The Economic Potential of Small Towns in the Eastern Cape Midlands

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I acknowledge that all references are accurately recorded and, that unless otherwise stated, all work herein is my own. I also certify that this thesis has not been submitted for a degree at any other University.

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Abstract

Small town economic decline has been experienced in many countries across the globe and can be explained through Geographical Economics, particularly the New Economic Geography, which suggests that agglomeration occurs as a natural outcome of high transportation and transactional costs. Yet despite the economic rationale behind their decline it is not an economic inevitability and there is evidence of towns in the United States, New Zealand and Canada that have reversed their economic fortunes. In South Africa approximately 5 million people live in the 500 small towns and many more live in their rural hinterlands where poverty levels are extremely high within a national context. Within this context the thesis examines the current economic status and potential growth prospects of small towns in the Eastern Cape Midlands in South Africa in order to identify critical growth drivers within small town economies.

Five small towns were selected for the study via means of a purposive sample and were subjected to two regional modelling techniques, namely Shift–Share Analysis and Economic Base Theory to determine their current economic trends and past growth patterns, while a Social Accounting Matrix was utilised to identify important sectoral linkages, potential avenues for growth and evident leakages within small town economies.

The sampled towns experienced negative economic growth trends between 1996 and 2001, the primary loss in employment being accounted for by regional economic changes as opposed to national or industrial trends. The decline was more severely felt in primary/industrial sectors of the economy; evidence was found that manufacturing activities declined in all of the centres, despite the industry growing nationally. The Social Accounting Matrix highlighted strong links between the agricultural and services sectors within the national economy. Thus, considering that agriculture was identified as the primary economic driver within the region and the services sector the largest employer in all of the towns it is evident that the economic potential of the towns is to a certain extent linked to the success of agriculture in their hinterlands.

Seven growth drivers, namely size, local economic development, existing markets, existing industries, infrastructure, municipal leadership and local entrepreneurs and were linked via

means of a scoring framework to the sampled towns' economic potential. Whilst the results of actually determining a towns economic potential are not definitive the study does provide useful insights about the impact and potential role played by these drivers. Linked to this scoring framework and to Cook's (1971) hierarchy of places in the Eastern Cape Midlands four categories of towns were identified in the commercial farming areas and recommendations were made about appropriate developmental interventions at a municipal level, such as the need to retain local entrepreneurs and to invest in social amenities.

Considering the evident need for development in rural areas the study provides critical insights into how to prioritise development strategies within small rural towns in commercial farming areas. In addition it would enable municipalities to critically reflect on their municipal Local Economic Development strategies and the relevance within the context of small towns.

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Chapter 1 Context and Aims of the Study

There is a tide in the affairs of men
Which taken at the flood, leads on to fortune;
Omitted, all the voyage of their life
Is bound in shallows and in miseries
On such a full sea we are now afloat,
And we must take the current where it serves
Or lose our ventures
(Brutus in William Shakespeare's Julius Caesar, Act 4, Scene 3: 817)

Internationally, numerous small towns have exhibited a general decrease in population and a loss of economic vitality. For example, "Small town Australia is certainly at a crossroads. Many small inland and remote inland communities continue to haemorrhage in terms of population and business loss. This decline is not new, but has intensified over the last two decades. Mean age continues to rise, while the 15-24 age group contracts dramatically. Such a situation is not uniquely Australian. Similarities can be seen in rural communities of Midwest USA, New Zealand and South Africa" (Kenyon and Black, 2001: 1). Thus there is emerging international evidence that the 'economic tide' does seem to be turning away from small towns.

Small towns in South Africa contain approximately 3.3 million people - around 8% of the country's population - whilst approximately 75% of the country's poor live in rural areas, most often the hinterlands surrounding small urban areas (CDE, 1996:1). Thus, it is evident that these towns play an important role in the social well-being of the nation, not just in terms of hosting not inconsiderable numbers and population, but also in terms of being service centres and providers of social services for their hinterlands. In addition, in sharp contrast to demographic trends in other countries, "Small towns (with populations between 5 000 – 100 000) are becoming increasingly important in South Africa due to rapid urbanisation" (Atkinson and Zingel, 2004: 1), as their populations appear to be rising. In this regard it is apparent that the international trend of population decline in small towns does not seem to hold and that they, along with the cities, are growing in demographic terms.

Geographical economics literature suggests that agglomeration forces are the primary cause behind the decline economy smaller centres across the globe (Brakman and Garretsen, 2005: 5). Is the 'tide turning' away from the sustainability of rural towns, or is it merely a temporary change that can be reversed by intuitive and well directed intervention? Should they be assisted from an equity perspective, or is it possible to stimulate growth and development within the country through them?

1.1 Aims of the study and an overview of the methodology

The major aim of this thesis is to examine the current economic status and potential economic growth prospects of selected small towns in the Eastern Cape Midlands and through this to determine the extent to which current trends can be manipulated by policies trying to stimulate economic growth. In addition the thesis sets out to identify growth drivers within small town economies and to assess to what extent they impact upon a towns development.

In order to achieve the primary goal there are also several sub-aims/objectives. These are to determine past and current economic trends in the sampled towns as well as the nature of these economies and secondly, to identify growth drivers and other economic opportunities, which could be harnessed to stimulate economic growth.

An earlier study by Cook (1971) into the Eastern Cape Interior or Midlands helped guide the topic selection as it identified the area as one which is unique and hence worthy of study, in addition her work provided useful comparative data. Other factors guiding the selection of the study area was the fact that the Eastern Cape is one of the poorest parts of the country, and it is predominantly a rural province, having a significant number of well-established small towns within it, which are critical to social welfare. The latter reason further justifies an examination of possible local development alternatives designed to respond to shortfalls. A review of the economic structure of the province is presented later in the chapter, in section 1.2. Five small towns within the Eastern Cape Midlands were selected to be studied in detail, namely Cradock, Bedford, Somerset-East, Pearston and Grahamstown. A full justification for their selection is provided later in the thesis.

In order to accomplish the aims and objectives of the thesis, a number of different research techniques were used. Firstly, historical evidence relating to the five towns was gathered from various sources. The data provided information on past economic trends and revealed each town's strengths and limitations, which proved valuable when assessing their economic potential.

To determine current economic trends in the five towns, data from the population censuses in 1996 and 2001 was used and was subjected to two regional modelling techniques namely Shift-Share and Location Quotient[1] analysis. In addition, a Social Accounting Matrix (SAM) was utilised to examine important sectoral linkages. The findings were also supplemented by structured interviews conducted with relevant stakeholders in the respective towns.

To assess current Local Economic Development (LED) information was collected though Municipal Integrated Development Plans (IDPs) and through structured interviews. Once all the LED strategies were known it became possible to evaluate their effectiveness in terms of both their employment and growth creation capabilities as well as their ability to satisfy their intended objectives. However, knowledge of past and current economic trends as well as LED projects still does not allow for the complete assessment of the economic potential of a region. It was thus necessary to identify and review other economic growth drivers and inhibitors within the towns and to evaluate their impacts.

In order to evaluate a town it is first necessary to review the context of its location. Towns located in different areas and regions face vastly different challenges. "In the modern era, which is characterised by enhanced internationalisation and competition between places as opposed to nations, small towns are increasingly being recognised as unique entities which need to be identified and assessed in their own right" (Nel, 1996: 7). Thus, the remainder of the chapter presents the demographic and economic situation within the Eastern Cape and the settlements within the province as a starting point to the study. A more detailed justification for the study is also provided.

Chapter 2 reviews the existing literature on small towns and the economic literature regarding location theory and geographical economics, which was deemed pertinent to

[1] Chapter 3 reviews the methodology of the two techniques in greater detail

this study. Chapter 3 provides greater detail on the methodology of the study and provides insights into the analytical tools used, whilst chapter 4 reviews the selected towns' history and past economic trends. Current economic trends are detailed in Chapter 5. LED initiatives of both the municipalities and private stakeholders are reviewed in Chapter 6, whilst growth drivers and inhibitors are identified in Chapter 7, which also attempts to determine the towns' economic potential. The conclusion of the study is presented in Chapter 8.

1.2 The Eastern Cape

The Eastern Cape is situated in the south eastern parts of the Republic of South Africa. It is the second largest province geographically with a surface area of 170 600 km2. Only 4.3% of this land is cultivated (DBSA, 2004: 1), largely because substantial parts of the province could be classified as semi-arid. However, the coastal belt is well suited to pineapple production and the inland areas are more suited to animal farming including angora goats, sheep and cattle (DBSA, 2004: 1). Figure 1.2.1 illustrates the province in relation to the other provinces in South Africa.

Figure 1.2.1 Map of South Africa

Source: ANC, 2006

The total population is 6.4 million or 14.2 % of the country's total (Stats SA, 2001a). 25.6% of the population live in or around the two major metropolitan areas, namely Port Elizabeth and East London[2]. Thus, the remaining 74.4% of the population either lives in, or are primarily dependent on, the smaller centres for residence, employment and essential services.

Table 1.2.1 Population by race within the Eastern Cape Province, 2001

Race	Millions	Percentage
African	5.6	87.6
Coloured	0.5	7.4
Indian	0.0	0.3
White	0.3	4.7
Total Population	**6.4**	**100**

Source: Stats SA, 2001a.

From Table 1.2.2, it is evident that purely in terms of employment and unemployment percentages the Eastern Cape is similar to national averages. However, Stats SA (2001a) estimated that 55% of the population were not economically active at the time of the census, a figure that was well above the national average of 42 %. Thus, despite unemployment being on a par with the rest of the country a high proportion of adults are not employed nor actively seeking work due to limited work opportunities.

[2] Measurement includes those living in the municipal districts of the two cities, namely the Nelson Mandela Metropolitan and Buffalo City municipality.

Table 1.2.2 Employment and unemployment by province, 2002

Province	Employed (millions)	Unemployed (Strict) (millions)	Unemployed (Expanded) (millions)	% Unemployment of EAP3 (Strict)	%Unemployment of EAP (Expanded)
E-Cape	**1.6**	**0.6**	**1.1**	**28.1**	**39.2**
Free State	0.8	0.4	0.5	33.5	40.9
Gauteng	2.8	1.0	1.5	27.0	35.6
KZN	2.0	1.0	1.8	34.3	46.7
Limpopo	0.9	0.5	1.1	36.7	55.1
Mpumalanga	0.8	0.3	0.5	29.8	41.7
North West	0.8	0.4	0.7	30.7	46.3
N-Cape	0.2	0.1	0.2	30.0	41.0
W-Cape	1.5	0.4	0.5	18.6	25.5
South Africa	**11.4**	**4.7**	**7.8**	**29.4**	**40.9**

Source: Stats SA, 2002 in SAIRR, 2003: 142

A more suitable indicator may be the Human Development Index (HDI) which "summarises a great deal of social performance in a single composite index combining three indicators – longevity (a proxy for health and nutrition), education and living standards" (Nafziger, 1997: 30). Table 1.2.3 indicates the changing HDI levels between 1980 and 1996, for South Africa by province.

[3] Economically Active Population

Table 1.2.3 Human Development Index by Province, 1980, 1991 and 1996[4]

	1980	1991	1996	% Increase 1980-1996
E-Cape	**0.42**	**0.51**	**0.62**	**52.4**
Free State	0.42	0.66	0.67	19.6
Gauteng	0.63	0.82	0.77	22.2
KZN	0.49	0.6	0.66	34.7
Limpopo	0.37	0.47	0.63	70.3
Mpumalanga	0.51	0.69	0.66	29.4
North West	0.48	0.54	0.61	27.1
W-Cape	0.64	0.83	0.76	23.6
N-Cape	0.55	0.7	0.68	18.8
South Africa	**0.56**	**0.68**	**0.69**	**23.2**

Source: SAIRR, 2003: 24

From Table 1.2.3 it is evident that despite recent improvements, the Eastern Cape is one of the worst off provinces, with an average HDI of 0.62 in 1996, the second lowest of all the provinces in the country, and below the national average of 0.69. However, what is noticeable is the improvement from 1980 to 1996, with an increase of 52.4%. Table 1.2.4 provides a projection of the HDI figures of all provinces for 2010 and indicates the immense impact that HIV/AIDS will have. This is important because it is unlikely that the 1996 HDI figures would have been fully reflective of the pandemic. The table illustrates that the HDI figure in 2010 in the Eastern Cape might be only 0.493, which is a major drop, accounted for by the impact of HIV/AIDS. It is also important to note that both measures were calculated with different weightings which accounts for the difference between the two measures.

[4] Numbers have been rounded

Table 1.2.4 Human Development Index; Projections by Province[5]

	HDI 1996	HDI 2010 with AIDS	HDI 2010 without AIDS
E-Cape	**0.643**	**0.493**	**0.608**
Free State	0.671	0.548	0.662
Gauteng	0.771	0.621	0.722
KZN	0.658	0.498	0.614
Limpopo	0.629	0.431	0.544
Mpumalanga	0.657	0.522	0.64
North West	0.679	0.567	0.644
W-Cape	0.608	0.527	0.642
N-Cape	0.762	0.659	0.714
South Africa	**0.688**	**0.542**	**0.654**

Source: Health Systems Trust, 2007

Fundamental inequalities, in terms of social and economic variables, also exist within the province. Nel (1999: 67) indicated that these have been evident since colonial days, initiated by the early territorial separation of the races, and the economic suppression of the Xhosa tribe. These inequalities are illustrated in Table 1.2.5, which shows the proportion of people living in poverty by race and by province. The disparities are clearly evident with 75% of Africans living in poverty, compared to the 5% of whites and 24% of coloureds. The table also indicates that 68% of the total population live in poverty, which is well above the national average of 49%, which highlights the evident developmental backlog and need for development and economic growth.

[5] Calculations were conducted in a slightly different manner to that of SAIRR figures and are thus not directly comparable.

Table 1.2.5 Poverty Levels: Percentage of people living in poverty by province and race, 2001

Province	African	Indian	Coloured	White	Total
E-Cape	**75**	**9**	**24**	**5**	**68**
Free State	61	3	24	5	53
Gauteng	38	7	13	3	28
KZN	63	8	14	3	54
Limpopo	65	6	22	4	64
Mpumalanga	59	6	19	5	54
North West	60	9	29	6	56
N-Cape	67	10	38	5	43
W-Cape	47	10	17	4	21
South Africa	**60**	**8**	**20**	**4**	**49**

Source: SAIRR (2003: 182)

The province contributed R40 billion to South Africa's Gross Geographic Product (GGP) in 2003, a mere 7% of its total (SAIRR, 2003: 48), compared with the 14.2% of the country's population living in the province (Stats SA, 2001a). Figure 1.2.2 provides a graphical representation of the percentage of Gross Geographic Product by sector, whilst Figure 1.2.3 illustrates the breakdown of the different population groups working in the various sectors.

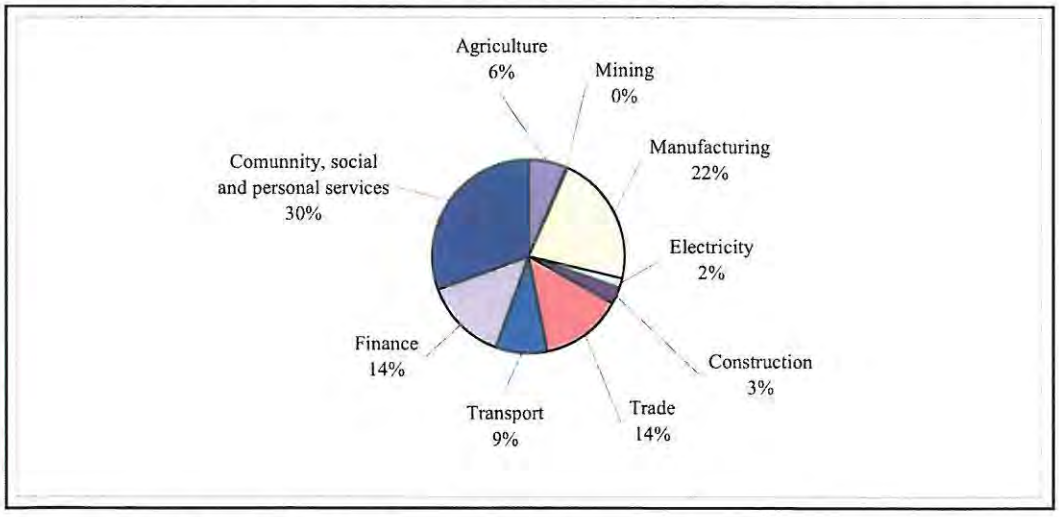


Figure 1.2.2 Gross Geographic Product by sector: Eastern Cape

Source: SAIRR, 2003: 48

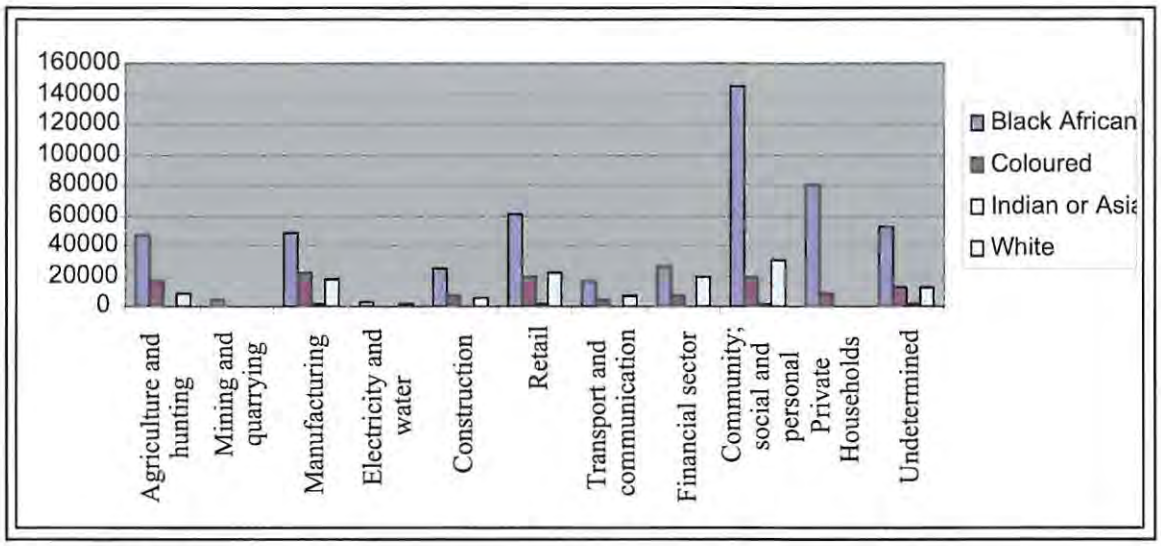


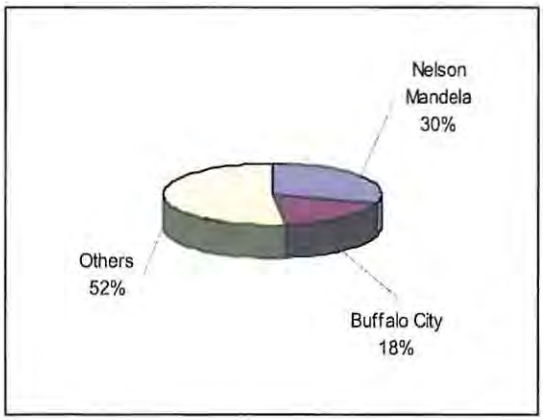
Figure 1.2.3 Employment by Race and Industry 2001: Eastern Cape

Source: Stats SA, 2001a

The figures illustrate that the services sector is the largest employer, employing approximately 200 000 people, and its contribution to the GGP was calculated at 30% of the region's total. The manufacturing industry represented 20% of the province's GGP yet only employed 90 866 people compared to agriculture, which employed 72 122 people but only contributed 6% to regional GGP (Stats SA, 2001a). Thus, despite agriculture being a relatively small contributor to GGP it plays a large part in the regional economy in terms of employment due to the high labour absorption rate of commercial agriculture and the high levels of subsistence type activities, particularly in the former homeland regions.

There are also many vast discrepancies in terms of wealth within the province. The primary discrepancy is between the two major urban centres and the remainder of the province in terms of economic activity and wealth. Figures 1.2.4 and 1.2.5 compare employment and gross value added in Port Elizabeth and East London, the two primary urban centres, to the province[1] (see Appendix 1).

[1] Despatch and Uitenhage are incorporated into the Nelson Mandela Metropole whilst King Williams Town and Mdantsane are incorporated into the Buffalo City Municipality.



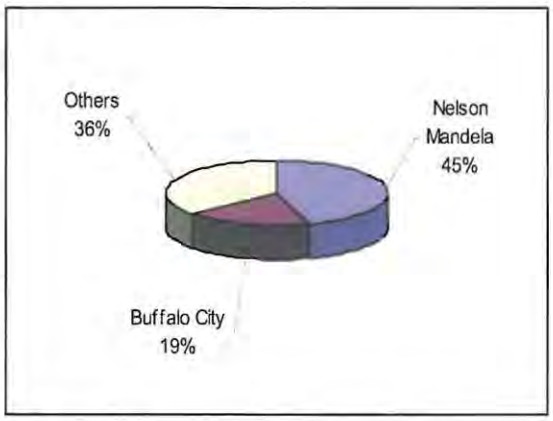


Figure 1.2.4 Municipal Employment figures as a percentage of provincial employment, 2001 (left)

Figure 1.2.5 Contribution of municipalities to provincial nominal value added (right)

Source: Stats SA, 2001a Figure 1.2.4,

Source: DBSA, 2004 Figure 1.2.5

Nelson Mandela and Buffalo City municipalities collectively account for 48% of total employment and 64% of total value added, despite only accounting for 27% of the population (DBSA, 2004: 56). Thus, the provincial economy is clearly dominated by the two large cities. The local municipalities of King Sabata Dalinyebo and Lukanji which contain the next two biggest centres in the provincial economy, namely, Mthatha and Queenstown contributed 6% and 4% respectively to provincial value added, whilst no other municipality contributed over 2.5%, clearly illustrating that small towns in the Eastern Cape are not major economic forces and that the bulk of the provincial economy is focused around the two major urban settlements in the province.

Another important distinction, which accounts for the disparity in terms of wealth, is that the Province incorporates two former homelands namely the Ciskei and Transkei. During the apartheid regime in South Africa land was set aside for black South Africans in ten Bantustans across the country, constituting 13% of the country's land and these areas were generally referred to as homelands. There was little or no economic base in these regions and the socio-economic conditions in them were very poor. These, conditions still remain in many of these areas and generally these areas are considerably worse off than the former white areas.

1.3 Survey of the Eastern Cape Midlands in the 1960s

A study and regional survey was undertaken on the Cape Midlands and Karoo regions in the late 1960s (Cook, 1971: 1). One of the core components of the survey was a review of the numerous small towns within the Eastern Cape Midlands. The rationale behind that study was to identify the existent settlement patterns and hierarchy of places in the Eastern Cape Midlands and to identify possible growth nodes in the area. This was deemed as important research focus because, at the time, the regional economy was fairly static and retrogressive in comparison with the remainder of the country and industrial development was limited in the dispersed inland settlements (Cook, 1971: 1).

The government hoped that the creation of a stable water supply through the Orange River Project, which diverted water to the Fish and Sundays Rivers through a system of tunnels, would assist in developing the region, in which the urban places would be the foci of the economic regeneration (Cook, 1971: 1).

The study concluded that the spatial economy of the region was undergoing a significant change; commercial enterprises were declining, leading to capital and labour leaving the settlements. This movement also resulted in a cut in expenditure on public amenities in the towns, which compounded the problem and made it harder for centres to attract people and investment. It went on to indicate that smaller, economically weaker settlements would be affected more significantly in this regard than the larger urban places. It also concluded that whilst the Orange River project may provide an economic boost for the region, particularly in certain localities, it would not be a panacea cure for the economic limitations of the region (Cook, 1971: 1).

The report suggested that there were severe limitations to the growth prospects of towns in the Eastern Cape Midlands and that the smaller centres in particular would struggle to retain and attract industrial and other core business activities.

1.4 Justification for study and the focus area

The study focuses on small towns due to the minimal research that has been undertaken on them (Dewar, 1995: 1). The Eastern Cape Midlands was selected as the focus area of the study for a number of reasons. Primarily, it is a vast geographical area with limited economic activities, a factor that was also the major justification for the study undertaken in the region in the late 1960s. There are also no large cities, making the towns the primary economic centres, which have experienced marginalization, along with many other Karoo towns (Nel, 2005*[7]), both of which were also important justifications for the earlier study.

Further justifications for the selection of the Eastern Cape Midlands were:

- The earlier study undertaken by Cook (1971) provided a valuable point of reference, which would enhance the comparability of the study;
- Practical research considerations due to financial constraints; the Eastern Cape Midlands towns were easily accessible from Grahamstown; and
- It was decided not to consider former homeland towns as the discriminatory policies prior to 1994, which distorted these settlements and their economies and would have made their assessment extremely complex. The poor census records in these settlements prior to 1994 were also a major consideration.

The actual five towns selected for the study within the focus area were chosen based on a purposive sample, derived from stratification according to the differing categories of towns by Cook (1971) as shown in Table 1.4.1. The Cook study rated towns by 'orders', which is a size ranking from lowest to highest, where the lower the 'order' the larger the settlement. Within the region these orders varied from 4 to 8.

Accordingly, the towns of Grahamstown (order 4); Cradock and Somerset East (order 5), Bedford (order 6) and Pearston (order 7) were selected, as they are a reflective sample of the different levels of settlements.

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[7] The asterisk dentotes that the reference is from a direct source, taken from the structured discussions and interviews conducted as part of this reseach

Table 1.4.1 Hierarchy of Towns in the Eastern Cape Midlands, 1970

Order	Name	Places in the Study Area
4	Major Country Town	**Grahamstown**
5	Country Town	**Cradock**, Graaff-Reinet, Middelburg, **Somerset East**
6	Minor Country Town	Adelaide, Alice, **Bedford**, Fort Beaufort, Port Alfred
7	Local Service Centre	Aberdeen, Alexandria, Hofmeyer, Jansenville, Murraysburg, Nouport, Paterson, **Pearston**, Steynsburg, Stytlerville and Tarkastad
8	Lower Order Service Centre	Alicedale, Bathurst, Balfour, Boesmansriviermond, Cookhouse, Hertzog, Hogsback, Kenton-on-Sea, Klipplaat, Nieu Bethesda, Riebeeck East, Rosemead, Seymour and Waterford.

Source: Cook, 1971: 10

Figure 1.4.1 on the following page graphically illustrates the towns in the Eastern Cape Midlands including those selected.

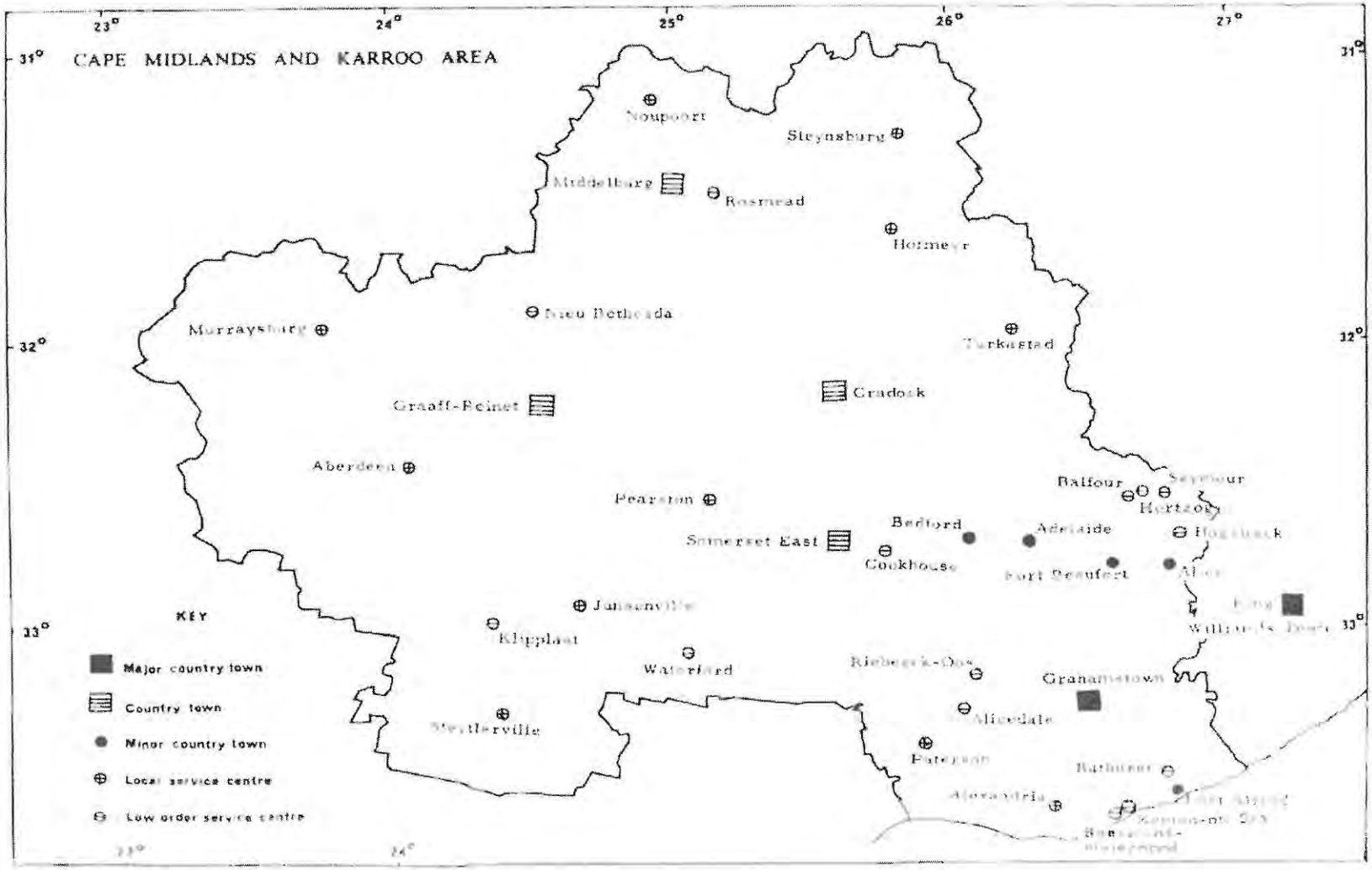

Figure 1.4.1 Towns in the Eastern Cape Midlands

Source: Cook, 1971

1.5 Conclusion

The study aims to identify the current economic status and potential economic growth prospects of small towns in the Eastern Cape Midlands. In order to achieve this aim a review of factors that could alter a towns' economic potential such as LED and other growth drivers will be undertaken. The focus area is justified due to the limited work undertaken on small towns nationally, and the Eastern Cape Midlands was selected as the focus area of the study due to the evident underdevelopment in the area, which was highlighted in an earlier study by Cook (1971). Other factors, which contributed to the decision, were that the earlier Cook (1971) study would be a valuable reference point and that the region was logistically suitable to work in. The actual towns were chosen through a purposive sample derived by stratification according to the differing categories of towns. In the following chapter, attention turns to an examination of contextual literature, which provided a theoretical basis for the research process and analysis.

Chapter 2 Literature Review

The current chapter reviews the literature regarding small towns, geographical economics and location theory due to its direct implications for understanding the economic potential of small towns. From the outset, it is important to state that the literature on South African small towns is relatively limited, particularly from a purely economic perspective (Dewar, 1995: 1). The chapter begins with Section 2.1, which defines small towns. Section 2.2 discusses international trends regarding small urban centres and 2.3 reviews specific South African experiences in this regard. Section 2.4 examines the literature on regional economics and location theory and considers the implications for small towns. Section 2.5 reviews the implications for development touching on current policy, links between small town and rural development, potential developmental options for small towns and views regarding small town support. Section 2.7 concludes the chapter.

2.1 Definition of a Small Town

The definition of a small town is difficult to determine in its own right and varies between institutions, regions and countries. The Urban Development Strategy of the Government of South Africa (RSA, 1995) suggested that any centre with a population of less than 100 000 be classified as a small town, the definition adopted within the thesis. Atkinson and Zingel (2004: 1) share a similar view, defining them as centres with populations between 5 000 – 100 000. However, the Centre for Development and Enterprise (CDE, 1996) suggested that having a population of below 50 000 constitutes a small town. These definitions also differ across countries, for example the Australian Bureau of Statistics (ABS, 1998 in Collits, 2000: 5) defines them as settlements with populations between 1 000 and 19 999.

Within this classification, three distinct categories of towns emerge in South Africa:

- Small towns in commercial farming areas, generally experiencing economic decline,
- Former homeland towns which are largely economically artificial, and are often unrelated to farming activities and
- Dense homeland settlements, lacking services and facilities.

(CDE, 1996: 2; Dewar, 1994)

Towns in the Eastern Cape Midlands clearly fit into the first category having been established in rural areas exhibiting historically significant investments whilst normally enjoying a symbiotic relationship with their agricultural hinterlands (CDE, 1996: 3).

2.2 International trends regarding Small Towns

As introduced in chapter 1, international literature suggests that there is a general decline in the economic activity and populations within small urban centres. Erickcek and McKinney (2004: 2) indicate that this trend is evident in the United States and specific studies, such as the one conducted by NCED (2002), on small towns in North Carolina in the United States confirms that between 1970 and 2000 all towns with a population below 10 000 experienced population declines. Collits (2000: 2) as well as Kenyon and Black, (2001:1) indicated that the same is occurring in Australia and point out that this trend is also evident in other countries such as the United States of America, Canada and New Zealand. As a result, disparities between small towns and larger urban centres appear to be widening across the globe.

Collits (2000: 3) indicates that small towns in general are facing many developmental challenges, which include agglomeration tendencies of economic activities towards larger centres. Courtney and Errinton (2000: 280) support this by indicating that in England, the

structure of the rural economy has changed and the demand for functions and services as well as the symbiotic relationship between these centres and their rural hinterlands appears to have changed. Kenyon and Black (2001:1) support this view and point out that changing international commodity prices have hit small towns extremely hard, as they often are reliant on one primary industry; this is particularly true of agricultural and mining commodities, which in the past have tended to be the staple of many small towns. Declining economies in small towns accentuates the problem of population loss, as employment opportunities tend to be scarce pushing people towards the larger centres in search of employment.

Despite the widespread economic and demographic decline of many small towns in Australia, Kenyon and Black (2001:1) indicate that a few have shown remarkable economic persistence, population stability and even growth, illustrating that there are exceptions to the general trend e.g. Tumby Bay in Australia.

Whilst evidence supports the findings of population and economic decline in towns in first world countries, is this true of less developed or Third World countries? Hardoy and Satterthwaitte (1986: 399 in Baker 1990: 18) in Latin America, Asia and Africa found that the generally accepted concepts and ideas regarding small town development were incorrect. Whilst the study did not directly refer to the demographics and direct measurement of economic activity, it introduced the idea that, particularly in Third World countries, the experience of small towns, due to their unique circumstances, may not correspond with first world trends. However, a comparison between towns within these regions is problematic due to the vast differences in the agricultural hinterlands surrounding them.

2.3 Trends in South African Small Towns

Of a population of 44.8 million in 2001, approximately 5 million residents lived in the approximately 500 small towns within South Africa (SACN, 2004). In addition to this,

numerous residents living in the rural hinterlands of these towns were dependent on the towns for basic and essential services. Contrary to international trends, the populations of most small South African centres appear to be increasing (Atkinson and Zingel 2004: 2). In a study of 37 small towns in the Eastern Cape by Nel and Hill (1997) all towns (excluding former homeland towns which were not included in the study) the populations were found to be growing, e.g. the population of Aliwal North grew from 13 075 to 21 903 between 1970 and 1991. However, the majority of the towns' economies were declining. Studies by the CDE (1996: 18) compared Gross Geographic Product by magisterial districts between the years 1991-1994 found that nationally 69% had experienced economic decline (importantly these magisterial districts were dominated by small towns). The implications of a general rural decline on the small service centres are significant and support the view that the economic activity in small towns appears to be declining. However, findings on towns in the Eastern Cape were not all negative. In Grahamstown, Kenton-on-Sea and Alexandria growth was noted, largely due to the areas being popular retirement and tourist locations (CDE, 1996: 19). Unfortunately, the data is now fairly dated, and current Gross Geographic Product data sets at that level are not available; only when more complex and recent data sets become available can a definite comparative analysis of economic trends be made (CDE, 1996: 17).

In addition, other documented changes have taken place across the country, which have had far-reaching effects on the towns and their basic functions. Atkinson and Zingel (2004: 2) list these as:

- Radical changes in mining techniques and mineral prices which have led to the collapse of many previously wealthy mining towns,
- Many rural rail line closures which have led to the demise of many rail junction and transport towns,
- Movements towards larger economies of scale in agriculture due to mechanisation, agri-businesses, liberalising tariff protection and the introduction of conservation and

game farming as rural activities have altered the relationships between the towns and their hinterlands, and

- Changing transport technology and shifts in retail purchasing patterns have displaced the role of the smaller towns as agricultural service centres, in favour of larger more central places.

(Atkinson and Zingel, 2004: 5)

These factors have had clear, negative impacts on the economies of a number of towns, and many are dealt with at length later in the study. What can be concluded is that centres, primarily dependent on one major industry e.g. mining or farming, can and often have experienced economic collapse, an assumption that is supported by Nel (1996: 8). In addition Christopher (1982, 152 in Nel, 1996: 7) points out that "the number of small South African towns is in excess of the present needs of the rural population and hence many do not possess the services necessary to provide for a community. Thus a spiral of decline begins where services are withdrawn, making the towns less attractive to the community." This indicates that potentially it is a necessary eventuality that a number of small towns will decline.

However, not all observations relating to smaller settlements are negative. Tourism appears to be growing with towns becoming locations for retirement as well as for telecommuters (Atkinson and Zingel, 2004: 6). Further, settlements with an estimated population threshold of 70 000 seem to be growing and do not appear to face the same economic pressures as the smaller centres (Atkinson and Zingel, 2004: 6).

Atkinson and Zingel (2004: 6) indicate that struggling centres often exhibit similar characteristics, which include:

- Dependence on state welfare, for the people and the towns themselves,
- Loss of formal sector jobs and the out-migration of skilled workers,
- High levels of poverty linked with unemployment and dependency, and

- Changes in district and municipal demarcation, and new legislation, resulting in the loss of local municipal autonomy and the reality of under-trained local officials with low budgets.

(Atkinson and Zingel 2004: 6)

2.4 Regional Economics and Location Theory

A geographic or spatial dimension to economic theory was initially developed by Von Theunen and subsequent to this additional theories have been developed in an attempt to explain the concentration of economic activities over space (Mikkelsen, 2004: 3). This particular geographical dimension has been incorporated into theory through various proxies such as transportation costs, land prices and labour mobility and through their interactions; a geographic pattern of change within economic agglomeration emerges due to an inherent trade off between centripetal forces that agglomerate economic activities and centrifugal forces, which break up these agglomerations (Mikkelsen, 2004: 3). This theory is useful as it provides some explanation as to why small towns may be experiencing economic decline. Both the fields of regional economics as well as the more traditional location theory are reviewed.

2.4.1 Regional Economics and the New Economic Geography

Geographical economics attempts to explain the spatial allocation of economic activity and is a sub-discipline, which has been gaining considerable attention due to its implications for a rapidly globalising economy (Naudé, 2005: 1). The cause for the resurgence of attention of Regional Economics is primarily due the conceptualisation of the New Economic Geography (NEG) (Brakman and Garretsen, 2005: 5).

The analytical framework behind the New Economic Geography (NEG) was developed by Krugman in the early 1990s (Mikkelsen, 2004: 3) and aimed "to put geography into economics using a general equilibrium framework where location is an endogenous variable" (Brakman and Garretsen, 2005: 25). Essentially, it seeks to explain economic

agglomeration across geographic space and relates these centralisation effects to transportation costs (Fugita and Krugman, 2004).

Since the inception of the NEG the core-periphery approach has been its fundamental backbone, a pattern that is explained through imperfect competition, transportation costs and economies of scale (Krugman 1991 and Krugman and Venables 1995 in Gries, 2005: 30). Gries (2005: 30) explains the theory by indicating that "the love of variety for product variations in monopolistic competition together with scale economies leads to an advantage for the core region. Immigration and more intensive competition through an increasing number of varieties put pressure on the price level in the core and lead to positive precautionary externalities" and that this process leads to an escalation of the agglomeration process as manufacturers tend to locate closer to large markets and conversely markets will be large where there are existent clusters of manufacturers. It is this need to be close to markets which leads to the majority of manufacturing activities being attracted towards cities, which has direct negative implications for small towns.

The NEG can be modelled through a set of seven formulae. The demand side is based on the Dixit and Stiglitz (1977) model and on the supply side is premised on the notion that all so called M-Firms produce only one variety of M-good, for which the equilibrium output is fixed and in such a situation the behaviour of the other firms is a given. This differs very little from the New Trade Models, particularly the one developed by Krugman (1980), which takes the spatial distribution of workers as given. Despite this, the NEG model and particularly the equation below, illustrates why the allocation of firms and workers may matter (Brakman and Garretsen, 2005: 10).

$$W_r = \text{Const}\ \{I_r\}^{-\mu/(1-\mu)}\ [\Sigma_s Y_s I_s^{\varepsilon-1}\ T_{rs}^{(1-\varepsilon)}]^{1/\varepsilon(1-\mu)}$$

Where:

W_r - is the region's r (nominal) wage rate;

Y_s - is expenditures (demand for final consumption and intermediate inputs),

I_s - is the price index for manufactured goods;
ε - is the elasticity of substitution for manufactured goods; and
T_{rs} - are the transport costs between regions r and s.

The equation closely resembles the 'old-fashioned' market potential function where wages are higher in regions that have easy access to high wage regions nearby, reflected by the term $YT_{rs}^{(1-\varepsilon)}$, which is generally referred to as the nominal market access (Redding and Venables, 2004 in Brakman et al., 2005: 7). Wages are also increased due to reduced competition, the competition effect, which can be measured by a form of price index I_s which measures fixed mark-ups over marginal costs where there is no 'strategic interaction between firms'. A low price index would reflect that many different varieties of products are produced in nearby regions and accordingly the transportation costs of the particular good would be relatively low, and as such reduce the total demand for locally produced manufacturing varieties (Brakman et al, 2005: 7). Considering that a firm's output levels and mark-ups are fixed, this effect would then need to be compensated for by a reduction in wages. Thus a change in the price index could impact either negatively or positively on regional wages (Brakman et al, 2005: 7).

The term $I^{\mu/(1-\mu)}$ in the wage equation, is generally referred to as the supplier access, (Redding and Venables, 2004 in Brakman et al, 2005: 7). The smaller the value of I, the lower the production costs are, which increases the 'break-even' wage rate. Thus, supplier access indicates that a low price index suggests that other firms supplying intermediate inputs will tend to be located relatively close to the area of production. Better supplier access, represented by a lower value of I, will also lower the wage rate (Brakman et al, 2005: 7).

The NEG model has two major applications, one for where there is labour mobility, e.g. between regions within the same country and secondly where there is limited labour mobility, e.g. between regions in different countries. Considering that all the towns within the study area are located within South Africa and more specifically the Eastern

Cape Midlands it can be assumed that there is a high degree of labour mobility. In such a situation Brakman et al (2005: 8) predict that using a NEG model similar to that of Pugga (1999) there will be 'complete agglomeration' of 'footloose agents' due to interregional labour mobility. This eventual outcome is illustrated in figure 2.4.1 below.

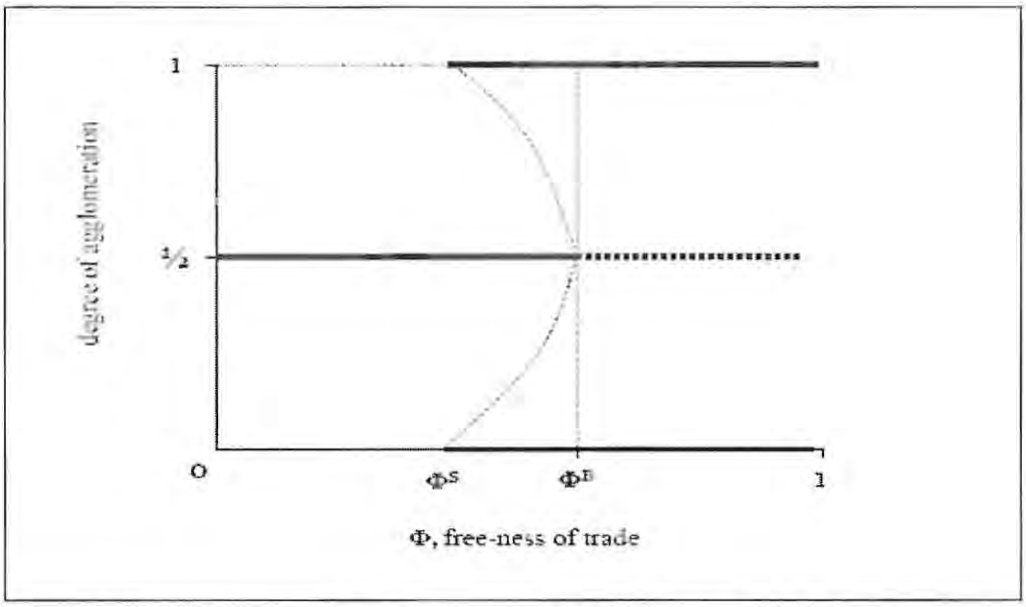

Figure 2.4.1 Implications of the NEG model where there is labour mobility
Source: Brakman et al, 2005: 11

Assuming two regions, economic integration would imply that there would be a reduction in transportation costs. Graphically this would imply a movement along the horizontal axis towards the value 1 resulting in an increase in the level of freeness of trade, which in terms of the model is defined as $\varphi rs \equiv T_{rs}^{1-\varepsilon}$; where 0 represents no integration and 1 represents free trade and full economic integration. The vertical axis represents the share of footloose production factors in region 1 (Brakman et al, 2005: 8).

The initial situation is assumed to be one of 'autarky'; where the regions are self-sufficient and (φ = 0) and footloose labour is equally distributed over the two regions,

which is illustrated by the solid line at ½. At this point, the two regions are identical and are in long run equilibrium. However, if the degree of economic integration changes, e.g. it shifts towards ($\varphi = 1$) it affects upon this equilibrium. Labour then has the choice to relocate from the one region to the other if it is more beneficial for them. Initially, relocation is not beneficial as it is still too costly to import from region 1 to region 2, due to high transportation costs and because competition for employment increases in region 2. However, once transportation costs decrease beyond a critical point it becomes beneficial to relocate, as the costs of importing from region 1 are outweighed. This then stimulates other workers to relocate until all workers have relocated into one region as shown above in the tomahawk figure (Brakman et al, 2005: 12).

However, within a national context, where there is labour mobility the outcomes are quite different. The model suggests that once transportation costs decrease past a certain level, total agglomeration in either one or the other location will occur. This implies that smaller towns will amalgamate with larger urban settlements at some point, depending on the level of transportation costs. This in itself predicts that small towns are unlikely ever to be able to reverse the current economic trends seen in these types of settlements.

Despite its achievements, there are limitations of the NEG framework and it is clear that it will never be able to model accurately the complexities of the real world as it relies heavily on the special functions for demand and transportation costs. Further, it assumes that firms are identical and makes no differentiation on the scale to which it is being applied (Mikkelsen, 2004: 30). Thus, there would be circumstances where towns may be in a position to avoid economic decline and agglomeration

2.4.2 Location Theory

Although many of the concepts of location theory are incorporated into the New Economic Geography, they are still relevant and an understanding of these aspects boosts the understanding of the challenges facing small towns.

Central Place Theory

Many location theories have been developed over the years, which have direct implications for the growth prospects of small towns. Takayama and Labys (1986) indicated that the classical theorists viewed space as a continuum in which economic activities were related to a reference point, namely a large city or market area. Thus, small towns would be developed and sustained by a service network linked to those living in rural areas. This was the central theme developed by Von Theunen, which was later incorporated into the Central Place Theory developed by Christaller and Löcsh (Christaller, 1933 and Löcsh, 1954 in Pedersen, 1990: 99).

"Central Place theory holds that the growth of a region or town relates to the demand of goods and services in the hinterland" (Collits, 2000: 16). Fugita *et al.* (2001: 26) explained the theory by imagining a large featureless plain inhabited by an evenly spread out population of farmers. Services to the farmers would not be spread equally, due to an evident trade-off between economies of scale and transportation costs. Larger centres would offer greater variation, thus attracting consumers from greater distances and a hierarchy of places would emerge, explaining the size and the spacing between the settlements within the area (Collits, 2000: 16). The approach suggests that the greatest threat to small towns is the emergence of economies of scale and a reduction in travelling costs, both of which would tend to favour enterprises locating within larger economic centres.

Factor Endowment Model

The growth of towns can also be explained through 'supply side' theories such as the Heckscher-Ohlin or Factor Endowment Model developed in the 1930s (Jovanovic, 2003: 28). The theory argues that natural endowments of land, capital and labour would determine what was produced within a specific region and accordingly the amount and type of business activities could be related to factor endowments or competitive advantages (Jovanovic, 2003: 28). However, the theory is based on neoclassical

principles, which in itself is problematic, especially in a Third World country where there are constraints on the operation of the market, e.g. traditional land tenure systems.

Growth Poles

As introduced by Perroux (1950) the concept of growth poles provides an explanation behind the spacing and size of economic activities (Jovanovic, 2003). Collits (2000) describes them as generating forces, which can cause economic activity across space to be patchy, as there are both positive and negative poles, which either attract or repel business activities. Thus, growth could be achieved through the creation of positive poles in smaller centres or it could be sucked away from rural areas into the larger urban centres. The implications for small town development are that they could experience economic growth or decline according to the structure and nature of the poles operational within their local economies.

Spatial clustering

Transaction costs form a major consideration in location theory, and clusters of economic activity form an important part of reducing these costs. Clusters have the ability to lock-in economic growth into a specific region, as firms and people are drawn into particular geographical locations thus creating growth. "A cluster is a relatively large group (a critical mass) and system of formal and informal functionally related specialised firms, knowledge skills and competencies, as well as specialised institutions (standard-setting bodies, schools, universities, research institutes, trade associations), in a particular geographical location" (Jovanovic, 2003: 48). Thus, they are particularly prevalent within the new knowledge based economy, which often excludes small towns from attracting any such firms due to their size and absence of existent clusters. Collits (2000: 16) highlight that "agglomeration economies drive business activities to locate in the proximity of one another" which explains the growth patterns of larger urban areas.

History

Arthur (1989: 128) illustrates that increasing returns and competition between economic objects caused economies to become locked into specific outcomes, thus making it an important element in the development path of an area. This makes the predictability of the economic future of a region theoretically limited. Whilst it may be possible to predict the economy within a stable environment one 'event' may change a settlement's development path overnight, for example the discovery of mineral resources in a small town would have immediate economic effects, which would have been unforeseen.

Summary

Location theory can be summed into five points, which show the evident bias towards the growth of large urban centres over small town towns (Ottaviano and Thisse, 2004: 20).

- Economic space is the outcome of trade-offs between various forms of increasing returns and different types of mobility costs.
- Price competition, high transportation costs and land use result in the dispersion of production and consumption.
- Firms are likely to cluster within large metropolitan areas when they sell differentiated products and transport costs are low.
- Cities provide a wide array of final goods and specialised labour markets that make them more attractive to consumers/workers.
- Agglomerations are the outcome of cumulative processes involving both the supply and demand sides.

2.5 Implications for Development

This section reviews current policy and views on small towns, the links between rural development, potential growth opportunities for small towns and views on small town assistance.

2.5.1 Current policy and views on small town development

In a country with scarce resources, it seems logical to approach rural poverty by optimising the use of existent infrastructure and investments, namely that found in the numerous smaller settlements in the country (CDE, 1996: 2). Despite their possible advantages government has in the past given them limited attention (CDE, 1996: 4). "The former Reconstruction and Development Ministry sub-divided its foci into 'Urban' and 'Rural', small towns falling between the two" (CDE, 1996: 4) while subsequent national policy has not specifically recognised small towns as unique entities requiring special attention. Atkinson and Zingel (2004: 2) indicate that many government schemes are generally supply-side driven policies, which have actually undermined the smaller centres, examples of which are:

- Provincial development plans have failed to define and prioritise support for a spatially balanced hierarchy of towns,
- Integrated Development Plans (IDPs) focus on municipalities and neglect the spatial role, needs and realities of the towns within them.
- Municipal governments have been placed under great stress through the need to deliver on programmes such as housing and land reform, thus prioritising other issues,
- Many programmes, such as the scaling down of hospitals, and the amalgamation of middle and working class schools have hastened the departure of the middle class from the towns,
- Certain programmes have not received adequate support, e.g. local business support centres, whilst others have been dismal failures, particularly some local economic development projects and poverty alleviation programmes, and
- The Integrated Rural Development Strategy pursues a scattered approach, emphasising infrastructure provision in only a few selected locations.

However, it is not just the government that has ignored these centres. Dewar (1995: 1) indicated that they have received scant attention from academics since the mid-1980s and Nel (1996: 1) also expressed the view that very little research had been conducted on South African towns, as urban policy has tended to favour the larger centres. No evidence was found to suggest a major change is this regard.

The CDE (2004: 2) identified four major reasons why small towns are important within the South African context:

- They are situated in the areas with the greatest needs,
- Small towns can assist with rural development, as they have existing infrastructure,
- Facilities and infrastructure within the towns need to be fully utilised and
- Small town development provides alternatives to residence and employment possibilities for immigrants, taking the pressure off the larger cities.

2.5.2 The role of small towns in rural development

One of the key arguments for investing and developing small towns was that they could act as an avenue to stimulate rural development. However, from a theoretical standpoint, this link is by no means clear as previous opinions on this subject were mixed. Baker and Claeson (1990:16) indicate that on the one hand optimists saw the development of small centres as meaningful because they contributed positively to rural development, whilst on the other hand the more pessimistic view suggested that they affected negatively.

The optimistic view followed the lines of early modernisation theories in which small towns were seen as locations from where new ideas and technology could trickle down to the rural population (Tacoli and Satterthwaitte, 2003). Hence, an even distribution of urban centres became the most efficient option to develop rural areas, or according to Rondinelli (1985 in Tacoli and Satterthwaitte, 2003: 12) a 'locationally' efficient distribution would allow clusters of services and infrastructure to serve a widespread

population, thus, promoting small settlements was the most logical way to stimulate economic growth in rural areas.

The pessimistic view, according to Tacoli and Satterthwaitte (2003:12), echoed the 'urban bias' argument, which suggested that small centres were 'tools' for the exploitation of rural areas, and a means to extract natural resources. This suggests that rural development through small town promotion is not possible (Southall, 1988 in Baker and Claeson 1990: 18). The line of thinking has parallels with traditional dependency theory (Atkinson and Zingel, 2004).

However, many scholars have adopted an intermediate position. Hardoy and Satterthwaitte (1986 in Baker and Claeson, 1990) indicated that in terms of development, small towns face unique sets of circumstances. Their individuality makes it difficult to assess the linkages between their growth and that of their rural hinterlands. Thus, it is possible that both theories will be useful within differing sets of circumstances.

Recently, wider perspectives have been adopted that describe the linkages between small towns and their rural hinterlands being partially dependant on power relationships evident at a national level (Atkinson and Zingel, 2004). Accordingly, government can manipulate the links by many different actions and policies, making small town promotion either beneficial or negligible to rural development.

There is some debate around the developmental role played by small towns (Hinderink and Titus, 2001: 380). However, Atkinson and Zingel (2004: 8) believe that small and intermediate centres assist rural development in a number of ways. These include:

- Acting as demand centres and markets for agricultural goods produced in the rural hinterlands, either for local consumers or by acting as export centres,
- Acting as service and distribution points for rural regions,

- Stimulating the growth of rural non-farm activities; stimulating employment generally through SMMEs or through shifts in the location of branches of private firms or other private enterprises,
- By attracting rural migrants through labour opportunities, easing the pressure on larger urban settlements, and
- Through the provision of public services.

The importance of the linkages between the towns and their rural areas are also emphasised by Baker and Claeson (1990: 16) who point out that the process of development in rural areas is by no means a one-way process. Small towns can promote growth in rural areas through the demand for increased agricultural productivity, greater goods and services provision and as points for the diffusion of new ideas and technology. The provision of goods and services not only includes basic commercial items, but also other elements such as education and health. In return, rural areas provide resources, and are sources of income that can be spent within the town, thus enabling the expansion of its economic and social functions. However, technological advances will have impacted upon this relationship.

2.5.3 Potential growth opportunities

The literature thus far suggests that small towns face major economic challenges and that these forces tend pull economic activities towards larger urban centres. Yet despite these factors and overall trends, some small towns across the globe have not followed this.

This section provides a more holistic view regarding the drivers and constraints of small town economies and seeks a broader explanation of how growth, as well as decline, can be achieved in small towns taking into account economic factors. Jensen (1997 in Collits, 2000: 17) identifies growth factors in small towns, which include:

- Regional economies are open and growth is determined by internal and external factors,
- There is interdependence between local and regional economies,
- Local economic outcomes are generally determined by markets,
- History and geography, including existing settlement patterns, provide both constraints and opportunities on regional economic outcomes,
- Within a market economy wealth is unevenly distributed,
- Migration of resources between regions is inevitable, and
- Certain towns are advantaged by location, either by access to markets, raw materials, infrastructure or natural amenities.

Many of these factors are similar to traditional location theory and the NEG, and provide explanations for the general decline of smaller urban centres. However, they also offer also shed light as to how growth is achievable within small towns. Firstly, because growth is determined by external and internal factors, if a town creates a viable economic environment, business activities may flow towards it. This may be particularly true of niche markets, which do not face direct competition where transportation costs are negligible. In addition, incentives to compensate for higher transport costs offered by local authorities may be an option if local economic conditions, particularly infrastructure, are good. Secondly, certain towns may have advantages in terms of raw materials, access to markets, infrastructure and natural amenities, providing a clear opportunity to stimulate the local economy.

2.5.4 Views regarding assistance to Small towns

Having discussed the numerous difficulties faced by small centres and highlighted possible opportunities available that may stimulate economic growth, the question which can be asked is what are the general opinions regarding state assistance to these small centres? Collits (2000: 2) indicates that there are at least four differing views on small towns' decline. These are important as they impact directly on whether they should receive assistance from national government.

The first view is that small town decline is inevitable, largely due to economic reasons and as such, governments should not waste resources trying to promote growth in them, despite the few success stories. A second view is that decline is inevitable but towns should be assisted for equity reasons, thus ensuring satisfactory service provision. Thirdly, government policies have led to small town decline. This idea sees government actions and interactions between parts of countries as having led to the centralisation of business, government and service activities into larger urban areas. The last opinion is that communities can revitalise their economies themselves, promoting the view that decline is not inevitable and can be turned around through local community action (Collits, 2000: 2). If small town decline is inevitable, should government waste valuable resources trying to boost economic activity? On the other hand, if local communities can reverse small town growth patterns, as a few have done, government assistance might pay off in creating employment where it is desperately needed and avoid over-concentration of people and activities in the cities.

2.6 Conclusion

Evidence suggests small town decline is a characteristic that can be explained through economic literature, particularly the New Economic Geography and location theory. However, small centres remain important service centres within the country for the 5 million people living in the 500 towns scattered across the country, as well as the many others living in their rural hinterlands. Thus, they are important in terms of development as people living in rural areas are often those living in poverty and are in dire need of assistance. Adding pressure to this is the rise in population in these centres, a situation that appears to be unique to third world countries.

The question of support of small towns is controversial and remains a critical question due to challenges facing them weighed up against their potential to promote rural development.

Chapter 3 An Economic History of five small Eastern Cape Towns

Arthur (1989: 128) illustrated the point that history is an important factor in the economic potential of any region. Thus, a crucial step in the study was the analysis of each town's history and past economic and demographic trends. The review is not intended to be exhaustive, yet reflects sufficient light on the towns and highlights how historical factors have shaped their economic environment.

Section 3.1 reviews the towns' origins, whilst 3.2 examines socio economic trends. Finally, early economic indicators are assessed in section 3.3.

3.1 Origins of the towns

Cook (1971) undertook a survey of the urban centres in the Eastern Cape Midlands, all of which were classified as 'small towns in commercial farming areas, generally experiencing economic decline'. Despite being service centres for their agricultural hinterlands many did not just emerge and grow for agricultural reasons, hence the reasons for their establishment may have had important implications for their subsequent development.

3.1.1 Agricultural backgrounds

Traditionally the development paths of towns across the globe were based upon the idea that settlements arose in rural areas as many previously farm-based activities became centralised within them, allowing farming to become specialised (Dewar, 1994: 352). The concept implied that centres would be established in central places in agricultural areas.

The town of Bedford fitted the description of an agricultural centre, when it was founded in 1855 (Myburg, 1978: 27). In 1855 Sir Andries Stockenstroom, a large land owner in the region, offered a portion of his land for sale for the purposes of creating a town, from which he could source labour and provide essential services for himself and other farmers in the region (Myburg, 1978: 27). Apart from the agricultural rationale, there was also an element of self–defence in having a larger population in the region, which brought safety to the local farmers and to Stockenstroom himself (Webster and Williams, 1985: 72).

3.1.2 Military towns

The formation of Grahamstown, Cradock and Somerset East were largely due to military and administrative reasons. However, the economic and social conditions of the surrounding farmers also played an important role, as it was often their presence that accounted for the actual location of the towns (Myburg, 1978: 27).

During the time of the Fourth Frontier War in 1812, Sir John Cradock, governor of the Cape, had the intention of containing the activities of the amaXhosa on the Eastern Frontier, and stopping the loss of stock and property being experienced by the white farmers. In order to achieve this he ordered the formation of a line of forts along the Great Fish River, and behind its northern and southern extremities, the towns of Cradock and Grahamstown were to be established (Thomson, 1970: 2).

In terms of Cradock's plan, the town of Grahamstown was established in its current location in 1812. Its existence from a military point of view was well justified, as it successfully defended an attack from Makana in 1819. Fifteen years later Hintsa, the then paramount chief of the amaXhosa, again threatened the settlement (Thomson, 1970: 3). "Grahamstown was a guarantee of the permanence of European civilisation on the Zuurveld" (Thomson, 1970: 2).

Cradock was formed for the same reason as Grahamstown, excepting that it was located behind the northern point of the frontier line. After its initial placement, the fort was moved to the modern day location of Cradock in 1813 (Myburg, 1978: 27). However, the requests by locals to move the initial placement of the town to a more suitable location indicated that there was also the need to meet the needs of an agricultural settlement.

Somerset East was established in 1825, on a farm which had previously acted as a service depot to European troops in the area, by the then Governor of the Cape Lord Charles Somerset (Birch, 1972: 63). The town was established as a Sub-Drostdy of Grahamstown, shifting Cradock to a Sub-Drostdy of Graaff-Reinet (Myburg, 1978: 28). Thus, it was established due to a mixture of administrative and military functions, but also from an agricultural perspective as the town served as a central place for the region, especially in later years.

3.1.3 Church Towns

In 1859, the Dutch Reformed Church established the town of Pearston. Prior to this, farmers living in the region simply attended church services on a local farm (Myburg, 1978:29). The ministry, seeing the need for a church bought a farm, sub-divided it into a number of plots, selling some as town plots and utilising the income generated to defray the costs (Myburg, 1978:29). Thus the modern day town of Pearston was formed due to religious considerations. In most other settlements the churches followed believers, such as Grahamstown where the town was already established and subsequently funding was received from Britain to establish churches for troops and Christians living there (Antrobus, 2005*).

3.2 Socio-economic characteristics

This section reviews historical socio-economic data. The population, number of business and manufacturing activities can be linked to the towns' origins and other events that may have had an effect on their economies and development paths.

Between 1930 and 1960, the population of the five towns more than double from slightly under 35 000 to over 71 000. In the next 41 years until 2001 the total population increased by 43%. Interestingly, of the 43 percent increase in population between 1960 and 2001, 71 percent can be attributed to Grahamstown and Cradock. These trends can be seen on Table 3.2.1 and Figure 3.2.1.

Table 3.2.1 Population of sampled towns, 1930 to 2001, selected years

	1930	1960	1970	1980	1991	1996	2001
Bedford	2 517	3 964	5 328	4 825	10 897	8 445	8 579
Cradock	7 567	19 561	20 522	25 638	26 857	29 166	31 292
Grahamstown	16 090	32 887	41 806	51 195	48 694	62 640	61 747
Pearston	1 125	2 669	3 009	3 549	3 610	3 872	4 041
Somerset-East	6 221	9 801	10 246	11 246	15 890	16 389	16 580
Total	**34 507**	**71 140**	**83 191**	**99 325**	**108 359**	**122 774**	**125 439**

Source: Henderson, 1930, Cook 1971 and Central Statistics Service 1970a, b, 1980a, b and 1991a and Stats SA, 2001a.

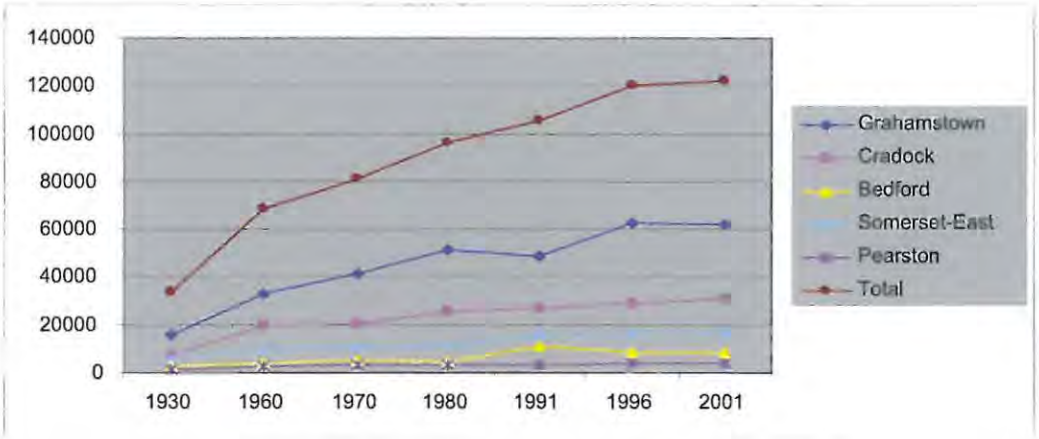

Figure 3.2.1 Graphic illustration of the populations, 1930 to 2001, selected years (not to scale)

Source: Henderson, 1930, Cook 1971 and Central Statistics Service 1970a, b, 1980a, b and 1991a and Stats SA, 2001.

As noted previously, the population growth differs from first world trends, which generally recognised depopulation of smaller urban centres. The population increase of 14.6% confirms Nel's (1996: 4) observation that indicated that the patterns exhibited were similar to many other small urban centres across the nation, which he believed may be linked to displaced farm workers and other rural people moving towards urban areas.

Manufacturing is an 'export' type activity and as such is a definite driver of a local towns' economy. Table 3.2.2 illustrates the number of manufacturing type activities in each town from 1890 to 1991, providing useful clues regarding the economic bases of the centres. Not surprisingly in 2001, 87% of these entities were concentrated in the largest centres.

Table 3.2.2 Number of Manufacturers, 1890 to 1991

	1891	1899	1910	1920	1931	1940	1950	1960	1970	1982	1991
Bedford	5	7	6	8	5	2	0	1	1	3	1
Cradock	10	7	7	6	8	9	12	9	9	8	10
Grahamstown	30	20	21	12	14	13	20	16	17	22	24
Pearston	2	3	2	5	2	1	1	1	0	1	1
Somerset-East	8	8	5	10	4	4	4	0	3	3	3
Totals	55	45	41	41	33	29	37	27	30	37	39

Source: South Africa Directories 1891-1970, 1982-1991 and Central Statistics Service 1982 and 1991c

In the early 1900s, manufacturing activities were more numerous in all of the settlements. However, these were generally conducted on a smaller scale, merely satisfying the local market. Thus, the general decrease can be explained by greater specialisation in production e.g. small scale manufacturing activates such as cabinet and dressmakers decreased. However, the main reason for the apparent decline from 1891 to 1920 from 55 to 41 was a reclassification of blacksmiths and repair establishments, previously regarded as manufacturers. Grahamstown and Cradock are the only two towns that have consistently had significant numbers of manufacturers throughout the period in question. Their origins as military and administrative centres provide an explanation, as generally their functions involved larger populations and consequently they required more services and manufactured goods, which entailed a larger economic base. It was unfortunately also not possible to determine what types of manufacturing activities declined during these time periods from the data contained in the South African Directories. It was thus difficult to determine the 'health' of the manufacturing sector simply from the number of entities, as one large manufacturer can be infinitely more valuable than numerous smaller ones. However, it does provide an indication that manufacturing type activities have not thrived within the smaller ones.

Table 3.2.3 illustrates the total number of business activities, including manufacturing, retailing and commercial enterprises, dating back to 1931.

Table 3.2.3 Total number of businesses 1930-1980

	1931	1970	1980	2005
Bedford	36	40	50	37
%	7.1	6	5.2	3.4
Cradock	148	179	212	316
%	29.2	26.8	21.9	29.3
Grahamstown	260	327	537	485
%	51.3	49	55.5	44.9
Pearston	N/A	16	21	21
%	N/A	2.40%	2.2	1.9
Somerset East	63	105	147	221
%	12.4	15.70%	15.2	20.5
Totals	507	667	967	1080

Source: South African Directories1931, 1970 and 1980 and Directories a & b 2005[8]

An interesting point raised is that the three biggest towns in the sample group all had military and administrative backgrounds. Thus, since their inception they were larger settlements with greater services offered. As a result, these centres always had a more vibrant economy in terms of population and service provision. Since the 1970s, the three centres have also experienced overall business growth, suggesting that they have become regional centres serving the needs of larger rural hinterlands, possibly even other smaller towns. Grahamstown continues to have the majority of business activities, ranging between 45 to 56 percent between 1931 and 2005. Interestingly, between 1980 and 2005 Grahamstown experienced a decline of 52 in terms of formal business activities, whilst both Cradock and Somerset East experienced a growth. The reason behind this shift is not

[8] The data was collected from a number of business directories and does not include informal activities or small businesses without telephones. Thus it is likely that these figures, especially current figures are undercounted.

clear but possibly indicates the emergence of a number of economies of scale in Grahamstown.

Pearston was created by the church and never served any major economic function; barring being a convenience to the local farmers and as a result never took off as an economic centre - a legacy that is likely to hamper any future developmental initiatives. Bedford, since its inception, was an agricultural centre and has remained relatively small in terms of service provision and population thereby appearing not to have altered its primary economic functioning. Both of these towns have not experienced significant business growth since the 1970s, despite increases in population. A possible explanation is that the larger centres in the region drew consumers away from them.

The information presented has painted an interesting pattern of the towns. Firstly the populations in all the centres have grown from 71 140 to 125 439 between 1970 and 2001. Interestingly neither Bedford nor Pearston have expanded in a commercial sense despite the population increases, however the rate of population increase in both of these centres has declined dramatically between 1991 and 2001. In contrast to this, the other towns appear to have expanded, with the number of business activities having increased from 611 to 1 022 between 1970 and 2005. This, suggests that the three larger centres have been servicing the needs of a larger rural hinterland plus quite possibly also the needs and wants of people living in other smaller centres such as Pearson and Bedford. Lastly, it appears that in terms of the number of establishments manufacturing entities have struggled in all of the towns, barring Grahamstown. The section on location theory revealed that business entities, particularly larger ones, such as manufacturers tended to favour larger urban centres, possibly explaining this trend.

These trends imply that the challenge to stimulate growth in Bedford and Pearston is large because, despite population increases, neither centre has experienced major economic growth since the 1930s. For the other three, their beginnings as administrative centres led to them having larger local economies and populations and they do not appear

to face as significant growth challenges as Bedford or Pearston. In terms of the number of manufacturing activities, which has links with the economic base of the towns, Grahamstown is the only place that has shown an increase since the 1970s, illustrating that these entities do not thrive in small towns.

3.3 Past Economic Indicators

An examination of a number of economic indicators was undertaken to identify more recent trends within the towns' economies between 1970 and 1990 and the results are presented in Tables 3.3.1, 3.3.2 and Figure 3.3.1 below. The data represents the old magisterial districts of which the town used to form the centre.

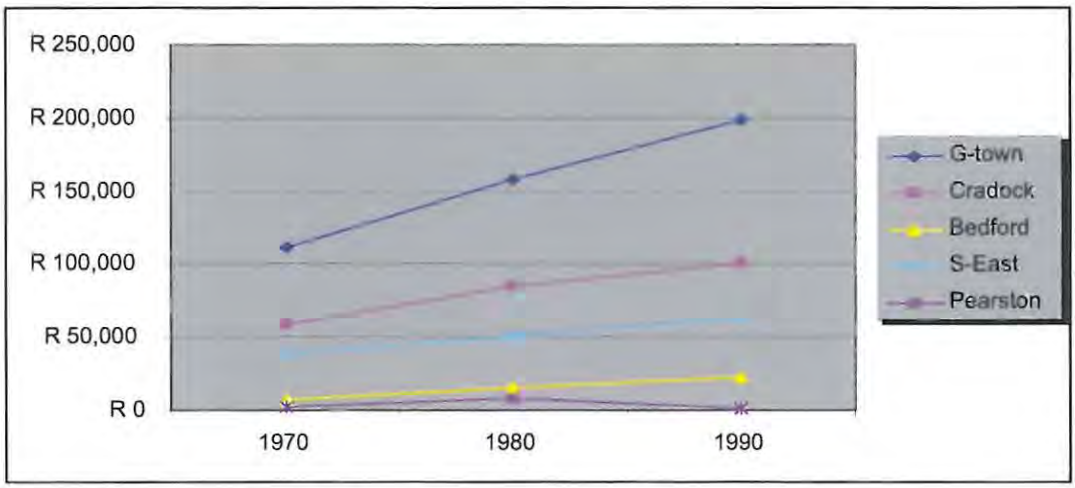

Figure 3.3.1 Total GGP at factor cost and constant 1985 prices
Source: (DBSA, 1992: (5) 60-75)

Figure 3.3.1 illustrates changes in the actual size of the local economies between 1970 and 1990 by showing total GGP at factor cost at 1985 constant prices. The figure implies that total economic activity within the towns generally increased during the period in question. It also indicated that the local economies of Grahamstown, Cradock and Somerset East were significantly larger than the other two towns.

Table 3.3.1 Employment in terms of economic sector 1980 – 1991

	Agriculture, hunting, forestry	Mining	Manufacturing	Elect, gas ,water	Construction	Commerce, catering and accommodation	Transport and communication	Finance	Community and social services	Total
Grahamstown (Albany)										
1980	3913	71	1358	145	608	2489	1356	589	9446	19975
1991	2995	17	542	112	827	1655	523	580	8163	15387
Change	-918	-54	-816	-33	219	-834	-833	-9	-1283	-4588
% Change	-23	-76	-60	-23	36	-34	-61	-2	-14	-23
Cradock										
1980	2053	11	224	40	667	997	1533	244	3676	9445
1991	1798	4	90	61	447	829	636	275	3599	7739
Change	-255	-7	-134	21	-220	-168	-897	31	-77	-1706
% Change	-12	-64	-60	53	-33	-17	-59	13	-2	-18
Bedford										
1980	1394	12	61	50	163	178	175	20	1048	3101
1991	856	19	34	6	61	134	101	27	1165	2403
Change	-538	7	-27	-44	-102	-44	-74	7	117	-698
% Change	-39	58	-44	-88	-63	-25	-42	35	11	-23
Somerset East										
1980	1870	31	366	115	298	563	754	115	2714	6826
1991	1793	11	247	74	488	493	360	147	2541	6154
Change	-77	-20	-119	-41	190	-70	-394	32	-173	-672
% Change	-4	-65	-33	-36	64	-12	-52	28	-6	-10
Pearston										
1980	513	1	2	0	83	74	26	5	626	1330
1991	390	0	21	0	65	54	11	9	414	964
Change	-123	-1	19	0	-18	-20	-15	4	-212	-366
% Change	-24	-100	950	0	-22	-27	-58	80	-34	-28

Source: DBSA, 1995: 62 – 66

Table 3.3.2 Percentage contribution to Gross Geographic Product by economic sector 1970 – 1991

	Agriculture, hunting, forestry	Mining and Quarrying	Manufact-uring	Electric, gas water	Const-ruction	Commerce, catering and accomm-odation	Transport and commun-ication	Financing insurance and real estate	Community and social services
Albany									
1970	13	1	5	2	3	12	8	13	44
1980	14	0	4	2	2	10	8	16	43
1990	13	0	4	2	4	9	4	16	48
Cradock									
1970	13	0	3	2	8	10	22	13	29
1980	21	0	1	1	4	8	29	12	24
1990	26	0	1	1	1	8	25	23	17
Bedford									
1970	27	0	0	2	6	16	9	4	37
1980	62	0	2	1	1	6	3	10	17
1990	58	0	1	0	1	4	2	10	24
Somerset East									
1970	16	0	6	2	7	10	19	5	35
1980	35	0	3	2	1	9	17	10	23
1990	46	0	2	1	3	8	13	11	16
Pearston									
1970	46	0	0	1	0	9	6	0	38
1980	71	0	0	1	0	4	2	9	13
1990	74	0	0	0	1	4	2	10	10

Source: DBSA, 1992: (5) 60-75

A number of other elements are also noticeable from the tables and graph. Firstly, the average increase in the contribution of agriculture to GGP, in the period 1980-1990, was associated with a decrease in employment. This may indicate a number of things. Firstly, commercial farmers were expanding production, through greater mechanisation, i.e. there

was no need to increase their workforce. Secondly, that the other industries declined thus accounting for the greater relative contribution by agriculture to GGP during the period; for example employment in manufacturing for example decreased in all of towns between 33 – 60 percent between 1980 and 1991, barring Pearston, which suggested a major decrease in economic activity. Alternatively, the difference may be because of a combination of the two factors.

Another noticeable trend was that the commercial sector, including catering and accommodation, and the manufacturing sector, experienced a general decline between 1970 and 1990 - 834 jobs were lost in the commercial sector in Albany alone between 1980 and 1991. The services sector was identified as a major contributor to the local economies, accounting for 48% of employment in Grahamstown in 1991. However, despite the significant employment its overall contribution to GGP declined in all towns barring Grahamstown. One of the reasons for the sectors dominance in Grahamstown is that from very early on since the establishment of Saint Andrews College in 1855, Saint Andrews Preparatory 1888, Kingswood College 1894 and Rhodes University in 1905 the town has become an educational centre. Their existence, together with facilities, such as the High Court, has resulted in the town developing somewhat of a competitive advantage in the educational sector as well as a few other specialised activities.

Lastly, total employment dropped in all of the districts between 1980 and 1990 despite the increases in GGP. Thus despite GGP growth the towns may have suffered socially due to the loss in employment. The decline in agricultural employment affected most heavily on the local economies of Pearston and Bedford and accounted for 34 and 77 percent respectively of their total decreases in employment. This illustrates that if towns are dependent on one industry the collapse or decline of that industry will have huge economic effects on the town.

The dominance of agriculture in all the towns was also evident in the initial statistics. Table 3.3.3 extends the analysis and presents the percentage contribution of agriculture to GGP, at factor cost, in 5-year intervals between 1970 and 1980.

Table 3.3.1 Percentage contribution of Agriculture to Gross Geographic Product, measured at factor cost

District	1970	1975	1980	1985	1990
Grahamstown (Albany)	15	14	17	12	11
Bedford	30	58	67	48	54
Cradock	15	23	25	21	23
Pearston	49	67	75	70	71
Somerset East	19	26	40	35	42

Source (DBSA, 1992: (5) 50 –70)

The table clearly emphasises the dominant role that agriculture within the old Magisterial Districts has on the economic livelihood of these regions. In 1990, only Grahamstown and Cradock had other industries that contributed more to GGP than agriculture (DBSA, 1992: (5) 50 –70). Another noticeable trend is the growing reliance of all of the towns, barring Grahamstown, on the agricultural sector particularly Bedford and Pearston where agriculture contributed 54 and 71 percent respectively to their GGP.

There were limited mining and quarrying activities within the town. No towns have any natural resources of any significance except Grahamstown, which has kaolin reserves. Interestingly, the exploitation of this resource in terms of valued added has not been substantial. A major explanation for this under-utilisation was the rail prices for unprocessed resources, which made it cost effective to rail the unrefined kaolin to larger centres as opposed to developing processing industries within the town (Antrobus, 2005*).

3.4 Conclusion

From their origins, it is evident that historical events impacted on the development paths of the towns. Cradock and Grahamstown's initial military and administrative functions led to their economies being relatively large service centres in comparison to other towns. A lack of economic growth in Pearston in a sense can also be linked to its origin as a town established for religious purposes as opposed to economic rationale, which stunted the growth potential of the town.

The population in all of the towns has grown since 1930, primarily accounted for by rural-urban migration and natural population increases over time, which contradicts observed international trends. Employment in all the towns' magisterial districts decreased between 1980 and 1991 suggesting that the towns were declining economically. All the towns are heavily reliant on the agriculture and service sectors in terms of GGP and employment. Interestingly, the agricultural sector performed relatively well in terms of GGP, but employment in the sector dropped within all of the towns, which may partly account for the overall decreases in employment between 1980 and 1991. Evidence also suggests that the manufacturing and commerce were beginning to struggle towards 1991.

Chapter 4 Analytical Methodology

The chapter reviews several analytical research tools to assess regional economies and the current economic situation within the selected towns in section 4.1 whilst section 4.2 considers their applicability in modelling small town economic performance within South Africa where available data sets are extremely limited. Finally, section 4.3 presents a conclusion to the chapter.

4.1 Regional Economic Models

Many different regional models exist, which can assist in explaining the economic growth or decline of various regions, thus enabling predictions to be made about the future prospects of a region (Nijkamp *et al.*, 1986: 258). Accordingly, this section reviews the theory underlying the most prominent techniques pointing out both their strengths and weaknesses. The three models that were selected for use in the analysis were examined in greater detail, including the analytical tools used.

4.1.1 Economic Base Theory

Economic base theory divides economic activities into two groups: firstly those that export goods to outside markets, i.e. basic activities, and those that produce goods for a local market, i.e. non-basic activities (Juleff, 1993: 4). This implies that only export type production creates wealth within a region whilst service type activities simply act as multipliers of the wealth that is brought in. As such, "export base theory focuses on principal demand-related factors responsible for the growth or decline of a local economy" (Barkley, 2001: 2). However, it becomes evident that this approach has its limitations.

"Economic-base models focus on the demand side of the economy. They ignore the supply side, or the productive nature of investment, and thus (are) short-run in approach" (Schaeffer, 1999), which implies that regional growth can only be achieved via increases in exports. This is clearly not a realistic assumption because if autonomous expenditure is included it becomes possible for regional economies to grow even if export activities have remained unchanged (Ghali 1977 in Schaeffer, 1999). However, economic base analysis is able to paint part of the picture of regional economies and remains an important and valuable analytical tool, particularly when dealing with limited data sets.

Of the measures that can be used in economic base theory, the most common are employment figures utilising location quotients as the main analytical tool (Juleff, 1993: 3), a method utilise in this study.

A basic Keynesian formula for the economic activity within a region, following BIDC (2002a) can be presented as follows:

$$\mathbf{Y = I + C + G + (X - M)} \qquad \mathbf{(4.1.1.1)}$$

Where

Y - Total Regional Product

I - Investments

C - Consumption

G - Government Expenditure

X - Exports

M - Imports

However, this equation represents the interaction between both the demand and the supply sides of the economy, but because the theory focuses on the demand side of the economy the equation can be simplified to:

$$\mathbf{Y = X + S} \qquad \mathbf{(4.1.1.2)}$$

S encapsulates all other non-export activities and considering employment data is used in the calculations the economic base model can be simplified further as:

$$\mathbf{E_t = E_b + E_n} \qquad \mathbf{(4.1.1.3)}$$

Where

E_t – Total employment

E_b –Basic employment

E_n – Non-Basic Employment

The equation above does not indicate how to identify export activities and the regions' basic and non-basic workforce. Juleff, (1993: 2) illustrates how the location quotient solves this problem, which can be expressed as:

$$\mathbf{LQ = (e_i / e_t)/ (E_i/E_t)} \qquad \mathbf{(4.1.1.4)}$$

Where

E_t – total employment for the nation

E_i – total employment in national industry

e_t – employment in region

e_i – employment in the regional industry

Juleff (1993: 2) indicates that if the LQ is greater than one, then the area or region is relatively specialised in that particular industry and accordingly exports some of these products to other regions. Similarly, if the LQ is less than 1 it is assumed that the particular industry is not specialised and as such the region will import goods in that specific industry. Essentially if the location quotient is 1.3 and R10 000 was invested into a particular sector it would result in a regional income of R13 000.

However, of the industries that have an LQ greater than 1, not all the workers in that industry will be serving export markets; certain workers will still be catering for the local

market (BIDC, 2002a). Thus in order to calculate the proportion of the workforce producing for the export market within an export industry it is necessary to determine E_b, (BIDC, 2002a).

$$\mathbf{E_b = LQ_i - 1/LQ_i} \qquad \mathbf{(4.1.1.5)}$$

Once E_b has been calculated, the figure can be multiplied by the number of workers within the export industries to determine the number of basic employees serving export markets, (BIDC, 2002a). Once this has been achieved, it is possible to calculate total basic employment, i.e. the export base of the community.

The calculation of the LQs of the various industries enables the determination of the composition of the regional economy, enabling an analysis of its strengths, weaknesses, opportunities and limitations. Thus, considering the primary aim of the thesis, namely, to determine the economic potential of the towns, economic base theory has something to offer. LQ as a measurement tool also appears to be an effective and acceptable way of measuring the economic base of a particular region.

Nijkamp *et al.* (1986: 263) indicates that certain problems and advantages exist when utilising economic base theory and location quotients. On the positive side, it is a useful tool when facing practical considerations such as data limitations. Schaeffer (1999) and BIDC (2002a) discuss a number of the negative aspects of using the LQ approach as a primary measurement:

- LQ and economic base theory are only useful tools in the short-run; any changes that occur within a region after the analysis has taken place will alter the predictive effectiveness of the model (Schaeffer, 1999).
- The measure that LQ > 1 as a type of threshold measure for regional specialisation is not significant (BIDC, 2002a). Thus, it merely acts as an indicator and not as a definite guideline. It is possible for industrial sectors with LQs greater than 1 not to

be exporters, such as the property market and construction industries, which generally only serve the local market. An increase in their LQs simply reflects changes in local consumption and investment patterns (BIDC, 2002a).

- The model underestimates export employment; the larger the areas the greater the error (BIDC, 2002a). This is because imports from a large region or province are relatively small compared to the imports within a small area of analysis.
- The method does not take into account specialisation; employment figures are not always an accurate measurement and operations may become mechanised leading to higher production levels without increasing employment (BIDC, 2002a).

An important aspect of economic base theory is the multiplier effect. Generally, the larger the area the greater it will be. Juleff (1993: 3) indicates that the higher the propensity to spend locally the greater the effect. Indications regarding the multiplier effect can be determined via LQs. However, no attempt shall be made to determine the actual multiplier figure within the towns, due to the complexity of achieving this, except through general questions posed through the structured interviews. These act only as rough guidelines regarding trends and spending patterns. Considering the sizes of the towns, it can be assumed that the multiplier will be extremely low in most of the centres.

4.1.2 Shift-Share Analysis

"Shift-share analysis is a method of disaggregating regional employment change in an industry in order to identify the components of that change" (Stevens and Moore, 1980: 419). Essentially, it identifies changes in regional economic performance that are not related to national shifts, making them effectively regional differences. Holden et al., (1989: 15) confirm that shift-share analysis has been used in regional analysis and in the evaluation of regional policy making. There are definite positives when applying the technique to the analysis of small towns, but possibly the most advantageous aspect of the model is its ability to make projections with minimal data sets (Nijkamp et al., 1986: 258).

The following section reviews the method of shift-share analysis that shall be adopted within the study. The basic formula is presented by BIDC, (2002b) as:

$$SS = NS + IM + RS \qquad (4.1.2.1)$$

Where:

SS - Shift-Share

NS - National Share

IM - Industry Mix

RS - Regional Shift

Stevens and Moore (1980: 420) indicate that the formulas for each of these items can also be expressed in terms of employment nationally and locally at the beginning and at the end point of the analysis.

$$NS = e_i^{t-1} (E^t / E^{t-1}) \qquad (4.1.2.2)$$

$$IM = e_i^{t-1} (E_i^t / E_i^{t-1} - E^t / E^{t-1}) \qquad (4.1.2.3)$$

$$= e_i^{t-1} (E_i^t / E_i^{t-1}) - NS$$

$$RS = e_i^{t-1} (e_i^t / e_i^{t-1} - E_i^t / E_i^{t-1}) \qquad (4.1.2.4)$$

Where

e - Regional employment in all industries

E - National employment in all industries

e_i - Regional employment within a specific regional industry

E_i - Regional employment within a specific national industry

t - End period of analysis

t-1 – Beginning period of analysis

The National Share (NS) indicates the level to which total employment within a region has increased due to national changes in the economy. The Industry Mix (IM) identifies fast or slow growing industries nationally; thus local areas with a high concentration of

fast growing industries would have grown at a higher rate than areas with high concentrations of slow growing industries. The Regional Shift (RS) shows regional industries that have grown or declined in relation to that particular industry's national trend, and as such is the most relevant component of shift-share analysis (BIDC, 2002b).

Despite the advantages of the method it does have some inherent weaknesses. Holden et al., (1989: 32) concluded in their critique of shift-share analysis as a means of regional analysis, that three major limitations exist. Firstly, mechanical techniques are required, yet the interpretation of the data does require a clear theoretical underpinning. Secondly, the theory is based solely upon regional employment; this presents certain problems in terms of reliability. Lastly, deriving growth vectors is a problematic task (Holden et al., 1989: 32). BIDC (2002b) offers a succinct view of the limitations of sift-share analysis: they describe the technique as a descriptive tool only, and accordingly it should be used in conjunction with other methods as it fails to account for many factors including business cycles, identification of comparative advantages and changes resulting from differing levels of industrial structure. BIDC (2002b) also conclude that because shift-share analysis is simply a view of a local economy at two different points of time the results become sensitive to the time period that is chosen.

A common notion held in location theory is that manufacturing operations tend to favour larger metropolitan areas; shift-share analysis enables the testing of this hypothesis relatively easily. Thus, despite the problems associated with shift-share, when used in conjunction with other methods the technique provides useful and valuable information regarding the economic potential of small towns.

4.1.3 Input-Output Models

Input-Output techniques utilise accountancy principles and are seen as models of the production side of the economy (Hewings and Jensen, 1986: 299). They can be used to measure the final production of a region in two ways. Firstly by calculating the costs of

inputs into a region, such as raw materials, intermediary inputs, imports, labour and capital. Secondly, by reviewing the output flows from a region (Nijkamp et al., 1986: 263).

An input-output table can be broken into four quadrants (Pissarenko, 2003: 1):

- Quadrant 1 - Intermediate Demand, which is the flow of products produced in the production process.
- Quadrant 2 – Final Demand, which is the final demand of each producing industry, e.g. demand for non-industry consumers like households, government or exports. It is the demand for goods, which are not used to produce other goods (as opposed to intermediate demand).
- Quadrant 3 - Inputs (e.g. raw materials) to producing industries, which are not produced by any industry like imported raw materials.
- Quadrant 4 – Primary inputs to direct consumption that are inputs directly consumed to produce other goods e.g. imported electricity.

These elements can be clearly seen in table 4.1.1.

Table 4.1.1 Fragment of Input output table

Input ↓ Output →	1	2	3	Total Final Demand	Total Output
1	x_{11}	x_{12}	x_{13}	Y_1	X_1
2	x_{21}	x_{22}	x_{23}	Y_2	X_2
3	x_{31}	x_{32}	x_{33}	Y_3	X_3
All primary Inputs	Z_1	Z_2	Z_3	-	-
Total Inputs	X_1	X_2	X_3	-	-

Source: Pissarenko, 2003: 2

If the change for final demand increases it will increase agricultural output and impact upon inter industry demand and thus increase outputs from the other sectors, this is generally referred to as a first order effect. This will then lead to second and third order

effects through regional multipliers as the additional money generated circulates within the regional economy (Pissarenko, 2003: 2).

"The most common view is that of the input-output table in regional analysis is as a model, virtually sufficient in and of itself, for regional projections and impact analyses" (Hewings and Jensen, 1986: 306). It allows the identification of current markets and enables predictions to be made regarding the size of future markets, which will come to absorb output of the various firms (Isard et al., 1998: 95). Through input-output analysis, it is possible to:

- Analyse the effectiveness of government's attempts to promote economic growth;
- Analyse the labour market;
- Forecast the economic development of a nation; and
- Analyse the economic development of various regions.

However, criticisms do exist of the model's ability to explain regional growth. Richardson (1973: 40) believes it lacks the generality of econometric models as it contains extremely precise theoretical implications and if any were to change the models forecasting ability is compromised. Another constraint is that this type of modelling is extremely data demanding (Nijkamp et al. 1986: 264), making it an inappropriate model within the South African context.

The model has the ability to shed light on the sectoral relationships within regional economies. It is a common tool although generally only applied to smaller regions where data sets are disaggregated to the level of analysis.

4.1.4 Gravity Models

Gravity models are a way in which the effects of distance can be incorporated into regional analysis (Richardson, 1973: 62). Nijkamp *et al.* (1986: 264) indicates that many

multi-regional economic models incorporate gravity formulas to account for the impact of transportation costs on industrial location. Hoover and Giarratani (2000: 103) explain the gravity formulae in much the same light, by indicating that within this type of model the distance of a market or input source is systematically discounted according to the location in question. Gravity type formulas can be applied to many situations and form an important variable within more complex modelling techniques particularly to analyze the effects economic integration on bilateral trade flows (van Beers, 2000:1). A standard gravity model can be presented as:

$$\log X_{ij} = \beta_0 + \beta_1 \log Y_i + \beta_2 \log Y_j + \beta_3 \log N_i + \beta_4 \log N_j + \beta_5 \log D_{ij} + \beta_6 \log P_{ij} + \mathbf{u}_{ij}$$

Where:

X_{ij} = Bilateral commodity trade flow from country i to country j
Y_i = Gross Domestic Product in country/region i
Y_j = Gross Domestic Product in country/region j
N_i = Population in country/region i
N_j = Population in country/region j
D_{ij} = Distance between country/region i and j
P_{ij} = Dummy variables picking up specific 'unnatural' factors
u_{ij} = Log-normally distributed disturbance term
(van Beers, 2000:2)

Despite the possible benefits of this model, without data on actual GDP within the towns as opposed to municipal regions, it not suitable to apply.

4.1.5 Econometric Models

Another common regional technique is the use of econometric type models. "A major reason econometric models are so ubiquitous in research and professional work is because they can be used in a variety of ways" (Isard *et al.*, 1998: 138). Three major uses are suggested by Isard *et al.* (1998: 8); firstly econometric models can be used to test hypotheses formally. Secondly, they enable future predictions to be made fairly accurately regarding the dependant variable and lastly, the implications of policy

decisions can be easily tested, e.g. changes in consumption, and investment, etc., can be tested (Isard *et al.*, 1998: 138). The distinctive element of econometric models is that they are not based on an underlying theory, as is the case with other models. Instead, they are based on specific relationships and the coefficients are specified accordingly. They have the ability to incorporate other methods, such as gravity models, and thus hold the key to large scale regional modelling. However, these types of models do require vast and accurate data sets in order to make accurate predictions. The method can be extremely useful in analysing small regional economies, but is only commonly utilised in the United States and other countries such as the United Kingdom due to the vast data sets, which are disaggregated to small areas. The method would thus not be suitable in countries such as South Africa were comprehensive data sets are not available for smaller urban areas.

4.1.6 Social Accounting Matrixes (SAMs)

"A social accounting matrix (SAM) is a comprehensive, economy wide data framework, typically representing the economy of a nation" (IFPRI, 2002: 5). The interrelated data sets thus allow hypotheses and policy issues to be tested (Stats SA, 2002). This is possible as the SAM is a square matrix where each account within the economy is represented in a row or column and each cell represents the payments from the account in the column to that of the row. It is thus premised on a double entry accounting system where total revenue is equal to total expenditure (IFPRI, 2002: 5).

The basic structure differentiates accounts for activities (entities of production) and accounts for commodities. The activity accounts are valued at producer prices whilst the commodity prices are valued at commodity prices. Commodities are essentially activity outputs which can either be sold locally or exported and include imports. This separation of activities from commodities allows many commodities to be generated from a specific activity, e.g. a forestry activity can produce numerous commodities such as timber and paper. Commodity payments, represented in the columns, are made to domestic activities, the rest of the world and various tax accounts and allows imports to be to be modelled as

perfect or imperfect substitutes for domestic production. The matrix also accounts for domestic import and export marketing of each commodity as well as the costs of the associated transport costs (IFPRI, 2002: 5).

The SAM can be utilised to test hypotheses by calculating the multipliers between the components within an economy, by using the material balance equation developed by Sadoulet and De Janvry (1995) and Bautista et al (2002). According to Jauna (2006: 300) the basic materials balance equation can be specified as:

$$Y^1 = AY^1 + F \qquad (1)$$

Where:

- Y^1 is a nx1 column vector of total sectoral output
- A is a nxn matrix of direct technical coefficients for the endogenous factors
- F is a nx1 column vector of final demand

Whilst the A matrix corresponds to the number of productive sectors. Thus by solving for Y^1 it is possible to derive equation 2.

$$Y^1 = (I-A)^{-1} F \qquad (2)$$

Where:

- I is the identity matrix
- $(I-A)^{-1}$ is the Leontief inverse

"The input-output model is concerned with solving for the sectoral output levels (Y) that satisfy final demand for those outputs (F) given the inter-industry structure of production or the intermediate input requirements of the production sector" (Jauna, 2006: 300). Equation 2 can thus be used to obtain various multipliers; most regularly the production and income multipliers. It can be reduced to:

$$Y^1 = M^1F \text{ where } M^1 = (I-A)^{-1} \quad (3)$$

Thus, M^1 becomes the Leontief inverse, which essentially is the input-output multiplier matrix. Considering Y^1 represents total sectoral output and F is proxy for final demand, equation 3 can be utilised to calculate endogenous incomes linked to changes in the total exogenous accounts, given the multiplier matrix. It can also be utilised to analyse the impacts of outputs caused by exogenous shocks; in other words changes in factors such as investment, government expenditure and demand from the rest of the world, which would affect final demand. The multiplier matrix M^1 can thus be utilised to determine total income change due to the exogenous factors; essentially it will indicate the amounts by which various sectors change in production due to an exogenous shock. The equation can now be extended to the SAM multiplier by including the primary factors and consumption accounts to the production sectors (Jauna, 2006: 301).

By letting "A_m be the enlarged square matrix of direct propensities computed from the SAM and Ms the enlarged inverse (SAM multiplier) matrix" (Jauna, 2006: 301) the M^s can be represented by:

$$Y = M^s F, \text{ where } M^s = (1 - A_m)^{-1} \quad (4)$$

M^s takes into account the induced effect of the changes of the exogenous shifts within the national economy. The final demand for goods and services can now be calculated by multiplying the multiplier matrix by final demand (Jauna, 2006: 301). This can be represented as:

$$Y^1 = (1-A)^{-1} * F \quad (5)$$

This formula can be used to validate the multipliers and highlights the impacts on all the entries within the SAM. To actually calculate final output, the figure prior to the shock is

subtracted from the amount after the shock. This resulting change in output shifts final demand within the various sectors and thus elements within the coefficient matrix. This can be represented as:

$$(1 - A_2)^{-1} * F - (1 - A)^{-1} * F = [(1 - A_2) - (1 - A)] = \Delta Y^1 \qquad (6)$$

A_2 is the change in the coefficient matrix that results from the shocks within the SAM. Thus, the equation represents the final changes in intermediate inputs (Jauna, 2006: 302).

Through these manipulations, it is possible to test scenarios within the national economy. Unfortunately, actually, developing or adapting a SAM for a small town within South Africa is not feasible due to the severe lack of available data at this level. However, the evident linkages within the national SAM may provide useful information about the scope and the nature of the linkages between the various sectors within the economy.

4.1.7 Computable Generated Equilibrium (CGE)

A Computable Generated Equilibrium (CGE) is very similar to a SAM; the model explains all of the payments within a SAM and is therefore disaggregated in a very similar manner (IFPRI, 2002: 1). A CGE in recent times has become a popular tool in regional analysis, although still not as widely used as input-output analysis (Partridge and Rickman, 2004: 1). It is essentially a set of equations, which define the actions of actors within the regional economy due to outcomes based on fixed co-efficients (IFPRI, 2002: 8). "For production and consumption decisions, behaviour is captured by nonlinear, first-order optimality conditions. that is, production and consumption decisions are driven by the maximization of profits and utility, respectively" (IFPRI, 2002: 8).

A CGE comprises of four main components, namely:

- Activities, production and factor markets
- Institutions

- Commodity Markets
- Macroeconomic balances

The major difference between a CGE and a SAM is that taxes have to be paid into 'tax accounts' which are related to its core government account. Despite their usefulness and ability to accurately model impacts at a regional level, they require significant data and are not suitable to disaggregate at a town level.

4.2 Models applicable for Small Towns in South Africa

As illustrated, many models exist, and the more complex ones provide greater insight into the regions being analysed. However, the problem of data accessibility is severe at a town level within South Africa and the most useful data sets the 1996 and 2001 population censuses do not contain the detailed economic data, necessary for utilising the more complicated techniques e.g. econometric models, SAMs and CGEs. On top of this, few studies have been undertaken on small towns, thus making other sources of information scarce (Nel, 1996).

It was thus deemed appropriate to use economic base and shift-share type analysis to analyse the towns directly. As mentioned the forecasting ability of these models paint a fairly accurate picture of the economic environment and trends without being data intensive. A national SAM was also used in conjunction with these methods to identify important linkages between sectors, although it was not possible to disaggregate this to a town level. However, it did allow several possible scenarios to be tested at a national level from which deductions could be made about changes within the towns' local economies to identify potential avenues to stimulate growth.

4.3 Conclusion

The chapter highlighted and reviewed several regional modelling techniques. Despite the advantages of a number of techniques, they were not utilised due to the unavailability of economic data at a town level in South Africa. The two models selected to analyse the towns were Shift-Share analysis and Economic Base theory, considering the data limitations they together with a national SAM were used to identify important economic trends, sectoral linkages and potential avenues for growth.

Chapter 5 Analysis of towns using Shift-Share Analysis, Economic Base Theory and a Social Accounting Matrix

The chapter assesses recent economic trends within the five selected towns by applying the available data using regional modelling techniques with the aim of identifying the complex set of linkages within their local economies. Section 5.1 reviews the census data and the manipulations that were required to isolate information about the towns themselves as opposed to the broader municipality. Economic trends are reviewed in 5.2. Section 5.3 utilises the shift-share technique to analyse changes in the local economies. In section 5.4 export base theory through the use of location quotients is applied to the data sets, whilst 5.5 employs a Social Accounting Matrix to identify sectoral linkages within the national economy and tests a set of hypothetical scenarios and their potential impacts on the towns. A conclusion is presented in 5.6.

5.1 Data sets utilised: 1996 and 2001 censuses

The primary data sets utilised within the study are the 1996 and 2001 censuses. Despite being fairly dated, these were the only data sets available that could be disaggregated below a local municipal level. Even with the census there are certain complications. The government prior to 1994 used Magisterial Districts as reference areas for economic statistics whilst the current government uses municipalities, making comparisons prior and post 1994 impossible for the scope of this work (Central Statistics Service 1991a and Stats SA 1996). Municipal boundaries were also shifted slightly between the 1996 and 2001 censuses; furthermore the boundaries of 'sub' places within municipalities were also changed between these periods making comparisons between towns and suburbs extremely complex (Parry, 2005*). In order to make an accurate comparison, the use of a GIS system should, ideally, be utilised, as this would allow greater consistency between the two data sets.

Unfortunately, a GIS system was not available for the study. Instead the boundary differences between the two years were mapped and taken into consideration when analysing the results. Copies of the town maps, highlighting the administrative differences can be seen in Appendix 3. Generally, there were fairly significant geographical changes to the town boundaries in all of the selected towns, barring Cradock, which exhibited only minor shifts.

Despite the large geographic changes, the demographic differences regarding population were not believed to be significant. Careful analysis of the town maps indicated that the major difference between the two periods is that municipal land, e.g. commonage, was included as part of the towns in 1996 and was excluded in 2001[9]. Thus, despite large boundary changes these movements are not believed to represent major demographic alterations. In order to confirm this view, testing was undertaken to monitor the population of the towns as a percentage of the municipality to ensure that the data correlated.

Figure 5.1 shows that few changes in the ratios took place, indicating that the boundary shifts had no significant effects on the demographics of the towns. In fact, most of the towns showed a slight increase in their percentage of the municipal population, which is consistent with the belief that people living in the rural areas are migrating towards, and settling in, rural towns around the country. Unfortunately the comparison of suburbs and 'sub-places' was not possible due to their significant boundary alterations.

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[9] Personal observations made in analysing the maps acquired from the various tourism boards reflect changes in the town boundaries, see Appendix 3.

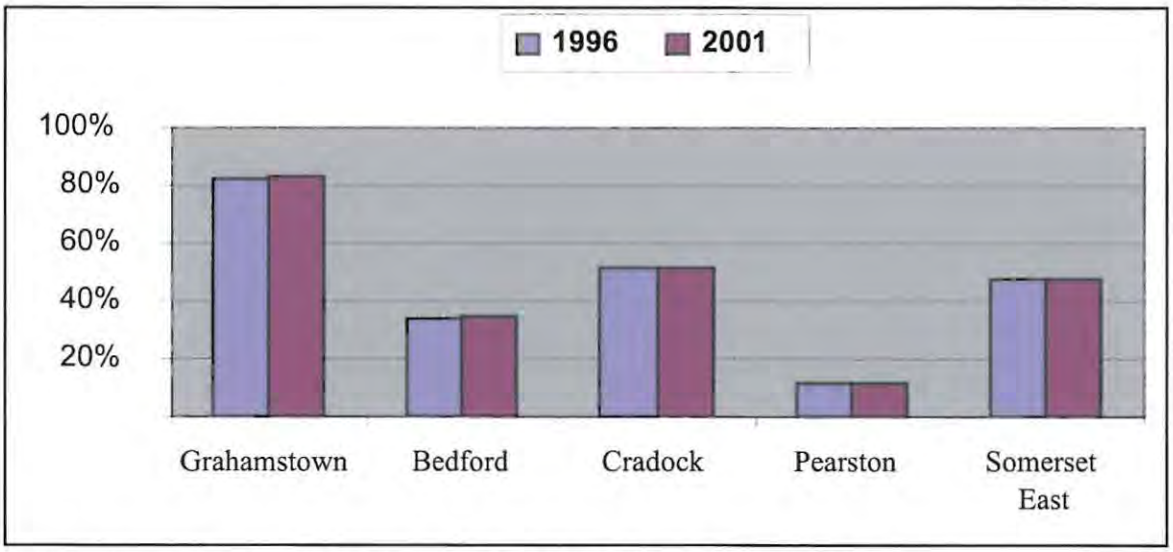


Figure 5.1 Town population as percentage of Municipal population

Source: Stats SA, 1996 & 2001a

5.2 General Overview of the Towns' Economic Environment

The sampled towns, as seen in chapter four are not decreasing demographically, but what of their current economic performance? Table 5.2.1 suggests that their situation has worsened, indicating lower employment levels in 2001 compared with 1996, and significantly higher levels of unemployment in 20 Table 5.4.2 illustrates the industries in the towns which contribute to their economic base, i.e. sectors with a LQ greater than 1, and the percentage of the town's workforce producing goods or services for export, i.e. the extent to which the local economy brings in external money into the local economy. Theoretically it also indicates that if money was invested into the towns the extent to which it would generate economic growth. This is also represented graphically on figure 4.4.1 below.

Table 5.2.1 Employment Figures 1996 and 2001

	G-town	Cradock	Bedford	Pearston	S-East
Employed 1996	12 300	5 336	770	364	2 933
Employed 2001	11 356	5 026	630	331	2 756
% Decrease in employment	7.7%	5.8%	18.2%	9.1%	6.0%
Unemployed 1996	7 954	4 297	1 210	607	2 001
Unemployed 2001	12 680	5 619	1 543	689	2 625
% increase in unemployment	59.4%	30.8%	27.5%	13.5%	31.2%
% not EA 1996	44	45	59	50	48
% not EA 2001	43	47	59	54	58

Source: Stats SA 1996 and 2001a

Key: EA = Economically Active

Grahamstown exhibited the most drastic results as employment dropped from 12 300 in 1996 to 11 356 in 2001, a decrease of over 944 (7.7%) and unemployment rose by 59%. The increase in unemployment can be attributed to the actual decrease in employment and in-migration, which indicates that the official population may be underestimated as it decreased slightly between 1996 and 2001. The trend was similar, but not as drastic in the other towns with employment decreasing between 18 and 5 percent, whilst unemployment rose between 13 and 32 percent. The results indicate conclusively that there was evidence of a loss in employment, but say very little about why.

5.3 Shift-Share Analysis

Shift-Share analysis essentially identifies changes in regional economic performance that are not related to national shifts, making them effectively regional differences, which can be extremely useful when identifying current and past trends in regions, cities or towns. The theory is briefly reviewed, before it is applied to national and provincial employment

data. Following this, the trends identified are examined and key findings are discussed. The technique is also applied to the occupational data of Grahamstown and Cradock, as only these two towns have sufficient employment to make the analysis valuable.

Employment based on industry data from the 1996 and 2001 censuses was subjected to the Shift-Share formula, shown in chapter three by equation 4.1.2.1, repeated here for easy reference.

$$\mathbf{SS = NS + IM + RS} \qquad \textbf{(4.1.2.1)}$$

Where:
SS = Shift-Share, NS = National Share, IM = Industry Mix and RS = Regional Shift
Source: BIDC, 2002b

The results of the 1996 – 2001 data analysis are shown below in Table 5.3.1. The totals for employment in each industry are shown for both time periods, and the difference between them is also highlighted. The NS (National Share) indicates what the employment levels would be in the industry in 2001 if that industry had followed national trends. The IM (Industry Mix) weights the movement according to the particular industry's national trend or weighting, thereby indicating the changes to employment between the two periods. Finally, the RS (Regional Shift) measures the changes in employment between the two periods that, as the name suggests, are primarily regional shifts, i.e. changes that have occurred due to shifts within the local economy. As the initial shift-share formula suggests, the addition of the three variables, equals the 2001 employment figure, as essentially shift-share analysis identifies the components of changes in employment. The equations used to calculate the figures are highlighted below.

$$NS = e_i^{t-1} (E^t / E^{t-1}) \qquad (4.1.2.2)$$

$$IM = e_i^{t-1}(E_i^t / E_i^{t-1} - E^t / E^{t-1}) \qquad (4.1.2.3)$$

$$= e_i^{t-1}(E_i^t / E_i^{t-1}) - NS$$

$$RS = e_i^{t-1}(e_i^t / e_i^{t-1} - E_i^t / E_i^{t-1}) \qquad (4.1.2.4)$$

Table 5.3.1 Shift-Share Analysis; identification of the components of employment change in relation to national employment figures 1996 - 2001[10]

	Agric-ulture	Mining	Manuf-acturing	Elect. gas and water	Const-ruction	W/sale and retail	Transport and commun-ication	Financial services	Community, social services	Private house-holds
Gtown										
1996	152	28	624	108	791	1510	335	573	4654	1969
2001	237	17	494	83	640	1577	229	713	4710	1414
Change	85	-11	-130	-25	-151	67	-106	140	56	-555
NS	159.8	29.4	656.1	113.6	831.8	1587.9	352.3	602.5	4893.9	2070.5
IM	19.4	-9.6	16.2	-42.8	-90.2	412.3	-45.6	159.5	529.0	-312.4
RS	57.7	-2.8	-178.3	12.3	-101.6	-423.1	-77.7	-49.0	-713.1	-344.1
Cradock										
1996	111	7	166	61	515	771	278	245	1540	1089
2001	256	6	165	49	331	978	191	326	1677	802
Change	145	-1	-1	-12	-184	207	-87	81	137	-287
NS	116.7	7.4	174.6	64.1	541.6	810.8	292.3	257.6	1619.4	1145.1
IM	14.2	-2.4	4.3	-24.2	-58.7	210.5	-37.9	68.2	175.0	-172.8
RS	125.1	1.0	-13.9	9.0	-151.9	-43.2	-63.5	0.2	-117.4	-170.4
Bedford										
1996	10	3	36	5	54	67	25	18	238	170
2001	24	0	17	6	28	116	17	40	260	66
Change	14	-3	-19	1	-26	49	-8	22	22	-104
NS	10.5	3.2	37.9	5.3	56.8	70.5	26.3	18.9	250.3	178.8
IM	1.3	-1.0	0.9	-2.0	-6.2	18.3	-3.4	5.0	27.1	-27.0
RS	12.2	-2.1	-21.8	2.7	-22.6	27.3	-5.9	16.1	-17.3	-85.8

[10] Agricultural employment represents only residents living within the town's boundary employed within the sector and not those living within the municipal area

	Agric-ulture	Mining	Manuf-acturing	Elect, gas and water	Const-ruction	W/sale and retail	Transport and commun-ication	Financial services	Community, social services	Private house-holds
Pearston										
1996	20	0	8	0	23	32	7	4	127	88
2001	39	0	0	0	14	30	6	11	129	48
Change	19	0	-8	0	-9	-2	-1	7	2	-40
NS	21.0	0.0	8.4	0.0	24.2	33.6	7.4	4.2	133.5	92.5
IM	2.6	0.0	0.2	0.0	-2.6	8.7	-1.0	1.1	14.4	-14.0
RS	15.4	0.0	-8.6	0.0	-7.6	-12.4	-0.4	5.7	-19.0	-30.6
Somerset East										
1996	146	3	207	26	211	265	88	107	884	506
2001	123	0	189	15	176	353	76	133	861	454
Change	-23	-3	-18	-11	-35	88	-12	26	-23	-52
NS	153.5	3.2	217.7	27.3	221.9	278.7	92.5	112.5	929.6	532.1
IM	18.7	-1.0	5.4	-10.3	-24.0	72.3	-12.0	29.8	100.5	-80.3
RS	-49.2	-2.1	-34.1	-2.0	-21.8	2.0	-4.6	-9.3	-169.1	2.2
South Africa (RSA total inc unspecified : 1996 - 9113846; 2001 - 9583765										
1996	814353	541550	1119971	109336	555132	1098048	483655	680153	1580686	1053105
2001	960486	383496	1206846	71622	520488	1454447	442734	904567	1841854	940320

Source: Own calculations, employment data from Stats SA 1996 and 2001a

Key: NS = National Shift; IM = Industrial Mix; RS = Regional Shift and G-Town = Grahamstown

While the dynamics of the shift-share analysis have been outlined at a theoretical level, the best description of how this analytical tool operates is through a worked example. Looking at the manufacturing sector in Grahamstown, the table indicates that 624 people were employed in the sector in 1996 and employment decreased to 494 in 2001. The NS during this period was 656, indicating that had employment followed the overall employment trends, employment in the sector would have increased to 656 in 2001. The IM component indicates that nationally, manufacturing activities grew at a quicker rate relative to other industries and that due to this above average rate, employment should

have increased by 16. Lastly the RS, which identifies the changes within the local economy, was calculated at –178, which indicated that due to 'regional shifts' 178 jobs were lost.

Thus within the manufacturing sector in Grahamstown, given an initial employment of 624, the shift-share can be computed as:

SS = NS + IM + RS **(4.1.2.1)**
SS = 656.1 + 16.2 – 178.3
SS = 494

The Shift-Share represents the employment within the industry in 2001, while the NS, IM and RS merely identify the components of that change. The results imply that the manufacturing sector in Grahamstown declined due to regional changes as opposed to national or industrial shifts.

The Eastern Cape is one of the poorest provinces within the country and as such the economic performance of the sampled towns cannot be separated from the province itself. In many instances the Eastern Cape itself underperformed in relation to the National Economy, meaning that the regional shifts/job losses due to the towns' economic activities, for example in manufacturing, are not as high as the national analysis. So in order to gauge the towns' performance within the provincial context, shift share analysis was also performed at a provincial level, the results of which are shown on Table 4.3.2.

Table 5.3.2 Shift-Share Analysis; identification of the components of employment change in relation to the Eastern Cape employment figures 1996 – 2001

	Agric-ulture	Mining and quarrying	Manuf-acturing	Elect: gas and water	Const-ruction	Whole -sale and retail	Transport storage and comm	Finance	Community social and personal services	Private h/hs
Gtown										
1996	152	28	624	108	791	1510	335	573	4654	1969
2001	237	17	494	83	640	1577	229	713	4710	1414
Change	85	-11	-130	-25	-151	67	-106	140	56	-555
NS	145.7	26.8	598.2	103.5	758.3	1447.7	321.1	549.4	4461.9	1887.7
IM	9.9	-8.9	-13.9	-31.0	-91.9	437.6	-39.8	288.6	526.4	-177.6
RS	81.4	-0.9	-90.3	10.5	-26.4	-308.3	-52.3	-125.0	-278.3	-296.1
Cradock										
1996	111	7	166	61	515	771	278	245	1540	1089
2001	256	6	165	49	331	978	191	326	1677	802
Change	145	-1	-1	-12	-184	207	-87	81	137	-287
NS	106.3	6.9	159	58.1	494	739	267	235	1476	1044
IM	7.1	-2.1	-4.4	-16.7	-60	223	-33	123	174	-98
RS	141.6	2	9.6	8.2	-103	15	-42	-32	26	-144
Bedford										
1996	10	3	36	5	54	67	25	18	238	170
2001	24	0	17	6	28	116	17	40	260	66
Change	14	-3	-19	1	-26	49	-8	22	22	-104
NS	9.6	2.9	34.5	4.8	51.8	64.2	24.0	17.3	228.2	163.0
IM	0.6	-1.0	-0.8	-1.4	-6.3	19.4	-3.0	9.1	26.9	-15.3
RS	13.8	-1.9	-16.7	2.6	-17.5	32.4	-4.0	13.7	4.9	-81.6
Pearston										
1996	20	0	8	0	23	32	7	4	127	88
2001	39	0	0	0	14	30	6	11	129	48
Change	19	0	-8	0	-9	-2	-1	7	2	-40
NS	19.2	0	7.7	0	22.1	30.7	6.7	3.8	121.8	84.4
IM	1.3	0	-0.2	0	-2.7	9.3	-0.8	2.0	14.4	-7.9
RS	18.5	0	-7.5	0	-5.4	-10.0	0.1	5.2	-7.1	-28.4

	Agric-ulture	Mining and quarrying	Manuf-acturing	Elect, gas and water	Const-ruction	Whole -sale and retail	Transport storage and comm	Finance	Community social and personal services	Private h/hs
Somerset East										
1996	146	3	207	26	211	265	88	107	884	506
2001	123	0	189	15	176	353	76	133	861	454
Change	-23	-3	-18	-11	-35	88	-12	26	-23	-52
NS	140.0	2.9	198.5	24.9	202.3	254.1	84.4	102.6	847.5	485.1
IM	9.4	-1.0	-4.6	-7.5	-24.5	76.8	-10.5	53.9	100.0	-45.7
RS	-26.4	-1.9	-4.8	-2.5	-1.8	22.1	2.1	-23.5	-86.5	14.5
Eastern Cape Africa (E-Cape total inc unspecified : 1996 – 786820; 2001 - 754341)										
1996	70470	7153	97035	5598	43634	83817	32850	35181	183189	102865
2001	72122	4574	90866	3762	36762	104646	27587	51451	196346	89338

Source: Own calculations, employment data from Stats SA 1996 and 2001a

Key: NS = National Shift; IM = Industrial Mix; RS = Regional Shift; G-Town = Grahamstown and S-East = Somerset East

The provincial shift-share analysis does highlight that on the whole the towns' economies performed 'better' in relation to the Eastern Cape than the national economy. For example, working again through manufacturing in Grahamstown, shown below, it is clear that the negative RS or 'jobs lost' in manufacturing to regional changes was only 90 as opposed to 178 in a national context. This change is largely accounted for by the declining employment figures in the province between 1996 and 2001.

SS = NS + IM + RS **(4.1.2.1)**

SS = 598.2 – 13.9 – 90.3

SS = 494

Unfortunately, the analysis provides no insight on agriculture as the employment figures only reflect agricultural labourers living in the town itself, meaning that a shift-share of the sector would be misleading.

The analyses did, however, allow the performance of the other sectors to be reviewed. The most significant finding was in the manufacturing industry. On both levels, all the towns, excepting Cradock, exhibited negative regional shifts. In Grahamstown the RS was 178 nationally and only 90 provincially, whilst Bedford exhibited decreases of 22 in the former and 17 in the latter. This, along with the decreases in real employment within the industry, indicates that manufacturing declined significantly, despite the fact that nationally manufacturing employment grew between the two periods, represented by positive IMs. The drop was not as significant on a provincial level as manufacturing within the province also declined, represented by the negative IMs and consequently the regional shifts were not as bad. The performance of manufacturing in all the towns is alarming and may well account for their poor economic performances, especially considering that the declines had been occurring for some time.

Mining and Quarrying represented a small proportion of local employment, and exhibited only minor regional changes, and therefore did not contribute significantly to overall economic performance of any settlement. Only Grahamstown had any industry in the sector and employment dropped from 28 to 17. However, the decline can largely be attributed to national and provincial shifts, i.e. negative IMs. Electricity, water and gas exhibited some positive regional shifts in the larger towns, despite a loss of employment in real terms. Thus, despite the evident job losses the sector performed satisfactorily within the local economies.

In the construction industry, all towns experienced drops in real employment and regional shifts. However, the regional shifts within the province were not as severe. Cradock, which was the worst hit, experienced a real decline in employment of 184 jobs or a total of 23% and had a negative RS of 152 nationally and 103 provincially. Employment in the wholesale and retail industry increased significantly nationally between 1996 and 2001 and all of the towns, barring Pearston experienced real employment increases. Retailing performed relatively well in a provincial context as only Grahamstown exhibited a large negative regional shift of 308. The result is surprising for Grahamstown, as earlier

evidence suggested that the town was acting as a regional urban centre, serving the needs of a large hinterland; accordingly it would be expected that regional shifts would have been positive. However, it is quite possible that Grahamstown was already serving the needs of its hinterland prior to 1994, providing an explanation as to why the industry did not grow. Another possible explanation is that the two larger urban centres of Port Elizabeth and East London were drawing consumers from further a field, negatively impacting retailing in Grahamstown.

Despite little movement in terms of real employment in the services sector, all towns exhibited negative regional shifts in a national context. Within the province the situation was more positive as both Cradock and Bedford created employment, i.e. positive regional shifts, albeit they were not large movements. Considering that services are the largest employer in the towns it is a concern. Real employment in the financial services grew in all the centres. However, the improvement was attributed to national and provincial growth, as opposed to any significant regional shifts. The larger towns had greater negative regional shifts, and these were bigger in relation to provincial employment. This is possibly because prior to 1996 the larger towns already had established financial institutions. Lastly, the transport and communication industry shed real employment in all of the settlements. But the two largest towns, Grahamstown and Cradock exhibited the largest negative regional shifts, as none of the others appeared to have had any well-established industries in the sector.

The key findings drawn from the two sets of analysis are highlighted below. On the whole the towns appeared to have declined economically in relation to the nation as a whole as the majority of the employment decrease in the towns was accounted for by regional shifts and not national or industrial trends. This reveals that the local economies of the sampled towns are indeed declining economically. Evidence was also found that manufacturing activities declined in all of the centres, despite the industry growing nationally. The consistency and the extent of the negative regional shifts clearly indicate that manufacturers appear to be favouring larger urban centres.

Shift-share analysis was also extended to the occupational data of Grahamstown and Cradock. It was applied to determine whether there was a decline in skilled occupations within the centres, which may account for their lowered economic vitality. It was conducted on the two largest towns, as it was not feasible to apply the technique to the smaller centres, as their populations were too low to be significant. The result of the analysis, shown in Table 4.3.3, supports the premise that the local economies experienced an economic slump between 1996 and 2001.

Working through an example: in Cradock the number of elementary occupations decreased from 1 661 in 1996 to 1 603 in 2001. Following national trends, employment should have risen to 1 746. However, these occupations increased in relation to others accounting for an increase of 26. Thus the remainder of the change can be identified as a regional shift, a figure of -169, i.e. 169 jobs were lost in the town due to changes within the local economy. A worked example is shown below.

SS = NS + IM + RS **(4.1.2.1)**

SS = 1747 + 26 – 170 = 1603

Table 5.3.3 Shift-Share Analysis, conducted on employment by occupation data; 1996 to 2001, using national employment figures

Grahamstown	**1996**	**2001**	**NS**	**IM**	**RS**
Legislators; senior officials and managers	535	367	562.6	193.0	-388.6
Professionals	2025	1091	2129.4	-575.2	-463.2
Technicians and associate professionals	690	1177	725.6	443.4	8.0
Clerks	1075	1148	1130.4	456.0	-438.4
Service workers; shop and market sales workers	1378	1614	1449.0	192.2	-27.2
Skilled agricultural and fishery workers	221	120	232.4	-66.6	-45.8
Craft and related trades workers	1305	1056	1372.3	-204.6	-111.7
Plant and machine operators and assemblers	390	529	410.1	13.1	105.8
Elementary occupations	3477	3433	3656.3	54.2	-277.5
Undetermined	1206	822	1268.2	-489.2	43.0
Cradock	**1996**	**2001**	**NS**	**IM**	**RS**
Legislators; senior officials and managers	182	199	191.4	65.7	-58.1
Professionals	556	261	584.7	-157.9	-165.7
Technicians and associate professionals	358	661	376.5	230.1	54.5
Clerks	381	603	400.6	161.6	40.7
Service workers; shop and market sales workers	612	726	643.6	85.3	-2.9
Skilled agricultural and fishery workers	175	70	184.0	-52.7	-61.3
Craft and related trades workers	634	482	666.7	-99.4	-85.3
Plant and machine operators and assemblers	164	212	172.5	5.5	34.0
Elementary occupations	1661	1603	1746.6	25.9	-169.5
Undetermined	623	207	655.1	-252.7	-195.4

Source: Own calculations, employment data from Stats SA, 1996 and 2001a[11]

The decrease in professionals in both towns is remarkable and casts doubt on the accuracy of the census data. No other evidence suggested that half of the professionals left between 1996 and 2001. Meyer (2005*) indicted that in his opinion this had not occurred in Grahamstown. The significant negative IM shifts suggest that the problem

[11] Please refer to Appendix 4 for South African Totals to verify the calculations.

was more likely due to the definitions of a 'professional' between the two periods and the way the census questions were asked. Furthermore the increase in technicians and associated professional occupations, suggest that the distinctions between the two groups were altered. However, for the purposes of the study it was not possible to clarify the discrepancies and therefore the views regarding the differences are speculative.

Craft workers, skilled agricultural and elementary workers, also experienced significant drops in both towns. The only areas where both towns experienced any positive regional shifts were technicians and associate professionals and plant and machine operators and assemblers. The latter is surprising, due to the decreases shown in the manufacturing sector. In summary the decrease in occupations in Grahamstown and Cradock were accounted for by regional shifts, supporting the view that the towns struggled economically.

It should also be noted that using employment figures as the base for economic performance has its problems as it is quite possible for GGP to have risen in the towns without accompanied rises in employment. However, the majority of the trends identified were significant and thus it can be assumed that the changes within employment within the various sectors were reflective of their economic performance.

5.4 Economic Base Theory and Location Quotient Analysis

Economic-base theory was the other regional modelling technique selected and due to its ability to determine the effects of shifts in economic activity in cities, towns and regions (Schaeffer, 1999). The theory aims to identify industries bringing additional wealth into the town, i.e. wealth creators, which drive the regional economies, using Location Quotients (LQ) as the measurement tool. The theory was applied to employment statistics from both the 1996 and 2001 population censuses in order to provide additional information on the current economic trends and the level of specialisation of industries within the towns. A calculation of the actual economic base of the towns is also undertaken, using employment data. This would be the percentage of the population serving export markets that bring wealth into the regional economy. The LQs of agriculture were computed, because these activities are minimal within the town boundaries despite being a major economic force in the region. The formula used in the analysis, as shown in chapter 4 is:

$$\mathbf{LQ = (e_i / e_t)/ (E_i/E_t)} \qquad \mathbf{(4.1.1.4)}$$

The equation illustrates the level of specialisation within each sector. The number 1 gives a rough proxy for the level of specialisation within the economy, where a figure greater than 1 indicates that the region or town is relatively specialised in that particular industry and exports more goods in that particular sector than it imports. Similarly if the LQ is less than 1 it can be assumed that the particular industry is not as developed and the region will import more goods then it exports.

However, in order to calculate the total economic base of a town it is also necessary to calculate the proportion of the workforce producing for export markets. Of the industries that have a LQ greater than 1, not all the workers will be serving export markets; some will be catering for the local market (BIDC, 2002a). The proportion of the workforce producing for the export market E_b can be determined by:

$$E_b = (LQ_i - 1)/LQ_i \qquad (4.1.1.5)$$

Source: BIDC, 2002a

Table 5.4.1 shows the LQ of the towns using national employment figures as the base whilst Table 5.4.2 illustrates the LQs using Eastern Cape Employment figures. Cradock had a LQ of 1.8 in the services industry in 1996 and a LQ of 1.6 in the same sector in 2001, utilising national employment figures, which indicates that the sector is relatively specialised and serves outside areas, in other words it exports goods. Similarly, utilising national employment figures, the transportation and communication sector in Grahamstown had a LQ of 0.5 in 1996 and 0.4 in 2001. This illustrates that the sector is not specialised and that the town will import more services and goods than it would export. The two tables provide insights into the vitality of the towns during the time periods in question. In a number of sectors, the LQs calculated using provincial data were very similar to those using national employment figures. Therefore if a difference is not mentioned, it can be assumed that the two data sets were fairly similar; only marked differences between the two are noted. Agricultural LQs of the municipalities are calculated later in the section as the sector is an extremely important component within the towns' economies.

Table 5.4.1 LQs of Industries within Towns using National Employment data

	Agric-ulture	Mining	Manuf-acturing	Elect. gas water	Const-ruction	Whole-sale; retail	Transport and comm	Finance	Services	Private house-holds	Undeter-mined	Total
Grahamstown												
1996	0.1	0.0	0.4	0.7	1.1	1.0	0.5	0.6	2.2	1.4	1.1	1
2001	0.2	0.0	0.3	1.0	1.0	0.9	0.4	0.7	2.2	1.3	1.2	1
Diff	0.1	0.0	-0.1	0.2	0.0	-0.1	-0.1	0.0	0.0	-0.1	0.2	0
Cradock												
1996	0.2	0.0	0.3	1.0	1.6	1.2	1.0	0.6	1.7	1.8	0.9	1
2001	0.5	0.0	0.3	1.3	1.2	1.3	0.8	0.7	1.7	1.6	0.6	1
Diff	0.3	0.0	0.0	0.4	-0.4	0.1	-0.2	0.1	0.1	-0.1	-0.3	0
Bedford												
1996	0.1	0.1	0.4	0.5	1.1	0.7	0.6	0.3	1.8	1.9	1.6	1
2001	0.4	0.0	0.2	1.3	0.8	1.2	0.6	0.7	2.2	1.1	0.8	1
Diff	0.2	-0.1	-0.2	0.8	-0.3	0.5	0.0	0.4	0.4	-0.8	-0.7	0.0
Pearston												
1996	0.6	0.0	0.2	0.0	1.0	0.7	0.4	0.1	2.0	2.1	1.3	1
2001	1.2	0.0	0.0	0.0	0.8	0.6	0.4	0.4	2.1	1.5	1.7	1
Diff	0.6	0.0	-0.2	0.0	-0.2	-0.1	0.0	0.2	0.1	-0.6	0.5	0
Somerset East												
1996	0.6	0.0	0.6	0.7	1.2	0.7	0.6	0.5	1.7	1.5	1.4	1
2001	0.4	0.0	0.5	0.7	1.2	0.8	0.6	0.5	1.6	1.7	1.5	1
Diff	-0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	-0.1	0.2	0.1	0

Source: Own calculations, employment data from Stats SA 1996 and 2001a[12]

Key: Dark Grey - LQ greater than or equal to 1; Light Grey – Difference in LQs between 1996 and 2001

[12] Refer to appendix 5

A number of key findings were also identified through the Economic Base analysis. Firstly, low values within the manufacturing sector indicated that imports significantly outweighed exports. However, this is not surprising considering the size of the towns, as very few centres across the globe, even ones with growing economies, would export more manufactured goods than are imported. The more important finding was the general drop of the LQ figures in manufacturing between the two time frames, indicating that there was a general decline.

Table 5.4.2 LQs of Industries within Towns using Provincial Employment data

	Agriculture	Mining	Manufacturing	Electricity, gas water	Construction	Wholesale, retail	Transport and communication	Finance	Community, social services	Private households	Undetermined
G-town											
1996	0.1	0.3	0.4	1.2	1.2	1.2	0.7	1.0	1.6	1.2	0.1
2001	0.2	0.2	0.4	1.5	1.2	1.0	0.6	0.9	1.6	1.1	1.1
Diff	0.1	0.0	-0.1	0.2	0.0	-0.2	-0.1	-0.1	0.0	-0.2	0.9
Cradock											
1996	0.2	0.1	0.3	1.6	1.7	1.4	1.2	1.0	1.2	1.6	0.1
2001	0.5	0.2	0.3	2.0	1.4	1.4	1.0	1.0	1.3	1.3	0.5
Diff	0.3	0.1	0.0	0.3	-0.4	0.0	-0.2	-0.1	0.0	-0.2	0.4
Bedford											
1996	0.1	0.4	0.4	0.9	1.3	0.8	0.8	0.5	1.3	1.7	0.2
2001	0.4	0.0	0.2	1.3	0.8	1.2	0.6	0.7	2.2	1.1	0.8
Diff	0.2	-0.4	-0.2	0.4	-0.4	0.4	-0.2	0.2	0.9	-0.6	0.6
Pearston											
1996	0.6	0.0	0.2	0.0	1.1	0.8	0.5	0.2	1.5	1.8	0.2
2001	1.3	0.0	0.0	0.0	0.9	0.7	0.5	0.5	1.5	1.2	1.5
Diff	0.6	0.0	-0.2	0.0	-0.3	-0.2	0.0	0.2	0.0	-0.6	1.4
S-East											
1996	0.6	0.1	0.6	1.2	1.3	0.8	0.7	0.8	1.3	1.3	0.2
2001	0.5	0.0	0.6	1.1	1.3	0.9	0.8	0.7	1.2	1.4	1.3

Diff	-0.1	-0.1	0.0	-0.2	0.0	0.1	0.0	-0.1	-0.1	0.1	1.2

Source: Own calculations, employment data from Stats SA 1996 and 2001a[13]

Key: LQ greater than or equal to 1; Light Grey – Difference in LQs between 1996 and 2001

Three sectors stood out as the predominant exporters, having LQs consistently above 1, in most of the towns and in both sets of calculations in the tables above, namely construction, services and private households.

Despite the high LQs in construction, it is most likely that the figure merely represents short-term boosted local consumption, as is frequently the case within the property and construction industries (BIDC, 2002a). The generally lower LQs in 2001 than in 1996 support this view. Government housing schemes are one possible reason for the high figures. However, these industries generally serve only local markets, and thus do not expand the economic base of the towns.

Employment by private households also cannot be considered an economic base, as the industry brings in very little additional income into the towns, nor do any of them 'export' this type of employment. Exceptions do exist, such as student housing in Grahamstown and B&B's elsewhere. However, the high LQs in this field are largely due to the higher percentage of houses employing domestic workers, not because the sector is an economic driver.

Evidence suggests that the towns act as 'service' centres, not only for their populations but also for those living in rural areas surrounding them, which accounts for the high LQs in that sector. From a developmental viewpoint, it emphasises their importance, as they do extend personal, community and social services beyond their boundaries, to many people living in rural areas who require them. The LQs were generally lower in the provincial context, indicating that the Eastern Cape economy is highly weighted in the

[13] Please refer to appendix 5

services industry. Services thus represent the largest economic base/industry in terms of employment.

Retail and trade industries, are generally not income creators. Cradock is an exception to this, exhibiting a high national LQ figure of 1.3. As such it is possible to identify the town as a retail centre within the region, serving the town and surrounding rural populations. Adami (2004*), who runs a wholesale outlet within Cradock, indicated that he also served consumers and traders outside of the town as far a field as Hofmeyer and even Jefferies Bay The latter is remarkable considering the distance between the two centres. Transport industries are also more successful in Cradock than in any other of the towns, almost certainly due to the N10 highway, which passes directly through the town.

It is possible to calculate the economic base of an area through location quotients and employment data. Table 5.4.3 utilises this method to calculate the export base of all the towns, this is illustrated on the following page.

Table 5.4.3 Economic base, by sector, using national employment figures

	Community Services				Electricity, Gas and Water				Wholesale and Retail				Total		
	Employment	LQ	Eb	Export Employment (Eb*ei)	Employment	LQ	Eb	Export Employment (Eb*ei)	Employment	LQ	Eb	Export Employment (Eb*ei)	Export Employment	Tot Employment	Total %
G-town															
1996	4654	2.2	0.54	2521		0.7				1			2521	12301	20.5%
2001	4710	2.2	0.54	2528		1				0.9			2528	11352	22.3%
Cradock															
1996	1540	1.7	0.40	615		1			771	1.2	0.2	128	743	5335	13.9%
2001	1677	1.7	0.42	710	49	1.3	0.2	14	978	1.2	0.2	215	939	5030	18.7%
Bedford															
1996	238	1.8	0.44	104	5	0.5				0.7			104	771	13.5%
2001	260	2.2	0.54	141	6	1.3	0.2	1	116	1.2	0.2	22	164	618	26.5%
Pearston															
1996	127	2.0	0.50	64		0				0.7			64	365	17.5%
2001	129	2.1	0.51	66		0				0.6			66	326	20.3%
S-East															
1996	884	1.7	0.42	375		0.7				0.8			375	2933	12.8%
2001	861	1.6	0.38	331		0.7				0.8			331	2756	12.0%

Source: Own calculations, employment data from Stats SA 1996 and 2001a

Key: E_b = Basic employment, export employment.

Table 5.4.2 illustrates the industries in the towns which contribute to their economic base, i.e. sectors with a LQ greater than 1, and the percentage of the town's workforce producing goods or services for export, i.e. the extent to which the local economy brings in external money into the local economy. Theoretically it also indicates that if money was invested into the towns the extent to which it would generate economic growth. This is also represented graphically on figure 4.4.1 below.

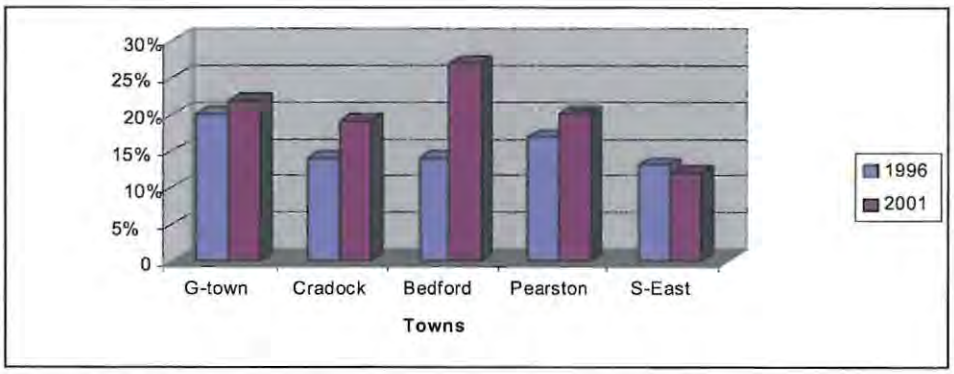


Figure 5.4.1 'Export type' employees as a percentage of total employment
Source: Own calculations, employment data from Stats SA 1996 and 2001a

The figure illustrates the percentage of the town's workforce producing goods or services for export. A number of interesting results were found. Firstly, the economic base increased in all of the towns between 1996 and 2001, barring Somerset East. However, the growth can largely be attributed to the services sector, which, as mentioned, is the primary export base of all the towns. Grahamstown had the highest economic base, which is not surprising due to the size and the nature of the town, whilst surprisingly, being the third largest town, Somerset East had the lowest economic base. The towns all exhibit lower LQs on a provincial level, due to the higher percentage of employment in the services sector compared to national trends. Essentially the percentage contribution of the services sector in the Eastern Cape is larger than its contribution nationally. This means that the LQ for services is far lower in the towns in a provincial context. This would impact negatively on the measure of their economic base.

A determination of the economic base of the towns, without considering agriculture would be misleading. However, the only way to determine the town's links to the sector would be to calculate the LQ of the municipality in which it is situated, as presented in Table 5.4.4.

Table 5.4.4 Agricultural LQs of local municipalities, 1996 and 2001

Local Municipalities	Towns	1996	2001
Inxuba Yethemba	Cradock	2.7	3.0
Blue Crane Route	Somerset East and Pearson	4.6	3.9
Nxuba	Bedford	4.1	3.4
Makana	Grahamstown	2.2	1.5

Source: Own calculations, employment data from Stats SA 1996 and 2001a

The calculations confirm that agriculture is the primary economic driver within the municipalities as exhibited by extremely high LQs, ranging from 1.5 to 4.6. While it was not possible to include the agricultural data in the assessment of the towns themselves, this sector needs to be taken into account when reviewing their local economies. A worrying factor for the towns is that the agricultural LQs dropped in all of the municipalities excepting for Inxuba Yetemba between 1996 and 2001.

Taking the shortcomings of Economic Base analysis into account and the fact that employment may not always accurately reflect economic activity in a town, it may be concluded that the method indicates very clearly the dependence of all of the towns on agriculture as the major export activity. Whilst this is not surprising, due to the nature of the region, it does indicate the problems that the towns and regions would experience should the agricultural sector suffer, as the LQ figures suggested may have happened in some of the municipalities between 1996 and 2001. The results also indicate that Grahamstown is the only town that is not significantly dependent on this sector, as reflected by relatively low municipal agricultural LQs figures and its reliance on the many educational institutions; accordingly it also had the highest export base. The only other major export base within all the towns was the services sector.

5.5 Social Accounting Matrix

The chapter thus far has analysed the economy of the five small towns with the best available regional modelling techniques subject to severe data limitations. A Social Accounting Matrix was also used to identify critical linkages within the towns' local economies.

The matrix allowed a number of hypothetical scenarios to be tested and due to the double accounting mechanisms to forecast the impacts of shocks within all sectors of the economy. Six scenarios were tested, namely a:

- 10% decrease in value of agricultural production;
- 10% increase in the value of agriculture production;
- R10 billion investment in agriculture;
- 5 % increase in value of production within agri industries;
- R10 billion investment in agri industries, and
- R10 billion investment in the petroleum industry.

Given the strong links all of the towns have with the agricultural sector it would be reasonable to assume that a decrease in agriculture within the national economy would have a major economic impact on small towns in rural areas and from this it would be possible to deduce impacts on their regional economies based on shocks to the national economy. In other sectors, e.g. manufacturing, an external shock would have little or no impact on the towns as other economic factors, such as agglomeration forces, have already resulted in these types of activities relocating towards larger urban centres and thus the effects of the shocks would be concentrated in or around the larger centres and thus would have little or no impacts on the towns.

The scenarios were run through were run through the IFPRI South African SAM and yielded the results highlighted below on table 1. They were run though the theoretical framework

presented in section 4.2.6. The final calculation is shown below, and represents the final changes in intermediate inputs.

$$(1 - A_2)^{-1} * F - (1 - A)^{-1} * F = [(1 - A_2) - (1 - A)] = \Delta Y^1 \qquad (6)$$

Table 5.5.1 Application of the SAM[14]

(Figures in Billions)	10% decrease in agric	10% increase in agriculture	R10 billion investment in agric	5% increase in Agro Industries	R10 billion investment in Agro Industries	R10 billion investment in petroleum
Sectors						
AGR	-10126.8	12278.0	22.1	153.1	6.6	1.7
MIN	-454.1	550.6	1.0	18.0	0.8	4.2
AGI	-2709.1	3284.7	6.0	530.3	21.7	3.2
TEX	-551.4	668.5	1.2	24.6	1.0	0.8
PPP	-543.6	659.1	1.2	36.4	1.5	0.8
PET	-817.4	991.0	1.8	29.4	1.2	14.8
CHM	-1430.8	1734.8	3.2	49.1	2.1	1.4
HEV	-533.0	646.3	1.2	28.9	1.2	0.8
MAC	-1148.9	1393.1	2.5	49.3	2.1	1.7
OHM	-573.1	694.9	1.3	32.3	1.4	0.9
ELE	-465.8	564.8	1.0	20.9	0.9	0.8
WAT	-1514.7	1837.8	3.9	26.7	1.7	1.0
CON	-184.7	223.9	0.4	8.5	0.4	0.3
SER	-10472.9	12698.1	23.1	612.0	25.5	19.8
Inputs						
CAP	-3583.6	4345.0	7.9	155.9	6.6	5.6
LABLO	-1338.0	1622.3	2.9	55.4	2.3	1.7
LABMED	-1055.1	1279.3	2.3	61.5	2.6	1.9
LABHI	-538.3	652.7	1.2	32.6	1.4	1.1
FIRMS	-3319.4	4024.8	7.3	144.4	6.1	5.2
Households						
HHLeast	-92.3	111.9	0.2	4.1	0.2	0.1
HHLow	-203.6	246.9	0.4	9.2	0.4	0.3
HHMiddle	-2141.6	2596.6	4.7	103.5	4.3	3.3
HHHigh	-1103.3	1337.8	2.4	56.0	2.3	1.8
HHHighest	-990.0	1200.4	2.2	46.0	1.9	1.6
Total	-45891.5	55643.0	101.7	2288.3	96.2	74.9

Source: Own calculations based on IFPRI 1999 South Africa SAM data set provided by J. Juana

[14] Calculations are shown in Appendix 6

The table indicates the particular impact that the external shock would have on the particular sector as well as the other sectors and components of the economy. Despite representing the national economy the tests yield some interesting results which have various implications for the towns within the study. Some of the major findings include:

- Agricultural production is most strongly linked to the services sector, e.g. a 10% decrease in agriculture leads to an R10472.9 billion loss to the services sector. Being the dominant sector within all the towns this illustrates their vulnerability to changes within the agricultural sector. These linkages would tend to be stronger within small towns due to their proximity and reliance on agricultural production.
- A R10 billion investment in the agricultural sector results in a R101 billion boost for the national economy, illustrating the multiplier effect. Neither similar investments in the agri industries or the petroleum sector would stimulate the national economy to such an extent by only generating R96 and R75 billion respectively. In addition the benefits of investments, such as in the petroleum industry would be concentrated in the larger urban centres.
- In terms of growing the regional economies of small towns it would thus appear that investments and or assistance within the agricultural and agri industries sectors would impact most significantly and should thus be the primary focus of growth schemes in these areas.
- However, even investment within these sectors results in major leakages from the local economies eg a R10 billion investment in agriculture results in an R 3.2 billion rand boost to the chemical sector but logically this boost would not be felt by any small towns in the Eastern Cape Midlands. It further emphasises the multiplier effect is smaller in small towns due to the number of leakages within the local economies.

While the SAM has the ability to test various scenarios at a national level and provides insight it unfortunately adds only marginally to an understanding of the differential growths in the economies of small towns.

5.6 Conclusion

Employment statistics between 1996 and 2001 revealed a dramatic decline in employment within all the towns. When the data sets were subjected to Shift-Share and Economic Base Analysis the findings also suggested that the towns' economic vitality had diminished and illustrates sectors in which the towns had declined or grown. The Shift-Share analysis indicated that in both a provincial and national context, the decrease in employment was due to regional declines and negative regional shifts and not national or industrial trends, illustrating the weakened regional economies. However, the declines were more significant compared to national employment figures. Location Quotient analysis yielded similar results indicating the towns' reliance on particular sectors and a general decline in the LQ figures between the two time frames.

Agriculture was identified as the dominant economic force within the region whilst the services industry provided the backbone of the towns' actual economies in terms of employment. Manufacturing performed poorly, indicating the presence of other external agglomeration economies drawing these activities away from the smaller urban settlements.

The national Social Accounting Matrix additionally highlighted that there were numerous leakages within the local economies of small towns and that growth in sectors, such as manufacturing and the chemical sector, would tend to impact larger urban centres. The strong linkages between the agricultural and services sectors will leave the towns in a vulnerable position should the agricultural sector decline and emphasised the importance of the sector for the towns.

Chapter 6 Local economic development and private entrepreneurial activities

The quantitative analysis of the towns revealed detailed information on their current economic performance and sectoral linkages. However, it was not possible to explain the different trends and growth trajectories exhibited within the sample towns. In addition the extent to which current trends could be reversed through development initiates such as Local Economic Development was not addressed. Thus, a qualitative analysis was undertaken to acquire additional information, including subtle economic trends not picked up by the statistical analysis as well as other factors which could alter the towns' growth potential, such as Local Economic Development and other growth drivers. Qualitative research can be broadly defined as research that is not based on any statistical procedures (Strauss and Corbin, 1990: 17 in Hoepfl, 1997: 2). A common tool used in qualitative research is purposive sampling, which seeks/selects information rich subjects in order to draw out as much knowledge as possible on a particular subject matter (Patton, 1990 in Hoepfl, 1997: 3). Purposive sampling techniques were applied to a set of structured interviews which were conducted in the towns.

6.1 Structured Interviews

Interviewees were selected due to specific knowledge they possessed on the towns and included municipal officials, prominent businessmen and other knowledgeable residents. Communication was made telephonically to set up appointments during the respective field trips to the each of the towns. Table 6.1.1 lists the people selected for the interviews as well as their positions.

Table 6.1.1 Structured interviews conducted

Town	Person	Position
Cradock	Mr Tantsi	Municipal Manager of Cradock
	MR C Adami	Owner of Adami's grocers (a family business since 1904)
	Mr X Maki *	LED Manager Inxuba Yetemba Local Municipality
	Mr D. Coetzee	Past Municipal Manager and Current Councillor
	Mr P Tam	Owner of the Tams chain stores
	Mr W. Walker	Dairy Farmer, milks 800 head of cattle daily
	Mr Schulze	Current Councillor
	Mr P and Mr M Antrobus	Farmers
	Mr C. Lang	Safari Hunter
Grahamstown	Mr J. Accom	Councillor
	Professor P. Vale	Head of Politics Department at Rhodes University
	Mr C. Meyer	Owner of Makana Brick and Tile
	Professor R. Van der Merwe	Head of the Grahamstown Residents Association
	Mr R Beer	Owner of the Beer Property Group
	M. Crampton	CEO of NISC
	Mrs B Ngcungca*	LED officer Makana Municipality
Bedford	Mr J Van Heerden	Corporate Services Manager
	Mrs Kim Van Niekerk	Local Estate agent
	Mr A Gqezeengele *	LED Officer Nxuba Municpality
	Mr David Khoury	Local Artist owner of Bedford Craft Centre
	Mr Ben and Lana Blom	Owners of Eagle's Hout Furniture
Somerset East and Pearston	Mr H Machant	Mayor of the BCR Municipality
	Mr Rob Beach	Director of the BCR Development Agency
	Mr PJ Fourie	Owner of PJ Engineering and Thermo Fluid Engineers
	Mr Zola Tetswana	Previous LED officer and currently employed by the BCR Development Agency
	Mr Zola Doro	Supervisor on Infrastructure and Community Service, Pearston
	Mr Chris Wilken	Employee of the BCR Development Agency
	Mr Luvuyu Matanga	Social Worker, Department of Social Development, Pearston
	Mr Nico Lombard	Employee of the BCR Development Agency
	Mr PJ Davenport	Owner of the Pearston Hotel and Pearston Bottle Store
	Mr A. Mtshudu*	LED Manager Blue Crane Route Municipality

Key: BCR – Blue Crane Route; * Telephonic interviews conducted with municipal LED officials

A structured questionnaire was prepared, see box 1 below, and was used as a guide during the interviews.

Box 1: General Outline of the structured interviews

1) Please describe what you do for a living and your personal and professional relationships with the respective town?
2) From a personal perspective what are the limitations of living in the town?
3) From a professional point of view what are the limitations of working or operating in/or around the town?
4) What are the personal advantages of living in the town?
5) What are the advantages of working or running a business in/or around the town?
6) From where do you purchase both private and professional goods?
7) In your opinion what might limit potential business activities from locating within the town?
8) What advantages does the town have for businesses/ people wanting to relocate?
9) In your opinion what local factors stifle local economic initiatives?
10) Has the local municipality been helpful to you and your business operations (where applicable)?
11) List various ways in which the municipality could improve or become more effective?
12) Have you been involved in any LED project? If so please provide details?
13) If yes did the municipality assist?
14) Are you aware of other personal LED projects in the town? If so please give details?
15) What do you think are the growth prospects of the town?
16) Do you have any other information relating to the town itself that may be of assistance for the purpose of the study?

Because the interviews targeted different role players it was possible to acquire detailed information on the towns, their economies and developmental initiatives. Full research notes were taken and are provided in appendix 2.

6.2 Local Economic Development (LED)

The Local Government Systems Act of 2000 charged local government structures with a mandate "to provide for the core principles, mechanisms and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment" (RSA, 2000). Local Economic Development units at a local level are the main thrust to achieve this outcome. "In order to promote economic development, it is increasingly recognised that micro-economic measures at the local level are needed as well as macro-economic measures at the national level" (World Bank, 2006). Local Economic Development or LED is a bottom-up type approach that has been attempted by many centres around the globe and generally encapsulates micro-economic measures. It is based upon "endeavours, innovation and entrepreneurship of local agents who seek to achieve meaningful and sustained economic and social betterment of their local area" (Nel, 1994; 265).

LED is an important aspect of the study as it may have the potential to revitalise the economies of small towns or it may simply be a waste of scarce government resources in trying to achieve economic growth where it is unachievable.

6.1.1 LED Studies

Within South Africa the principal study of small town development is Stutterheim in the Eastern Cape (CDE, 1996: 12). Prior to 1996, the local economy appeared to be stagnant like so many other small rural towns. The 'Stutterheim Initiative' was launched in 1990, and the newly established forum settled political disputes and began to address socio-economic problems within the town (CDE, 1996: 13). Despite the progress made by the Stutterheim Foundation, problems till existed in the town (Mncwabeni and Bond, 1999).

LED projects in the town were fairly limited and many were not sustainable. Despite the training schemes adopted, employment opportunities remained limited, often resulting in residents leaving (Mncwabeni and Bond, 1999). The story of Stutterheim clearly illustrates that LED is not a miracle cure for small towns. Despite the positive aspects achieved, a major economic revival was not achieved, although it should be said that the conditions in the town would have been far worse if no actions had taken place.

Alicedale is a former railway town located in the Eastern Cape which had extremely high unemployment levels with a stagnant local economy. However, a public private partnership which included Makana Local Municipality led to the creation of a high profile "multi-faceted tourism village that would boast a world-class golf course, a game reserve, residential golf course, four star hotel, cultural village, conference centre, spa and wellness facility and a new bar/restraint collectively known as Bushman Sands." (World Bank, 2006: 72). The private sector provided the bulk of the financial capital and management expertise whilst the public sector facilitated the project, provided basic infrastructure and sourced capital for the local community so they could have joint ownership. It was estimated that the initiative would lead to a number of socio economic spin-offs, including an estimated 500 permanent and temporary jobs and generate business opportunities for residents in the town. The example illustrates that private sector buy-in and an effective public private partnership can revive the fortunes of flagging small towns, particularly if there are marketable business opportunities (World Bank, 2006: 72). However, it must be noted that the town has specific locational factors which made it an ideal location for the establishment of the hotel and golf course including its proximity to local game parks, cheap land and attractive buildings.

Wuppertal is a small community/settlement in the Cederberg Mountains near Cape Town. It was characterised by unemployment of around 75% and high out-migration. Incorporating a central village and 14 outstations the region has a population of 2550 and covers an area of 36 000 hectares. The topography and climate also limits the possibility of types farming activities. Through the support of regional NGO, A-SNAPP (Agribusiness in Sustainable Natural Africa Plant Products), Rooibos tea was identified

as a niche market product which could be produced in the area. Currently the project has been developed into a commercial venture with 170 farmers now growing rooibos and secondary employment has been created on these farms and through the 'tea court'. The NGO was also critical in establishing market linkages particularly with the European and American 'fair trade' markets (World Bank, 2006: 74). However, the actual location of the town and the ability to grow rooibos in the region was the primary reason for the establishment of the industry.

Internationally, LED also impacted on Tumby Bay, a small town located in southern Australia. Due to natural disasters, shifting commodity prices and other macro-economic variables the economic forecast for the town looked bleak and a local newspaper in 1991 published a story on Tumby Bay entitled "A town waiting to die". Shaken by the article the local council and other concerned residents organised a community meeting where schemes were discussed to revive the town's economic fortunes and through their collective actions Tumby Bay had the third fastest rural town growth rate in South Australia in 2001 (Kenyon and Black, 2001). Some of the activities that stemmed from the original community planning event included:

- Town beautification projects;
- Introduction of new information technology opportunities;
- Development of a telecentre;
- Development of a marina; and
- Retiree promotion initiative.

The case studies indicate that LED initiatives have the ability to stimulate economic growth in small towns. However, these are generally linked to specific locational developmental advantages such as their proximity to tourist attractions or natural resources. If these are not existent the ability of LED initiatives to rejuvenate these towns seems limited.

6.1.2 LED goals and strategies within the towns

Information was collected from the municipal IDPs, telephonic interviews with municipal LED officials and the other structured interviews. In order to achieve this goal a number of issues were addressed. Firstly, the aims of the municipal LED strategies were identified to provide a context/benchmark by which to 'judge' the actual effectiveness of the policies. Secondly, the actual impacts of the respective municipal LED actions were reviewed and assessed in relation to the actual economic environments within the towns.

The aims of the municipal LED policies are identified below in table 6.2.1. An examination of the table illustrates that optimistic goals were set by municipalities with all strategies hoping to boost the local economy and increase employment through LED actions. Nxuba went as far as to set out specific objectives, such as increasing economic growth in the area by 10% by 2008 through tourism. All the other municipalities explicitly stated that LED activities were also directed towards poverty alleviation, barring Nxuba, which implied this outcome.

Table 6.2.1 LED objectives by Municipality

Municipality	Broad objectives	Specific Goals
Makana (Grahamstown)	Job Creation and Poverty Alleviation	N/A
Inxuba Yetemba (Cradock)	To stimulate the local economy	N/A
	Job Creation and Poverty Alleviation	N/A
	Boost Tourism	Boost the number of tourists by 2006
	Boost Agriculture	Maximise the agricultural potential of the region by 2009 particularly through emerging farmers
Nxuba (Bedford)	Promote SMMEs	Increase the no. of SMMEs by 20% by 2008
	Promote Tourism	Stimulate the local economic growth by 10% through tourism by 2008
	Promote Agriculture	Increase agricultural output by 20% by 2008
Blue Crane Route (Somerset East and Pearston)	Stimulate local economic growth	N/A
	Reduce Unemployment	N/A
	Better the living standards of Residents	N/A

Source: Extracts from respective IDPs (Makana, 2004; Inxuba Yetemba, 2005; Nxuba, 2005 and BCR, 2005)

6.2.2.1 Cradock

Cradock is situated midway between Port Elizabeth and Bloemfontein. Despite being located along a major travel route the town faces locational disadvantages by not being situated near any large population centre. There is mass unemployment and poverty in the town as only 25% of the population were unemployed and 47 % of the population were not economically active in 2001 (Stats SA, 2001a). Within this context the municipal LED strategy outlined to stimulate the local economy, promote job creation, and assist with poverty alleviation and to boost tourism and agriculture. The actual projects that have been implemented or proposed in Cradock to achieve these outcomes are listed below in table 6.2.2.1 on the following page.

Current LED projects have benefited 117 – 127 people, the majority of who were beneficiaries within two major projects, at a cost of just over R5.5 million. Of significance is the fact that the cultural village, which was an attempt to promote tourism and to stimulate employment, was a failure as the initiative collapsed and never really attracted much tourism activity (Schulze, 2006). The Expanded Public Works funded programme of fencing off the cemetery has also had a minimal impact, creating only 6 temporary jobs despite costing over 2 million rand. The community gardens initiative had the greatest impact in terms of the number of people assisted; however, it was primarily aimed at poverty alleviation. Thus whilst implemented LED projects may have been acting as a poverty alleviation tool they do not appear to have the capacity to alter the towns economic potential. A similar assessment can be made of the planned projects. Although there will be approximately 300 beneficiaries to construct a remembrance garden for the Cradock four, who were murdered anti-apartheid activists, the benefits will only be temporary and unless the garden attracts significant numbers of tourists the R1.6 million spent may not have a significant impact within the town.

Table 6.2.2.1 LED Projects initiated in Cradock

Town: Cradock				
Projects	**Budget R (000)**	**Partners**	**Status**	**Jobs created/ Expected**
Hawkers Infrastructure*	686	DEAT	Planning	0
Tourist Centre*	700		Planning	0
Create an economic profile*	100	DEAT	Planning	0
Remembrance Garden*	1600	DEAT	Planning	300 temporary
Sub-total	**3 086**			**300**
Community gardens	720	Dept Agric and Social Dev	Implemented	50 - 60 beneficiaries
Promotion of SMMEs	160		Implemented	15
Siyazondla Programme (crop farming support)	166	Dept Agric	Implemented	0
Masimanye Bakery Project	175		Implemented	13
Livestock Project	600	Dept Agric	Implemented	3
Fencing of the cemetery	2 000		Completed	6 temporary
Training Tour Guides	100	EPA	Completed	0
Vusubuntu Cultural Village	1 600	DEAT and DPLG	Completed	30 beneficiaries
Sub-total	**5521**			**117-127**
Total	**8607**			**417-427**

Source: Inxuba Yetemba, 2005 and Maki, 2006

Key* - Proposed Projects (Have not been finalised)

6.2.2.2 Bedford

The objectives identified for LED in the Nxuba municipality were to increase the number of SMMEs by 20%, boost agricultural output also by 20% through emerging farmers and increase GGP by 10% through tourism, all by 2008 (Nxuba, 2005). Considering that in 2001 only 630 people were employed in the town these are optimistic aims. Table 6.2.2.2 clearly illustrates that there is very little chance of these claims being met.

Table 6.2.2.2 LED Projects initiated in Bedford

Town: Bedford				
Projects	**Budget R (000)**	**Partners**	**Status**	**Jobs created/ Expected**
Tourism Master Plan*	250		Planning	0
Cabinet Making*	100	DEAT	Planning	22
Cotton Project*	420 (Just for fencing)	Da Gama textiles, Amatole Development Agency	Planning	350
Sub-Total	**770**			**375**
Community Gardens	100	Dept of Agric	Expanding	32
Promotion of SMMEs	250	DBSA	Implementation	28
Promotion Heritage Garden Festival	150		Implemented	0
Sub-Total	**500**			**60**
Total	**1270**			**435**

Source: Nxuba, 2005; Gqezengele, 2006

Key* - Proposed Projects (Have not been finalised)

The table illustrates that only 3 LED projects had actually been implemented in Bedford by 2007 which directly impacted on 60 people. It is more difficult to measure the actual benefits of the Heritage Garden Festival because it did not stimulate direct employment; however, it created secondary benefits by drawing tourists into the town. According to Gqezengele, (2006) a large cotton growing project has been proposed in conjunction with Da Gama textiles and the Amatole Economic Development Agency. This initiative, if implemented, would go a long was to addressing poverty and unemployment in Bedford, as there are a proposed 350 beneficiaries. However, due to the nature of the initiative its actual implementation cannot be assured, nor is it likely to impact on the municipality's LED targets for 2008. While it is clear that the municipal LED policy has gone some way towards alleviating poverty although it does not appear capable of meeting its municipal LED objectives.

6.2.2.3 Pearston

The economic situation in Pearston could be described as dire (Doro, Davenport and Fourie, 2006*). Only 331 people were employed in 2001 out of a population of 4041 (Stats SA, 2001a). Machant (2006*), the Mayor of Blue Crane Route Municipality, indicated that because of this municipal LED projects tended to focus on poverty alleviation. By 2006 only one LED project has been implemented in Pearston namely community gardens, which impacted on approximately 20 people (Mtshudu, 2006). Even the sustainability of the community gardens appeared to be threatened by high levels of theft, vandalism and damage due to livestock (Doro and Matanga, 2006*).

Table 6.2.2.3 LED Projects initiated in Pearston

Town: Pearston				
Projects	**Budget R (000)**	**Partners**	**Status**	**Jobs created/ Expected**
Mohair Project*	-	Dept Agric	Planning	100
Bread Baking*	100	-	Planning	
Ostrich Breeding Programme*	75		Planning	6
Sub Total	**175**			**106**
Community Gardens	250	Dept Agric	Implementation	20
Sub Total	**250**			**20**
Total	**425**			**126**

Source: BCR, 2005; Mtshudu, 2006

Key* - Proposed Projects (Have not been finalised)

6.2.2.4 Somerset East

The municipal objectives for Somerset East, which are the same for Pearston, are: to stimulate economic growth, reduce unemployment and to improve the living standards of residents. The actual municipal projects that have been undertaken to achieve these outcomes are listed below in table 6.2.2.4.

Table 6.2.2.4 LED Projects initiated in Somerset East

Town: Somerset East				
Projects	**Budget R (000)**	**Partners**	**Status**	**Jobs created**
Compile Skills database*	100		Planning	0
Prepare Integrated Tourism Development Plan*	200		Planning	0
Ostrich Breeding Programme*	75		Planning	0
Sub Total	**375**			**0**
Integrate with BCDA	75	BCDA	Implementation	
Car Wash*	75		Implementation	6
Biltong Festival	650		Implemented	0
Laundry project	250			7
Sub Total	**1050**			**13**
Total	**1425**			**13**

Source: BCR, 2005; Mtshudu, 2006

Key* - Proposed Projects (Have not been finalised)

The municipal LED strategies have had very little impact with only 13 jobs created in Somerset East. However, the municipality is fortunate enough to have an economic development agency tasked with stimulating economic development which appears to be driving LED and which has made considerable strides in this regard.

The Biltong Festival, an annual event which the municipality has promoted, has provided secondary benefits for the town through increased spending (Mtshudu, 2006). A laundry SMME, employing 7 people, is the only LED project which has created employment (Mtshudu, 2006). Thus it is evident that the very few municipal LED activities in

Somerset East are unlikely to alter its economic potential. It also appears that without the assistance of the BCDA the municipality could not achieve its goals.

6.2.2.5 Grahamstown

Grahamstown's LED objectives were to alleviate poverty and create jobs; a number of projects were planned to achieve these outcome. These are listed below in table 6.2.2.5.

Table 6.2.2.5 LED Projects initiated in Grahamstown

Town: Grahamstown				
Projects	**Budget R (000)**	**Partners**	**Status**	**Jobs created/ Expected**
Establish a 'One Stop Shop' for potential SMMEs	82	-	Not implemented	-
Hawkers Infrastructure*	N/A	-	Planning	-
Makana Goat Project*	9 000	Dept Agric, DEAT	Planning	-
Expansion of Industry and SMMEs*	100	Rhodes University	Implemented	-
Sub total	**9 082**			
Establishment of B&Bs in disadvantaged communities	-	-	Implemented	46
Botanical Garden	1000	Parks Dept, DEAT	Implemented	150 temporary
Develop Website	5		Completed	-
Sub total	**1005**			**196**
Total	**10 087**			**196**

Source: Makana, 2005; Ngcungca, 2006

Key* - Proposed Projects (Have not been finalised)

There are a number of notable projects which have the capacity to impact positively on the town. A municipal website was created to promote investment in the region. A public works programme was initiated in the Botanical Gardens, which created 150 temporary jobs as well as creating secondary amenities for local residents and visitors and was achieved though a combination between a municipal and national initiative. Forty six B&BS were developed in previously disadvantaged areas to operate during the annual National Arts Festival. The development of a 9 million rand goat project was also being considered, although there is no certainty whether the project will be implemented or how many beneficiaries there will be (Ngcungca, 2006).

The evidence suggests that some positive steps have been taken by the municipality in relation to LED. However, limited direct employment was created.

6.3 Private business and entrepreneurial activities

Private business and entrepreneurial activities play a critical role within the economies of small towns. Individuals or private entities acting in their best interests have the ability to create positive externalities which can bring wealth into the town and create employment. The following section identifies these types of activities.

6.3.1 Cradock

There were a number of private initiatives which were critical to the economy. Sandra Antrobus bought and renovated the Victoria Hotel and opened a set of Guest Houses. Tour buses regularly stop over, 37 in November 2004, largely due to marketing and the reputation of the hotel (S. Antrobus, 2004*). Apart from stimulating additional employment this activity brings new wealth into the town and the regularity of the tour busses has created an opportunity for local cultural groups, who perform for the visitors.

Cradock is a distribution centre for a wide rural hinterland and there are two large family owned retail operations which sell to residents, local spaza shops and to smaller retailers in regional towns. Interestingly, one of these wholesalers, Adami's sold goods to as far

away as Jeffereys Bay. However, the retail sector does face competition from larger centres such as Port Elizabeth many of the wealthier residents within the town prefer to do their shopping there. These activities are major assets within the town but the question remains whether these types of activities can be extended further?

6.3.2 Bedford

Between1998 and 2000 only 2 houses were sold in Bedford for as little as R5 000 (Van Niekerk, 2005*). The 48 houses sold in Bedford since 2001, led to what has been described by some as a "rejuvenation" of the town (Van Niekerk, 2005*). This was sparked off by Van Niekerk (2006) a local estate agent marketing the town in 'Country Life' magazine. However, it is debatable whether the booming property market and the number of people who relocated led to an improvement in the economic situation for the community as whole, as non-home owners were little affected by the change of ownership.

The town has just one significant manufacturing activity, Eagles Hout which employs 146 people. It recently extended its operations from only producing furniture, by also creating agricultural fence dropper from recycled old telephone cables (Blom, 2005a*). However, barring the apparent success of the individual firm, there are no other manufacturing activities, nor does it appear that any will be attracted in the near future. Van Niekerk (2005*) pointed out that other local industries, such as the 'Sasko' flourmill, had closed over recent years.

Training initiatives have also been undertaken in the town by Lana Blom (2005b) and local artist David Khoury (2005*) taught local artists and allowed their works to be sold in his gallery. Unfortunately Khoury's gallery is now closed and it is unlikely that Lana Blom's initiative will spark significant growth in the town, although it may assist in terms of poverty alleviation.

6.3.3 Somerset-East and Pearston

As seen previously the Blue Crane Development Agency (BCDA), primarily formed through the determination and drive of individuals (Beach, 2005*) has actively promoted the towns of Somerset East and Pearston. The Agency is linked with the municipality and is regularly contracted to undertake development work on its behalf.

The Agency has implemented notable large scale projects in the town, in particular the development of the Boshberg Eco-Resort, which Beach (2005*) described as a 600 million rand mega project which would include the following:

- Hotel
- 420 residential plots
- A wellness centre/spa
- Trout Fishing
- 18 hole golf course
- Equestrian Estate

The proposed resort is planned to include three different housing nodes aimed at varying markets which is expected to compete with the more expensive traditional 'golfing estates'. The agency plans on developing the resort and the housing nodes themselves as opposed to tendering them to private developers, as they intend to use the profits to maintain the resort, develop the golf course and other recreational facilities in the town that will benefit the whole community. Through the project Tetswana (2006) hopes that 100 permanent and 6000 temporary jobs would be created which would significantly boost the local economy. The agency has also proposed a hotel resort in Pearston utilising the 'Karoo' as the major attraction, although it is still in its conceptualisation phase (Tetswana, 2006*).

The agency has also secured R5 million for the development and construction of an airport and a light industrial park (Fife, 2006), the primary rationale being to develop tourism in the area allowing Somerset East to become a gateway to the Greater Addo

Elephant National Park. A light aircraft assembly plant has also been attracted to the newly created industrial park primarily through efforts by the agency (Beach, 2005*).

The agency has also implemented agricultural projects which have been developed in and around both towns. These projects are primarily aimed at creating employment through promoting high value crops such as flowers and plants which can be used for bio diesel. An example is the newly created Misty Mountains, a flower farming facility following a R1 million rand investment, which created 15 sustainable jobs (Testswana, 2006*). The farm is 65% owned by the beneficiaries and the BCDA whilst the remainder is owned by commercial farmers. It is hoped that the facility would render R885 000 turnover by 2007 (Fife, 2006). The introduction of the schemes would be supported with training and mentorship programmes as well as locating markets for the products. Eventually it is hoped that the agency can assist in securing the newly trained farmers their own land (Tetswana, 2006*).

It is clear that the agency has been a major catalyst in all of the mentioned projects and through their actions it does seem possible to improve the economic situation in Somerset East, although an attempt to rejuvenate Pearston is unlikely.

Somerset East also has successful manufacturing operations such as PJ Engineering, which specialises in machine design and manufacturing. A subsidiary company Thermo Fluid Engineers also creates air-conditioning units for foreign sports cars (Fourie, 2006*). The companies appear to be extremely successful due to their high level of expertise and as such have created a niche market and accordingly do not face significant locational disadvantages by operating in Somerset East. The town is also home to two other small niche market manufacturers producing school science kits and rugby jerseys respectively.

6.3.4 Grahamstown

Grahamstown has a well established educational industry due to the presence of Rhodes University and private schools including Kingswood College, St Andrews Prep, St Andrews College and the Diocesan School for Girls (DSG). There are a number of small

niche enterprises which have been established due to this academic nature of the town, these include: Geodatatec, National Inquiry Service Centre (NISC) and Coastal and Environmental Services (CES) (Makana, 2004b). These activities are boosted by the skilled and diverse workforce of the town.

Makana Brick and Tile is a major industry in the town and being a manufacturing based activity it brings significant money into the town. However the entity faces a number of challenges despite the kaolin reserves in the town. Meyer (2005*) that the operations of the plant were hindered by what he described as the difficult nature of the working class in the town. Strikes and other disturbances caused by this caused significant efficiency and profitability. He indicated that many of the other operations utilising the clay reserves closed down due to labour unrest and that it was a major growth inhibitor for industrial type operations.

6.4 Conclusion

In summary, municipal LED programmes, with the exception of Somerset East, have been a dismal failure. Private initiatives, predominately stimulated by visionary individuals, often in co-operation with public institutions, have been at the forefront of what has been deemed as successful in the towns.

7 Trends and Growth Drivers

The chapter highlights evident socio-economic trends within the sampled towns and continues to identify growth drivers within the small economies which are then related to their economic potential. A basic framework for assessing towns' economic potential is provided in section 7.4.

7.1 Identification of trends

7.1.1 Decrease in the economic vitality of the sampled towns

Employment data manipulated in the shift-share and LQ analyses indicated a definite decrease in the economic activity between 1996 and 2001, a similar economic trend to many small urban centres around the globe. However, prominent businessmen in Grahamstown, such as Colin Meyer (2005*) and Rob Beer (2005*), believed that the town had actually experienced economic growth between 1994 and 2005. Due to the differing reference periods this discrepancy is possible and may be an indication that the local economy has grown since 2001.

7.1.2 Rural linkages

From their origins the five towns selected for the study have been heavily dependent on agriculture, and the relationship between the two has shaped their development. However, it appears that the interactions between the two have been somewhat altered. Despite the past dominance of the sector within the regional economy evidence from interviews suggested that local farmers were now far less dependent on the centres and many preferred to source goods and services from larger centres.

Van Niekerk (2005*) pointed to a general withdrawal of wealthy farmers from the Bedford economy, often sending their children to school in Grahamstown and therefore acquiring retail goods from that town, whilst agricultural goods were often secured from

the larger urban centres of Port Elizabeth and East London. Walker (2004*), a dairy farmer milking 800 cows 30km from Cradock, indicated that if the town were not there, it would not have a significant effect upon his operations.

The decline in these interactions provides a partial explanation for the worsening economic conditions in small towns. This can be attributed to the general reduction of travel costs and improved connectivity, which enable farmers to source goods from other areas at reduced costs. The expansion of game farming in the areas surrounding many of the centres has exacerbated the problem, as the reserves/hunting lodges are even less reliant on the local towns than farmers (Davenport 2006*, Lang 2004*).

7.1.3 Potential for tourism, and lifestyle changes

The CDE (1996) sees tourism as an economic growth opportunity for small towns and evidence from Clarens, in the Free State, supports this view as Molosankwe (2005) indicates that the town's economy is sustained by tourists who frequent the centre throughout the year.

All the Municipal IDPs identified tourism as a promising sector to exploit for future growth (Makana, 2004; BCR, 2005; Nxuba, 2005 and Inxuba Yetemba, 2005). However, whilst tourism may be an opportunity, there needs to be some attraction that would want to make people visit the centres. Whilst it is possible to create these attractions, generally tourism potential is linked to something within the town, or it surrounds such as natural amenities or historical buildings or events.

Annual festivals and events are also a potential source of attracting tourists. The National Arts Festival is held in Grahamstown and attracts up to 20 000 tourists and creates a positive economic spin off of around R40 million (Snowball and Antrobus, 2003: 26). Run in tandem with the National Arts Festival itself, the Schools Arts Festival as well as the annual Sasol Science Festival bring large numbers of scholars into the town. The tourist industry also benefits from events such as graduation and other University and

School functions as well as parents dropping or fetching children/students who often stay over in the town. These events are closely linked to the towns' educational sector. Tourism linked business entities in Bedford have also benefited from the introduction of an annual garden festival, where local properties have been displayed to the public (Van Niekerk, 2005*).

Atkinson and Zingel (2004:6) highlighted that small towns are also becoming popular centres for retirement and telecommuters, probably due the low cost of living and relaxed lifestyle. According to Khoury and Van Niekerk (2005*), prior to 2000, Bedford was experiencing an economic decline. Between 1998 and 2000, only two houses were sold, one for as little as R5 000 (Van Niekerk, 2005*). However, subsequently between 2001 and 2005, 48 houses were sold, constituting 12% of the town's housing stock (Van Niekerk, 2005*). This has been attributed largely to the work of Kim van Niekerk who placed an article in the magazine 'Country Life' which sparked national interest, and resulted in a number of people buying property and moving into Bedford (Van Niekerk 2005*; Khoury 2005*).

Thus it is evident that tourism and people relocating to smaller centres is a potential source of economic growth although it would be difficult to stimulate such opportunities in towns such as Pearston where there are few natural amenities or other draw-cards such as historical buildings or events which take place there.

7.2 Growth Drivers and Inhibitors

This section identifies and reviews growth determinants and inhibitors and discusses their possible impacts.

7.2.1 Size

Evidence in South Africa suggests that larger towns, with an estimated population threshold of 70 000 do not appear to be experiencing economic decline similar to that of

the smaller centres (Atkinson and Zingel, 2004: 6). The apparent threshold can be explained by economic factors. Firstly, at that size some primary industries or services must exist in almost all settlements e.g. hospitals, schools, bakeries, etc. Accordingly, secondary activities are likely to thrive, creating employment and wealth. The New Economic Geography also explains this threshold by indicating that at a certain size business activities and residents from smaller neighbouring settlements, will shift towards the larger centre.

Grahamstown had an official population of 61 747 in 2001(Stats SA 2001a), and Makana Municipality itself numbered 74 539 (DBSA, 2004) indicating that the town is on the cusp of the threshold. Thus, it is not surprising that the town had the highest economic base within the sampled towns. A number of secondary academic enterprises also thrive due to the presence of the university such as Geodatatec, National Inquiry Service Centre (NISC) and Coastal and Environmental Services (CES) and other service providers such as restaurants, pubs, hotels and bed and breakfasts also appear to be thriving. If the population continues to grow, sustained growth could become a reality, especially as the university is also currently expanding (Vale, 2005*).

The evidence suggests opposite results for the two smallest towns. Pearston and Bedford, both of which have populations under 10 000, face severe growth limitations associated with their size. Cradock and Somerset East with populations of 31 292 and 16 580 (Stats SA, 2001) respectively, whilst both below the threshold do not appear as negatively impacted as the other two smaller centres.

7.2.2 Location and Infrastructure

According to Jensen, (1997 in Collits, 2000: 15) geographical positioning and infrastructure play a role in the development potential of any centre.

It is clear that basic infrastructure is a prerequisite for growth, and within the context of the Cape Midlands, generally speaking bigger centres have greater infrastructure, and

have more reliable and effective provision of services. Blom (2005*) complained about the numerous electricity failures experienced in Bedford, which reduced the competitiveness of production. Meyer (2005*), owner of Makana Brick and Tile, in Grahamstown, chose to locate the factory outside of the town borders in order to have access to electricity directly from Eskom, the national supplier, as opposed to the municipality, which is less reliable. These types of problems effectively make smaller centres a less attractive option for industrial operations. Basic and reliable infrastructure and competitively priced services are essential to attract enterprises, thus making them growth inhibitors if a satisfactory level is not achieved.

All the towns studied experienced a decline in manufacturing between 1996 and 2001, whilst nationally this sector experienced growth (Stats, 2001a). Location, including considerations of natural resources, amenities and access to markets, go a long way to explaining these growth patterns. The lack of growth in Cradock, primarily because it is situated away from any large population despite having a good infrastructure plus an abundance of land and water, exemplifies this. Ottaviano and Thisse (2004), through the use of location theory, confirmed the importance of transportation costs. Essentially firms act as profit maximising entities and choose locations where the sum of all costs is the lowest. Thus transportation costs, and accordingly location, are important factors for the development prospect of a town. Therefore being located in a larger settlement is a distinct economic advantage, whilst being located away from markets can stifle economic growth. Firms also have a natural inclination to move towards larger centres as clustering of related industries enhances efficiency (Jovanovic, 2003: 48).

While the numerous economic challenges facing small towns, particularly in attracting and retaining industrial type activities have been illustrated, certain types of economic enterprises are not reliant on location and infrastructure and are not affected or drawn to larger settlement, e.g. tourist related businesses and manufacturers producing goods for niche markets.

7.2.3 Local Leadership

"The role of local leadership is accepted as a key driver of regional economic performance. Leadership is especially important in smaller communities which often lack infrastructure, skills and resources for economic development" (Collits 2000: 19). Leadership plays a key role in identifying economic opportunities and also in ensuring co-operation amongst the community to achieve these goals. However, local leadership, in the context of the study, can be broken into two components, namely, leadership from the municipality and from private stakeholders or individuals.

A) Municipal Leadership

Governance at a municipal level can impact severely upon a town's economy. However, good governance may not necessarily be enough to stimulate growth. Two examples of contrasting municipal leadership illustrate this point.

In Cradock doubts were raised over the financial position of Inxuba Yetemba Municipality (Adami, 2004*). Coetzee (2004*) a former town clerk indicated that due to cash flow problems, although better than in previous years, the municipality appeared to moving from solving one disaster to the next and not acting in a strategic manner. This is a major concern if businesses are reliant on the municipality for basic services.

Somerset East and Pearston were more fortunate in this regard. The municipality had ensured a relatively positive relationship between itself and the Blue Crane Development Agency (BCDA). The interaction between the two provided a strong leadership platform (Beach, 2005*). The mutual effort led to the creation of several innovative industries capable of stimulating growth. Tetswana (2006*) also confirmed this view and indicated that strong and formal links existed between the two entities and that they had worked together to achieve many of the projects.

B) Private stakeholder and individual leadership

Individuals and local entrepreneurs also form an important component of local leadership. The reason behind this is clear when reviewing what Henton et al. (1997: 34 in Collits, 2001: 24) consider the general traits of civic entrepreneurs:

- see economic opportunity within the community;
- are entrepreneurial by nature;
- provide collaborative leadership which connects the economy and the community;
- are motivated by broad and long-run interests; and
- work well in teams, often playing complementary roles.

The traits illustrate why it is important to retain and to attract civic entrepreneurs.

7.2.4 Established Industries

Towns fortunate enough to have established active industries have distinct developmental advantages. As previously discussed Arthur (1989: 128) noted 'history' is an important element in the development path of any area and that certain events can cause industries to lock into a certain locations due to reductions in transactional costs.

Despite the major advantages of having an established industry, evidence in mining towns suggest that should the primary industry close the town itself often collapses (Atkinson and Zingel, 2004: 5). This is a reality that has led to the decline of many towns, due to declining mineral prices, mineral depletion and major technical advances (Atkinson and Zingel, 2004: 5).

Grahamstown is the only town within the study that has a large established industry, namely education. The presence of the university and schools provides employment for a large number of residents. The wages paid in the educational sector as well as the money

spent in the town by the scholars and students, the majority of whom are attracted from beyond the town itself, represents a major cash injection into the local economy. Snowball and Antrobus (2006: 19) confirmed this in a study which calculated the impact of university students on the economy of Grahamstown. Using an expenditure approach the total was calculated at R245 million; R207 million was accounted for by direct impacts, whilst indirect impacts constituted R38 million. These indirect benefits occurred due to the circulation effect within a local economy, which creates a multiplier effect (Snowball and Antrobus, 2006: 19). To calculate the indirect benefit the multiplier of 0.18 was multiplied by the direct benefits of R207 million, the same as that used in a National Arts Festival survey (Antrobus *et al.*, 1997). In addition a large portion of the students' expenditure within the town is supplemented by their own earnings, money earned from tutoring and working in pubs and restaurants, etc. To overcome the difficulties this presented in determining the actual influx of new money into the regional economy, Snowball and Antrobus (2005: 19) also utilised an income approach to calculate the actual injection of wealth. The more conservative latter approach concluded that the total impact was R230 million. The breakdown of both calculations can be seen in Table 7.1.4.1 and additional information on the calculations is contained in Appendix 7.

Table 7.1.4.1 Impact of students on the Grahamstown Economy

		Expenditure Method (R millions)	Income Method (R millions)
A	**Cost of living**	120	108
B	**Fees**	87	87
C	**Direct impact**	207	195
D	**Indirect impact (C x 0.18%)**	38	35
	Total impact	245	230

Source: Snowball and Antrobus, 2006: 19; own calculations were conducted to extract the required information

The study also identified secondary benefits such as visitors to the town; approximately 15% of the sample had family or friends staying over in town. These visitors require accommodation, food and entertainment benefiting local hotels, B&BS, restaurants, pubs, shops and game lodges, thus illustrating the abundant secondary impacts.

Thus, it can be seen that the university students and scholars from the private schools such as Saint Andrews, Diocesan School for Girls, Kingswood and Saint Andrews Prep, are major economic drivers within the town. Rhodes University itself has grown significantly over the last thirty years with student numbers that have risen from 2581 in 1981 (RU, 1982) to over 6000 in 2006 (RU, 2006). Vale (2005*) confirmed the trend and believed that the numbers would continue to rise, validating the statement by referring to the additional residences and lecture venues that had recently been constructed or were under construction at the University.

The other towns are not as fortunate to have major established industries to the same extent as Grahamstown, which makes the creation of wealth in them more difficult to achieve.

7.2.5 Macroeconomic and other variables

Shifts in national policy or changes in the international economy may either stimulate or hinder towns' development, for example changes to the National Social Grant System. "South Africa has one of the biggest non-contributory social welfare systems in the world, with about 10m people now receiving basic social protection from the state (22% of the total population)" (Bisseker, 2005). EPRI, (2004) indicate that social grants have already gone a long way to alleviating levels of poverty within the country. The impact of these grants is also felt within the small towns, a view supported by Adami (2004), who indicated that grant spending was a major economic force in Cradock. Due to the link between the towns and the agricultural sector, which was highlighted in the Social Accounting Matrix, fluctuating agricultural commodity prices will have either positive or negative economic impacts on the towns.

7.3 Determination of the towns' economic potential

By knowing the towns' past and current economic trends, current LED and local entrepreneurial initiatives and the primary growth drivers and inhibitors it is possible to indicate whether, under a similar macro-economic climate and current local variables, the towns are capable of reversing the trends between 1996 and 2001. This is clearly illustrated by the Social Accounting Matrix which illustrated that a change in the national economy, particularly in the agricultural sector, would have a major impact on their economies. The following section brings together the research conducted in earlier chapters to make an assessment.

7.3.1 Grahamstown

In terms of the Shift-Share analysis Grahamstown did not perform well and experienced significant regional shifts in many sectors, including a negative 713 employment shift in the services sector in relation to developments in a national context. Despite this, the town actually experienced a real employment increase in services, thus the negative RS could simply be due to a high national growth rate. Negative regional shifts and real employment losses were also experienced in both the manufacturing and transportation industries, similar to trends seen in the other towns. However, when reviewed in conjunction with Economic Base analysis the town looked particularly healthy. Grahamstown had the highest measured economic base and exhibited the largest LQs in the services sector of 2.2.

Being the largest town and given the existence of many educational institutions it also faced fewer economic challenges. Local Leadership, in terms of the municipality, was satisfactory but in terms of municipal LED actions very little noticeable positive impact had been achieved.

Due to a strong initial economic position the town may be capable of economic growth and some residents interviewed believed that the town had grown between 1996 and 2001

(Meyer, 2005* and Beer 2005*). Thus, it does appear to have the capacity to grow further.

7.3.2 Somerset East

Both the Shift-Share and Economic Base analysis suggested that the economic situation in Somerset East was unhealthy. Negative regional shifts were experienced in almost all of the industries in a national context and the town exhibited the lowest percentage economic base of all the centres. Despite this, the local leadership in Somerset East was strong and appeared to be the primary economic driver. The Blue Crane Development Agency (BCDA), working together with the municipality and financed through the Industrial Development Corporation (IDC), have put into place a number of meaningful and sustainable LED developmental initiatives, such as the planned formation of an 'eco-resort', light aeroplane manufacturing plant and other unique agricultural projects. The vision, guidance and determination of the two institutions have changed the economic outlook of the town and could well reverse the future outlook as suggested by negative statistical scores. Tetswana (2006*) optimistically predicted that over 6 000 temporary and 1 000 permanent jobs may be generated through the 'eco-resort', which would result in a massive boost for the town, considering that total employment in 2001 was only 2 757 (Stats SA 2001a). The BCDA have also begun the long process of diversification of the local economy, although agriculture still remains the dominant force according to the LQ figures. The aeroplane manufacturing plant and the arrival and continued success of a number of successful entrepreneurs such as PJ Fourie, a specialist engineer, bodes well for the future of the town.

7.3.3 Cradock

Cradock has many of the attributes required for economic growth, namely: land, water, good rail and road networks and cheap labour, yet it failed to enjoy any meaningful growth (Adami, 2004*). A major reason behind this is that it lacks locational advantages by not being situated close to any major markets, which stifled possible investment and

business activities. Another major reason behind the outcome was to do with the apparent lack of strategic guidance and direction shown by the municipality. A number of LED strategies were introduced, but none made any significant improvements to the town's economy. Considering this and the numerous economic challenges facing the town, it is unlikely that future LED projects under present leadership would have any chance of stimulating growth.

The town was economically stronger than all centres, apart from Grahamstown, in the Shift-Share and Economic Base analysis, despite showing evidence of decline and in a provincial context Cradock performed relatively well in a provincial and experienced a noticeable increase in its Economic Base between 1996 and 2001. The potential establishment of a sugar beet/bio-diesel plant may provide a major economic boost for the town and the possible primary and secondary benefits may alter the economic outlook of Cradock. However, the establishment is still speculative and under current conditions it does not look likely that the town will reverse its continued decline.

7.3.4 Bedford

Bedford, from its origin as an agricultural centre never experienced any major economic growth nor does it appear likely to occur now, despite exhibiting increases in its economic base between 1996 and 2001. Individuals in Bedford have made an attempt to develop the town; however integration between the municipality, community and the civic entrepreneurs had not been achieved, thereby rendering their efforts ineffective, including LED initiatives. Due to its small size, locational disadvantages and lack of growth in the past, the town faces huge economic obstacles, which by themselves will be extremely difficult, if not impossible to overcome.

7.3.5 Pearston

Pearston, the smallest town considered, despite the strong leadership from its municipality and the Blue Crane Route Development Agency both situated in Somerset East, is also unlikely to reverse its decline due to locational and economic challenges. From its establishment as a Church town, the economic function of the centre was limited. It recorded a LQ in the manufacturing sector of zero in 2001. Another possible reason for its economic decline is its close proximity to Graaff-Reinet and Somerset East, both of which could be considered regional centres drawing customers away from the smaller towns in the region, such as Pearston. Despite the efforts by the BCDA and the municipality the town is likely to continue to decline, acting primarily as a welfare distribution point. Doro, (2006), Matanga (2006), Davenport (2006) and Machant (2006*) all believe the town had been in a state of continual decline over recent years and do not anticipate growth occurring in the foreseeable future.

7.4 Importance of growth drivers

The major drivers within the economies of each town are identified below in table 7.4, and were assessed through visits and the structured interviews[15]. The performance of each was ranked on a scale of 0 to 5, where zero indicates that the economic driver is non existent and five that it is strong in the town. For example, size was evaluated as a medium level growth driver in Grahamstown hence it was ranked as 4, whilst in Pearston it was considered to be zero as its size is a major economic constraint for the town. Municipal leadership was also disaggregated between Somerset East and Pearston due to the slight bias towards the former in terms of development strategy.

[15] See the research notes taken on the respective towns in Appendix 2

Table 7.4 Ranking of Growth Drivers in the towns

Town	LED	Size	Existing markets	Existing Industry	Infrast-ructure	Municipal Leadership	Local Entrepreneurs	Total	Percentage of max score
Grahamstown	2	4	3	5	3	2	4	23	66
Cradock	1	2	2	2.5	2.5	2	2.5	14.5	41
Bedford	1	1	1	1	1	2	1.5	8.5	24
Somerset East	5	1	1	2	1	3	3	16	46
Pearston	1	0	0	0	0.5	2	0.5	4	11

Key: 0 – 5 where 5 is excellent and 0 is poor

The ranking closely links to the assessment of the towns' economic potential. Grahamstown and Somerset East, the towns identified as most likely to benefit from economic growth, had the highest rankings with 23 and 16 respectively. Grahamstown in particular appears to be well positioned to stimulate its local economy due to the presence of its educational institutions, measured by the 'existing industries' driver, its size and the existence of local entrepreneurs; all three of these key drivers ranked above 4.

Cradock had a ranking 14.5, but what differentiates it from both Somerset East and Grahamstown is that there is not one specific driver which was particularly strong. Bedford and Pearston had the lowest rankings of 8.5 and 4 which highlights why the two towns face the largest economic challenges. It is also important to note that only 2 of the 7 drivers can actually be improved in the short run, namely LED strategies and municipal leadership. Thus, the ability to shift the development path of any small town is a major challenge. The ranking process highlights the importance of growth drivers within small towns and provides a simple framework by which local municipalities could assess the developmental outlook within their municipal boundaries. From the study it could be safe to assume that towns scoring a ranking above 55% would be in a relatively strong position to promote economic growth, whilst towns scoring lower than 30% would struggle due to the severe economic challenges facing them.

8 Conclusion

The literature on small towns suggested that their general economic decline across the globe could be explained using economic theory, particularly Geographical Economics, the New Economic Geography and location theory which all hypothesise that agglomeration forces pull economic activity away from smaller towns towards larger urban centres as a natural outcome of high transportation and transactional costs. Nevertheless, pure economic theory does not fully explain how towns in the United States, New Zealand and Canada have managed to avoid this decline and in many circumstances reverse their economic fortunes.

In South Africa approximately 5 million people live in 500 small towns scattered across the country and this, along with the high poverty levels in the towns themselves and their rural hinterlands, highlights that these centres cannot be ignored in a national developmental context.

Similar to international trends all of the sampled towns in the Eastern Cape Midlands experienced negative growth trends between the two national censuses of 1996 and 2001, which both Shift-Share analysis and Economic Base theory confirmed was felt more severely in the industrial/primary sectors of their local economies. These findings were in line with regional economic theory, particularly the New Economic Geography, and the results were similar to Cook's (1971) assessment of the towns in the region. Economic Base theory conducted at a municipal level identified agriculture as a critical economic driver within all of the towns' economies and a Social Accounting Matrix (SAM) highlighted the important linkages between agriculture and the other key sectors, particularly the services sector.

However, what was different from international experience was that all of the towns in the sample experienced population increases between 1996 and 2001. The extent of the population increases suggested that it was due to a combination of immigration from rural areas, possibly attracted by government housing policies and pushed by changing farming techniques, as well as natural population growth. In addition historical developmental trajectories were also found to be an important element and in many respects their current

economic trends can be traced back to the towns' origins and early economic history, highlighting the difficulties in forcibly stimulating growth.

Using seven growth drivers, namely, size, local economic development, existing markets, existing industries, infrastructure, municipal leadership and local entrepreneurs, links were recognised, via means of a scoring process, between these drivers and a towns' economic potential. However, these results are by no means definitive. Despite this it was possibly to make informed assessments, for example, where several drivers were in place as was the case in Grahamstown and to a lesser extent Somerset East, achieving economic growth appeared possible, particularly if the drivers were above a critical threshold level of 55% on the scale. Similarly, those towns with a low score, such as Bedford and Pearston both below 25%, were found to have limited growth potential. However, further research is required around the weightings and identifying their rank of importance.

In terms of stimulating economic growth within small towns municipal Local Economic Development (LED) programmes, with the exception of Somerset East, were seen to have failed and private initiatives, predominately stimulated by visionary individuals, often in co-operation with public institutions, have been at the forefront of what has been deemed as successful developmental interventions in the towns. Accordingly, local authorities should thus be cautious of spending vast sums on elaborate growth schemes without very careful analysis as these may not lead to any noticeable development, particularly if few of the pre conditions for growth are in place.

From a practical viewpoint the study makes suggestions to municipal LED units aiming to stimulate economic growth. As previously noted, Cook (1971) categorised towns in the Eastern Cape Midlands, all of which are towns in previously white commercial farming areas, according to availability of services into a hierarchy of places. Using this and the simple scoring framework developed in section 7.4, small towns in the Eastern Cape and nationally, excluding the former homelands, can be clustered into four broad categories. Importantly, the clustering shown in Table 8.1 only holds for small towns in commercial

farming areas. The table reflects where the sampled towns would be classified and provides an indication of where a sample of other towns in the Eastern Cape could be classified.

Table 8.1 Categories of small towns in the Eastern Cape

Category 1 Towns (Order 4)	**Category 2 Towns (Order 5 - 6)**	**Category 3 Towns (Order 7 - 8)**	**Special opportunity towns**
Grahamstown	**Cradock**	**Bedford**	Kenton-on Sea
Queenstown	**Somerset East**	**Pearston**	Port Alfred
King Williams Town	Graaff-Reinet	Hofmeyer	Hogsback
	Aliwal North	Steynsburg	
	Middelburg	Venterstad	
		Alexandria	
		Riebeeck East	

Index:

Category 1 – Towns scoring/likely to score 55% and above on the ranking system

Category 2 – Towns scoring/likely to score between 25% and 54% on the ranking system

Category 3 – Towns scoring/likely to score lower than 25% on the ranking system

Special Opportunity Towns – Towns where specific developmental opportunities exist – eg coastal towns

The results of the study suggested that category 1 towns have some growth potential and with the correct guidance from the municipality it would be possible to develop these local economies. However, stimulating growth in such centres can be done most effectively delivered through local entrepreneurial agents as opposed to municipal LED actions. Strategies identified in the study to promote growth and development in category 1 towns included:

- Retaining and attempting to attract skilled residents as local entrepreneurs were identified as one of the key growth drivers in small towns and entrepreneurial agents were found to be at the forefront of stimulating growth in many of the towns.
- An attractive lifestyle was also identified as a key element for local entrepreneurs. Thus encouraging private health care, top-class recreational facilities and good

educational institutions were identified as sound strategies as these elements would make a town a more attractive place to live and were seen to be more effective in drawing in entrepreneurs as opposed to providing tax breaks or other forms of incentives.

- Support of existing SMMEs and industries was also found to be easier than attracting new business ventures into small towns.

Category 2 towns face similar challenges, albeit to a larger degree and as such the recommendations above hold. However, building world class recreational facilities and encouraging private health care facilities for example are unlikely to be viable and as such simply improving exiting services may be a better option. It is also unlikely that these towns' economic fortunes can be reversed unless specific developmental vehicles or mechanisms, such as the development agency in Somerset East, are put into place. Caution should be observed when setting up development type agencies as they require vast investments and do not guarantee returns. Unless large scale initiatives with significant opportunities, such as the Boshberg Development node, are identified and found to economically viable, setting up such vehicles may be inadvisable.

Category 3 towns face a realistic threat of continued economic decline, although not necessarily inevitable. Development strategies in these towns should rather focus on poverty alleviation initiatives and the promotion of a sustainable livelihoods approach.

Special opportunity towns incorporate those that have unique features to stimulate their local economies, such as the coastal towns, which have in many instances enabled economic growth. Developmental and growth strategies in such towns should be linked to maximising these opportunities.

The simple scoring process could be easily replicated, with appropriate studies, and utilised to categorise small rural towns in commercial farming areas across the country. Considering the evident need for development in rural areas within South Africa the study provides a mechanism by which small rural towns could be targeted by

developmental strategies to stimulate growth. Effectively category 1 and special opportunity towns should be at the centre of any rural development strategy within the country as growth and the creation of employment is possible. In addition the study provides a means to evaluate the applicability of municipal Local Economic (LED) initiatives and could reduce poorly conceptualised programmes aimed at creating economic growth in towns where it is unlikely to occur, primarily due to broader national economic trends which is critical considering the minimal impact of municipal driven LED strategies despite the sums spent.

References

ABS, 1998. Australian Social Trends. **Australian Bureau of Statistics**. Australia

ANC. 2006. Map of South Africa. **African National Conference**. Available at: http://www.anc.org.za/images/map/samap. Accessed 15 November 2006

ANTROBUS, G., WILLIAMS, V., FRYER, D., KHUMALO, B., STREAK, J., and WEBB, A. 1997. The economic impact of the 1996 Standard Bank National Arts Festival. Department of Economics, Rhodes University. Grahamstown.

ARTHUR, W.B., 1989. Competing Technologies, Increasing Returns, and Lock-in by Historical Events. **The Economic Journal.** 99: 116-131.

ATKINSON, D. and ZINGEL, J., 2004. Towards a Small Towns Network: Concept, Feasibility and Process Paper. **Human Sciences Research Council**, Bloemfontein

BAKER, J., 1990. **Small Town Africa: Studies in Rural Urban Interaction.** Scandinavian Institute of African Studies, Uppsala.

BAKER, J. and CLAESON, C.F., 1990. **Introduction in Small Town Africa Studies in Rural-Urban Interaction**. Scandinavian Institute of African Studies, Uppsala

BARKLEY, D. L., 2001. **Employment Generation Strategies for Small Towns: An Overview of Alternatives.** REDRL Research Report. Available at http://www.cherokee.argecon.clemson.edu.barkley.researchreport08-2001-02. Accessed 21 September 2004.

BAUTISTA, R.M., THOMAS, M., MUIR-LERESCHE, M. and LOFGREN, H. 2002. Macroeconomic policy reforms and agriculture: towards equitable growth in Zimbabwe. Research Report 128. **International Food Policy Research Institute**, Wshington

BCR, 2005. Integrated Development Plan. **Blue Crane Route Municipality**. Municipal Document. Somerset East

BIDC, 2002a. Methods of Regional Analysis: Economic base and location quotient. **Business and Industry Data Center**. 2. Available at http://www.bidc.state.tx.us/researchcorner/archives/Issue II/Location_Quotient.pdf. Accessed 01 April 2005.

BIDC, 2002b. Methods of Regional Analysis: Shift-Share. **Business and Industry Data Center**. 1. Available at http://www.bidc.state.tx.us/researchcorner/archives/Issue I/-Shift_Share.pdf. Accessed 01 April 2005.

BIRCH, K., 1972. Somerset East. **Grahamstown Historical Society**. 1(2): 63-66

BISSEKER, C., 2005. The Great Juggling Act. **Financial Mail.** February 25. 2005. Available at http://free.financialmail.co.za/budget2005/overview/bud8.htm. Accessed 12 September 2006.

BRAKMAN, S., GARRETSEN, H. 2005. Geographic Economic in its Teens: Theory, Empirics, Policy and Unresolved Issues. **Journal of Development Perspectives**. 1 (1), 5 - 28

BRAKMAN, S., GARRETSEN, H and SCHRAMM, M. 2005. **Putting New Economic Geography to the test: Free-ness of trade and agglomeration in the EU regions**. CESIFO Working Paper no. 1566. Available at http://www.cesifo-group.de/. Accessed 01 April 2005

CENTRAL STATISTICAL SERVICES, 1970a. **Population Census: Population of Cities, Towns and Rural Areas**. No. 02-05-01. Government Printers, Pretoria.

CENTRAL STATISTICAL SERVICES, 1970b. **Population Census: Geographical Distribution of the Population**. No. 02-05-10. Government Printers, Pretoria.

CENTRAL STATISTICAL SERVICES, 1980a. **Population Census: Geographical distribution of the population with a review for 1951-1980**. No. 02-80-13. Government Printers, Pretoria.

CENTRAL STATISTICAL SERVICES, 1980b. **Population Census: Occupation by Statistical Region and District**. No. 02-80-05. Government Printers, Pretoria.

CENTRAL STATISTICAL SERVICES, 1982.**Census of Manufacturing 1980: Principal Statistics on a Regional Basis. No.30-01-02 (1982)**. Government Printers, Pretoria.

CENTRAL STATISTICAL SERVICES, 1991a. **Population Census: Geographical distribution of the population with a review for 1970-1991**. No. 03-01-02 (1991). Government Printers, Pretoria.

CENTRAL STATISTICAL SERVICES, 1991b.**Census of Manufacturing 1991: Principal Statistics on a Regional Basis**. No.30-01-02 (1991). Government Printers, Pretoria.

COLLITS, P., 2000. **Small Town Decline and Survival: Trends, Success Factors and Policy Issues.** Paper presented to "Future of Australian Towns" conference at La Trobe University, Bendigo. June 2004. Available at http://www.regional.org.au/au/countrytowns/global/collits.htm. Accessed 21 September 2004.

CEE, 2003. Answers.com. **Columbia Electronic Encyclopaedia**, Sixth Edition. Columbia University Press., 2003. Available at http://www.answers.com/topic/bantustan. Accessed 14 Nov. 2006

COOK, G. P., 1971. **Towns of the Cape Midlands and Eastern Karoo**, Institute of Social and Economic Research, Survey of the Cape Midlands and Karoo Region (2), Rhodes University, Grahamstown.

COURTNEY, P and ERRINGTON, A. 2000. The Role of Small Towns in the Local Economy and some Implications for Development Policy. **Local Economy.** 15(4): 280-301

CHRISTALLER, W., 1933. **Die zentralen Orte in Süddeutchland: Eine ökonomish-geograpische Untersuchung über die Gesetzmässigskeit der Verbreitung und Entwicklung der Siedlungen mit städtlichen Funktionen,** Gustuv Fischer Verlag, Jena.

CHRISTOPHER, A.J., 1982. **South Africa**, Longman, London.

DBSA, 1992. **Development Information: Region D**. Development Bank of Southern Africa. Halfway House.

DBSA, 1995. **Eastern Cape: Statistical Macroeconomic Review**. Development Information Paper 101. Development Bank of Southern Africa. Halfway House.

DBSA, 2004. **Eastern Cape Province socio-economic profile**. Development Paper No. 155. Development Bank of Southern Africa. Halfway House.

DEMARCATION BOARD, 2005. Information Index. **Map of Eastern Cape**. Available at http://www.demarcation.org.za/infoIndex.aspx. Accessed 17 May.

DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND TOURISM, 2004. **Eastern Cape SOE Report 2004.** Available online at http://www.environment.gov.za/soer/ecape/download_report.htm. Accessed 20 April 2005.

DEPARTMENT OF HEALTH, 2005. **Municipalities of the Republic of South Africa: Eastern Cape Province**. Available at http://www.doh.gov.za/department/foodcontrol/sa_municipal/ec-municipal.html. Accessed 20 April.

DEWAR, D., 1994. Reconstructing the South African countryside: The Small Towns. **Development Southern Africa.** 11(3): 351-362.

DEWAR, D., 1995. **Small Towns in Development: Towards a South African Perspective.** Unpublished paper. University of Cape Town, Department of Architecture and Planning, Cape Town.

EPRI, 2004. The Social and Economic Impacts of South Africa's Social Security System. **Economic Policy and Research Institute**. Research paper 37, Cape Town.

ERICKCEK, G. A. and MCKINNEY, H., 2004. Small Cities Blues: Looking for Growth Factors in Small and Medium-sized Cities. **Upjohn Institute**. Staff Working Paper No. 04-100. Available at **http://ideas.repec.org/p/upj/weupjo/04-100.html. Accessed 26 April 2005**.

FIFE, I. Dare to be Dubai: SA's tiniest agency takes R770m property risk to put its dorp on the map. **Financial Mail.** May 19, 2006.

FUJITA, M. and KRUGMAN, P., 2004. The New Economic Geography: Past, Present and Future. **Papers in Regional Science**. 83: 139-164.

FUJITA, M., KRUGMAN, P. and VENABLES, A. J., 2001. **The Spatial Economy**. MIT Press, Cambridge.

GHALI, M., 1977. Tourism and Regional Growth: An Empirical Study at Alternative Growth Paths for Hawaii. **Studies in Applied Regional Science**. Martinus Nijhoff Social Sciences Division, Leiden.

GRIES, T. 2005. Endogenous Formation of Regions in Developing Countries. **Journal of Development Perspectives**. 1 (1), 29-62

HARDOY, J. E. and SATTERTHWAITTE, D., 1986. **Small and Intermediate Urban Centres: Their Role in National and Regional Development in the Third World**. Hodder and Stoughton, in association with the International Institute for Economic Development. London

HEALTH SYSTEMS TRUST, 2007. **Human Development Index.** Available at http://new.hst.org.za/indic/indic.php/83/?mode=data. Accessed 6 April 2007.

HENTON, D., 1997. **Grassroots Leaders for a New Economy: How Civic Entrepreneurs are Building Prosperous Communities**. Josey-bass, San Francisco.

HENDERSON, W. P. N., 1930. **Official South African Municipal Yearbook. 1930-1931.** WPM Henderson, Cape Town.

HEWINGS, G. J. D. and JENSON, J. C., 1986. **Regional, Interregional and Multiregional Input – Output Analysis**. Handbook of Regional and Urban Economics Vol 1. North Holland Amsterdam, Holland.

HINDERINK, J. and TITUS, M. 2001. Small Towns and Regional Development: Major Findings and Policy Implications from Comparative Research. Urban Studies. 39(3): 370-391

HOEPFL, M., C. 1997.Choosing Qualitative research: A Primer for Technology Education Researchers. **Journal of Technology Education**. 9(1). Available at http://scolar.lib.vt.edu/ejournals/JTE/v9n1.html. Accessed 7 September 2006.

HOOVER, E. M., and GIARRATANI, F., 2000. An Introduction to Regional Economics. **The Web Book of Regional Science**. Regional Research Institute, West Virginia University. Available at: http://www.rri.wvu.edu/Webbook/Giarratani/contents.htm. Accessed 12 July 2004.

HOLDEN, D. R., ALASDAIR, G. M., and SWALES, J. K., 1989. Shift-Share Analysis of regional growth and policy: a critique. **Oxford Bulletin of Economics and Statistics.** 5 (1), 15- 34

IFPRI, 1999. South African Social Accounting Matrix 1999. **International Food Policy Research Institute**. Washington. http://www.ifpri.org.data/southafrica02.htm

IFPRI, 2002. A Standard Computable General Equilibrium (CGE) Model in GAMS. **International Food Policy Research Institute**. Washington. Available at

INXUBA, 2005. **Integrated Development Plan**. Inxuba Municipality. Public Document.

INXUBA YETEMBA, 2005. Integrated Development Plan. **Inxuba Yetemba Municipality**. Public Document.

ISARD, W., AZIS, J., DRENNAN, M. P., MILLER, R. E., SALTZMAN, S., and THORBECKE, E., 1998. **Methods of Interregional and Regional Analysis**. Ashgate, Aldershot.

JENSEN, R. C., 1997. Rural Australia: **Past Present and Future**. Paper Presented at the Rural Australia Towards 2000 conference. Charles Sturt University.

JOVANOVIC, N., 2003. Spatial Location of Firms and Industries: An Overview of Theory. **Economia Internazionale**, 56 (1): 23-82.

JUANA, J.S., 2006. A quantitative analysis of Zimbabwe's land reform policy: mAn application of Zimbabwe SAM multipliers. Agrekon 45 (3): 294-318

JULEFF, L., 1993. The Implications of Export Base Theory for the Study of Advanced Producer Services (1): Location Quotient Analysis. **Social Science Working Paper No. 9.** Department of Economics, Napier University. Available at ftp://nefc.mcc.ac.uk/pub/NetEc/RePEc/wuk/napier/ssurp9.pdf. Accessed 15 November 2004

KENYON, P., and BLACK, A., 2001. Small Town Renewal: Overview and Case Studies. **Rural Industries Research and Development Corporation**. RIRDC Publication NO 01/043. Available at http://www.rirdc.gov.au/reports/HCC/01-043sum.htm. Accessed 15 February 2005.

KRUGMAN, P. 1991. **Geography and Trade.** MIT Press, Cambridge, Mass

KRUGMAN, P. and VENABLES, A.J. 1995. Globalization and the Inequality of Nations. **Quarterly Journal of Economics.** 110: 857-880.

LÖSCH, A., 1954. **The Economics of Location.** Yale University Press. New Haven

MAKANA. 2004. **Integrated Development Plan**. Available at http://www.makana.gov.za/docs/MKN%20IDP%20Review.doc. Accessed 27 July.

MAKANA, 2005. Frontier Prospects. **Makana Municipality**. Merging Dynamics, Grahamstown.

MIKKELSEN, E. I., 2004. **New Economic Geography – an introductory survey**. Topics in International Economics, Bergen, Norway.

MNCWABENI, L and BOND, P, 1999. Local Economic Development in Stutterheim, Available at: **http://www.dplg.gov.za/documents/publications/linkingled/linkingledcasestudies/stutterheim.htm**. Accessed 6 March 2006.

MOLOSANKWE, B. 2006. Little town flies proudly South African flag. **The Star**. 8 July, 2006.

MYBURGH, D. W., 1978 The Origins of Towns in the Eastern Cape Midlands. **Contree: Journal for South African Urban and Regional History**, 4, pg 25-29

NAFZIGER, E.W., 1997. **The Economics of Developing Countries (3e)**. Upper Saddle River, Prentice Hall.

NAUDÉ, W. 2005. Geographical Economics and Africa: An editorial overview. **Journal of Development Perspectives**. 1 (1), 1-4

NCED, 2002. Small Town Trends and Issues. **North Carolina Economic Development inc**. Available at: http://www.ncruralcenter.org/smalltowns/trends.htm. Accessed 14 November 2006.

NEL, E.L, 1994. Local Development initiatives and Stutterheim. **Development Southern Africa.** 11(3): 363-367.

NEL, E., 1996. **Poverty and Inequality in South Africa: The Small Town Dimension**. Input Paper to the 1996 World Bank Study of Poverty in South Africa. Available at http://www.govsa.co.za. Accessed 23 July 2004.

NEL, E. L., 1999. **Regional and Local Economic development in South Africa: The experience of the Eastern Cape.** Aldershot, Ashgate.

NEL, E.L. and HILL, T.R., 1995: **The Role of Small Urban Centres in Economic Recovery and Regional Development in Africa - A South African Case Study**, Phase II, Research report commissioned by the United Nations Centre for Regional Development, Nairobi.

NIJKAMP, P., RIETVELD, P. and SNICKARS, F., 1986. Regional and Multiregional Economic Models a Survey. **The Handbook of Regional and Urban Economics, Vol I.** Elsevier Publishers. Amsterdam

OTTAVIANO, G. and THISSE, J., 2004. New Economic Geography: What about the N?* **Centre for operations research and econometrics**. Core Discussion Paper No. 2004/65. Available at http://www.core.ucl.ac.be/staff/thissePapers/EnPla51.pdf. Accessed 23 March 2005.

PATTON, M., Q. 1990. **Qualitative Evaluation and Research Models (2nd Ed).** Sage Publications. Newbury Park

PERROUX, F., 1950. Economic Space: Theory and Applications. **Quarterly Journal of Economics**. 64(1): 89-104

PISSARENKO, D. 2003. **The Basics of Input- Output Analysis.** Available online at http://demetrix.sourceforge.net/resources/2003_02_20_ioAnalysis/ioAnalysis.pdf. Accessed 17 July 2007.

PUGA, D. 1999. The rise and fall of regional inequalities, **European Economic Review.** 43, 303-334.

REDDING, S. and VENABLES, A. J. 2004. Economic Geography and International Inequality. **Journal of International Economics**. 62 (1): 53-82

RSA, 1995a. **Urban Development Strategy of the Government of National Unity.** Republic of South Africa. Government Gazette No. 16679, Pretoria.

RSA, 2000. **The Local Government Systems Act**. Government Gazette No. 21776, Pretoria.

RICHARDSON, H. W., 1973. **Regional Growth Theory**. Western Printing Services, Bristol.

RONDINELLI, 1985. **Applied Methods of Regional Analysis: the Spatial Dimensions of Development Policy.** Westview Press, Colorado

Rhodes University, 1982. **Rhodes University Calendar.** University Printers, Grahamstown.

Rhodes University, 2006. **Rhodes University Calendar.** Available at http://www.ru.ac.za?academic/callendar?2006?university.sud. Accessed 15 June 2006.

SACN, 2004. State of the Cities. **South African Cities Network**, Cape Town.

SADOULET, E. and DE JANVRY, A. **Quantitative Development Policy Analysis**. John Hopkins university Press, Baltimore

SAIRR, 2003. South Africa Survey. **South African Institute of Race Relations**, Johannesburg

SCHAEFFER, W. A., 1999. Regional Impact Models. **Regional Research Institute**. Available at http://www.rri.wvu.edu/WebBook/Schaffer/regionalGT.pdf. Accessed 10 June 2005.

SNOWBALL J.D and ANTROBUS, G.G, 2003. Economic Valuation of the National Arts Festival: economic impact, business and household surveys. **Grahamstown Foundation**. Grahamstown

SNOWBALL and ANTROBUS, 2006. Is economic impact a good way to justify the inclusion of foreign students at local universities? **South African Journal of Higher Education**. 20 (3): 168 - 181

SOUTHALL, A., 1988. Small Towns in Africa Revisited. **African Studies Review.** Special Issue. 31(3): 1 – 134.

SOUTH AFRICAN DIRECTORY, 1891. **The Argus Annual**. Argus, Cape Town.

SOUTH AFRICAN DIRECTORY, 1899. **The Argus Annual**. Argus, Cape Town.

SOUTH AFRICAN DIRECTORY, 1910. **The General Directory of South Africa, 1910: Cape Colony, Natal, Orange River Colony, Transvaal, Rhodesia**. Dennis Edwards & co, Cape Town.

SOUTH AFRICAN DIRECTORY, 1920. **The General Directory of South Africa, 1910: Cape Colony, Natal, Orange Free State, Transvaal, Rhodesia,**

Basutoland, Swaziland, Portuguese East Africa and South West Africa. Dennis Edwards & co., Cape Town.

SOUTH AFRICAN DIRECTORY, 1931. **Ken Donaldson Directory**. Cape Times (Ltd), Cape Town.

SOUTH AFRICAN DIRECTORY, 1940. **Cape Times South African Directory 1940.** Cape Times (Ltd), Cape Town.

SOUTH AFRICAN DIRECTORY, 1950. **Cape Times South African Directory 1950.** Cape Times (Ltd), Cape Town.

SOUTH AFRICAN DIRECTORY, 1960. **Cape Times South African Directory 1960.** Cape Times (Ltd), Cape Town.

SOUTH AFRICAN DIRECTORY, 1970. **Braby's Commercial Directory of South, East and Central Africa 1970**. AC Braby (Ltd), Durban.

SOUTH AFRICAN DIRECTORY, 1980. **Braby's Commercial Directory of South, East and Central Africa 1980**. AC Braby (Ltd), Durban.

STATS SA, 1996. Population Census. **Statistics South Africa**. Available at http://www.stassa.co.za. Accessed 5 June 2005.

STATS SA, 2001a. Population Census. **Statistics South Africa**. Available at http://www.stassa.co.za. Accessed 5 June 2005.

STATS SA, 2001b. Concepts and Definitions. **Statistics South Africa**. Report no. 03-02-26(2). Available at http://www.statssa.gov.za/publications/populationstats.asp. Accessed 7 July 2005.

STATS SA, 2002. Labour Force Survey: July 2002. **Statistics South Africa**. Statistical Release P0210, 25 September 2002, Pretoria.

STATS SA, 2003. General Household Survey: July 2002. **Statistics South Africa**. Statistical Release P0318, 15 December 2003, Pretoria.

STEVENS, B.H. and MOORE, C.L., 1980. A Critical Review of the Literature on Shift-Share as a Forecasting Technique. **Journal of Regional Science**. 20(4): 419-437

STRAUSS, A. and CORBIN, J., 1990. Basics of qualitative research: grounded theory procedures and techniques. Sage Publications. Newbury Park

TACOLI, C. and SATTERTHWAITTE, D., 2003. The Urban Part of Rural Development: the Role of Small and Intermediate Urban Centres in Rural and Regional Development and Poverty Reduction. **The International Institute for**

Environment and Development. Rural-Urban interactions and livelihood strategies working Paper 9, London.

TAKAYAMA, T. and LABYS, W. C., 1986. Spatial Equilibrium Analysis. **Handbook of Regional and Urban Economics**. Chapter 5, pp 171-195. Elsevier Publishers B.V, Amsterdam.

THOMPSON, D. H., 1970. **A Short History of Grahamstown**. Grocott and Sherry , Grahamstown.

VAN BEERS, C., 2000. **Is the gravity model a flawed instrument in measuring economic integration effects**. Delft University, Delft. Available at http://www.tbmtudelft.nl. Accessed 25 June 2008.

WEBSTER, L, J. and WILLIAMS, 1985. Trip to Bedford and District, **Grahamstown Historical Society**. 4(3): 72-74

WORLD BANK, 2006. **Investigation of Pro-Poor Local Economic Development in South Africa.** Available at http://www.khanya-aicdd.org. Accessed 23 August 2006.

Structured Interviews

ADAMI, C., 2004. **Structured Interview**. Owner of 'Adami's Wholesale' in Cradock. November

ACCOM, G., 2005. **Structured Interview.** Municipal Council member in Grahamstown. Grahamstown. February.

ANTROBUS, G., 2005. **Personal Communication**. Professor of Economics at Rhodes University. Grahamstown. June

ANTROBUS, M., 2004a. **Structured Interview**. Farmer, Cradock district. Cradock. November.

ANTROBUS, S., 2004b. **Structured Interview**. Owner of the 'Hotel Victoria' in Cradock. Cradock. November.

BEACH, R., 2005. **Structured Interview**. Director of the 'Blue Crane Route Development Agency' in Somerset-East. Somerset East. July.

BEER, R., 2005. **Structured Interview**. Owner of 'Beer Property Group' in Grahamstown. Grahamstown. November

BLOM, B., 2005a. **Structured Interview**. Owners of 'Eagle's Hout' in Bedford, Bedford. June

BLOM, L., 2005b. **Structured Interview**. Wife of Bennie Blom and involved in a number of training initiatives in the town through the assistance of the Dutch Government, Bedford. June

COETZEE, D., 2004. **Structured Interview**. Past Municipal Manager on Cradock, Cradock. November

CRAMPTON, M., 2005. **Structured Interview**. Director of 'NISC Institute' and 'African Journals Online', Grahamstown. September.

DAVENPORT, P. J., 2006. **Structured Interview**. Owner of the Pearston Hotel and Pearston Bottle Store. Pearston. January.

DORO, Z. 2006. **Structured Interview**. Supervisor Infrastructure and Community Services Blue Crane Route Municipality. Pearston. January.

FOURIE, P. J., 2006. **Structured Interview** Owner of PJ Engineering and Thermo Fluid Engineers in Somerset East. Somerset East. January.

GQEZENGELE, A. 2006. **Telephonic Interview**. LED Officer in Nxuba Local Municipality. November

LANG, C., 2004. **Structured Interview**. Safari Hunter in the Eastern Cape, Cradock. November

KHOURY, D., 2005. **Structured Interview**. Local Artist and owner of the 'Bedford Craft Centre', Bedford. June

MACHANT, H., 2006. **Structured Interview.** Mayor of the Blue Crane Route Municipality. Somerset East. January.

MAKI, 2006. **Telephonic Interview**. LED Manager in Blue Crane Route Municipality. November

MATANGA, L., 2006. **Structured Interview**. Social Worker in the Department of Social Development. Pearston. January.

MEYER, C., 2005. **Structured Interview**. Owner of 'Makana Brick and Tile', Grahamstown. November.

MTSHUDU, A. 2006. **Telephonic Interview**. LED Manager Blue Crane Route Municipality. November

NGCUNGA, B. **Telephonic Interview**. LED Assistant. Makana Local Municipality. November

NEL, E., 2005. **Personal Communications**. Professor of Geography at Rhodes University, Grahamstown. June

PARRY, K., 2005. **Personal Communications.** Dissemination Officer at Statistics South Africa. Communication via E-Mail, Pretoria. March – September

SCHULZE, 2004. **Structured Interview**. Municipal Councillor in Cradock, Cradock. November.

TAM, P., 2004. **Structured Interview**. Owner of the 'Tam Group' in Cradock, Cradock. November.

TANTSI, 2004. **Structured Interview**. Municipal Manager of Cradock, Cradock. November.

TETSWANA, Z., 2006. **Structured Interview**. Previous LED officer of the Blue Crane Route Municipality, currently employed by the Blue Crane Route Development Agency. Somerset East. January.

VALE, P., 2005. **Structured Interview**. Head of the Politics Department Rhodes University, Grahamstown. August

VAN DER MERWE, R., 2005. **Structured Interview**. Retired Professor and head of the 'Residents Association' in Grahamstown, Grahamstown. November.

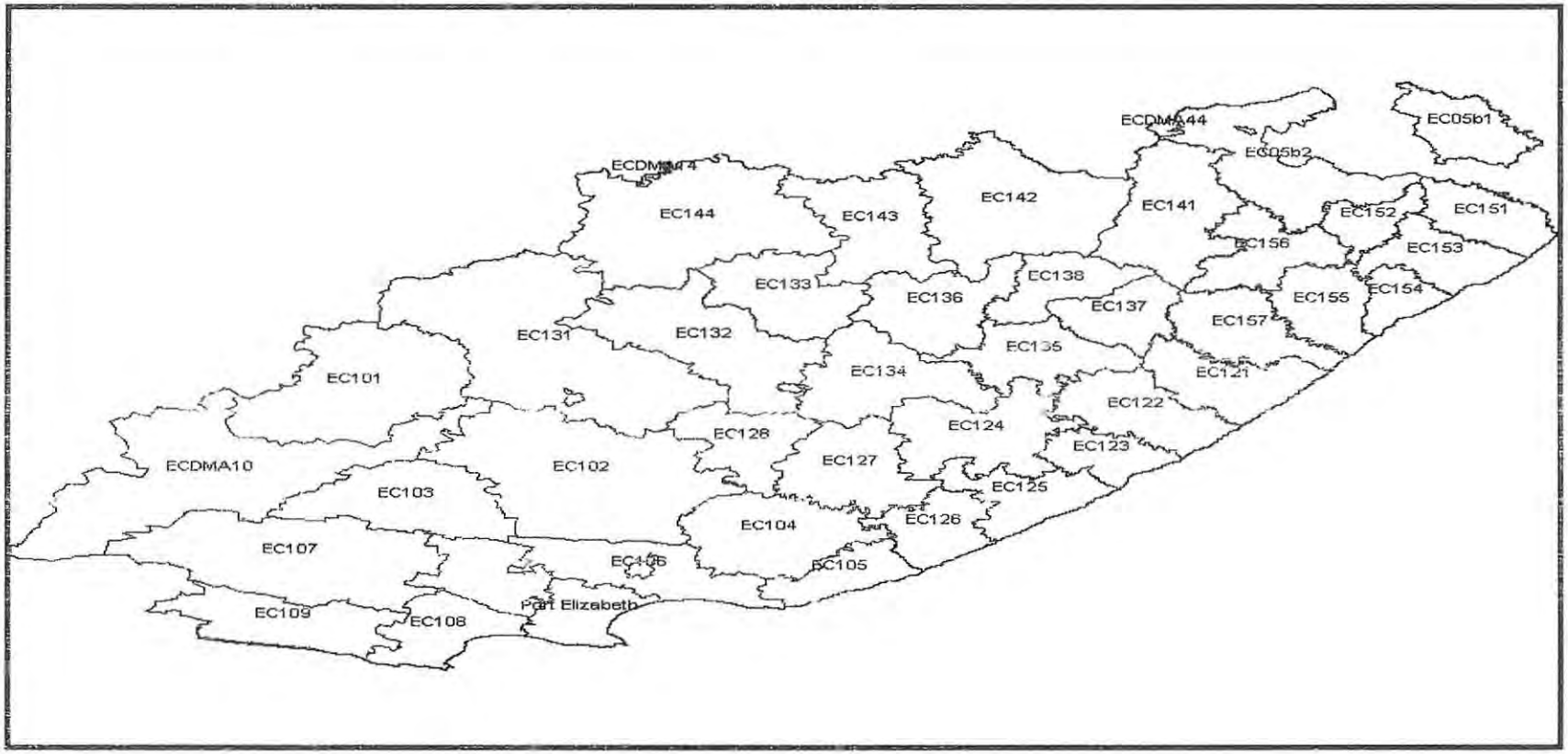
VAN HEERDEN, J., 2006. **Structured Interview**. Corporate Services Manager Nxuba municipality. Adelaide. January.

VAN NIEKERK, K., 2005. **Structured Interview**. Local Estate agent and local farming family in Bedford, Bedford. June.

WALKER, W., 2004. **Structured Interview**. Dairy Farmer Cradock District, **Cradock**. November.

Appendixes

Appendix 1: Municipalities in the Eastern Cape



Appendixes

Index table of municipality names and towns situated in the Municipalities

Municipality	District Municipality	Major towns and cities
NELSON MANDELA METROPOLITAN MUNICIPALITY (NM)[a]		Port Elizabeth LC and TRC, Despatch, Uitenhage LC and TRC, Seaview, Blue Horizon Bay,
CAMDEBOO LOCAL MUNICIPALITY (EC101) (WD)	Cacadu District Municipality	Aberdeen, Graaff-Reinet, Nieu-Bethesda
BLUE CRANE ROUTE LOCAL MUNICIPALITY(EC102) (WD)	Cacadu District Municipality	Cookhouse, Pearston, Somerset East
IKWEZI LOCAL MUNICIPALITY (EC103) (WD)	Cacadu District Municipality	Jansenville, Klipplaat
BAVIAANS LOCAL MUNICIPALITY (EC107) (WD)	Cacadu District Municipality	Steytlerville, Willowmore
KOUGA LOCAL MUNICIPALITY (EC108) (WD)	Cacadu District Municipality	Hankey, Humansdorp, Jeffreys Bay, Oyster Bay, Patensie, St Francis Bay
KOU-KAMMA LOCAL MUNICIPALITY (EC109) (WD)	Cacadu District Municipality	Joubertina, Kareedouw
MAKANA LOCAL MUNICIPALITY (EC104) (WD)	Cacadu District Municipality	Alicedale, Grahamstown, Riebeek East
NDLAMBE LOCAL MUNICIPALITY (EC105) (WD)	Cacadu District Municipality	Alexandria, Bathurst, Boesmansrivier, Seafield Boknes/Cannon Rocks, Kenton on Sea, Port Alfred
SUNDAY'S RIVER VALLEY LOCAL MUNICIPALITY (EC106) (WD)	Cacadu District Municipality	Kirkwood, Paterson
MBHASHE LOCAL MUNICIPALITY (EC121) (AD)	Amatole District Municipality	Idutywa,Willowvale, Xhora/E Dale
MNQUMA LOCAL MUNICIPALITY (EC122) (AD)	Amatole District Municipality	Butterworth, Kentani, Nqamakwe
GREAT KEI LOCAL MUNICIPALITY (EC123) (AD)	Amatole District Municipality	Kei Mouth, Komga
AMAHLATI LOCAL MUNICIPALITY (EC124) (AD)	Amatole District Municipality	Kei Road, Stutterheim, Keiskammahoek, Cathcart
BUFFALO CITY LOCAL MUNICIPALITY (EC125) (AD)	Amatole District Municipality	East London, King William's Town
NGQUSHWA LOCAL MUNICIPALITY (EC126) (AD)	Amatole District Municipality	Hamburg, Peddie
NKONKOBE LOCAL MUNICIPALITY (EC 127) (AD)	Amatole District Municipality	Alice, Fort Beaufort, Hogsback,Middledrift, Seymour
NXUBA LOCAL MUNICIPALITY (EC128) (AD)	Chris Hani District Municipality	Adelaide, Bedford
INXUBA YETHEMBA LOCAL MUNICIPALITY (EC131) (CHD)	Chris Hani District Municipality	Cradock, Middelburg
TSOLWANA LOCAL MUNICIPALITY (EC 132) (CHD)	Chris Hani District Municipality	Hofmeyer, Tarkastad

INKWANCA LOCAL MUNICIPALITY (EC133) (CHD)	Chris Hani District Municipality	Molteno, Sterkstroom
LUKANJI LOCAL MUNICIPALITY (EC134) (CHD)	Chris Hani District Municipality	Queenstown, Whittlesea/Sada
INTSIKA YETHU LOCAL MUNICIPALITY (EC135) (CHD)	Chris Hani District Municipality	Cofimvaba, Tsomo
EMALAHLENI LOCAL MUNICIPALITY (EC136) (CHD)	Chris Hani District Municipality	Dordrecht, Indwe, Lady Frere
ENGCOBO LOCAL MUNICIPALITY (EC137) (CHD)	Chris Hani District Municipality	Engcobo
SAKHISIZWE LOCAL MUNICIPALITY (EC138) (CHD)	Chris Hani District Municipality	Cala, Elliot
ELUNDINI LOCAL MUNICIPALITY (EC141) (UD)	Ukhahlamba District Municipality	Maclear, Mt Fletcher, Ugie
SENQU LOCAL MUNICIPALITY (EC142) (UD)	Ukhahlamba District Municipality	Barkley East, Lady Grey, Rhodes, Sterkspruit
MALETHSWAI LOCAL MUNICIPALITY (EC143) (UD)	Ukhahlamba District Municipality	Aliwal North, Jamestown
GARIEP LOCAL MUNICIPALITY (EC144) (UD)	Ukhahlamba District Municipality	Steynsburg, Venterstad, Burgersdorp
MBIZANA LOCAL MUNICIPALITY (EC151) (ORTD)	Oliver Tambo District Municipality	Bizana
NTABANKULU LOCAL MUNICIPALITY (EC152) (ORTD)	Oliver Tambo District Municipality	Tabankulu
INGQUZA LOCAL MUNICIPALITY (EC153) (ORTD)	Oliver Tambo District Municipality	Lusikisiki, Flagstaff
PORT ST JOHNS LOCAL MUNICIPALITY (EC154) (ORTD)	Oliver Tambo District Municipality	Umzimvubu, Port St Johns
NYANDENI LOCAL MUNICIPALITY (EC155) (ORTD)	Oliver Tambo District Municipality	Libode, Ngqeleni
MHLONTLO LOCAL MUNICIPALITY (EC156) (ORTD)	Oliver Tambo District Municipality	Qumbu, Tsolo
KING SABATA DALINDYEBO LOCAL MUNICIPALITY (EC157) (ORTD)	Oliver Tambo District Municipality	Mqanduli, Umtata
UMZIMKULU LOCAL MUNICIPALITY (EC05b1) (ANZOD)	Alfred Nzo District Municipality	Umzimkulu
UMZIMVUBU LOCAL MUNICIPALITY (EC05b2) (ANZOD)	Alfred Nzo District Municipality	Mt Ayliff, Mt Frere

Appendix 2: Personal Rough Research notes on the Towns

Cradock Notes

People Interviewed:
Mr Cr Adami; owner of Adami's grocer family buss since 1904
Mr P Tam; Owner of the Tams chain in Cradock (grocers, hardware etc)
Mr Tantsi; Municipal Manager of Cradock,
Mr W. Walker; Dairy Farmer outside of Cradock, milks 800 cows
Mr P and Mr M Antrobus; Farmers outside of Cradock
Mrs S Antrobus; Owner of Hotel and B&B's
C. Lang; Safari Hunter lives on a plot outside of Cradock
Mr D. Coetzee; past Municipal Manager and current councillor in Cradock
Mr Schulze; current councillor, Cradock. Department of Education Regional

Current Local Economy:
1) High unemployment 80 % (Adami, 2004)
2) Workforce is under skilled
    - High staff turnover
    - Quality kids leave
    - Quality of education poor (Adami, 2004)
    - Workers attitude not great, low human capital and they strike (Adami, 2004)

3) Limited numbers of entrepreneurs with limited Resources.
4) Limited skills of existing SMME owners (Adami, 2004).

5) Agriculture
    - Large dairy industry (Walker and Adami, 2004)
    - Livestock, meat and wool stable – but smaller farmers struggle to cope with international competition (Adami, 2004)
    - Crops limited mainly Lucerne (Adami, 2004)
    - Game farming stable (Adami, 2004)
    - Trying to develop emerging farmers on municipal land surrounding the town (Tantsi, 2004)
    - BEE unlikely to effect incomes of farmers, unless they leave (Tantsi, 2004)
    - Lack of working capital for farmers, generally they produce low value goods – need identify high value crops and need be more creative in product selection.
    - Irrigated land constitutes 2% of the total land but 80% of total production. Farmers also struggle to maintain the minimum wage. Many unemployed workers move into the town.
    - The majority of the farmers n town are not fully committed to the Sugar Beet plant (M and P Antrobus, 2004).

- Hunting lodges generally buy goods in larger centres don't bring clients into town as they run fully sufficient camps. These lodges also provide minimal employment opportunities for locals (Lang, 2004).
- The town is dependant on agriculture but it is becoming less profitable which has direct implications on the town (Coetzee, 2004)
- Agriculture cannot create growth without backing of government.
- Commercial farmers are not dependant on the towns (Walker, 2004).

6) Business Activities in Cradock (Largely service related):
Consist of:

- Banks
- Supermarkets
- Clothing and Furniture
- Professionals
- Petrol stations-boosted by main road through Cradock
- Fast Foods- boosted by main road through Cradock
- Accommodation
- Tourism, Mountain Zebra Park, spend money in town

Other key issues include:

- Buss centre in town has been taken over by smaller business operations and the nature of the CBD is changing (Schulze).
- Wealthy residents shop for clothes and other luxury goods in Port Elizabeth (Adami, 2004).
- Industry in the town has infrastructural problems and locational disadvantages which is common amongst many small towns. Cradock does have some locational advantages including the river, N9 passing through the town and available land. (Tantsi, 2004).
- A proposed milk factory almost was developed in the town which would have provided a major economic boost, (Coetzee, 2004)
- 97 permanent railways jobs were lost which represented a loss of income for the town but which has been compensated by the Karoo regional police headquarters which has been moved to Cradock (Coetzee, 2004)
- 37 tour buses in November stopped over in Cradock (S. Antrobus, 2004) they however do not stay more than one night.

7) Population is approximately 60000 with 12 000 households; (personal estimate) (Adami, 2004)
8) No major manufacturing concerns in the town (Adami, 2004)
9) Government Departments in the Town

- Prison - Large juvenile prison
- Police - Central Headquarters moved to Cradock, huge economic boost for the town
- Municipality
- Spoornet - decreased activities recently but there is still a possibility of a regional office returning

- Schools
- Hospitals – doctors struggling to make a living therefore many are leaving. Doctors now regurally travelling. to Hofmeyer and other smaller towns to expand patient base.

10) Other Sources of Income
    - Government grants,
    - Pensions,
    - Child grants and
    - Disability grants

Grants are keeping the town alive economically. Residents will stay in Cradock because of grants, if there was no social security network they may need to leave to larger cities as there are greater employment opportunities (Adami, 2004).

Strengths and Weaknesses of the Town

Strengths:

1) Plenty of water through the Fish River scheme.
2) Good Rail and Road infrastructure.
3) Land is cheap, but low returns on agricultural land
4) Labour is cheap, but largely unskilled
5) Cost of living is cheap and the town is a nice place to live. Possibility of attracting pensioners, but the poor condition of the state hospital does not assist in this regard.
6) Crime is not a severe problem, generally it is largely pretty and mostly confined to the townships

Weaknesses:

1) Few Entrepreneurs (Tam, 2004)
2) The town is not attractive to entrepreneurs and industry- as there are no clear no locational advantages. Basic services are getting worse e.g. hospital and there are no personal and social attractions e.g. movies
3) Municipality ineffective and insolvent, has a 2 million rand overdraft and can not service the loan (Adami, 2004)
4) Aids is widespread which affects the availability and productivity of workers.
5) Limited Opportunities for youth , who accordingly will often leave.

Municipality:

Municipal finances are in a poor state and there are still major cash flow problems. (Coetzee, 2004)

LED

The municipality appears only doing small things to uplift the community they can not create sustainable jobs though questionable projects like the cultural village. Non involvement by wealthy town members in LED processes is also a problem. However, this can not be blamed entirely on these individuals as Tam (2004) has offered to assist in training schemes but the municipality declined his offer.

Grahamstown Notes:

People Interviewed:
Professor P. Vale; Head of Politics Department at Rhodes University
Mrs M. Crampton; Managing Director of NISC 'National Inquiry Services Centre'
Mr J. Accom; Grahamstown council member
Mr C. Meyer; Owner of Makana Brick and Tile
Mr R Beer; Owner of the Beer Property Group
Professor R. Van der Merw; Head of the Grahamstown Residents Association, retired.
Attended Makana Investment and Development Conference which was held on the 3rd and 4th of December 2005

Defining Characteristics of the town:

Rhodes University and the private schools are the major economic forces in the town and along with the High Court bring in a large number of professionals into the town. The private schools include Kingswood College, St Andrews Prep, St Andrews College and DSG. Meyer (2005) believes this brings in a large number of diverse people which stimulates 'small town charm'. Meyer (2005) also believes it is the skill and diversity of the residents that makes the town flourish. Beer (2005) also indicated that due to the security of the educational facilities, the town is a relatively risk free environment, i.e it is not going to collapse overnight.

Crampton (2005) whom is MD of the NISC centre believes the town is an ideal location to initiate small knowledge based industries, and pointed to the number of these types of organisations already operating in the town. They include Geodatec, National Enquiries Service (NISC) and Coastal and Environmental services (CES).

Beer (2005) and Meyer (2005) both concur that they felt as though the town had grown over the last ten years. Beer himself has invested vast sums of money in property development including the Pepper Grove Mall based on this perceived growth.

Accom (2004) believes that the town is culturally split both socially and economically with very few people and particularly business operations prepared to operate in the former 'locations'. Accom (2005) also believes poverty and unemployment are major problems and that population growth at the lower income brackets is exacerbating the problem; he also indicates that family planning and basic education may assist.

Van der Merwe (2005) believes that there has been a decline in services to the residents in the town, and that many technical aspects of the town have been neglected.

Meyer (2005) indicates that despite the kaolin reserves in the town, his operations are not simple due to what he describes as the difficult nature of the working class in the town. He indicated that many of the other operations utilising the clay reserves closed down due to labour unrest and that it was a major growth inhibitor for industrial type operations. Lastly, Meyer's operations were intentionally situated outside of the town borders so that he could source electricity directly from Eskom; if he had gone through the town he would be subjected to significantly higher prices and an irregular supply.

Van der Merwe (2005) indicates that the university is the main driver in the local economy and despite the drop in funding from the government it has successfully managed to source additional funding from overseas. Rhodes is also building new residences and lecture halls indicating that it is expanding (Van der Merwe, 2005). Rhodes is also becoming more involved in LED initiatives in the town due to the realisation that its fate and that of the town are intertwined (Vale, 2005). Beer (2005) indicated that the growing student population benefited businesses in the town and is partially responsible for what he sees as its growth. Beer (2005) believes the town has also become a regional shopping centre and is attracting consumers from some of the smaller centres.

Municipality:

Van der Merwe (2005) believed that the municipality neither facilitated nor inhibited growth in the town over recent years. However he believes that there are a number of inherent weaknesses with the local municipality. Post 1994, fuelled by the current ideology, many of the town officials were sacked losing a lot of the corporate memory and the people who replaced them were under qualified and unskilled. Van der Merwe (2005) also points out that due to the under qualified staff consultants were needed and that salaries were not dropped to incorporate this cost, 46% of the municipal budget goes to salaries. Also the municipality has a debtor's book of approximately 114 million rand, largely due from non collection from business in the town and some of the wealthy citizens not as one might expect from the lower income groups, indicating poor collection techniques.

Meyer (2005) indicated that despite being a major employer in the town he experienced an almost non-existent formal relationship with the municipality and to get them to assist his operations required a lot of effort on his part. Crampton (2005) also indicated that she had almost no relationship with the municipality.

Beer (2005) indicated that the old Chamber of Commerce had became inundated by politics and as such slowly deteriorated as it no longer became a tool for businesses to air their concerns as no action would ever be taken and as a result it no longer functions.

Thus whilst the municipality is not seen as actively discouraging growth in the town it is not yet efficient, due to the high salaries and high debtors book. Nor does it appear that they are looking after existing enterprises and trying to solve some of the major issues that they face. However, efforts were made on their part to host an investment and

development conference in December 2005, to brainstorm ideas about how to generate employment and growth in the region, which is a positive step.

LED initiatives:

A number of LED strategies were mentioned at the development and investment conferences, however almost all of them were incorporated in the municipal integrated development plans and as such are covered in the thesis. However, the conference does reaffirm their commitment to the initiated and proposed projects.

A joint initiative has been formed between Makana Municipality and Rhodes University, which aims to stimulate growth in the community. Projects such as promoting edu-tourism as a means for growth in the town have been proposed and initiated on a small scale (Vale, 2005).

Due to the collapse of the Chamber of Business Beer (2005) has attempted to create a business forum in the town. He plans to initially invite 140 members, businessmen from all sectors of the community. He plans the forum will meet to discuss key policy areas and later involve the municipality, police and NGOs.

Major Advantages and Growth Drivers:

- Presence of the University and schools
- Highly skilled and diverse population in the town
- Small town atmosphere
- Low risk environment

Problems and inhibitors of Growth:

- Low skill level of labour
- Unemployment and social problems, i.e. expanding population in lower income groups
- Difficult workforce
- Municipality
- Electricity prices

Bedford Notes:

Interviews conducted:

Mrs Kim Van Niekerk; Local Estate agent, local farming family

Mr David Khoury; Local Artist owner of Bedford Craft Centre

Mr Ben and Lana Blom; Owners of Eagle's Hout (146 jobs), Lana heavily involved with local training initiatives in township, receiving money for research through Dutch Government.

Picture of Bedford:

Prior to 2000 Bedford, like many other small towns in SA was experiencing a state of economic decline, particularly harsh years were from 1998 – 2000. During this period only 2 houses were sold in the town from as little as R5 000 (Van Niekerk, 2005). Khoury (2005) confirmed this by indicating that in the mid 1980's Bedford took a dive and that numerous businesses closed between 1998 and 2000. The reasons behind the decline were numerous. Firstly, a limited market within the town; the wealthier farmers, or owners of game lodges etc withdrew from the town and their children went to school in Grahamstown and would thus shop there. Secondly tourists to the lodges were not really brought into the town, with the exception of maybe visiting Eagles Hout Furnishers (Blom, 2005). Social activities were also moved out of town, meeting places, cricket club etc (Van Niekerk, 2005). Lastly more traditional reasons were the movement of businesses away from the town; Sasko flour factory closed, venison factory closed (10 jobs) as did the railways earlier, the size of the town also made certain types of local activities such as restaurants unsustainable (Van Niekerk, 2005).

Bedford Rejuvenation:

Bedford has undergone a mini rejuvenation since 2000. 48 houses roughly 12% of the housing stock in the town have been sold 2001-2005 (Van Niekerk, 2005). Eagle Hout currently employs 146 people (Blom, 2005) and a flower festival was introduced in 2004, which saw 750 people come into the town for the weekend (Van Niekerk, 2005).

Van Niekerk (2005) marketed the town through articles in Country Life etc, this linked with the low interest rates and cheap housing prices in Bedford resulted in individual's leaving larger centres to relocate in search of a 'better lifestyle'. The effect that the new entrants have had on the town is debatable but their entry along with the greater participation from the local farmers has led to a slight increase in economic environment. The increase in farmer participation in the town has been a 'community' effort; whilst many will not do their shopping in Beford they have become more involved in the town (Van Niekerk, 2005).

Renewed tourism has also been a large economic boost in the town. Prior to 2000 very little tourism activities occurred in the town and the town itself was often 'missed' by those visiting the surrounding game loges. However the formation of the Bedford Art and Craft centre, by the respected artist David Khoury has drawn tourists into the town and sparked economic growth (Van Niekerk, 2005).

Greater interaction amongst various sectors of the community to market Bedford, as a tourist destination was achieved through the formation of a multiracial committee to try and include all sectors of the community. This committee initiated the annual flower festival, held for the first time in 2004 and co-ordinated other activities to market the town as a tourist destination eg paint bins (Van Niekerk, 2005). However, again it is largely the actions of certain individuals that have sparked an interest in Bedford as a tourist destination, Kim Van Niekerk marketing the town in Country Life etc, and David Khoury setting up his gallery in the town despite certain problems.

Other more traditional economic growth has been achieved at Eagles Hout (Blom, 2005) creating 146 jobs, creating furniture and rubber droppers from old telephone lines. Lana Blom has also been highly involved within the coloured and black community offering part time employment and training to mothers, ladies in the location teaching new skills and assisting throughout the process (Blom, 2005)

Municipal and LED Actions:
Bedford has been linked with Adelaide into the Nxuba municipality. The union of these towns has been problematic (Van Niekerk, 2005). The representation on the municipal council favours Adelaide 6 – 4 thus a bias has been noted by certain residents of 'favouritism' towards Adelaide, eg potholes not been fixed etc in Bedford. Van Niekerk, (2005) also believed that the LED officer was a concern indicating that he was not as helpful as he possibly could be in assisting the local committee's LED actions. Khoury (2005) had had numerous clashes with the municipality, threatening him for not paying his bills although it was their mistake. Clashes also existed between Khoury and the bottle store across the road, as trucks were often parked in front of his store and drunken customers visiting the bottle store, particularly at the month end scared away potential customers passing through the town. Despite Khoury's potential to attract tourists the municipality did nothing to facilitate the row nor did they assist with other requests made such as cutting down dead trees (Khoury, 2005), despite showing off Khoury's premises, to the authorities in Bisho.

Blom (2005) also experienced problems with the municipality, whom he claimed earned 100% profit on electricity, and at a price far higher than what would be paid in larger urban areas, despite being the largest employer in town.

Town Notes: Somerset East and Pearston

People Interviewed:
Mr H Machant Mayor; of the Blue Crane Route Municipality
Rob Beach; Director of the Blue Crane Route Development Agency
Zola Tetswana; Previous LED officer of the Blue Crane Route Municipality, currently employed by the Blue Crane Route Development Agency
PJ Fourie; Owner of PJ Engineering and Thermo Fluid Engineers
Chris Wilken; Employee of the Blue Crane Route Development Agency
Nico Lombard; Employee of the Blue Crane Route Development Agency

Zola Doro; Supervisor on Infrastructure and Community Service, Pearston
Luvuyu Matanga; Social Worker, Department of Social Development, Pearson
Mr PJ Davenport ; Owner of the Pearston Hotel and Pearston Bottle Store
Mr Ian Fife; Article written in the Financial Mail 'Dare to be Dubai' 19 May 2006 regarding the BluCrane Route Development Agency

As the two towns are located in the same municipality a number of the interviewees provide information on both centres and as such the lists of people interviewed relates to both of the towns.

Somerset East:

Town Characteristics:

Unemployment and poverty, as in other towns in the province, is a severe problem. Beach (2005) believes the actual unemployment figure to be close to 80%. Fourie, (2006) believes that a poverty trap exists within the town, residents are poor and accordingly can not afford training and as a result remain poor. Fourie (2006) goes on to mention that the local economy has extremely strong links with the local farmers. However, in many respects this has changed, as the farmers now tend to go to Port Elizabeth for entertainment and shopping. The saving grace in this regard is that they still support the local school and as such do frequent the town regularly and buy groceries and other essentials. Setswana (2006) indicated that in 1996 things were not looking good for the town, large retailers such as Edgars left, resulting in a loss of business confidence by all. Also around this time a major transition occurred in much of the rural hinterland as many farmers changed to game farming which required less employment, as a result unemployment rose significantly, as agriculture was a major employer within the area and dependency on grants rose. Currently grants are a major economic force within the town. Fourie (2006) indicates that despite the many problems he believes that the town has begun to grow and feels that it will continue to do so particularly with the development of the 'eco resort'.

Current business Environment

The are a number of niche market manufacturers in the town. These include PJ Fourie Engineering and its subsidiary Thermo fluid engineering, a rugby jersey manufacturer and a school science kit producer. Fourie (2006) indicated that there are economic reasons why he should not be located in the town but because of the level of expertise he and the company have, he can afford to locate where he chooses, essentially Somerset East is his personal preference. The other major industry in the town is a tyre retreading plant. Wilken (2006) believes that with the establishment of a number of small specialist

industries and the friendly and attractive nature of the town, it has the ability to attract other small industries. An example is the proposed light aeroplane manufacturing plant.

The Blue Crane Development Agency and LED

The municipality is fortunate to have a Development Agency primarily focused on developing the region, the Blue Crane Route Development Agency. They have implemented a number of projects, and have many more planned including the large scale development of the 'eco-resort', which Tetswana (2006) believes will be the towns' equivalent to Volkswagen in Uitenhage. The agency is also fortunate to have a good working relationship with the municipality, the Mayor Mr Machant (2006) indicated that the municipality backs the agency fully. A number of the major projects are being developed by the agency in Somerset.

- The 'Eco-Resort' – This project has been initiated by the agency, planning to establish the resort at the foot of the Boshberg Mountain. 18 feasibility studies have been performed (Beach, 2006) showing that the project is viable. However, at the time of the last interview they were struggling to get the final environmental impact assessment. Beach (2006) describes it as mega project and expects about R600m will be invested. The resort includes the following:

  - An Equestrian Estate
  - 18 hole golf course
  - Hotel
  - A wellness centre/spa
  - Trout fishing
  - Private housing nodes, 420 houses.

  There are three different housing nodes aimed at varying markets, it is felt that the resort will compete with the 'golfing estates' that have sprung up around the country, as a cheaper and possibly more attractive alternative. The agency plans on developing the resort and the housing nodes themselves, as they intend to pour the profits of the project back into the town. Thus profits will be utilised to maintain the resort, develop the golf course and to spend on other recreational facilities in the town that will benefit the whole community. Through the project it is hoped that a large number of permanent and temporary jobs will be created which will significantly boost the local economy. Machant (2006) also believes that the spin offs from the project will be felt throughout the town.

- The agency has also secured funding for the development and construction of an airport in Somerset East. It has a budget of R5 million (Fife, 2006), and included in this is the establishment of a light industrial park. They have also managed to attract an Italian light aircraft assembly plant to locate in the town, which was currently located in Pretoria. It is also hoped that over time that the owner may eventually start

to manufacture the planes and parts in the town and then export them elsewhere. The primary rationale behind the development of the Airport is to develop tourism in the area allowing Somerset East to become the economic hub of the region (Fife, 2006). The agency and municipal officials are also hoping for secondary benefits and have developed the idea of initiating a flying school, for the lightweight planes.

- A number of agricultural projects have also been developed in and around the town. These projects are primarily aimed at creating employment and the agency has been promoting high value crops such as flowers and bio diesel. An example is Misty Mountains a flower farming facility that has been established and which has led to 15 permanent jobs (Tetswana, 2006). 65% of the farm is owned by the labourers and the remainder by the agency (Fife, 2006). It is hoped that the facility will render R885 000 turnover by next year (Fife, 2006). The introduction of the scheme will be supported with training and mentorship programmes as well as locating markets for the products. Eventually it is hoped that the agency can assist in securing the newly trained farmers their own land.

The agency has been a major catalyst in all of the mentioned projects in Somerset East although it has worked closely with the municipality and their LED programmes.

Tourism potential

Tourism in the town will receive a huge boost with the completion of the airport. It is hoped that this facility will become the main arrival point for tourists to the region (Fife, 2006). The opening of the Northern Gate at Addo National Elephant Park, and the tarring of the road between the gate and Somerset East also coincides with this development (Beach, 2006). Thus it is hoped that visitors to the park as well as the other hunting lodges etc. will fly directly into Somerset East, effectively making it the hub of tourism in the region. 'The natural beauty of the town, which brings in tourists and promotes others to relocate, also assist tourism and the development of the 'Eco Resort' should increase the number of people visiting the town. The municipality also hosts an annual Biltong Festival, which reportedly draws in large crowds from across the country. Bicycle races and other events are also being planned to try and boost the sector (Beach, 2006). Fourie (2006) indicated that the beauty and relaxed nature of the town is one of the major reasons that he relocated.

Municipality

The municipality appears to run fairly smoothly, they work well with the development agency. There very few complaints about them by the locals who appeared to be fairly satisfied with the work they were doing.

Pearston:

Economic Environment

The economic environment is not healthy as it began to decline drastically in the late 1970's (Wilken, 2006). Mr Machant (2006) the Mayor of the Blue Crane Route Municipality described the town as dying, indicating that the banks, post office and other retailers have left the town. Davenpoort (2006) believes the situation to have worsened since the bank closed as now farmers take labourers to Somerset East to get money, and as a result they tended to source personal products there. Thus the local stores struggled even more. Doro and Matanga (2006) indicted that unemployment is huge in the town and that the dependence of grants is massive. The levels of alcohol abuse etc. are also extremely high as residents have little else to do. They also pointed out that many of the older kids in the towns leave at about 16 to go off and look for work in bigger cities such as Port Elizabeth and Cape Town. Very few return unless ill – they indicated a number of the girls become involved in prostitution and regularly become infected with HIV upon which they return to Pearston to die. Thus the socio-economic conditions within the town are poor.

Davenpoort (2006) indicated that the major reason for the decline was the shift to game farming by a number of the local farmers. Game farming is not labour intensive and as result many labourers living in Pearston were retrenched. To make the situation worse the local farmers also tended to source their goods from other larger centres such as Port Elizabeth or Graaf Reinett.

LED and the Blue Crane Development Agency

Machant (2006) the Mayor indicated due to the situation in Pearston LED projects tended to focus on poverty alleviation. However, a number of these projects aimed at relieving the situation have been cancelled due to a lack of community interest and mis-management (Doro and Matanga, 2006). The particular scheme they were referring to was a chicken project which collapsed after a year, despite large investments. They also indicted that crop farming as a poverty alleviation strategy was not an option due to the high levels of theft, vandalism and damage by livestock.

The BCRDA has come up with a LED type concept for Pearston. Wilken (2006) hopes to be able to initiate a hotel/resort aimed at utilising the 'Karoo' experience as the main drawcard. The idea is establish the resort, which will attempt to attract foreigners and will also include a golf course. The project is one of the few that could possibly be viable in the town, but is still in the planning stage.

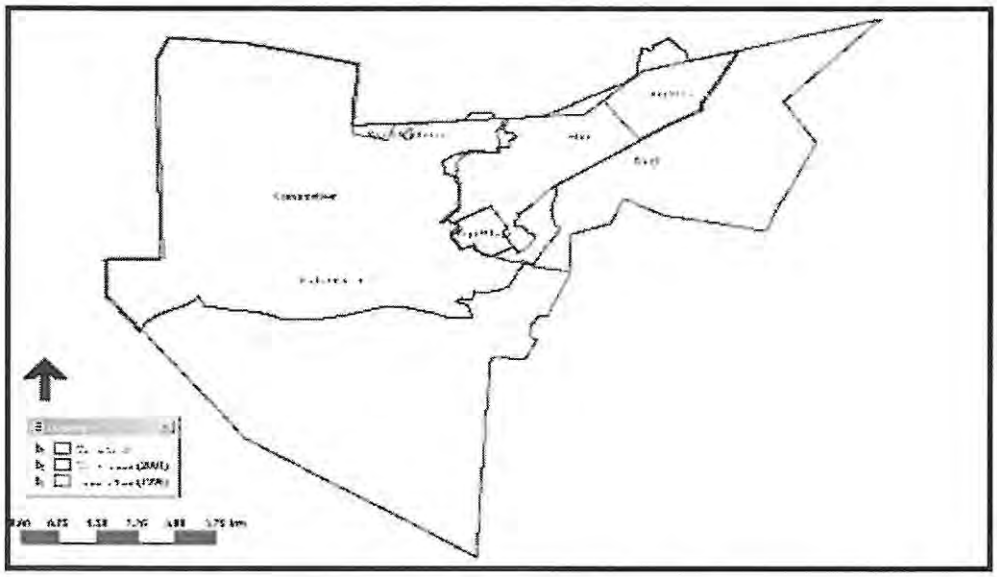
Municipality and other remarks

Pearston is located in the same municipality as Somerset East so see the comments regarding the municipality in Somerset East. Overall the situation looks dire for the town. The only promising possibility is the development of the 'Karoo Experience' resort, which is still a long way off, and even if it comes to fruition, which is by no means definite, the sustainability of such a venture is questionable. Thus there does not appear to be any quick solution for the town and its economic future does not appear to be strong.

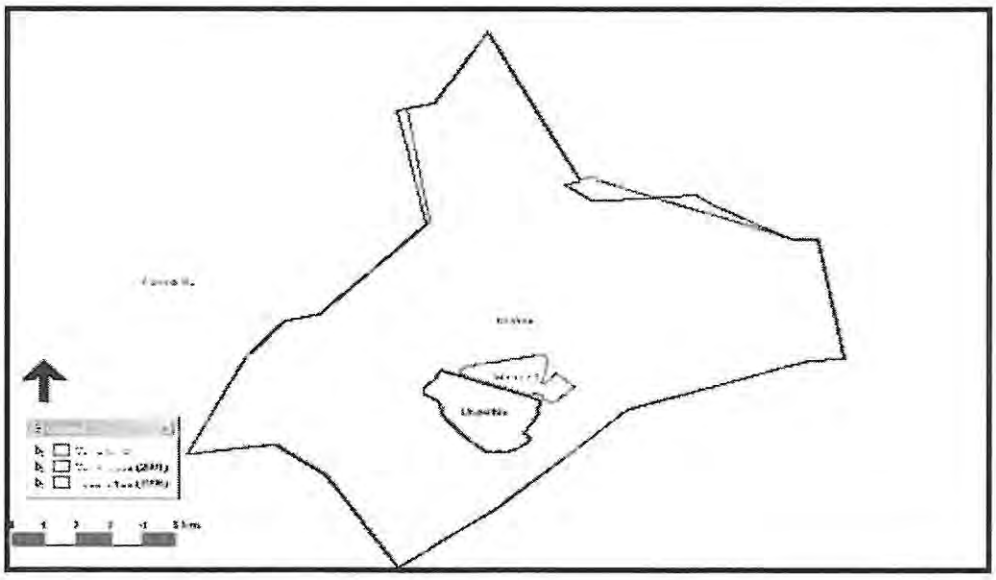
Appendix 3: Differing town boundaries between the 1996 and 2001 censuses

Key: Blue lines - 2001 boundaries; Green lines - 1996 boundaries

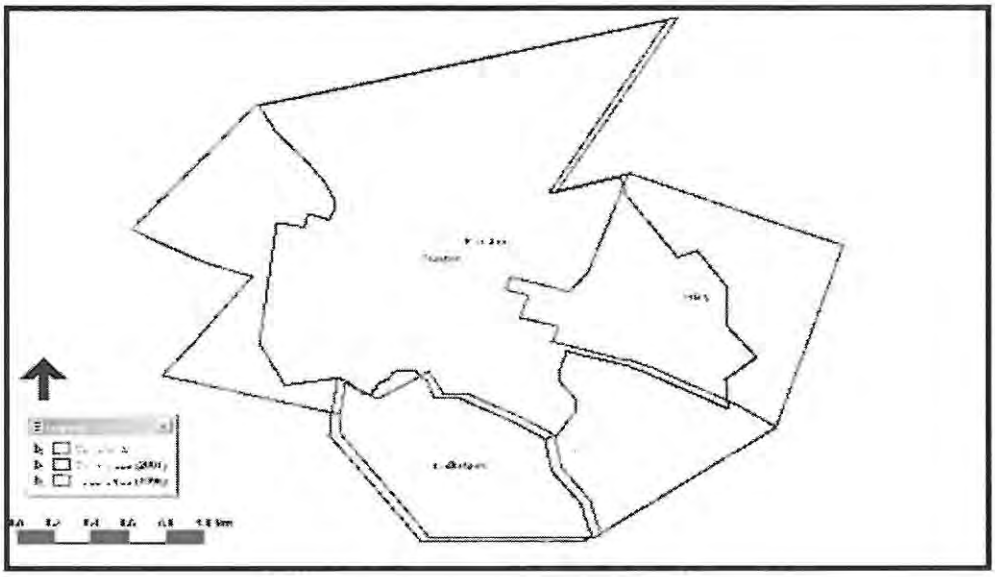
Grahamstown



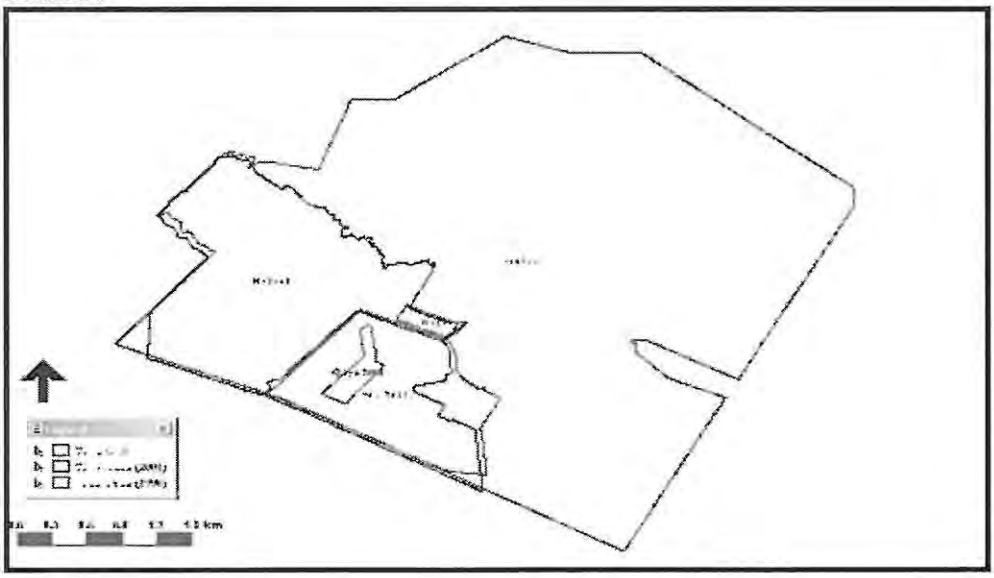
Cradock



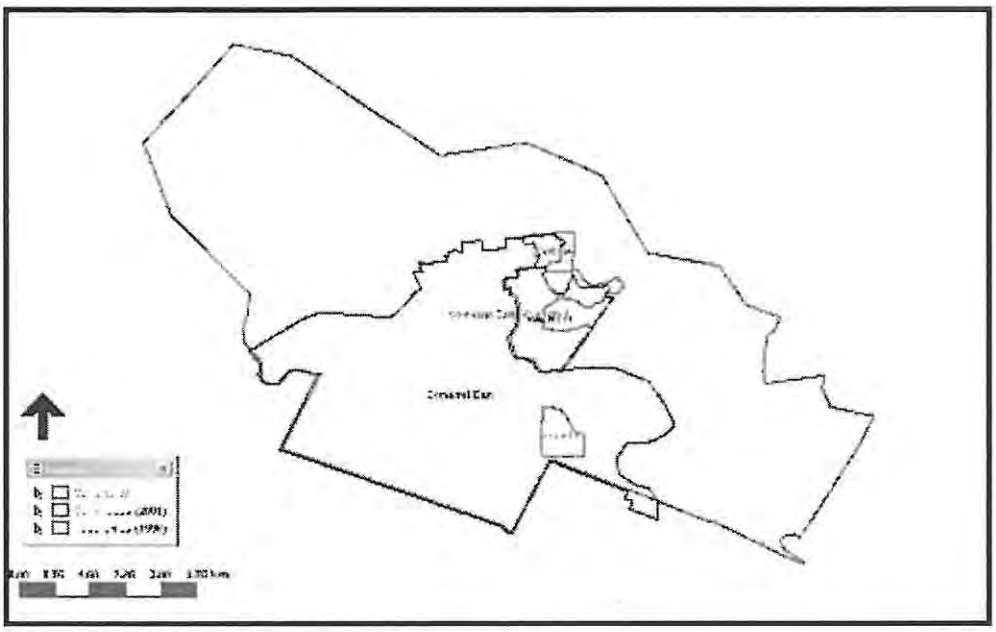
Pearston



Bedford



Somerset East



Source: Stats SA 1996 and 2001a, and Parry (2005)

Appendix 4: SA total occupation figures

	Legislators, senior officials and managers	Professionals	Technicians and associate professionals	Clerks	Service workers, shop and market sales workers	Skilled agric and fishery workers	Craft and related trades workers	Plant and machine operators and assemblers	Elem occup	Undeter	Total
1996	364906	870956	542887	709952	820809	357277	1301996	777910	2380103	987054	9113850
2001	515388	668462	919779	1047700	977591	268107	1164967	844229	2539941	637595	9583759

Source: Stats SA, 1996; Stats SA, 2001

Appendix 5: LQ calculations

National LQ figures:

1996

	Agric	Mining	Manufact-uring	Elect	Constr uction	W-sale and retail	Transport	Financial	services	Private h/h	Undeter mined	Tot
G-town	152	28	624	108	791	1510	335	573	4654	1969	1557	12301
e_i/e_t	0.01	0.00	0.05	0.01	0.06	0.12	0.03	0.05	0.38	0.16	0.13	1
LQ	0.14	0.04	0.41	0.73	1.06	1.02	0.51	0.62	2.18	1.39	1.07	1.00
Cradock	111	7	166	61	515	771	278	245	1540	1089	552	5335
e_i/e_t	0.02	0.00	0.03	0.01	0.10	0.14	0.05	0.05	0.29	0.20	0.10	1
LQ	0.23	0.02	0.25	0.95	1.58	1.20	0.98	0.62	1.66	1.77	0.88	1.00
Bedford	10	3	36	5	54	67	25	18	238	170	145	771
e_i/e_t	0.01	0.00	0.05	0.01	0.07	0.09	0.03	0.02	0.31	0.22	0.19	1
LQ	0.15	0.07	0.38	0.54	1.15	0.72	0.61	0.31	1.78	1.91	1.60	1.00041
Pearston	20	0	8	0	23	32	7	4	127	88	56	365
e_i/e_t	0.05	0.00	0.02	0.00	0.06	0.09	0.02	0.01	0.35	0.24	0.15	1
LQ	0.61	0.00	0.18	0.00	1.03	0.73	0.36	0.15	2.01	2.09	1.30	1.00041
S East	146	3	207	26	211	265	88	107	884	506	490	2933
e_i/e_t	0.05	0.00	0.07	0.01	0.07	0.09	0.03	0.04	0.30	0.17	0.17	1
LQ	0.56	0.02	0.57	0.74	1.18	0.75	0.57	0.49	1.74	1.49	1.42	1.00041
S Africa	814353	541550	1119971	109336	555132	1098048	483655	680153	1580686	1053105	1074122	9110111
E_i/E_t	0.09	0.06	0.12	0.01	0.06	0.12	0.05	0.07	0.17	0.12	0.12	0.99959

$$\mathbf{LQ = (e_i / e_t)/ (E_i/E_t)}$$

2001

	Agric	Mining	Manufact-uring	Elect	Constr uction	W-sale and retail	Transport	Financial	services	Private h/h	Undeter mined	Tot
G-town	237	17	494	83	640	1577	229	713	4710	1414	1237	11352
e_{ij}/e_i	0.02	0.00	0.04	0.01	0.06	0.14	0.02	0.06	0.41	0.12	0.11	1.00
LQ	0.21	0.04	0.35	0.98	1.04	0.92	0.44	0.67	2.16	1.27	1.22	1
Cradock	256	6	165	49	331	978	191	326	1677	802	249	5030
e_{ij}/e_i	0.05	0.00	0.03	0.01	0.07	0.19	0.04	0.06	0.33	0.16	0.05	1
LQ	0.51	0.03	0.26	1.30	1.21	1.28	0.82	0.69	1.73	1.63	0.55	1
Bedford	24	0	17	6	28	116	17	40	260	66	45	618
e_{ij}/e_i	0.04	0.00	0.03	0.01	0.05	0.19	0.03	0.06	0.42	0.11	0.07	1
LQ	0.39	0.00	0.22	1.30	0.83	1.24	0.60	0.69	2.19	1.09	0.81	1
Pearston	39	0	0	0	14	30	6	11	129	48	51	326
e_{ij}/e_i	0.12	0.00	0.00	0.00	0.04	0.09	0.02	0.03	0.40	0.15	0.16	1
LQ	1.19	0.00	0.00	0.00	0.79	0.61	0.40	0.36	2.06	1.50	1.75	1
S East	123	0	189	15	176	353	76	133	861	454	376	2756
e_{ij}/e_i	0.04	0.00	0.07	0.01	0.06	0.13	0.03	0.05	0.31	0.16	0.14	1
LQ	0.45	0.00	0.54	0.73	1.18	0.84	0.60	0.51	1.63	1.68	1.53	1
S Africa	960486	383496	1206846	71622	520488	1454447	442734	904567	1841854	940320	856905	9583765
E_i/E_t	0.10	0.04	0.13	0.01	0.05	0.15	0.05	0.09	0.19	0.10	0.09	1.00

Provincial LQ figures

1996

	Agric	Mining	Manufact-uring	Elect	Constr uction	W-sale and retail	Transport	Financial	services	Private h/h	Undeter mined	Tot
G-town	152	28	624	108	791	1510	335	573	4654	1969	1557	12301
e_{ij}/e_i	0.01	0.00	0.05	0.01	0.06	0.12	0.03	0.05	0.38	0.16	0.13	
LQ	0.14	0.25	0.41	1.23	1.16	1.15	0.65	1.04	1.63	1.22	0.13	
Cradock	111	7	166	61	515	771	278	245	1540	1089	552	5335
e_{ij}/e_i	0.02	0.00	0.03	0.01	0.10	0.14	0.05	0.05	0.29	0.20	0.10	
LQ	0.23	0.14	0.25	1.61	1.74	1.36	1.25	1.03	1.24	1.56	0.10	
Bedford	10	3	36	5	54	67	25	18	238	170	145	771
e_{ij}/e_i	0.01	0.00	0.05	0.01	0.07	0.09	0.03	0.02	0.31	0.22	0.19	
LQ	0.14	0.43	0.38	0.91	1.26	0.82	0.78	0.52	1.33	1.69	0.19	
Pearston	20	0	8	0	23	32	7	4	127	88	56	365
e_{ij}/e_i	0.05	0.00	0.02	0.00	0.06	0.09	0.02	0.01	0.35	0.24	0.15	
LQ	0.61	0.00	0.18	0.00	1.14	0.82	0.46	0.25	1.49	1.84	0.15	
S East	146	3	207	26	211	265	88	107	884	506	490	2933
e_{ij}/e_i	0.05	0.00	0.07	0.01	0.07	0.09	0.03	0.04	0.30	0.17	0.17	
LQ	0.56	0.11	0.57	1.25	1.30	0.85	0.72	0.82	1.29	1.32	0.17	
Ecape	70470	7153	97035	5598	43634	83817	32850	35181	183189	102865	125028	786820
E_{ij}/E_i	0.09	0.01	0.12	0.01	0.06	0.11	0.04	0.04	0.23	0.13	0.16	1

2001

	Agric	Mining	Manufact-uring	Elect	Constr uction	W-sale and retail	Transport	Financial	services	Private h/h	Undeter mined	Tot
G-town	237	17	494	83	640	1577	229	713	4710	1414	1237	11352
e_{ij}/e_i	0.02	0.00	0.04	0.01	0.06	0.14	0.02	0.06	0.41	0.12	0.11	1.00
LQ	0.22	0.25	0.36	1.47	1.16	1.00	0.55	0.92	1.59	1.05	1.07	1.00
Cradock	256	6	165	49	331	978	191	326	1677	802	249	5030
e_{ij}/e_i	0.05	0.00	0.03	0.01	0.07	0.19	0.04	0.06	0.33	0.16	0.05	1.00
LQ	0.53	0.20	0.27	1.95	1.35	1.40	1.04	0.95	1.28	1.35	0.49	1.00
Bedford	24	0	17	6	28	116	17	40	260	66	45	618
e_{ij}/e_i	0.04	0.00	0.03	0.01	0.05	0.19	0.03	0.06	0.42	0.11	0.07	1.00
LQ	0.39	0.00	0.22	1.30	0.83	1.24	0.60	0.69	2.19	1.09	0.81	1.00
Pearston	39	0	0	0	14	30	6	11	129	48	51	326
e_{ij}/e_i	0.12	0.00	0.00	0.00	0.04	0.09	0.02	0.03	0.40	0.15	0.16	1.00
LQ	1.25	0.00	0.00	0.00	0.88	0.66	0.50	0.49	1.52	1.24	1.53	1.00
S East	123	0	189	15	176	353	76	133	861	454	376	2756
e_{ij}/e_i	0.04	0.00	0.07	0.01	0.06	0.13	0.03	0.05	0.31	0.16	0.14	1.00
LQ	0.47	0.00	0.57	1.09	1.31	0.92	0.75	0.71	1.20	1.39	1.34	1.00
Ecape	72122	4574	90866	3762	36762	104646	27587	51451	196346	89338	76887	754341
E_{ij}/E_i	0.10	0.01	0.12	0.00	0.05	0.14	0.04	0.07	0.26	0.12	0.10	1.00

Appendix 6: SAM calculations

1 Aggregated SAM

	AGR	MIN	AGI	TEX	PPP	PET	CHM	HEV	MAC	OHM	ELE	WAT	CON
AGR	51179.44	39	31236.81	614.55	1257.44	1.34	441.12	83.39	206.14	2292.17	9.71	8098.29	713.241346
MIN	174.49	84078.39	117.13	23.89	216.72	11935.15	2368.04	9466.059665	156.37	1669.46437	3952.16	136.93	4173.31607
AGI	4917.889	60.46	99823.11	1178.62	134.75	0	1103.543	16.90132938	8.93	41.3690716	29.74	0	0
TEX	536.25	450.43	109.4447	33442.74	38.12039	0	240.5841	44.69	770.6393	1304.20391	6.35	1.87	523.99
PPP	322.98	153.46	2824.19	353.0498	41966.02	1.58	1332.618	281.6255296	383.1449	905.412907	28.89	55.98	490.88
PET	2907.73	1256.07	523.55	110.1	270.22	23328.16057	5421.384	1399.62	526.35	287.05	103.72	40.64	1987.12
CHM	4544.83	3254.82	967.39	2557.774	2313.88	362.9285245	68996.97	2654.389635	2799.127	6677.14966	64.87	199	853
HEV	585.69	2808.21	2070.35	295.7044	139.56	81.68236884	1526.521	94345.84507	15303.41	1923.56959	180.92	129.32	12595.27
MAC	2005.96	5118.48	517.84	528.7002	779.6	288.96	831.0025	3708.045186	115517.9	733.31311	1163.26	282.77	6059.42
OHM	430.75	2304.21	2465.59	819.4579	1292.191	30.15	3426.252	766.0710836	4075.272	39579.013	55.75	147.83	3261.68
ELE	452.27	3733.23	624.92	279.17	512.28	257.92	1125.73	4665.73	647.06	474.72	28993.25997	427.29	1067.53556
WAT	8324.312	426.54	217.04	59.88	87.27	21.6	66.96	117.37	23.56	30.45	121.37	13062.64	91.59
CON	206.05	841.63	0	0	0	0	0	0	0	0	1250.87	0	86746.1244
SER	9847.098	22060.78	45002.11	22173.53	11432.47	15179.26088	26264.49	22238.34429	48440.81	20095.7347	1377.613914	560.8218058	6128.27727
CAP	16839.68	23460.27	14246.86	1415.704	5228.822	8134.282921	8438.903	12188.80306	7562.646	3027.28522	11465.49662	2199.903595	8281.71099
LABLO	7101.787	16898.2	4972.932	5265.065	1895.607	542.8916618	2170.905	7221.987701	6627.511	5307.77511	3329.164772	333.4170346	8740.54174
LABMED	1040.271	4365.496	3456.139	922.7977	2733.825	501.1001569	2003.79	3996.14243	4507.312	2379.85776	1476.139638	166.524708	2711.79544
LABHI	238.2006	2348.441	2859.657	822.2685	2327.55	855.9799557	3422.877	2990.920578	4937.438	1832.05193	2314.79559	302.1200118	2317.64464
FIRMS	0	0	0	0	0	0	0	0	0	0	0	0	0
HHLeast	0	0	0	0	0	0	0	0	0	0	0	0	0
HHLow	0	0	0	0	0	0	0	0	0	0	0	0	0
HHMiddle	0	0	0	0	0	0	0	0	0	0	0	0	0
HHHigh	0	0	0	0	0	0	0	0	0	0	0	0	0
HHHighest	0	0	0	0	0	0	0	0	0	0	0	0	0
GOV	572.413	854.7123	15482.47	2803.183	1174.737	16660.9792	2428.248	1102.038867	11935.55	2582.16357	1111.735498	100.178382	3099.81103
INV	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW	3419.824	11962.82	10878.17	6646.451	5705.463	4011.268895	17012.52	8669.843484	70792.9	9071.41379	276.1526337	70.87597626	591.858451
Total	115647.6	186475.6	238395.7	80312.64	79506.52	82195.23514	148622.5	175957.8179	295222.1	100214.168	57311.96863	26316.40151	150434.807
	115647.6	186475.6	238395.7	80312.64	79506.52	82195.23514	148622.5	175957.8179	295222.1	100214.168	57311.96863	26316.40151	150434.807

Continued:

	SER	CAP	LABLO	LABMED	LABHI	FIRMS	HHLeast	HHLow	HHMiddle	HHHigh	HHHighest
F	0.221	0.135	0.362	0.330	0.296	0.146	0.588	0.526	0.363	0.261	0.251
AGR	0.079	0.038	0.085	0.084	0.084	0.041	0.093	0.087	0.084	0.086	0.084
MIN	0.522	0.326	0.886	0.804	0.716	0.352	1.470	1.307	0.887	0.627	0.602
AGI	0.123	0.077	0.199	0.189	0.173	0.083	0.218	0.240	0.210	0.159	0.142
TEX	0.159	0.064	0.139	0.139	0.139	0.069	0.142	0.142	0.137	0.140	0.148
PPP	0.141	0.070	0.149	0.151	0.155	0.076	0.142	0.134	0.146	0.162	0.163
PET	0.205	0.107	0.250	0.244	0.238	0.116	0.139	0.272	0.251	0.236	0.227
CHM	0.112	0.049	0.108	0.106	0.106	0.052	0.279	0.114	0.107	0.105	0.110
HEV	0.262	0.136	0.266	0.275	0.291	0.146	0.116	0.226	0.256	0.305	0.342
MAC	0.135	0.071	0.160	0.159	0.158	0.077	0.223	0.156	0.163	0.157	0.156
OHM	0.094	0.047	0.116	0.111	0.105	0.050	0.146	0.139	0.114	0.105	0.092
ELE	0.052	0.029	0.075	0.069	0.063	0.031	0.171	0.105	0.075	0.057	0.054
WAT	0.055	0.017	0.038	0.037	0.037	0.018	0.117	0.040	0.038	0.037	0.037
CON	4.455	1.244	2.732	2.714	2.718	1.343	0.042	2.774	2.717	2.715	2.838
SER	0.738	1.247	0.566	0.552	0.541	0.266	2.729	0.628	0.563	0.530	0.542
CAP	0.248	0.088	1.205	0.199	0.194	0.096	0.649	0.229	0.204	0.189	0.192
LABLO	0.374	0.113	0.252	1.248	0.247	0.122	0.236	0.264	0.250	0.245	0.254
LABMED	0.178	0.058	0.129	0.127	1.126	0.062	0.264	0.138	0.129	0.125	0.129
LABHI	0.684	1.155	0.524	0.511	0.501	1.247	0.140	0.582	0.522	0.491	0.502
FIRMS	0.020	0.011	0.062	0.030	0.017	0.011	0.601	0.017	0.016	0.015	0.015
HHLeast	0.045	0.025	0.129	0.071	0.039	0.027	1.018	1.038	0.035	0.033	0.034
HHLow	0.536	0.327	1.004	0.950	0.743	0.354	0.039	0.432	1.396	0.378	0.388
HHMiddle	0.297	0.186	0.397	0.506	0.642	0.201	0.440	0.234	0.216	1.207	0.213
HHHigh	0.229	0.269	0.245	0.258	0.358	0.290	0.238	0.189	0.171	0.163	1.167
HHHighest	9.964	5.888	10.077	9.864	9.687	5.277	10.293	10.015	9.050	8.525	8.682
Total											

2 A: nxn matrix of direct technical coefficients for endogenous factors

Calculation used (A/Sector total) eg row Agr and column Agr = 51179.44/115647.6

A	AGR	MIN	AGI	TEX	PPP	PET	CHM	HEV	MAC	OHM	ELE	WAT	CON	SER	CAP	LABLO	LABMED	LABHI	FIRMS	HHLeast	HHLow	HHMiddle	HHHigh	HHHighest	GOV	INV	ROW	Total
AGR	0.443	0.000	0.131	0.008	0.016	0.000	0.003	0.000	0.001	0.023	0.000	0.308	0.005	0.001	0.000	0.000	0.000	0.000	0.000	0.056	0.056	0.031	0.016	0.014	0.000	-0.044	0.038	0.019
MIN	0.002	0.451	0.000	0.000	0.003	0.145	0.016	0.054	0.001	0.017	0.069	0.005	0.028	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.011	0.299	0.031
AGI	0.043	0.000	0.419	0.015	0.002	0.000	0.007	0.000	0.000	0.000	0.001	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.591	0.502	0.283	0.147	0.128	0.000	-0.283	0.056	0.039
TEX	0.005	0.002	0.000	0.416	0.000	0.000	0.002	0.000	0.003	0.013	0.000	0.000	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.067	0.080	0.068	0.041	0.030	0.000	0.023	0.021	0.013
PPP	0.003	0.001	0.012	0.004	0.528	0.000	0.009	0.002	0.001	0.009	0.001	0.002	0.003	0.012	0.000	0.000	0.000	0.000	0.000	0.001	0.003	0.007	0.013	0.015	0.000	-0.011	0.021	0.013
PET	0.025	0.007	0.002	0.001	0.003	0.284	0.036	0.008	0.002	0.003	0.002	0.002	0.013	0.011	0.000	0.000	0.000	0.000	0.000	0.009	0.008	0.025	0.042	0.041	0.000	0.020	0.017	0.014
CHM	0.039	0.017	0.004	0.032	0.029	0.004	0.464	0.015	0.009	0.067	0.001	0.008	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.038	0.036	0.037	0.037	0.031	0.000	0.033	0.058	0.025
HEV	0.005	0.015	0.009	0.004	0.002	0.001	0.010	0.536	0.052	0.019	0.003	0.005	0.084	0.004	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.002	0.002	0.000	0.053	0.129	0.029
MAC	0.017	0.027	0.002	0.007	0.010	0.004	0.006	0.021	0.391	0.007	0.020	0.011	0.040	0.017	0.000	0.000	0.000	0.000	0.000	0.005	0.010	0.038	0.074	0.094	0.000	0.565	0.091	0.049
OHM	0.004	0.012	0.010	0.010	0.016	0.000	0.023	0.004	0.014	0.395	0.001	0.006	0.022	0.006	0.000	0.000	0.000	0.000	0.000	0.010	0.018	0.031	0.032	0.029	0.000	0.011	0.054	0.017
ELE	0.004	0.020	0.003	0.003	0.006	0.003	0.008	0.027	0.002	0.005	0.506	0.016	0.007	0.003	0.000	0.000	0.000	0.000	0.000	0.041	0.027	0.019	0.016	0.009	0.000	-0.025	0.005	0.009
WAT	0.072	0.002	0.001	0.001	0.001	0.000	0.000	0.001	0.000	0.000	0.002	0.496	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.008	0.007	0.004	0.002	0.002	0.000	-0.004	0.000	0.004
CON	0.002	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.000	0.577	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.405	0.001	0.025
SER	0.085	0.118	0.189	0.276	0.144	0.185	0.177	0.126	0.164	0.201	0.024	0.021	0.041	0.611	0.000	0.000	0.000	0.000	0.000	0.152	0.208	0.312	0.390	0.435	0.456	0.220	0.149	0.302
CAP	0.146	0.126	0.060	0.018	0.066	0.099	0.057	0.069	0.026	0.030	0.200	0.084	0.055	0.131	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.043	0.051
LABLO	0.061	0.091	0.021	0.066	0.024	0.007	0.015	0.041	0.022	0.053	0.058	0.013	0.058	0.039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023
LABMED	0.009	0.023	0.014	0.011	0.034	0.006	0.013	0.023	0.015	0.024	0.026	0.006	0.018	0.076	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.028
LABHI	0.002	0.013	0.012	0.010	0.029	0.010	0.023	0.017	0.017	0.018	0.040	0.011	0.015	0.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.014
FIRMS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.057
HHLeast	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.046	0.015	0.002	0.004	0.000	0.000	0.000	0.000	0.000	0.017	0.000	0.000	0.003
HHLow	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.094	0.037	0.005	0.011	0.000	0.000	0.000	0.000	0.000	0.023	0.000	0.000	0.006
HHMiddle	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.607	0.560	0.359	0.164	0.000	0.000	0.000	0.000	0.000	0.033	0.000	0.001	0.047
HHHigh	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.180	0.293	0.432	0.097	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.024
HHHighest	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.073	0.090	0.193	0.209	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.019
GOV	0.005	0.005	0.065	0.035	0.015	0.203	0.016	0.006	0.040	0.026	0.019	0.004	0.021	0.016	0.000	0.000	0.000	0.000	0.104	0.011	0.043	0.139	0.184	0.165	0.498	0.000	0.001	0.070
INV	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.410	0.001	0.001	0.003	0.005	0.005	-0.045	0.025	0.016	0.022
ROW	0.030	0.064	0.046	0.083	0.072	0.049	0.114	0.049	0.240	0.091	0.005	0.003	0.004	0.019	0.074	0.000	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.014	0.000	0.000	0.036
Total	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

3 (I-A) Identity Matrix

I-A	AGR	MIN	AGI	TEX	PPP	PET	CHM	HEV	MAC	OHM	ELE	WAT	CON	SER	CAP	LABLO	LABMED	LABHI	FIRMS	HHLeast	HHLow	HHMiddle
AGR	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIN	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AGI	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TEX	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PPP	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PET	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEV	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAC	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
OHM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
ELE	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
WAT	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
CON	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
SER	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
CAP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
LABLO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
LABMED	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
LABHI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
FIRMS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
HHLeast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
HHLow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
HHMiddle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
HHHigh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HHHighest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 (I-A) - A

I - A	AGR	MIN	AGI	TEX	PPP	PET	CHM	HEV	MAC	OHM	ELE	WAT	CON	SER	CAP	LABLO	LABMED	LABHI	FIRMS	HHLeast	HHLow	HHMiddle
AGR	0.5575	-0.0002	-0.1310	-0.0077	-0.0158	0.0000	-0.0030	-0.0005	-0.0007	-0.0229	-0.0002	-0.3077	-0.0047	-0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0657	-0.0558	-0.0314
MIN	-0.0015	0.5491	-0.0005	-0.0003	-0.0027	-0.1452	-0.0159	-0.0538	-0.0005	-0.0167	-0.0690	-0.0052	-0.0277	-0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0008	-0.0005	-0.0004
AGI	-0.0426	-0.0003	0.5813	-0.0147	-0.0017	0.0000	-0.0074	-0.0001	0.0000	-0.0004	-0.0005	0.0000	0.0000	-0.0069	0.0000	0.0000	0.0000	0.0000	0.0000	-0.5907	-0.5022	-0.2832
TEX	-0.0046	-0.0024	-0.0005	0.5836	-0.0005	0.0000	-0.0016	-0.0003	-0.0026	-0.0130	-0.0001	-0.0001	-0.0035	-0.0016	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0665	-0.0805	-0.0677
PPP	-0.0028	-0.0008	-0.0118	-0.0044	0.4722	0.0000	-0.0090	-0.0016	-0.0013	-0.0090	-0.0005	-0.0021	-0.0033	-0.0118	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0009	-0.0026	-0.0074
PET	-0.0251	-0.0057	-0.0022	-0.0014	-0.0034	0.7162	-0.0365	-0.0080	-0.0018	-0.0029	-0.0018	-0.0015	-0.0132	-0.0105	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0090	-0.0079	-0.0254
CHM	-0.0393	-0.0175	-0.0041	-0.0318	-0.0291	-0.0044	0.5358	-0.0151	-0.0095	-0.0666	-0.0011	-0.0076	-0.0057	-0.0076	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0380	-0.0364	-0.0372
HEV	-0.0051	-0.0151	-0.0087	-0.0037	-0.0018	-0.0010	-0.0103	0.4638	-0.0518	-0.0192	-0.0032	-0.0049	-0.0837	-0.0042	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0007	-0.0011	-0.0018
MAC	-0.0173	-0.0274	-0.0022	-0.0066	-0.0098	-0.0035	-0.0056	-0.0211	0.6087	-0.0073	-0.0203	-0.0107	-0.0403	-0.0170	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0054	-0.0102	-0.0385
OHM	-0.0037	-0.0124	-0.0103	-0.0102	-0.0163	-0.0004	-0.0231	-0.0044	-0.0138	0.6051	-0.0010	-0.0056	-0.0217	-0.0059	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0099	-0.0179	-0.0308
ELE	-0.0039	-0.0200	-0.0026	-0.0035	-0.0064	-0.0031	-0.0076	-0.0265	-0.0022	-0.0047	0.4941	-0.0162	-0.0071	-0.0033	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0412	-0.0268	-0.0185
WAT	-0.0720	-0.0023	-0.0009	-0.0007	-0.0011	-0.0003	-0.0005	-0.0007	-0.0001	-0.0003	-0.0021	0.5036	-0.0006	-0.0011	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0077	-0.0067	-0.0041
CON	-0.0018	-0.0045	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0218	0.0000	0.4234	-0.0046	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SER	-0.0851	-0.1183	-0.1888	-0.2761	-0.1438	-0.1847	-0.1767	-0.1264	-0.1641	-0.2005	-0.0240	-0.0213	-0.0407	0.3886	0.0000	0.0000	0.0000	0.0000	0.0000	-0.1520	-0.2077	-0.3124
CAP	-0.1456	-0.1258	-0.0598	-0.0176	-0.0658	-0.0990	-0.0568	-0.0693	-0.0256	-0.0302	-0.2001	-0.0836	-0.0551	-0.1307	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LABLO	-0.0614	-0.0906	-0.0209	-0.0656	-0.0238	-0.0066	-0.0146	-0.0410	-0.0224	-0.0530	-0.0581	-0.0127	-0.0581	-0.0390	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LABMED	-0.0090	-0.0234	-0.0145	-0.0115	-0.0344	-0.0061	-0.0135	-0.0227	-0.0153	-0.0237	-0.0258	-0.0063	-0.0180	-0.0761	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LABHI	-0.0021	-0.0126	-0.0120	-0.0102	-0.0293	-0.0104	-0.0230	-0.0170	-0.0167	-0.0183	-0.0404	-0.0115	-0.0154	-0.0323	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
FIRMS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.9263	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000
HHLeast	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0463	-0.0147	-0.0024	-0.0041	1.0000	0.0000	0.0000
HHLow	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0942	-0.0366	-0.0053	-0.0109	0.0000	1.0000	0.0000
HHMiddle	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.6066	-0.5802	-0.3592	-0.1643	0.0000	0.0000	1.0000
HHHigh	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.1797	-0.2926	-0.4322	-0.0969	0.0000	0.0000	0.0000
HHHighest	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0732	-0.0900	-0.1928	-0.2089	0.0000	0.0000	0.0000

5 Leontif Inverse {=MINVERSE(C90:Z113)}

F	AGR	MIN	AGI	TEX	PPP	PET	CHM	HEV	MAC	OHM	ELE	WAT	CON	SER	CAP	LABLO	LABMED	LABHI	FIRMS	HHLeast	HHLow	HHMddle
AGR	2.169	0.202	0.620	0.227	0.253	0.131	0.179	0.196	0.126	0.261	0.203	1.397	0.231	0.221	0.135	0.362	0.330	0.296	0.146	0.588	0.526	0.363
MIN	0.097	1.906	0.073	0.072	0.083	0.418	0.143	0.298	0.096	0.131	0.325	0.114	0.251	0.079	0.038	0.085	0.084	0.084	0.041	0.093	0.087	0.084
AGI	0.581	0.465	2.153	0.490	0.439	0.306	0.396	0.455	0.289	0.440	0.471	0.524	0.482	0.522	0.326	0.886	0.804	0.716	0.352	1.470	1.307	0.887
TEX	0.118	0.117	0.100	1.818	0.104	0.074	0.095	0.109	0.076	0.139	0.112	0.113	0.130	0.123	0.077	0.199	0.189	0.173	0.083	0.218	0.240	0.210
PPP	0.116	0.106	0.148	0.132	2.223	0.078	0.132	0.114	0.079	0.142	0.097	0.117	0.123	0.159	0.064	0.139	0.139	0.139	0.069	0.142	0.142	0.137
PET	0.175	0.122	0.119	0.116	0.118	1.474	0.188	0.132	0.077	0.122	0.108	0.151	0.157	0.141	0.070	0.149	0.151	0.155	0.076	0.139	0.134	0.146
CHM	0.306	0.225	0.199	0.270	0.280	0.136	2.019	0.230	0.145	0.373	0.171	0.278	0.223	0.205	0.107	0.250	0.244	0.238	0.116	0.279	0.272	0.251
HEV	0.114	0.152	0.117	0.103	0.095	0.076	0.120	2.255	0.241	0.158	0.123	0.126	0.536	0.112	0.049	0.108	0.106	0.106	0.052	0.116	0.114	0.107
MAC	0.246	0.275	0.200	0.217	0.224	0.163	0.192	0.280	1.779	0.216	0.270	0.260	0.374	0.262	0.136	0.266	0.275	0.291	0.146	0.223	0.226	0.256
OHM	0.123	0.144	0.131	0.139	0.162	0.062	0.164	0.128	0.109	1.765	0.115	0.134	0.203	0.135	0.071	0.160	0.159	0.158	0.077	0.146	0.156	0.163
ELE	0.100	0.151	0.085	0.089	0.101	0.075	0.098	0.199	0.057	0.097	2.108	0.156	0.142	0.094	0.047	0.116	0.111	0.105	0.050	0.171	0.139	0.114
WAT	0.325	0.052	0.108	0.051	0.055	0.032	0.041	0.047	0.029	0.054	0.053	2.200	0.053	0.052	0.029	0.075	0.069	0.063	0.031	0.117	0.105	0.075
CON	0.040	0.054	0.035	0.038	0.034	0.030	0.033	0.041	0.025	0.036	0.134	0.038	2.398	0.055	0.017	0.038	0.037	0.037	0.018	0.042	0.040	0.038
SER	2.243	2.309	2.483	2.895	2.463	1.915	2.365	2.487	1.840	2.602	1.955	2.162	2.326	4.455	1.244	2.732	2.714	2.718	1.343	2.729	2.774	2.717
CAP	0.768	0.692	0.632	0.558	0.615	0.531	0.564	0.667	0.389	0.562	0.835	0.809	0.654	0.738	1.247	0.566	0.552	0.541	0.266	0.649	0.628	0.563
LABLO	0.287	0.332	0.225	0.295	0.219	0.163	0.191	0.280	0.162	0.270	0.289	0.264	0.343	0.248	0.088	1.205	0.199	0.194	0.096	0.236	0.229	0.204
LABMED	0.226	0.254	0.249	0.273	0.293	0.184	0.238	0.278	0.190	0.274	0.239	0.226	0.272	0.374	0.113	0.252	1.248	0.247	0.122	0.264	0.264	0.250
LABHI	0.115	0.133	0.132	0.143	0.174	0.102	0.150	0.156	0.110	0.151	0.179	0.134	0.159	0.178	0.058	0.129	0.127	1.126	0.062	0.140	0.138	0.129
FIRMS	0.711	0.641	0.586	0.517	0.570	0.492	0.522	0.618	0.361	0.520	0.774	0.749	0.606	0.684	1.155	0.524	0.511	0.501	1.247	0.601	0.582	0.522
HHLeast	0.020	0.022	0.017	0.020	0.017	0.012	0.015	0.020	0.012	0.019	0.020	0.019	0.023	0.020	0.011	0.062	0.030	0.017	0.011	1.018	0.017	0.016
HHLow	0.044	0.048	0.037	0.044	0.038	0.028	0.033	0.044	0.027	0.042	0.045	0.042	0.050	0.045	0.025	0.129	0.071	0.039	0.027	0.039	1.038	0.035
HHMddle	0.459	0.496	0.420	0.468	0.453	0.319	0.388	0.483	0.304	0.457	0.501	0.458	0.517	0.536	0.327	1.004	0.950	0.743	0.354	0.440	0.432	1.396
HHHigh	0.236	0.253	0.227	0.245	0.255	0.175	0.219	0.259	0.167	0.244	0.274	0.244	0.268	0.297	0.186	0.397	0.506	0.642	0.201	0.238	0.234	0.216
HHHighest	0.212	0.207	0.187	0.182	0.195	0.151	0.173	0.205	0.126	0.182	0.239	0.222	0.207	0.229	0.269	0.245	0.258	0.358	0.290	0.194	0.189	0.171
Total	9.830	9.357	9.280	9.402	9.465	7.146	8.657	9.982	6.794	9.257	9.642	10.935	10.726	9.964	5.888	10.077	9.864	9.687	5.277	10.293	10.015	9.050

6 $(1 - A_2)^{-1} * F - (1 - A)^{-1} * F = [(1 - A_2) - (1 - A)] = \Delta Y1$

F = Gov + Inv + ROW (See table 1)
1-A*F = {=MMULT(Table 5, 1-A*F column table 6)}
Total – Table 1
Difference = 1-A*F - Total

	F	1-A*F	Total	Difference	
AGR	2624.540971	115648.0412	115647.6053	0.435913402	
MIN	67079.60397	186475.6782	186475.6427	0.03555476	
AGI	-24797.61395	238395.8659	238395.7025	0.163408134	
TEX	7590.491395	80312.67464	80312.63943	0.035206387	
PPP	3097.734609	79506.55596	79506.51941	0.036551859	
PET	6472.06661	82195.28213	82195.23514	0.046991936	
CHM	17037.93618	148622.543	148622.4564	0.086655078	
HEV	35258.25773	175957.8572	175957.8179	0.039274541	
MAC	93888.86169	295222.1857	295222.1047	0.081032594	
OHM	13290.31119	100214.2096	100214.1678	0.041816882	
ELE	-2231.357901	57312.01715	57311.96863	0.048515805	
WAT	-477.8265443	26317.08787	26316.40151	0.686353463	
CON	53039.23437	150434.8189	150434.8069	0.012005258	
SER	253575.7983	1824883.626	1824882.952	0.674492741	
CAP	9424	370416.6229	370416.3707	0.252262134	
LABLO	0	141514.5459	141514.4636	0.082294289	
LABMED	0	169071.9376	169071.8671	0.070475564	
LABHI	0	86538.59524	86538.55341	0.041828003	
FIRMS	0	343111.6043	343111.3707	0.233666796	
HHLeast	7034.541693	17674.90247	17674.89657	0.005897559	
HHLow	9841.69715	33553.966	33553.95291	0.013095014	
HHMiddle	13969.40866	281996.5623	281996.4195	0.142823694	
HHHigh	1304.939941	146835.8524	146835.7763	0.076118623	

HHHighest	365.4125502	114287.024	114286.9547	0.069236128	
				3.411470643	3.411471

Scenarios were tested by alerting figures on the original SAM to represent the scenarios tested eg a R10 billion investments in the agricultural sector was calculated by adding R10 to R51179. The calculation of these scenarios are illustrated below.

	10% decrease in agriculture	10% increase in agriculture	R10 billion investment in agriculture	5% increase in Agro Industries	R10 billion investment in agriculture	R10 billion investment in Petrolium
AGR	-10126.8	12278.0	22.1	153.1	6.6	1.7
MIN	-454.1	550.6	1.0	18.0	0.8	4.2
AGI	-2709.1	3284.7	6.0	530.3	21.7	3.2
TEX	-551.4	668.5	1.2	24.6	1.0	0.8
PPP	-543.6	659.1	1.2	36.4	1.5	0.8
PET	-817.4	991.0	1.8	29.4	1.2	14.8
CHM	-1430.8	1734.8	3.2	49.1	2.1	1.4
HEV	-533.0	646.3	1.2	28.9	1.2	0.8
MAC	-1148.9	1393.1	2.5	49.3	2.1	1.7
OHM	-573.1	694.9	1.3	32.3	1.4	0.9
ELE	-465.8	564.8	1.0	20.9	0.9	0.8
WAT	-1514.7	1837.8	3.9	26.7	1.7	1.0
CON	-184.7	223.9	0.4	8.5	0.4	0.3
SER	-10472.9	12698.1	23.1	612.0	25.5	19.8
CAP	-3583.6	4345.0	7.9	155.9	6.6	5.6
LABLO	-1338.0	1622.3	2.9	55.4	2.3	1.7
LABMED	-1055.1	1279.3	2.3	61.5	2.6	1.9

LABHI	-538.3	652.7	1.2	32.6	1.4	1.1
FIRMS	-3319.4	4024.8	7.3	144.4	6.1	5.2
HHLeast	-92.3	111.9	0.2	4.1	0.2	0.1
HHLow	-203.6	246.9	0.4	9.2	0.4	0.3
HHMiddle	-2141.6	2596.6	4.7	103.5	4.3	3.3
HHHigh	-1103.3	1337.8	2.4	56.0	2.3	1.8
HHHighest	-990.0	1200.4	2.2	46.0	1.9	1.6
	-45891.5	55643.0	101.7	2288.3	96.2	74.9

Appendix 7: Calculation of the economic impact of Students on the Grahamstown Economy

The following tables are extracts from the study conducted by Snowball and Antrobus (2005) illustrating the economic impacts of Rhodes students on the Grahamstown economy. The study differentiates between South African and foreign students.

Expenditure Method

Table 1: Expenditure method: Living expenses

DIGS	A. Monthly spending x 8 (Rand)	B. Rent x 12 (Rand)	C. No. of students	Total(Rand) spending per student (A+B)	Total for all (A+B)C R millions
SA	11 912	12 072	2 686	23 984	64.42
Foreign	11 016	13 068	401	24 084	9.7
RES	**A. Monthly spending x 8**	**B. RU res.**	**C. No of students**	**Total spending per student (A+B)**	**Total for all (A+B)C R millions**
SA	8 032	20 100	757	28 132	21.3
Foreign	6 624	20 100	958	26 724	25.6

Table 2: Fees per annum

	Undergraduate			Postgraduate		
	Average fees (Rand)	No. of students	Total (Rm)	Average fees Rands	No. of students	Total (Rm)
SA	**14 176**	**3 684**	**52.2**	**9 773**	**798**	**7.8**
Foreign	16 176	1 330	21.5	11 773	440	5.2

Table 3: Economic impact: Expenditure method (Figures in millions of Rands)

	SA	Foreign
A. Cost of living	85.64	35.26
B. Fees	60.03	26.7
C. Direct impact	145.67	61.96
D. Indirect impact (C x 0.18%)	26.22	11.15
F. Total impact (C+D)	171.89	73.11

Income Method

Table 4: Income method: Living expenses

DIGS	A. Monthly income x 8 (Rand)	B. Rent x 4 (Rand)	C. No. of students	Total spending per student (A+B)	Total for all (A+B)C R millions
SA	15 864	4 024	2 686	19 888	53.42
Foreign	15 968	4 356	401	20 324	8.15
RES	A. Monthly income x 8 (Rand)	B. RU res.	C. No of students	Total spending per student (A+B)	Total for all (A+B)C R millions
SA	6 136	20 100	757	26 236	19.86
Foreign	7 680	20 100	958	27 780	26.61

Table 5: Economic impact: Income method (Figures in millions of Rands)

	SA	Foreign
A. Cost of living	73.28	34.76
B. Fees	60.03	26.7
C. Direct impact	133.31	61.46
D. Indirect impact (C x 0.18%)	23.99	11.06
E. Total impact (C+D)	157.30	72.52

*The calculation of fees is similar to the expenditure method.