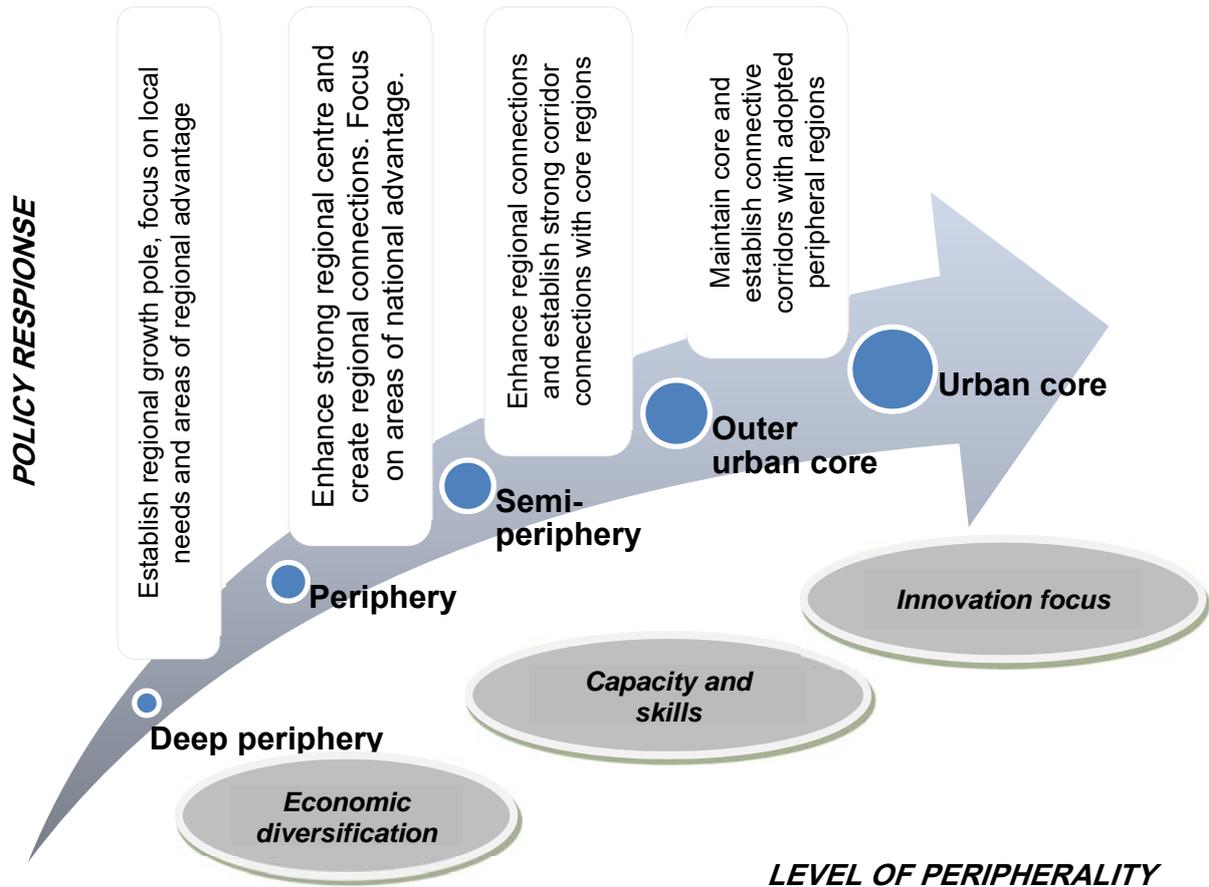


Figure 8-13 Temporal perspective: peripherality and associated policy response

Source: Own representation

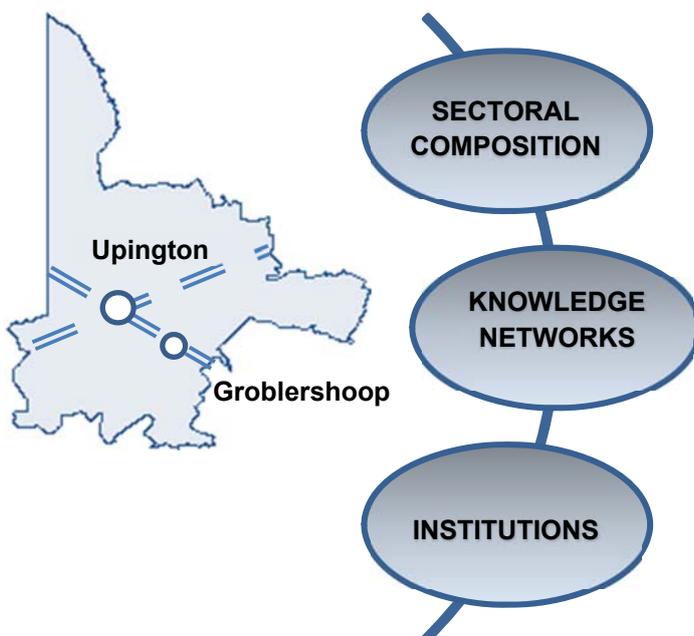
The temporal perspective illustrates that the level of peripherality will determine the level and intensity of investment, as well as the main policy action (i.e. economic diversification, capacity and skills development, or innovation focus). The deepest level of periphery will mostly have an inward-focus with regard to the proposed policy response, initially focusing on strengthening the region through the identification of a single strong centre of regional potential. In this instance the region will aim to increase its growth potential with a focus on specific local advantage. The second level of peripherality is proposed to move from a level of one strong regional centre to establishing connections with other centres of potential within the region. The region will only then be able to focus on being more adaptable with regard to economic diversification enhancing skills and capacity in ancillary industries. As the region reaches the last peripheral stage, the policy response will also change to an innovation focus, continuing to strengthen the local hierarchical structure, but also enhancing corridor connections with the urban core.

This does not postulate that a peripheral region should only focus on a single pillar at a time, nor does it propose a one-size-fits-all approach to regional resilience. It generalises the South African space economy with assumptions that levels of peripherality across the country will pose similar constraints and characteristics with regard to the economy, the knowledge networks and the institutional presence and capacity.

It has been established as crucial to the success of policy actions and programmes to develop and adjust policy in an innovative manner to localised needs and unique challenges, constantly seeking to balance policy adaptation levels with the adaptability and flexibility of policy for distinctive circumstances. To further illustrate a process of unique policy for unique localities, the following proposals (refer Figure 8-14, Figure 8-15, Figure 8-16, Figure 8-17, Figure 8-18) identify the worst faring pillar(s) within each of the PRs (highlighted in the table), with PR-specific policy proposals. The proposals for each PR and each of the pillars are based on the PPRR-lens approach, and the findings of the statistical data analysis (refer Section 7.4). A conceptual map (not to scale) of each of the PRs illustrate the concepts of regional growth poles as the main focus and most intense areas of policy interventions, followed along the progressive corridor with lesser intensive but targeted investment, and linking with the urban core as node of continued, but muted, maintenance-type investment.

PLANNING REGION

1



PILLAR 1

- Focus on the 5 sectors of national CA
- Focus specifically on the secondary sector industries of national CA, i.e. “other non-metal mineral products”, and “electricity, gas and water”
- Identify and establish regional growth pole with strong connection to PR core (i.e. **Upington**)
- Connect regional growth pole through **N14 corridor** to Springbok (W) and Kuruman (NE)
- Connect and strengthen regional growth pole along **N10 corridor** with Namibia (NW) and Groblershoop (SE)
- Utilise agricultural and tourism potential along the Orange River basin
- Utilise the importance and capacity of the Upington Airport to enhance exports and increase access to the rest of the Province

PILLAR 2

- Least resilient pillar in PR1
- Enhance active access to ICT
- Focus on utilising the region’s readiness for innovation, with a focus on related-industries as identified in Pillar 1
- Skills training centres related to industries of national advantage and provincial advantage.
- Provide business support and venture capital targeted at industries related to industries of comparative advantage.
- Focus on establishing PSET related to the two national industries of comparative advantage in regional growth pole as identified in Pillar 1

PILLAR 3

- Continue to improve institutional sector
- 3rd level of assurance to be the focus, i.e. municipal council and municipal public accounts committee
- Institutional layering and plasticity is possibility
- Establishment of RDA in conjunction with other PRs
- Continued DPA and SOC investment in basic services

Figure 8-14 PR1 – PPRR-lens policy proposals

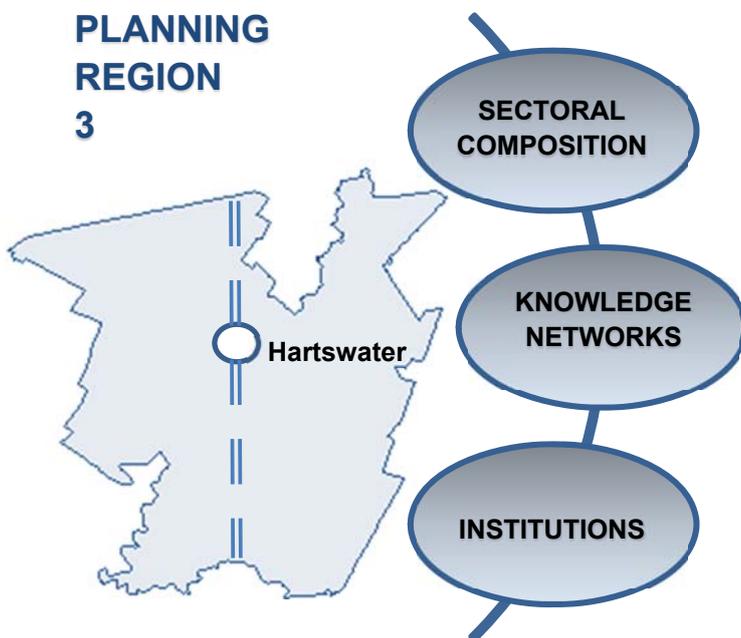
Source: Own representation



<p>PILLAR 1</p> <ul style="list-style-type: none"> • Pillar should receive immediate attention • Identification of a strong growth-pole (i.e. Kuruman) • Focus on strengthening a national and/or regional corridor, along the N14 corridor, connecting with Vryburg (E) and Upington (SW) • Dependence on primary sector too high • Strong focus on diversification of economic sectors • National advantage in “mining and quarrying” to be utilised to advantage • BUT strong focus on Industry 8 “metals, metal products, machinery and equipment” to be utilised to advantage (provincial CA)
<p>PILLAR 2</p> <ul style="list-style-type: none"> • Pillar to be part of medium to long-term vision • High readiness ICT access provides opportunity for growth
<p>PILLAR 3</p> <ul style="list-style-type: none"> • Pillar should receive immediate and drastic intervention • Immediate intervention required in leadership oversight, HR management and IT governance • Immediate intervention required in financial and performance reporting • Immediate intervention required in risk management • Lessen dependence on consultants • Key positions to be filled with immediate effect – focusing on capacity • Monitoring and evaluation of KPAs with personal consequences in case of poor performance • Political leadership to be held responsible and accountable with consequences linked to outputs • Skills training and capacity enhancement of especially the municipal leadership, followed by interventions for management staff • Institutional layering and plasticity is possibility • Establishment of RDA in conjunction with other PRs • Focus DPA and SOC funds on service delivery

Figure 8-15 PR2 – PPRR-lens policy proposals

Source: Own representation



- PILLAR 1**
- Strong and skewed dependence on tertiary sector
 - Presence of 50% outer urban core regions allows for stronger focus on secondary /manufacturing sectors due to proximity to large markets
 - Allow for identification of second regional growth pole within the deep peripheral regions, i.e. **Hartswater**, exhibiting characteristics of high growth potential and intermediate human needs
 - Strengthen **N12 / N18 corridor** to Kimberley (S) and Vryburg (N)
 - Nine industries of provincial advantage in secondary industries should receive highest focus to diversify the larger economy
 - National advantage in Industry 13 “Electricity, gas and water” to be exploited intensely
 - Continue to focus on tertiary advantage industries on national level

- PILLAR 2**
- Strongest pillar within the PR
 - Utilise high readiness and available PSET infrastructure to the advantage of this pillar
 - Support secondary sector development through the utilisation and expansion of existing PSET infrastructure
 - Focus on skills training in manufacturing sector through enhanced occupational training

- PILLAR 3**
- Weakest pillar in the PR
 - Leadership oversight responsibility and effective policies and procedures need immediate attention
 - Processing and reconciling controls in the financial and performance management needs immediate attention
 - Skills training and capacity enhancement of especially the municipal leadership, followed by interventions for management staff
 - Municipal Manager to be reassessed and held accountable for poor outputs
 - Municipal Public Account Committee to be assessed for poor assurance
 - Institutional layering and plasticity is possibility
 - Establishment of RDA in conjunction with other PRs
 - DPA and SOC investment in basic services required

Figure 8-16 PR3 - PPRR-lens policy proposals

Source: Own representation



<p>PILLAR 1</p> <ul style="list-style-type: none"> • Focus on Industry 1 (Agriculture, forestry and fishing to utilise advantage and stimulate primary sector • Focus on Industries 3, 9, 13 and 14 in secondary sector to strengthen in provincial context • Focus strongly on Industries 13 and 14 to utilise advantage on national level and support strengthening of secondary sector. • Continue to build upon strengths in tertiary sector industries with advantage on national level (Industries 15,16, 17, 21 and 22) • Identify and stimulate development within a regional growth-pole, i.e. De Aar, exhibiting high development potential and low human need. • Strengthen development along the N10 corridor to connect De Aar with Upington (NW), and Cradock (SE)
<p>PILLAR 2</p> <ul style="list-style-type: none"> • Stimulate active access to ICT through establishing centres of expertise, to provide both skills training and technological support • Invest venture capital in entrepreneurial businesses focused on innovation industry • Provide business support for expansion and new ventures in the innovation industry • Initiate and support PSET development through DPA and SOC investment within the growth pole
<p>PILLAR 3</p> <ul style="list-style-type: none"> • Leadership oversight responsibility need immediate attention • Reporting and IT systems control in the financial and performance management needs immediate attention • Skills training and capacity enhancement of especially the municipal leadership, followed by interventions for management staff • Poor governance in especially risk management and audit committee needs immediate attention. • Above issues to be addressed through capacity building ad skills training • Management and leadership to take full responsibility and suffer consequences for poor performance • Key positions to be filled with immediate effect – focusing on capacity • Monitoring and evaluation of KPAs with personal consequences in case of poor performance • Political leadership to be held responsible and accountable with consequences linked to outputs • Institutional layering and plasticity is possibility • Establishment of RDA in conjunction with other PRs

Figure 8-17 PR4 - PPRR-lens policy proposals

Source: Own representation

**PLANNING
REGION
5**

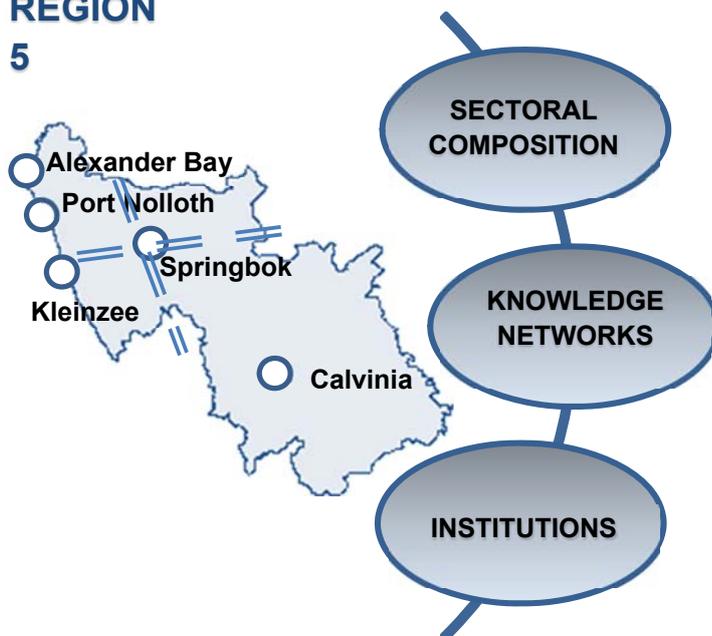


Figure 8-18 PR5 - PPRR-lens policy proposals

Source: Own representation

<p style="text-align: center;">PILLAR 1</p> <ul style="list-style-type: none"> • Focus should be on enhancing the contribution of the secondary sector • Poor levels of provincial advantage, focus to be on Industry 6 – “Petroleum products, chemicals, rubber, and plastic”, followed by Industry 2 “mining and quarrying” • Focus on national advantage within the primary sector, i.e. agriculture, forestry and fishing, and mining and quarrying. • Utilise locational advantage along the west coast of South Africa, focused on wind power, tourism and port development (Port Nolloth, Alexander Bay) • Establish regional growth poles, i.e. Springbok, Calvinia, Alexander Bay and Kleinzee (all with high development potential and low need) to strengthen the hierarchical distribution of a very rural region • Link the regional N7 corridor with Cape Town (S) and Namibia (N), and along the N14 corridor linking with Upington (E) • Focus on sectors ancillary to the SKA development.
<p style="text-align: center;">PILLAR 2</p> <ul style="list-style-type: none"> • Very large passive access to ICT • Improve active ICT through infrastructure provision • Support business development in the innovation sector through venture capital and skills training • Support skills training in the tourism sector • Support capacity building and skills training focused on the secondary sector, i.e. occupational category • Support skills training in SET sector for support to SKA • Enhance and establish PSET development and opportunities
<p style="text-align: center;">PILLAR 3</p> <ul style="list-style-type: none"> • All levels of assurance need immediate attention • Management, municipal manager and mayor to be held accountable and suffer consequences of poor performance • Key positions to be filled with immediate effect – focusing on capacity • Monitoring and evaluation of KPAs with personal consequences in case of poor performance • Institutional layering and plasticity is possibility • Establishment of RDA in conjunction with other PRs and the Western Cape Province • RSDf proposed between NC and WC government to strengthen west coast tourism specifically

8.4 Concluding remarks and areas of future research

In an attempt to provide a regional policy framework for a more resilient peripheral region, this research concurred with the three problem statements identified (refer Section 1.2) through systematic analysis of both the literature and empirical investigation and substantiation. It is agreed that regional growth alone (as a natural process) does not form a sound foundation for regional resilience in accordance with the pillars identified. A regional developmental approach (as an interventionist tactic) through spatial targeting within objectively identified localities and through a continuous strive towards a dynamic stability between the three pillars, will establish a truly integrated regional system of core and periphery.

Through a process of decentralised-concentration (utilising the policy instruments as identified) in both regional growth centres (regional level) and growth points (sub-regional level) the capacity of the peripheral region to robustly recover from, and enhance its prowess during and after a shock or slow-burn process, will be enriched. The focus on decentralised-concentration in an allocative (through optimal spatial allocation and use of natural resources) and innovative (taking into account institutional and socio-economic structure of the region) manner, will yield a peripheral region with a dynamic relationship between unbalanced spatial development and inclusive socio-economic development. In support hereto, institutional collective action by a responsive and accountable local and regional government, operating beyond their functional limits, will reinforce and amplify development in the peripheral region.

The proposed progressive peripheral regional resilience lens outlook allows for a certain manner of contemplating and approaching the peripheral region in an evolutionary approach to policy making – taking into account where the region comes from, what type of dynamic exists between settlements within the region, determining the weaknesses amongst the three pillars of regional resilience and arriving at a custom-designed policy approach to a more resilient peripheral region.

As with any inquiry with a novel focus, various potential areas for future research (outside the scope of this particular study) came forth as the research progressed. Potential areas for future research are concisely itemised as conclusion to this study:

- *Building on existing findings:* As previously discussed as part of the limitations of this study, various statistical analyses could be performed on the indicators forming part of each of the three pillars of regional resilience.
- *Examining the framework in a new context:* Extending the proposed framework to other peripheral areas within South Africa, and within an international context.
- *Reflecting on the existing framework:* Over time, a reflection on the existing framework will be possible as policy implementation becomes visible, or as the regional context changes.

- Expanding the proposed framework: Including various supplementary indicators within the three pillars of regional resilience (also identified within Section 1.8) for the purpose of quantitative regional analysis.
- Design of area specific regional policy: Similar to the study-area specific recommendations (refer Section 8.3.2), lawfully binding regional policy could be designed for a specific region in conjunction with governmental and private role-players to implement the framework as proposed.
- Examining implementation mechanisms and bodies: Keeping with the pragmatic approach, mechanisms for the implementation of proposed policy initiatives could be explored, i.e. Regional Development Agencies.
- Measuring the impact of policy initiatives over time: As stated previously, the impact of policy is difficult to measure over the short and medium term. Over a longer period, the implication and impact of enacted policy guidelines could be statistically measured.



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ANNEXURE A

CONTENT ANALYSIS: REGIONAL POLICY OF 17 CASE STUDY COUNTRIES

CASE STUDY COUNTRIES	GOVERNANCE		PERIPHERALITY	PROBLEMS	OBJECTIVES	FRAMEWORK		ACTORS	
						Regional policy	Focus (rural / urban / regional)	Policy intervention units (administrative / functional)	Lead Regional Ministry / Agency
Australia	<i>Non-EU</i>	Federal	9th most decentralised; 30% rural & intermediate	Inter-regional disparities	Strong emphasis on infrastructure provision; Develop Regional Plans; Economic diversification; Industrial restructuring,	No over-arching framework; White Paper on Developing Northern Australia (2015); Agricultural Competitiveness White Paper (2015)	Rural, regional and urban separated	571 municipal; 8 regional	Department of Infrastructure and Regional Development
Canada	<i>Non-EU</i>	Federal	most decentralised; 43% rural	Inter-regional disparities	Place-based economic development.	RDA have own document	Rural, regional and urban separated	3805 municipal; 13 regional	6 RDA; Innovation, Science and Economic Development Canada (ISED)
Chile	<i>Non-EU</i>	Unitary	16% intermediate; 36% rural	Inter-regional disparities; Access to peripheral areas; Administratively fragmented.	Targeted infrastructure investment	Decree N°18.359 (1985) National Urban Development Policy (2013); National Rural Development Policy 2015-2025 (2014)	Rural, regional and urban separated	345 municipal; 15 regional	Ministry of Interior (Undersecretary of Regional Development, SUBDERE)
Denmark	<i>EU</i>	Unitary	2nd most decentralised. 29% rural; 49% intermediate	Economic development	Business development. Business support. Training. Competitiveness in all regions.	Business Development Act (2005, renewed in 2014)	Rural and regional	98 municipal; 5 regional	Ministry of Business and Growth
Estonia	<i>EU</i>	Unitary	11% intermediate; 45 % rural and remote	Inter-regional disparities	Regional economic drivers. Rural-urban linkages through transport. Region-specific clusters. Development capacity at local level.	National Regional Development Strategy (RDS) 2014-2020 National Regional Development Strategy (RDS) 2014-2020; National Spatial Plan: Estonia 2030+	Regional and urban	213 municipal	Ministry of Finance (Regional Development Department)
Finland	<i>EU</i>	Unitary	30% intermediate; 40% rural and remote	Inter-regional disparities	Increasing resilience to industrial shocks; improving economic drivers through business and innovation support	Act on Regional Development (2014) Government decision on national regional development priorities 2016-2019 (2016) Regional Strategy 2020 (2010); Structural Funds Programme in Finland: Sustainable Growth and Employment 2014-2020	Regional and urban	1 regional; 313 municipal	Ministry of Economic Affairs and Employment
Hungary	<i>EU</i>	Unitary	36% intermediate; 47% rural and remote	Inter-regional disparities	Reducing disparities; Competitiveness; Balanced growth; Accessibility; Sustainability	Act on Territorial Development and Spatial Planning (XXI/1996, amended in 2016); National Development 2030- National Development and Territorial Development Concept (2014)	Urban and rural	19 regional; 3178 municipal	Ministry for National Economy
Iceland	<i>Non-EU</i>	Unitary	36% intermediate; 64% rural	Inter-regional disparities	Infrastructure; Capacity of sub-national government; Balanced growth; Economic diversification; Innovation	Parliamentary resolution on a Strategic Regional Plan for the years 2014-2017	Rural and regional	74 municipal	Steering Committee for Rural development; Ministry of Industries and Innovation
Ireland	<i>EU</i>	Unitary	2nd least decentralised; 44% intermediate; 28% rural	Inter-regional disparities	Competitive regions; Business support and funding	National Spatial Strategy (2002-2020) National Spatial Strategy (2002-2020); Action Plan for Jobs, 2016	Regional and urban	31 municipal	Department of Environment, Community and Local Government
Italy	<i>EU</i>	Unitary	43% intermediate; 20% rural and remote	Inter-regional disparities	Reducing disparities; Infrastructure investment; Institutional capacity; Access to public services	Partnership Agreement with the EU (2014-2020)	Rural, regional and urban separated	107 intermediate; 22 regional	Department for Cohesion Policy – Presidency of the Council of Ministers

New Zealand	<i>Non-EU</i>	Unitary	55% intermediate	Economic development	Innovation; Competitiveness; Lagging regions; Business support; Innovation	Business Growth Agenda (BGA 2015); Regional Growth Programme (2014)	Rural and regional	67 municipal; 11 regional	Ministry of Business, Innovation and Employment (MBIE)
Norway	<i>Non-EU</i>	Unitary	44% intermediate; 32% rural	Economic development	Sustainability; Hard and soft infrastructure; Distressed areas; Cluster policies; Training	White Paper On Rural and Regional policy (2013)	Rural, regional and urban combined	428 municipal; 18 regional	Ministry of Local Government and Modernisation
Poland	<i>EU</i>	Unitary	39% intermediate; 33% rural and remote	Economic development	Competitiveness; Capacity building; Territorial cohesion; SEZ; Infrastructure investment in innovation	National Strategy for Regional Development 2010-2020	Regional and urban	2478 municipal; 380 intermediate; 16 regional	Ministry of Development
Portugal	<i>EU</i>	Unitary	27% intermediate; 20% rural and remote	Inter-regional disparities	Competitiveness; Access to public services; Clusters; Incentives for targeted workforce training.	Partnership Agreement with the EU (2014-2020)	Rural, regional and urban separated	308 municipal; 2 regional	Secretary of State in the Ministry of Infrastructure and Development
Slovenia	<i>EU</i>	Unitary	57% (intermediate) 43% (rural & remote rural) 11th most centralised	Inter-regional disparities	Achieving balanced growth; Reviving areas distressed by industrial shocks; Focus on smart specialisation (innovation clusters)	Promotion of Balanced Regional Development Act, 1999. Spatial Development Strategy of Slovenia, 2004	Rural, regional and urban separated	Functional - 12 development regions; 212 municipal	Ministry of Economic Development and Technology (Regional Development Directorate)
Sweden	<i>EU</i>	Unitary	62% intermediate; 16% rural and remote	Economic development	Innovation; Quality of Life; Labour market supply; Public services; Skills development; Transportation systems	National Strategy for Sustainable Regional Growth and Attractiveness (2015-2020)	Rural, regional and urban combined	290 municipal; 21 regional	Ministry of Enterprise and Innovation
Turkey	<i>Non-EU</i>	Unitary	36% intermediate; 30% rural and remote	Inter-regional disparities	Competitiveness; Infrastructure; Coherence in policy	Tenth National Development Plan (2014-18)	Rural, regional and urban separated	1397 municipal; 81 regional	Ministry of Development

ANNEXURE B

EASYDATA (QUANTEC)

Contents

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Data sets

These are collections of tables, which are grouped as follows:

1. Annual time series projected for the period 1995-2015, for 269 local municipalities/ward-based regions for metros (2011 demarcation):
 - 1.1. International Trade
 - 1.2. Demographics
 - 1.3. Development Indicators
 - 1.4. Gini coefficient
 - 1.5. Labour
 - 1.6. Household Income & Expenditure
 - 1.7. Income & Production
 - 1.8. Capital Formation
 - 1.9. Location quotient for GVA
 - 1.10. Tress index for GVA
2. Poverty line: MLL (Minimum Living Levels) in current Rand, of previously disadvantaged households 1995-2015 (for 13 selected former segregated urban areas)
3. Human Development Index 1995-2010 (on 2006 district council level)

Sources

The data sets have been projected using the following sources:

1. Annual time series projected for the period 1995-2014 for 269 local municipalities/ward-based regions for metros (2011 demarcation):
 - 1.1. International Trade
 - South African Revenue Service data by postal code
 - 1.2. Demographics

- Population Censuses 1996, 2001, 2011 StatsSA on sub place level
- Demographic/AIDS model 2008 ASSA (Actuarial Society) on provincial level
- Mid-year Population Estimates 2015 StatsSA on provincial level

1.3. Development Indicators

- Population Censuses 1996, 2001, 2011 StatsSA on sub place level
- Demographic/AIDS model 2008 ASSA (Actuarial Society) on provincial level
- Mid-year Population Estimates 2015 StatsSA on provincial level

1.4. Gini coefficient

- Population Censuses 1996, 2001, 2011 StatsSA on sub place level
- Income and Expenditure Surveys 1995,2000,2005,2010 StatsSA (0.2% sample of households) on provincial level

1.5. Labour

- Population Censuses 1996, 2001, 2011 StatsSA on sub place/ward level
- Demographic/AIDS model 2008 ASSA (Actuarial Society) on provincial level
- Mid-year Population Estimates 2015 StatsSA on provincial level
- Household Surveys 1995-current StatsSA (0.2% sample of households) on provincial level
- Quarterly Employment Statistics 2006-current StatsSA (over 20 000 non-agricultural enterprises) on national level
- Labour Force Surveys 2000-current StatsSA (0.2% sample of households) on provincial level
- Industry Censuses (various) StatsSA on national level

1.6. Household Income & Expenditure

- Population Censuses 1996, 2001, 2011 StatsSA on sub place level
- Demographic/AIDS model 2008 ASSA (Actuarial Society) on provincial level
- Mid-year Population Estimates 2015 StatsSA on provincial level
- Household Surveys 1995-current StatsSA (0.2% sample of households) on provincial level
- Household Consumption Expenditure 1995-current SARB by durability on national level
- Income and Expenditure Surveys 1995,2000,2005,2010 StatsSA (0.2% sample of households) on provincial level
- National Accounts 1993-current StatsSA (published & unpublished) by industry on national & provincial level
- National Accounts SARB (published & unpublished) on national level
- Quantec Standardised Industry databank 1970-current by industry on national level

1.7. Income & Production

- Population Censuses 1996, 2001, 2011 StatsSA on sub place level
- Demographic/AIDS model 2008 ASSA (Actuarial Society) on provincial level
- Mid-year Population Estimates 2015 StatsSA on provincial level
- Large sample surveys (various) StatsSA (industry-specific, on enterprise level) on national level
- Annual Financial Statistics 2006-current StatsSA
- National Accounts 1993-current StatsSA (published & unpublished) by industry on national & provincial level
- National Accounts SARB (published & unpublished) on national level
- Quantec Standardised Industry databank 1970-current by industry on national level

1.8. Capital Formation

- Population Censuses 1996, 2001, 2011 StatsSA on sub place level (*awaiting 2011 INDUSTRY profile from Statistics SA*)
- Demographic/AIDS model 2008 ASSA (Actuarial Society) on provincial level
- Mid-year Population Estimates 2015 StatsSA on provincial level
- Annual Financial Statistics 2006-current StatsSA
- National Accounts 1993-current StatsSA (published & unpublished) by industry on national & provincial level
- National Accounts SARB (published & unpublished) on national level
- Quantec Standardised Industry databank 1970-current by industry on national level

1.9. Location quotient for GVA

- Regional Socio-Economic Analysis, Development Bank of Southern Africa, March 2006
- Population Censuses 1996, 2001, 2011 StatsSA on sub place level
- Demographic/AIDS model 2008 ASSA (Actuarial Society) on provincial level
- Mid-year Population Estimates 2015 StatsSA on provincial level
- Large sample surveys (various) StatsSA (industry-specific, on enterprise level) on national level
- Annual Financial Statistics 2006-current StatsSA
- National Accounts 1993-current StatsSA (published & unpublished) by industry on national & provincial level
- National Accounts SARB (published & unpublished) on national level
- Quantec Standardised Industry databank 1970-current by industry on national level

1.10. Tress index for GVA

- Regional Socio-Economic Analysis, Development Bank of Southern Africa, March 2006

- Population Censuses 1996, 2001, 2011 StatsSA on sub place level
 - Demographic/AIDS model 2008 ASSA (Actuarial Society) on provincial level
 - Mid-year Population Estimates 2015 StatsSA on provincial level
 - Large sample surveys (various) StatsSA (industry-specific, on enterprise level) on national level
 - Annual Financial Statistics 2006-current StatsSA
 - National Accounts 1993-current StatsSA (published & unpublished) by industry on national & provincial level
 - National Accounts SARB (published & unpublished) on national level
 - Quantec Standardised Industry databank 1970-current by industry on national level
2. Poverty line: MLL (Minimum Living Levels) in current Rand, of previously disadvantaged households 1995-2015 (for 13 selected former segregated urban areas)
- Minimum Living Levels (MLLs) of previously disadvantaged households living in former segregated urban areas 2002 and 2003: Bureau of Market Research, University of South Africa, Research Report No. 319, March 2003
 - StatsSA CPI 1995-2015
3. Human Development Index 1995-2010 (on 2006 district council level)
- UNDP Human Development Report 2011: Explanatory note on 2011 HDR composite indices - South Africa <http://hdrstats.undp.org/images/explanations/ZAF.pdf>
 - Demographic/AIDS model 2003 ASSA (Actuarial Society) on provincial level
 - Barro-Lee Educational Attainment Dataset www.barrolee.com
 - Community Survey 2007 StatsSA (2% sample of the population) on local municipal level
 - DOE Education Statistics in South Africa 1995-2010 <http://www.education.gov.za/LinkClick.aspx?link=462&tabid=57&mid=1315>
 - Mid-year Population Estimates 2010 StatsSA on provincial level
 - Population Censuses 1996, 2001 StatsSA on sub place level
 - Large sample surveys (various) StatsSA (industry-specific, on enterprise level) on national level
 - National Accounts 1993-current StatsSA (published & unpublished) by industry on national & provincial level
 - National Accounts SARB (published & unpublished) on national level
 - Quantec Standardised Industry databank 1970-current by industry on national level
 - StatsSA GDP by province 1995-2010

Disclaimers/Notes

Seeing that this data is estimated with desktop studies based on the best official data available, our projections should not be used for absolute values and interpretation or cyclic analysis, but

rather for comparative study of the profiles of local municipalities and regions inside metros and of changes over time.

1. Annual time series projected for the period 1995-2014, for 269 local municipalities/ward-based regions for metros (2011 demarcation):

1.1. International Trade

The data received from SARS are subject to a number of limitations which should be kept in mind when using this dataset and may explain potential inaccuracies in the data:

- Provincial import and export figures from SARS are tied to postal codes. These are the postal codes of the head office or agent that report importing and exporting activity. The import and export statistics for each province and municipality are calculated by aggregating the figures for all postal codes in each region.
- Two issues are inherent in the SARS data: Firstly, the postal codes may not reflect the actual importer/exporter address but that of an agent that handles the international trade (smaller agricultural exporters are a good example of this). The agent may therefore not be in the same province/municipality as the exporter or importer. Secondly, while the importer or exporter may have several branches, all international trade transactions may be handled by head office – as in the petroleum and mining industries. The head office may therefore not be in the same province/municipality as the branches.
- Given the postal code limitations, gold and platinum exports and imports are assigned only to provinces where the mining of these commodities takes place. In the near future this will also be done for other mined commodities, particularly iron and coal.
- This merchandise dataset does not include the trade in services. The service sectors are therefore not included under the SIC4 and QSIC classifications.
- From 2010 onwards, SARS has made detailed merchandise trade data for South Africa with other members of the Southern African Customs Unions (SACU) – Botswana, Lesotho, Namibia and Swaziland (BLNS) – available. Prior to 2010 the data for the BLNS countries was only partially published.

1.2. Demographics

1.3. Development Indicators

1.4. Gini coefficient

Seeing that we have not yet included the tax data per municipality, the Gini including taxes will not yet show variation between municipalities.

1.5. Labour

Any employment estimates in South Africa are fraught with difficulties and should be used with care. This is even more so at the regional level, and stems largely from the historical lack of consistent and comprehensive surveys based on both the enterprise and household populations.

Statistics South Africa's Households Surveys and Labour Force Surveys are household-based surveys. The current sample size is approximately 30 000 households (0,2% of all households). The actual households included in the samples change over time. These surveys are therefore not well suited for industry and/or provincial dissemination of employment data with any high degree of confidence. However, it is good at estimating overall employment and unemployment. The surveys also split employment between

formal and informal employment, although the formal and informal employment and unemployment estimates vary considerably over time. Definitional changes also played a role in this.

In contrast to the household surveys, the Quarterly Employment Statistics is a quarterly enterprise-based survey covering a sample of approximately 20 797 (VAT registered) private and public enterprises in the formal non-agricultural sector. Only national employment and earnings statistics are estimated from the survey information. The survey gives a good indication of formal employment by sector. The sample for the QES is designed and drawn from StatsSA's Business Sample Frame (BSF), which includes VAT-registered enterprises, PAYE and UIF contributors.

Two main shortcomings of the QES therefore are:

- First, its coverage is not comprehensive because both the agricultural and informal sectors and non-VAT paying firms are not surveyed, and PAYE and UIF contributors only since 2015.
- Secondly, major discontinuities exist in the QES as certain sectors were alternately included and excluded from the survey's coverage. For instance, data before and from the first quarter of 1998 and data before and from the third quarter of 2002 are strictly not comparable. It is possible to circumvent this problem by statistically linking the time series in order to provide continuous (albeit imperfect) employment time series.

Quantec attempts to overcome these shortcomings by relying on most of the above sources to estimate regional employment for 26 industries. The various population censuses provide a benchmarking basis for estimating employment, unemployment and the labour force on a regional basis. The regional estimates are benchmarked on the national estimates from the EasyData Standardised Industry Database, which are compatible with the labour remuneration statistics in the National Accounts. Regarding the discontinuities in the QES, Quantec linked the old SEE (before the services industries were comprehensively covered), the new SEE (phased in from 1985) and the QES (phased in from 2006 onwards). Previously, the DBSA Standardised Employment Series was used as the basis to give estimates of the service industries.

Regional estimates of industry employment (formal and informal) as well as unemployment should be used as medium-term indicators. Short-term results from the LFS are problematic because of the high levels of variation caused by the sample size and definitional issues (the Western Cape LFS sample is normally based on approximately 4 000 households or 8 000 workers).

1.6. Household Income & Expenditure

Household income and consumption expenditure is estimated from the Household Surveys and Income and Expenditure Surveys and benchmarked on the SARB income and expenditure by durability.

1.7. Income & Production

The regional estimates are benchmarked on the national estimates from the EasyData Standardised Industry Database, which are compatible with the labour remuneration statistics in the National Accounts. GVA by industry is estimated on basis of employment and remuneration estimates described above and national ratios of remuneration to output, GVA and GOS by industry. The results are benchmarked on the SSA provincial GVA for 10 industries.

The subsidies and taxes on production are already contained in GVA, which is commonly used as a regional measure of production. To calculate GDP subsidies and taxes on products are needed, which are not available at this stage and fairly unreliable on a regional level, except for the provincial GDPR from Statistics SA available from our RSA Economic Indicators databank.

1.8. Capital Formation

Investment and capital stock is imputed by calculating national ratios for capital requirements to GVA by industry and then comparing it to the local GVA by industry. It is also benchmarked on Quantec, SARB and SSA data.

1.9. Location quotient for GVA

See 1.7 above.

1.10. Tress index for GVA

See 1.7 above.

2. Poverty line: MLL (Minimum Living Levels) in current Rand, of previously disadvantaged households 1995-2015 (for 13 selected former segregated urban areas)
3. Human Development Index 1995-2010 (on 2006 district council level)

Tables and variables

1. Annual time series projected for the period 1995-2014, for 269 local municipalities/ward-based regions for metros (2011 demarcation):

1.1. International trade

- Population, number of households and densities with: Population, Households, Area (Sqr.Km.), Population density (People per Sqr.Km.) and Household Size, all by 4 Population groups.
- Population, HIV infection, AIDS deaths and other deaths with: 4 Population groups; Gender; 17 Age groups.

1.2. Demographics

- Population, number of households and densities with: Population, Households, Area (Sqr.Km.), Population density (People per Sqr.Km.) and Household Size, all by 4 Population groups.
- Population, HIV infection, AIDS deaths and other deaths with: 4 Population groups; Gender; 17 Age groups.

1.3. Development Indicators

- Households' energy for lighting by household head population group
- Households' phones by household head population group
- Households' refuse removal by household head population group
- Households' toilet facilities by household head population group
- Households' type of dwelling by household head population group

- Households' access to water by household head population group
- Persons' levels of education by population group, gender and 5-year age groups
- Age Dependency Ratios by population group and gender
- Gini coefficient including and excluding social grants and direct taxes

1.4. Labour

- Employment and unemployment population by Working age, Employed, Formal, Highly skilled, Skilled, Semi- and unskilled, Informal, Unemployed, Not economically active.
- Employment by skill level and industry by 23 Industries; Employed, Formal, Highly skilled, Skilled, Semi- and unskilled, Informal.

1.5. Household Income & Expenditure

- Household Income & expenditure in Rand millions, current and 2005 prices by Household savings, Consumption expenditure, 4 Durable goods, 5 Semi-durable goods categories, 6 Non-durable goods categories, 6 Services categories, Disposable Income, Current Income, Remuneration, Unearned Income, Population, Households.

1.6. Income & Production

- Regional output and GDP as gross value added (GVA) at basic prices in Rand millions, current and 2005 prices by 23 Industries; Gross value added at basic prices, Value added at factor cost, Compensation of employees per skill level, Gross operating surplus, Tax on production, Subsidies on production, Intermediate consumption, Output at basic prices.
- Tress index for GVA at municipal level (main place for old metros), Tress index – 10 industries; 23 industries.
- Location quotient for GVA by 10 Industries, relative to District, Province and National.

1.7. Capital Formation

- Fixed capital formation and capital stock by asset type in Rand millions, current and 2005 prices by 3 Industries; Gross domestic fixed investment per construction, transport and other equipment and transfer costs, Fixed capital stock per construction, transport and other equipment and transfer costs.
- Fixed capital formation and capital stock by industry in Rand millions, current and 2005 prices by 23 Industries; Gross domestic fixed investment, Fixed capital stock.

2. Poverty line: MLL (Minimum Living Levels) in current Rand, of previously disadvantaged households 1995-2015 (for 13 selected former segregated urban areas))

- MLL (Minimum Living Levels) in current Rand, of previously disadvantaged households, with 3 population groups and household size.

3. Human Development Index 1995-2010 (on 2006 district council level)

- Human Development Index 1995-2010 (on district council level), with Life expectancy at birth index, Expected years of schooling index, Mean years of schooling index, GNI per capita 2005 PPP\$ index

Definitions

1. Annual time series projected for the period 1995-2014, for 269 local municipalities/ward-based regions for metros (2011 demarcation):

1.1. International Trade

1.2. Demographics

1.3. Development Indicators

- Age Dependency Ratios

The ratio of the combined child population (0-14 years) and the aged population (65 years and over) - persons in the dependent ages - to every 100 people of the intermediate age population (15-65 years) - economically active ages.

Where more detailed data are lacking, the age-dependency ratio is often used as an indicator of the economic burden the productive portion of a population must carry - even though some persons defined as dependent are producers and some persons in the productive ages are economically dependent.

- Crude Death Rate

Number of deaths in a year per 1 000 population.

1.4. Gini coefficient

1.5. Labour

- Skill levels

Skill levels are derived from the occupation groups as follows:

Highly skilled: Professional, semi-professional and technical occupations; Managerial, executive and administrative occupations; Certain transport occupations, e.g. pilot navigator.

Skilled/medium skilled: Clerical occupations; Sales occupations; Transport, delivery and communications occupations; Service occupations; Farmer, farm manager; Artisan, apprentice and related occupations; Production foreman, production supervisor

Semi- and unskilled: all that are neither highly skilled nor (medium) skilled.

1.6. Household Income & Expenditure

1.7. Income & Production

The subsidies and taxes on production are already contained in GVA, which we use as a regional measure of production. What you need to calculate GDP are subsidies and taxes on products, which are not available at this stage and fairly unreliable on a regional level.

Skill levels for compensation of employees are derived as described hereabove under Labour.

1.8. Capital Formation

1.9. Location quotient for GVA

A comparative advantage (CA) indicates a relatively more competitive production function for a product or service in a specific economy than in the aggregate economy. This

economy therefore produces the product or renders the service more efficiently. An indication of the CA of an economy is its location quotient. A location quotient provides an indication of the comparative advantage of an economy in terms of its production and employment. An economy has a location quotient larger (smaller) than one, or a comparative advantage (disadvantage) in a particular sector when the share of that sector in the specific economy is greater (less) than the share of the same sector in the aggregate economy.

The sectors with values higher should, however, not be regarded as the only sectors worth developing as latent potential in other sectors has not been addressed by this technique.

The formula for calculation is: (Percentage contribution of a sector to GGP or total employment in a specific economy/percentage contribution of the same sector to the aggregate economy).

Example:

Sector	GGP (R million)		Percentage		Location quotients
	KwaZulu-Natal	Total	KwaZulu-Natal	Total	KwaZulu-Natal
Agriculture	4 172	23 458	5.4	4.8	1.1*
Mining	1 256	39 122	1.6	8.1	0.2
Manufacturing	24 680	114 916	31.7	23.7	1.3
Energy	1 607	19 135	2.1	4.0	0.5
Construction	2 435	14 315	3.1	3.0	1.1
Commerce	12 997	77 752	16.7	16.1	1.0
Transport	8 494	37 154	10.9	7.7	1.4
Finance	9 510	65 371	12.2	13.5	0.9
Services	12 758	92 834	16.4	19.2	0.9
Total	77 909	484 057	100.0	100.0	1.0

* $(4\ 172/77\ 909) / (23\ 458/484\ 057)$ or 5.4/4.8

1.10. Tress index for GVA

The sectoral composition of economic activity in a region is a good indication of the level of diversification or concentration of a region's economy and can be measured by the so-called tress index. A tress index of zero represents a totally diversified economy. On the other hand, the higher the index (closer to 100), the more concentrated or vulnerable the region's economy to exogenous variables such as adverse climatic conditions, commodity price fluctuations, and so on. An increase in the tress index of a region reflects an increase in the dependence of the local economy on a single or a few economic activities and is an ostensibly negative trend. A recent trend in many regions is the increase in importance of the manufacturing sector, resulting in an increase in the tress index value or such regions. The diversity of the manufacturing sector, however, prevents an increase in the vulnerability of these economies.

The steps for calculating a GGP tress index are as follows:

- i. Calculate each sector's contribution to the GGP.
 - ii. Rank the sectors according to contribution.
 - iii. Multiply each sector by its appropriate weighting, the largest sector's weighting being nine (assuming nine sectors in the economy) and the smallest being zero.
 - iv. Calculate the sum total of the weighted values of the sectors.
 - v. To obtain an index value (0 to 100), subtract 500 from the total and divide by four. This is true if there are nine sectors. The value to be subtracted (in this case 500) is the lowest potential total weighted value. The denominator is calculated by dividing the difference between the highest and lowest potential total weighted values by 100.
2. Poverty line: MLL (Minimum Living Levels) in current Rand, of previously disadvantaged households 1995-2015 (for 13 selected former segregated urban areas)

The Minimum Living Levels (MLL) denotes the minimum financial requirements of members of a family if they are to maintain their health and have acceptable standards of hygiene and sufficient clothing for their needs.

The MLL is the lowest sum possible on which a specific size of family can live in our existing (2003) social set-up. Sufficient quantities are allowed under each of the ten relevant items, but rational expenditure on them is assumed throughout. As it is highly unlikely that persons at this living level know very much about dietary requirements or manage to curb unnecessary spending, the sum estimated for the MLL is at best a theoretical minimum.

The Supplemented Living Level (SLL) makes provision for more items than the Minimum Living Level. By present standards some of these items may be regarded as necessities and others as desirable amenities of life. The SLL is not a subsistence budget, nor is it a luxury budget. Perhaps it can be described as an attempt at determining a modest low-level standard of living.

The Minimum and Supplemented Living Levels were calculated according to the actual size of families, their age structure and sex composition in each area. Surveys were conducted in every MLL area and for each population group to determine these variables in each family size group.

3. Human Development Index 1995-2010 (on 2006 district council level)

- UNDP Human Development Report 2011, pp.167-169
http://hdr.undp.org/en/media/HDR_2011_EN_Complete.pdf

4. General definitions

Capital productivity (Index, 1995=100) [CapProd]	Fixed capital productivity is a measure of output per unit of fixed capital input. Fixed capital productivity is equal to total output (Q) divided by the fixed capital input (C), i.e. the capital stock: Fixed capital productivity = Q / C = output per unit of fixed capital input.
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Capital stock @ basic prices (1995=100) [CapStock]	Fixed capital stock refers to the value of all capital goods in a country at the beginning of a period. Fixed capital stock consists of buildings and construction works, transport equipment, machinery and other equipment and transfer costs. No account of depreciation should be made as well as the spending should have originated from within the country's borders.
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Commodity Classification The complex nature of the basic customs and statistical needs makes it necessary to have a rather detailed commodity classification. The Harmonized Commodity Description and Coding System (Harmonized System, or HS), or extended versions based on HS, such as the Combined Nomenclature used by the countries that are members of the European Union provide such details. Classification using these nomenclatures is based on the nature of the commodity. However, for analytical purposes, such a division of products is not the most appropriate. Commodity categories more suitable for economic analysis are provided by the Standard International Trade Classification, Revision 3 (SITC, Rev.3), which classifies commodities according to their stage of production.

Conversion of data from one classification to another A correlation between two classifications (e.g., A and B) is a description of the relationship between the scope of their headings. That relationship can be established by means of two tables: the table correlating headings of A to B and the table correlating headings of B to A. Each table defines the scope of the headings of one classification in terms of the scope of the headings of the other. If the scope of a given heading of classification A coincides with the scope of a single heading of classification B (a “one-to-one” relationship), the correlation of that heading to classification B is definite. If the scope of a given heading of classification A is distributed among several headings of classification B (a “one-to-many” relationship) the correlation of that heading to classification B is split. Correlation tables usually contain both definite and split correlations.

While various users of classifications often prepare correlation tables for their own internal purposes, official versions are generally issued by the organization which maintains one or both of the classifications involved. Whenever successive versions of the same classification are produced, a correlation table between the headings of the revised and original versions is issued. A reverse table, showing the correlation between headings of the original and revised versions, is also frequently produced. Correlation tables enable users to express data in various versions of a classification in order to obtain a continuous time series. However, if the scope of a heading of one version is split between several headings of the other version an exact correlation becomes impossible and there is a discontinuity in the corresponding statistical series. For data processing purposes it is often desirable to substitute a split correlation by an approximate, but one-to-one correlation. Such approximations are warranted if the scope of the correlated headings is quite similar. However, differences in scope between certain basic headings may be so great that no meaningful one-to-one correlation is possible at that level. In such a case, a correlation can only be established between basic headings of one version and the higher level headings of the other version.

Date of recording The IMTS recommends that goods be included at the time when they enter or leave the economic territory of a country. In the case of customs-based data-collection systems, which provide the compiler with a choice of dates at which transactions may be recorded, consistency strongly suggests that a single date be adopted for all transactions. It is

recommended that the time of recording be the date of lodgement of the customs declaration since that would provide an approximation of the time of crossing the border of the economic territory of a country.

Exports	In the case of the general trade system, export flows come from: (1) The free circulation area, premises for inward processing or industrial free zones; (2) Premises for customs warehousing or commercial free zones. There are three types of exports: (a) Domestic goods originating in the free circulation area or in industrial free zones; (b) Domestic goods comprised of compensating products after inward processing; (c) Foreign goods in the same state as previously imported. In the case of the special trade system under the relaxed definition, the export flows come only from the free circulation area, premises for inward processing or industrial free zones. There are three types of exports: (a) Domestic goods originating in the free circulation area or industrial free zones; (b) Domestic goods comprised of compensating products after inward processing; (c) Foreign goods in the same state as previously imported. There are two possible destinations: (1) The rest of the world; (2) Premises for customs warehousing or commercial free zones.
Formal sector employment - number of full-time equivalent jobs [Jobs]	Employment figures indicate the number of paid employees and include casual and seasonal workers. Employment consists of three main categories, namely highly skilled, skilled and semi-and unskilled labour. Sources: * Statistics South Africa: Survey of Total Employment and Earnings, October Household Surveys and Population Censuses * Department of Labour: Manpower Surveys * Development Bank of South Africa: Standardised Employment Series
General trade system	The general trade system is in use when the statistical territory of a country coincides with its economic territory. Consequently, under the general trade system, imports include all goods entering the economic territory of a compiling country and exports include all goods leaving the economic territory of a compiling country
Goods to be included	Besides the goods which are normally imported and exported, special attention is drawn to the following cases, in which goods are recommended to be included in the detailed international merchandise trade statistics. Non-monetary gold; Unissued banknotes and securities, and coins not in circulation; Goods traded in accordance with barter agreements; Goods traded on government account; Food and other humanitarian aid; Goods for military use; Goods acquired by traveler; Goods on consignment; Goods used as carriers of information and software; Goods for processing; Goods involved in affiliated trade; Returned goods; Electricity, gas and water; Goods dispatched through postal services; Migrants' effects; Goods transferred from or to a buffer stock organization; Goods under financial lease; Ships, aircraft and other mobile equipment; Goods to or from offshore installations; Trade on high seas; Bunkers, stores, ballast and dunnage; Empty bottles; Waste and scrap.
Gross domestic fixed investment @	Gross domestic fixed investment refers to additions to the country's capital stock (i.e. the purchase of capital goods), without making provision for depreciation and the spending originated within the

<p>basic prices (1995=100) [GDFI]</p>	<p>country's borders. Gross domestic fixed investment consists of buildings and construction works, transport equipment, machinery and other equipment and transfer costs.</p>
<p>Gross domestic product @ basic prices (1995=100) [GDPGrowth]</p>	<p>Value added at basic prices Value added at basic prices equals the value added at factor costs (FC) added to net indirect taxes on production (NIT): $BP = FC + NIT$. Value added at factor cost is equal to the gross operating surplus plus labour remuneration. The gross operating surplus is equal to net operating surplus plus depreciation charges.</p>
<p>Gross operating surplus capital ratio % [GosCap]</p>	<p>The gross operating surplus capital ratio gives an indication of the gross return (profitability) on capital within the sector. Gross operating surplus equals the income received by factors of production in the economy, i.e. rent, interest and profit by those who owns the production factors without taking into account the value of the consumption of fixed capital. Gross operating surplus = net operating surplus + consumption of fixed capital (depreciation).</p>
<p>Gross operating surplus output ratio % [GosOutput]</p>	<p>The gross operating surplus output ratio gives an indication of the gross margin on output (sales).</p>
<p>Gross output (sales) (1995=100) [SalesGrowth]</p>	<p>Output (Q) - (Intermediate + final demand). Output consists of the production of goods or services within an establishment that become available for use outside that establishment. Total output is the sum of the output of all the establishments of an economy.</p>
<p>Harmonized System</p>	<p>The Harmonized System (officially Harmonized Commodity Description and Coding System) was adopted by the Customs Co-operation Council in June 1983, and the International Convention on the Harmonized System (HS Convention) entered into force on 1 January 1988 (HS88). In accordance with the preamble to the HS Convention, which recognized the importance of ensuring that HS be kept up to date in the light of changes in technology or in patterns of international trade, HS is regularly reviewed and revised. The headings and subheadings of HS are accompanied by interpretative rules, and section, chapter and subheading notes, which form an integral part of HS and are designed to facilitate classification decisions in general and to clarify the scope of the particular headings or subheadings. It is recommended that countries use HS for the collection, compilation and dissemination of international merchandise trade statistics</p>
<p>HS1996</p>	<p>HS1996 stands for the 1996 revision of the Harmonized System. HS1996 contains 5,113 subheadings and 1,241 headings, grouped into 97 chapters and 21 sections. As a general rule, goods are arranged in order of their degree of manufacture: raw materials, unworked products, semi-finished products and finished products. For example, live animals fall under Chapter 1, animal hides and skins under Chapter 41 and leather footwear under Chapter 64. The same order also exists within the chapters and headings</p>

Imports	<p>In the case of the general trade system, import flows come from the rest of the world or from customs transit, i.e., goods redirected from customs transit to remain in the economic territory. There are three types of imports: (a) Foreign goods (other than compensating products after outward processing); (b) Foreign goods comprised of compensating products after outward processing; (c) Domestic goods in the same state as previously exported. (so-called re-imports). These imports are brought into: (1) The free circulation area, premises for inward processing or industrial free zones; (2) Premises for customs warehousing or commercial free zones. In the case of the special trade system, under the relaxed definition, the import flows come from: (1) The rest of the world or from customs transit; (2) Premises for customs warehousing or commercial free zones. There are three types of imports: (a) Foreign goods (other than compensating products after outward processing); (b) Foreign goods comprised of compensating products after outward processing; (c) Domestic goods in the same state as previously exported. The goods are imported into free circulation.</p>
Labour productivity - (Index, 1995=100) [LabProd]	<p>Labour productivity is the most widely used productivity concept. Labour productivity is the ratio between output (Q) and the labour input (LI) used to produce that output: $\text{Labour productivity} = Q / \text{LI} = \text{output per unit of labour input.}$ Labour productivity can be expressed as output per worker (by dividing total output by total number of workers employed) or as output per hour (by dividing total output by the total number of hours worked).</p>
Multifactor productivity - (Index, 1995=100) [MultProd]	<p>Multi-factor productivity Multi-factor productivity is a measure of the growth in output that is not explained by the growth in the quantity of inputs. Multi-factor productivity includes technical progress, improvements in the workforce, improvements in management practices, and economies of scale. In the short to medium term, factors such as the weather and variations in capacity utilisation associated with the business cycle can affect multi-factor productivity. $\text{Multi-factor productivity } (A(t)) = Q(t) / [(WL(t)*L(t)) + (WK(t)*K(t))].$ Where Q(t) = Real output at time t. WL(t) = Labour's income share at time t. = Remuneration of employees divided by total income at time t. L(t) = Real labour output at time t. WK(t) = Capital's income share at time t. = Gross operating surplus divided by total income at time t. K(t) = Real capital input at time t.</p>
Quantity Unit Reference	<p>0:Not reported 1:No Quantity (all quantities zero, standard if 0-3 digits) 2:Area in square meters 3:Electrical energy in thousands of kilowatt-hours 4:Length in meters 5:Number of items 6:Number of pairs 7:Volume in litres 8:Weight in kilograms 9:Thousands of items</p>

- 10: Number of packages
- 11: Dozens of items
- 12: Volume in cubic meters
- 13: Weight in carats

Re-exports	Re-exports are exports of foreign goods in the same state as previously imported; they are to be included in the country exports. They are also recommended to be recorded separately for analytical purposes, which may require the use of supplementary sources of information in order to determine the origin of re-exports, i.e., to determine that the goods in question are indeed re-exports rather than the export of goods that have acquired domestic origin through processing.
Re-imports	Re-imports are goods imported in the same state as previously exported; they are to be included in the country imports. They are also recommended to be recorded separately for analytical purposes, which may require the use of supplementary sources of information in order to determine the origin of re-imports, i.e., to determine that the goods in question are indeed re-imports rather than the import of goods that have acquired foreign origin through processing.
SITC Rev.3	SITC Rev.3 stands for Standard International Trade Classification, Revision 3. The Statistical Commission, at its twenty-first session (12 - 21 January 1981), took note of the fact that a third revision of SITC would have to be made available when the Harmonized System came into force. Employing the subheadings of the original Harmonized System (see HS1992) as building blocks, the United Nations Statistics Division produced SITC Rev.3, taking account of the need for continuity with the previous versions of SITC. SITC Rev.3 contains 3,118 basic headings and subheadings, which are assembled in 261 groups, 67 divisions and 10 sections.
Special trade system	The special trade system is in use when the statistical territory comprises only a particular part of the economic territory. The special trade system (strict definition) is in use when the statistical territory comprises only the free circulation area, that is, the part within which goods "may be disposed of without customs restriction". Consequently, in such a case, imports include all goods entering the free circulation area of a compiling country, which means cleared through customs for home use, and exports include all goods leaving the free circulation area of a compiling country. However, under the strict definition, goods imported for inward processing and goods which enter or leave an industrial free zone would not be recorded since they would not have been cleared through customs for home use. The compensating products after inward processing also would not be included in exports. Examples of these are when crude petroleum is brought into a country for refining under the inward processing procedure or when non-ferrous base metals are imported and smelted under the same procedure, and the resulting products are exported. From an economic standpoint, however, this kind of industrial activity does not differ from similar activities elsewhere in the economy. For this reason, it is recommended to include such activity in the record of special trade statistics. When this recommendation is applied, a "relaxed" definition of the special trade system is in use; i.e., the special trade system (relaxed definition) is in use when (a) goods that

enter a country for or leave it after inward processing and (b) goods that enter or leave an industrial free zone are also recorded and included in international merchandise trade statistics.

Statistical territory	In international merchandise trade statistics, the objective is to record goods entering and leaving the economic territory of a country. In practice, what is recorded is goods that enter or leave the statistical territory, which is the territory with respect to which data are being collected. The statistical territory may coincide with the economic territory of a country or with some part of it. It follows that when the statistical territory of a country and its economic territory differ, international merchandise trade statistics do not provide a complete record of inward and outward flows of goods.
Trade systems	There are two trade systems in common use by which international merchandise trade statistics are compiled: the general trade system and the special trade system. Two definitions of the special trade system are considered below: the strict definition and the relaxed definition
Unit labour costs - (Index 1995=100) [UnitLabCost]	Unit labour cost measures the average cost of producing one unit of output. Unit labour cost is equal to wage rate or earnings per worker (w) times the number of workers (N) divided by the output produced by the workers (Q): Unit labour cost = $(w * N) / Q$. $w * N$ is a measure of the cost of labour.
Unit of Trade Value and Net weight	The unit of Trade Value is US\$, Net weight is kilogram (kg).
Valuation	It is recommended that values for Imports are recorded as a CIF-type value, and values for Exports as a FOB-type value. CIF-type values include the transaction value of the goods, the value of services performed to deliver goods to the border of the exporting country and the value of the services performed to deliver the goods from the border of the exporting country to the border of the importing country. FOB-type values include the transaction value of the goods and the value of services performed to deliver goods to the border of the exporting country.
Year	Year refers to the calendar year from 1 January to 31 December. If a reporter uses a different base for the year, this would be reflected in the meta-data. Please see Date of recording for more precise information regarding the recording of transactions.