THE ROLE AND DEVELOPMENT OF INTERMEDIATE REGIONS IN NATIONAL PHYSICAL PLANNING

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UITTREKSEL

"Die rol en ontwikkeling van intermediêre streke in nasionale fisiese beplanning".

Vir die doeleindes van hierdie studie word die nasionale fisiese ruimte verdeel in drie spesifieke sones, naamlik die *metropolitaanse streek* (kern), die intermediêre streek (oorgangsone), asook die periferie streek wat die grootste fisiese oppervlakte in 'n ontwikkelende land soos Suid-Afrika beslaan. Die intermediêre streek bestaan uit die 'oorgangsstreek' tussen die metropool en die periferie en word geïdentifiseer deur middel van homogene karaktereienskappe wat die intermediêre streek as spesifieke entiteit in fisiese beplanning laat figureer. In terme van geografiese eienskappe, het die intermediêre streek heelparty raakpunte met Friedmann (1966) se 'opwaartse oorgangstreek'. Die intermediêre streek word egter nie net deur morfologiese groeiprosesse geïdentifiseer nie, maar ook deur middel van migrasiepatrone, die hervestiging van ekonomiese aktiwiteite, streekontwikkelingsbeleid en die ruimtelike verspreiding van ekonomiese aktiwiteite.

In terme van streekbeplanning in Suid-Afrika, het die intermediêre streek heelwat aandag ontvang in terme van beplande desentralisasie van ekonomiese aktiwiteite. Sedert die laat 1950's het die Suid-Afrikaanse regering geen moeite gespaar in die aanwending en aansporing van 'n groeipool-strategie vir die doeleindes van streekontwikkeling nie. Die oorsprong hiervan word gevind in die destydse Eerste Minister, dr. H.F. Verwoerd se 'grensgebied'-ontwikkelingstrategie, wat gebaseer was op die stimulering van groeipunte aanliggend tot metropolitaanse streke en/of aanliggend aan die tuislande.

Hiérdié beleid ten opsigte van streekontwikkeling het verskeie veranderings ondergaan in die opvolgende dekades: die grensgebied-groeipunte is herdoop na 'dekonsentrasiepunte' (in die apartheidsfase), 'groeipole', 'groeisentrums', en 'desentralisasie punte' (in die sogenaamde 'grand apartheid'-fase), om maar enkele benamings uit te wys. Die beginsel wat egter steeds gegeld het ten opsigte van streekontwikkeling, uitgesonderd die polities-geïnspireerde

benadering, was die gebruik van spesifieke stedelike sentra as uitgangspunt vir gemeenskap- en streekontwikkeling. Nasionale, sowel as internasionale kritiek ten opsigte van die beginsel van 'aparte ontwikkeling' wat onder andere deur hierdie beleid tot uitvoering gebring is, het mettertyd aanleiding gegee tot 'n totaal-nuwe benadering ten opsigte van streekontwikkeling.

In plaas van die tradisionele groeipunt-benadering, is 'n uniforme benadering in 1991 geïmplementeer, bestaande uit 'n strategie wat potensieel ontwikkelingsvoordele aan alle stedelike sentra in die nasionale ruimte bied - metropolitaanse gebiede uitgesluit. Volgens hierdie strategie kan enige entrepreneur in elke moontlike ligging in die land, aansoek doen vir finansiële aansporingsmaatreëls van die sentrale owerheid vir die vestiging van nuwe industrieë in nie-metropolitaanse Suid-Afrika.

Die opinie word egter gelewer in die studie dat hierdie verandering in rigting sekere leemtes laat ten opsigte van die optimale benutting van nasionale ontwikkelingspotensiaal. Hierdie standpunt sal gemotiveer word deur middel van 'n diepgaande studie van die prosesse wat stads- en streekbeplanning rig en spesifieke voorstelle sal gemaak word ten opsigte van die ontwikkeling van die intermediêre streek in nasionale fisiese beplanning.

In Hoofstuk 2 van die studie word aandag gegee aan die identifisering en kwalifisering van die intermediêre streek op grond van verskeie teorieë en empiriese studies op nasionale sowel as internasionale vlak. Die identifisering van die intermediêre streek is bemoeilik deur 'n tekort aan inligting, aangesien geen spesifieke verwysing daarna in die literatuur bestaan nie. Daar word egter geargumenteer dat sekere belangrike prosesse 'saamgevat' kan word in 'n spesifieke ruimtelike gebied in die ekonomiese ruimte van 'n land. Uit die literatuur blyk dit dat verskeie aktiewe kragte wat morfologiese ontwikkeling beïnvloed, gesamentlik aangetref word in die intermediêre streek. Aangesien die literatuur nie hierdie streek aandui as bestaande uit spesifieke ontwikkelingspotensiaal as gevolg van bogenoemde karaktereienskappe nie, word 'n formele definisie van die intermediêre streek in terme van ekonomiese en ruimtelike ontwikkeling afgelei in hierdie hoofstuk.

In Hoofstuk 3 word die onderskeie teorieë en prosesse bespreek wat stedelike- en streekontwikkeling rig en aanleiding gee tot die manifestasie van die intermediêre streek. Ooreenstemmende migrasieprosesse en -patrone wat in ontwikkelde lande ondervind word, is in Suid-Afrika geïdentifiseer wat bewys lewer van veranderende denke ten opsigte van ontwikkeling en lewenskwaliteit in spesifieke sektore van die Suid-Afrikaanse samelewing. Hoofstuk 4 voorsien 'n oorsig van streekontwikkelingsbeleid in verskeie lande waardeur gepoog word om optimale ontwikkelingstatus te bereik.

Hoofstuk 5 is 'n historiese oorsig van die ontwikkeling van die Suid-Afrikaanse ruimtelike ekonomie sedert die voor-industriële fase, dit wil sê, vanaf ongeveer 1870. Hierdie afdeling voorsien die nodige agtergrond vir die bespreking rakende groeipool-strategieë wat in Suid-Afrika sedert die 1960's geïmplementeer is. In Hoofstuk 6 word die nuwe Streeknywerheid-ontwikkelingsplan wat in 1991 die lig gesien het, geëvalueer in terme van teoretiese agtergrond en praktiese implementering. In die finale hoofstuk, word 'n intermediêre streek afgebaken deur middel van spesifieke empiriese data waarna deurentyd in hierdie studie verwys word. Laastens word 'n intermediêre streek-strategie voorgestel wat gebaseer is op verskeie streekontwikkelingsprosesse en -patrone, sowel as verskeie beplannings-instrumente en -strategieë.

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"For the LORD is great,
and greatly to be praised;" (Ps. 96:4).

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CHAPTER 1

INTRODUCTION

For the purpose of this study, the national physical space is classified according to three specific zones or regions, i.e. the *metropolitan region* (core), the *intermediate region* (transitional area), and the *peripheral region* (outer periphery) which encompasses the largest area in a developing country such as South Africa. The intermediate region constitutes the transitional area between the metropolis and the periphery, and is identified by means of homogeneous characteristics rendering the intermediate region a specific entity in physical planning. In terms of geographic characteristics, the intermediate region has much in common with Friedmann's (1966) upward-transitional region. However, the intermediate region is identified not only by means of morphological growth processes, but also from migration patterns, the relocation of economic activities, regional development policies, and the spatial distribution of economic activities.

In terms of regional planning in South Africa, the intermediate region has received much attention in terms of the decentralisation of economic activities. Since the late 1950's, the South African government has gone a long way in promoting the growth centre-strategy for the purposes of regional development. It originated from the late dr. Verwoerd's strategy on 'border region development', which implicated growth centres adjacent to the metropolitan region's border, and/or adjacent to Bantustans.

This policy on regional development has however been improvised over the ensuing decades; the border development points changing gradually into 'industrial development points', 'deconcentration points' (the so-called 'apartheid' phase), 'growth poles', 'growth centres', and 'decentralisation points' (the so-called 'grand apartheid' phase), to name but a few. The essence of regional development though, apart from its politically biased colour, is the principle of utilising specific urban centres as point of departure for the purpose of population upliftment and regional development. Wide ranging criticism however, of these policies

propagating 'separate development', both local and international, gave way to a totally new point of departure regarding regional development.

Instead of the traditional growth centre approach, a uniform approach was introduced in 1991, consisting of a strategy which potentially provides advantages to all urban centres in the country - metropolitan areas excluded. According to this strategy, any entrepreneur, in every possible location in the country, could apply for certain financial incentives from the government, with the establishment or relocation of industry to non-metropolitan South Africa. The main reason for the implementation of the uniform approach, was criticism *against* the growth centre approach in general, as well as its specific manifestation in South Africa.

In this study the opinion is however expressed that this change of direction left certain gaps in terms of maximum utilisation of national development potential. This statement is motivated by means of in-depth study into the processes guiding urban and regional development, and specific proposals are advocated regarding the development of the intermediate region in national physical planning.

In order to qualify the intermediate region concept and -strategy, Chapter 2 deals with the identification of an intermediate region from various theories and empirical studies done nationally and internationally. The identification of an intermediate region was somewhat hampered because of a lack of information, as no specific references exist as such. It is argued that some important development processes could all be 'tied' together in a certain spatial area in the economic space of a country. It seems that several forces active in morphological development coincided in this 'intermediate region', but no literature explicitly indicated this specific spatial area as containing significant development potential because of the above-mentioned characteristics. A formal definition of the intermediate region in terms of economic and spatial development is reached in this chapter.

The following chapter takes a look at the various theories and processes dictating urban and regional development, resulting in the manifestation of the intermediate region. Similar migration processes and patterns found in developed countries are identified in the South African spatial area, providing evidence of changing 'thoughts' on development and lifestyle in specific sectors of society. Chapter 4 provides an overview of

development policies implemented in various countries in an effort to attain optimal development status.

Chapter 5 firstly provides a survey on the development of the South African spatial economy since the pre-industrial period, i.e. pre-1870. This section also provides necessary historical background to the discussion on the above-mentioned growth centre-strategies implemented in South Africa since the 1960's. Consequently, the new Regional Industrial Development Programme introduced in 1991 is reviewed in terms of its theoretical inception and practical application in Chapter 6. In the final chapter, an intermediate region is delineated by means of specific empirical data which is referred to throughout this study. Finally, an intermediate region-strategy is proposed, based on various regional development processes and patterns, as well as various planning instruments and policies.

CHAPTER 2

THE INTERMEDIATE REGION CONCEPT

2.1 Introduction

For the purpose of this study on intermediate regions it is deemed necessary to look at the different concepts and models of regions used in the physical planning process. Attention in this chapter will firstly be focused on the various concepts regarding the regional concept as such, and well as its physical and economic manifestation. For better comprehension of the intermediate region concept, the evolutionary development of the concrete and abstract regional concepts will also be reviewed. There will primarily be focused on the locational theory which constitutes the macro planning aspects on the location of economic activities.

With the various regional concepts as background, attention will consequently be turned to the identification of the intermediate region, in its spatial and economic context.

2.2 The regional concept

Numerous concepts relating to the identification or classification of a region have been developed over time - most being vague with little insight into the actual concept of the region. It is known that the regional level lies somewhere between the national and urban level; that to some a region is only a method of classification, to others a real entity that can positively be identified. Of the following theories, only the aspects relevant to this study will be discussed shortly. These basic theories and concepts will in turn give structure to a working definition of the intermediate region and its basic characteristics in the second part of this chapter.

2.2.1 Objective and subjective views

Regional planning consists of two elements namely the planning action and the spatial area (region) in which it takes place. The necessity of regional planning originates from a country's need to determine it's development potential as well as to eliminate unwanted development. As a country is not homogeneous in every way, it is necessary for a country to be divided into smaller areas according to similar characteristics and problems (Glasson, 1978:23; Geyer, 1992:78).

Two divergent views as to the concept of the region can be found namely an *objective* and a *subjective* view. According to the subjective view a region can be seen as a means to an end, a model, to assist in the study of the world. It is a method of classification, a device to segregate areal features, with the only natural region being the surface of the earth (Glasson, 1978:36). The objective view sees the region as an end in itself, a real entity that can be identified and mapped.

According to Hartshorne (1959:31), regions are seen as descriptive tools, defined according to particular criteria, for a particular purpose. In this context they perform a particularly useful function, avoiding the extremes of description. Consequently, attempts to see the region as a unitary concrete object have passed into history. Glasson (1978:36) concludes that although the subjective view is now generally accepted, there are important exceptions such as economic regions that exist objectively.

For planning purposes, distinction is usually made between formal, functional and planning regions.

2.2.2 Formal regions

The concept of the region as a method of classification has evolved through two distinct phases reflecting the economic advance from simple agrarian economy to a complex industrial system. The first phase saw the

formal region while the second phase saw the development of the functional region (Glasson, 1978:37).

The Penguin Dictionary of Human Geography describes a formal region (also called homogeneous or structural region) as a "... region in which internal variation of specified criteria is appreciably less than the variation between the region and other areas" (Goodall, 1987:487). A formal region thus is a geographical area which is uniform or homogeneous in terms of selected criteria (Glasson, 1983:37; Hagget, 1983:262; Knowles & Wareing, 1983:28).

According to Glasson (1978:38), early definitions of formal regions were predominantly physical, linked with the concept of geographical determinism. It seems that interest in this region stemmed from the fact that physical factors are more stable than economic factors and hence much easier to study. Darwin's Theory of Evolution also influenced this study of the physical environment - following Darwin's concept of natural selection - with the result that geographers believed that the survival of man depended on his adaptation of the environment (Hagget, 1983:237). Hence, it was thought that the human environment could best be understood by isolating and studying the physical environment. Later, there was a shift to other criteria such as economic, social and political criteria.

The delineation of formal regions involves the grouping together of local units which have similar characteristics according to certain clearly defined criteria, but which differ considerably from other units outside the region according to the chosen criteria. If the criteria is simple and static, such as 'land over 500 feet', identification is relatively simple. Using a variety of dynamic and constantly changing criteria, such as the economic and demographic characteristics of a region, the task becomes more difficult. According to Glasson (1978:41) several techniques have been used to delineate formal regions such as the *weighted index number method* and the *factor analysis method.*

2.2.3 Functional regions

The identification of the formal region concept resulted in the development of the functional region. According to Turnock (1967:382), the occupation of the earth's surface contributes to a functional interaction which can be described as the sum of the activities of persons focused in establishments, localised in places with structures or facilities made by man, interconnected by communication, transportation, and organisation built or devised by man. This interaction forms the basis of certain theories which could help to identify functional regions. In the following section, only aspects relevant to the study of these theories will be discussed.

2.2.3.1 Central places

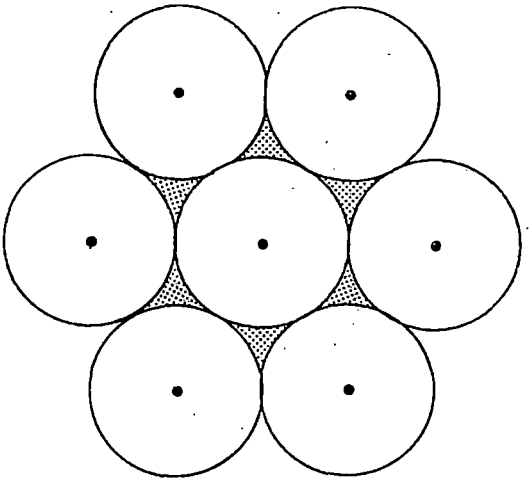
Walter Christaller (1966:14-83) developed a theory with regard to the origin, location, size, and functions of central places. A central place in this context is described as an urban settlement node whose primary function is to provide the population of the surrounding area with goods and services. Using concepts of maximum distance a consumer will travel to purchase goods or services, as well as a minimum level of business for an establishment to be economically viable, Christaller demonstrated that groups of establishments or orders of functions with similar characteristics could be identified.

Each order of functions is associated with a central place and the aim is to locate that place in order to minimise distance travelled by consumers while maximising the profitability of each establishment. This *centrality* requirement - assuming a uniform distribution of population and purchasing power, and transport costs varying linearly with distance - produces a triangular arrangement of central places, each with a hexagonal market area. *Centrality* in this context thus refers to the "... relative importance of a place with regard to the region surrounding it, or to the degree to which the town exercises central functions" (Christaller, 1966:18).

From Figure 2.1*a* it is evident that these hexagons are the most efficient shape of market area to serve an area completely. The underlying logic of this spatial pattern is that settlements with large populations will be able to support more central place functions and more establishments of each function than settlements with small populations. A hierarchy of central places evolves from settlements with the smallest populations and lowest-order establishments, which form the densest network, to those in the next order forming a less dense network, and so on. Christaller identified seven levels in all. At each level every central place contains all the functions of the lower levels. There is only one centre of the highest order and the number of centres below it increases in a ratio of 3 - i.e. the k = 3 hierarchy (the sequence therefore is 1, 2, 6, 18, 54, 162 etc.).

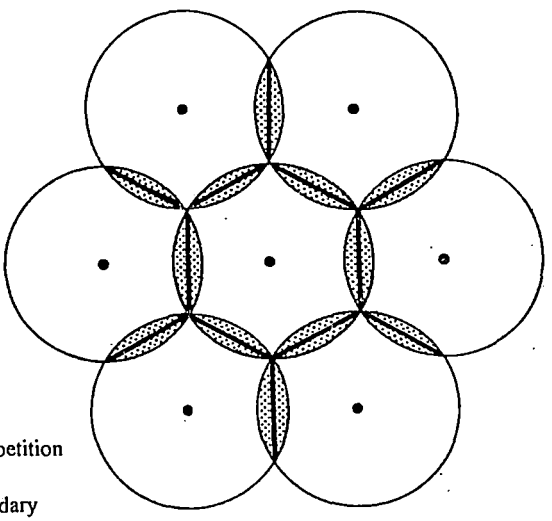
Accordingly the lower order centres and their supplementary regions are contained within those of large centres according to this rule of threes[1]. The market area of the higher order-place thus includes a third of the market area of each of the six neighbouring lower-order places (see Figure 2.1*b*). This arrangement minimises the aggregate distance travelled by the consumers is revered to as the marketing principle, which according to Christaller is a "...spatial" entity (Christaller, 1966:77).

1 Christaller also identified the k=4 and k=7 hierarchies in his central place study, referring to the transportation and administrative principles respectively. Although the k = 7 hierarchy is not relevant to this study because of its solely administrative function, the k =4 hierarchy can theoretically be associated with the 'development corridor' concept as noted in Friedmann's description of upward-transitional areas (section 2.3) as well as the 'development axis' as a policy instrument. According to this transportation principle "... the distribution of central places is most favourable when as many important places as possible lie on one traffic route between two important towns, the route being established as straight and as cheaply as possible" (Berry, 1976:233). The spatial manifestation of this phenomenon can therefore be implicated as a 'sub region' connecting regions by means of certain communication routes. However, for the purpose of this section concerning the regional concept, only the market principle of the k = 3 hierarchy is deemed relevant.



Unserved customers

(a)



Area of competition

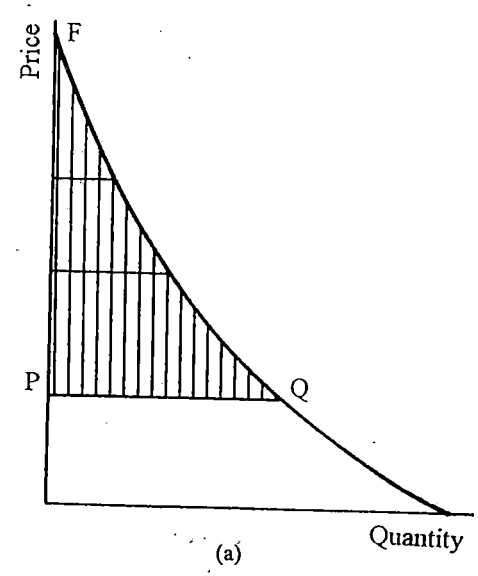
Market boundary

(b)

Figure 2.1 Central places and areas of competition

Christaller's theory was refined by another German, namely August Lösch, who presented an important modification of Christaller's model (Lösch, 1954:103-137). Like Christaller, he again used hexagonal service areas, but allowed various hexagonal systems to coexist. Lösch hereby sought to explain the size and shape of market areas within which a location would command the largest revenue. Lösch simplified a region to a flat uniform plain, held supply constant and assumed that demand for a product decreased with an increase in price. If this price increase was the result of an increase in transport costs, then demand would decrease with distance from a production centre. Figure 2.2*a* shows that demand decreases as price increases, thus forming a demand curve. Assuming that the price increase is the result of transport costs, by rotating the demand curve around production point P, the shape of the market area is seen to be circular, and the size of the market area is the volume of the cone. As competition increases as other producers develop on the plain, the market areas become hexagonal to avoid overlap and the exclusion of some areas. They also become smaller as large profits are reduced by competition. Each product will have a different market area depending upon the relative importance of transport costs in its price, and different patterns of market areas will emerge. If these patterns are rotated around a common production centre, some of these patterns will coincide (see Figure 2.2*b*), forming points of maximum demand which should develop as concentrations of industry. It seems therefore that Christaller's theory gives an explanation of the service element in spatial structure, whereas Lösch explained the spatial distribution of market-oriented manufacturing industry (Glasson, 1978:157).

Richardson (1973:172) identified certain shortages in the above mentioned central place theories. First of all he noted that the uniform plain differed too much from the reality. In explaining the evolution of the space economy in a developed country, the starting point, according to Richardson, would not be from the homogeneous plain but from the spatial structure of an economy immediately preceding the age of industrialisation.



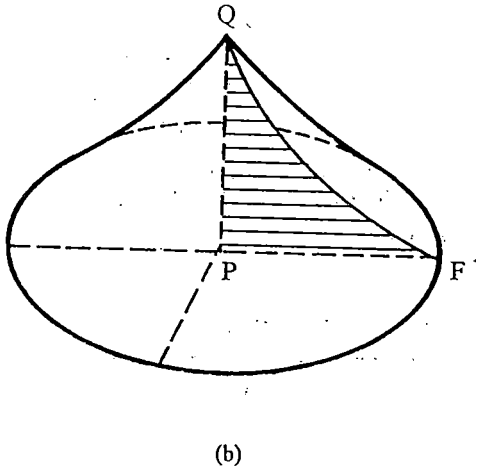


Figure 2.2 Derivation of the demand cone and the market area from the demand curve for the product as a function of distance (Lösch: 1954:106-110).

He explains that such an economy already contains a substantial number of nodal points which he refers to as *locational constants*. He also stated that the development of *places* which do not conform to the market principle has an important role to play in the system of central places in a spatial economy: "... they provide a few reference points in the space economy that mould, perhaps even predetermine, the economy's spatial structure". These *locational constants* may be earlier established cities or natural resource concentrations. Richardson (1973:173) identified three main categories of locational constants, namely:

(i) an immobile natural resource;

(ii) a long established city;

(iii) particular sites that have special advantages due to the heterogeneity of land or being potentially nodal locations from the point of view of future transportation developments, and that are developed earlier than other sites.

Thus, the development of a system of central places can take place according to the Löschian framework as well as Richardson's locational constants, resulting in a system of central places which corresponds much more with the reality (Geyer, 1992:54).

2.2.4 Economic space

Whilst the theories of Christaller and Lösch tried to explain location of central places in the geographical space (location theory), Perroux developed his theory of economic spaces as part of the growth theory in regional planning. Perroux wanted to move away from the geographical isolation of regions which gives an unrealistic account of the economic forces and patterns present in the region. According to this theory, space can be divided into *geonomic* and *economic* space - geonomic space referring to concrete (physical) aspects of space, and economic space referring to the abstract space environment. Perroux (1950:94) defined economic spaces by the economic relations which exist between economic elements. These economic spaces reduce to three namely: *(i)* economic

space as *defined by a plan*; *(ii)* economic space as a *field of forces*; and *(iii)* economic space as a *homogeneous aggregate*.

In further describing these concepts, Perroux (1950:101) noted that a national space economy is actually a domain covered by *economic plans*, whether proposed by individuals or government. Economic space being a *field of forces*, results in the nation being presented as a "... place of passage for these forces, or as a set of centres or poles from which emanate, or to which go, certain of these forces" (Perroux, 1950:102). Economic space as a *homogeneous aggregate* allows the measurement of the effect of a 'national market' or 'national level of prices'.

Finally, Perroux concluded that national space is an inextricably woven network of national and international markets according to categories of products and services, of prices fixed by data given by national space, and of prices determined by elements external to the national space and to spaces of the economic plans of the government and its nationals (Perroux, 1950:102).

2.2.5 Economic space applied in geographical space

Absent, however, from the above mentioned theory of Perroux, was the implementation of this economic space on geographical space.

Boudeville (1966:1) recognised the importance of Perroux's contribution in this field by stating that "... Implicit in the study of regional planning is the concept of economic space". Boudeville noted that space was at first conceived as geographical, while the concept of economic space appeared as a less emotive and more operational notion. Accordingly economic and geographic conceptions of space are in contradistinction to one another, with the geographer placing man in a so-called natural environment and the economist placing "... environment in the tool-box of human activities" (Boudeville, 1966:2). Boudeville also made an important distinction, namely that geographical space is three-dimensional with economic space being multi-dimensional.

Boudeville (1966:2-3) described space in terms of *homogeneity*, *polarisation* or in terms of *final objective*. He described homogeneous space as intuitive because it is descriptive, while that of polarisation is associated with the relationships constructed by the flows of inputs and outputs characterising human activity. The concept of *programming* space is created by the goals of man.

Boudeville also distinguished between nodal and polarised regions - polarised regions refers to a number of nodal points of various hierarchies with a certain interaction between these nodal points. A nodal region does not necessarily refer to a number of nodal points. This concept of a polarised region resulted from Boudeville's study on the structure of cities, whereby every major city has a radius of satellite towns which in turn possess satellite villages (Boudeville, 1966:10). Accordingly Boudeville defined this polarised region "... as the set of neighbouring towns exchanging more with the regional metropolis than with other cities of the same order in the nation" (Boudeville, 1966:10).

A polarised region is by no means a static entity, as its boundaries change frequently because of disproportionate development in the various towns. The development of infrastructure around towns, population growth in different towns, and the effect of structural development and differentiation in the towns contribute to the changing boundaries of polarised regions (Boudeville, 1966:16). Following his identification of the polarised region, Boudeville also described his view on *programming space* and *programming regions*. According to Boudeville (1966:16), programming space is geographically discontinuous, but economically functional, while programming regions are only geographically continuous. Criteria in identifying a programming region include maximum efficiency in regional planning being linked with maximum interconnection of the nodal points in the polarised region (Boudeville, 1966:16-17).

Finally, Boudeville (1966:74) noted that "... towns form a hierarchic polarized system through which economic growth will materialize". This leads to the conclusion that a correlation can be found between Perroux's growth poles in an economic space and central places (Christaller & Lösch) in geographical space (Geyer, 1992:73).

Thus, Christaller, Lösch and Richardson introduced and described central places and their complementary regions to the geographical space, while

Perroux identified certain regions with growth poles in an economic environment. In an effort to fill the gap between geographical and economic space, Boudeville (1966) identified the polarised region where Perroux's growth poles referred to urban centres interacting with each other in varying intensity, volume and form. With this theory, Boudeville identified the location of growth poles in geographical space as well as the future locations of economic activity.

Additional to these theories, and most important in this study is the demarcation of regions for physical planning. Some definite boundaries to regions in geographical space were derived in the central place studies, but it was Hans Weighmann's writings on locational theory (1931) that gave physical structure to all economic processes. As Isard puts it, "... Weighmann attempts to formulate the foundations for *realistic* economic theory which embraces the spatial structure of economic processes, the spatial extent of bonds and markets, and the spatial interrelations of all economic quantities" (Isard, 1956:37). Since Weighmann tried to describe the space-economy in its realistic setting, he introduced the time element and assigned time co-ordinates to the various markets and processes. In his quest Weighmann formulated the concept of relative maximum, which states that an increasing amount of physical space is to be overcome in the movement of an economic object. The period necessary for such movement increases until it reaches a maximum - a maximum in the sense that, given more time, a further spatial movement would be improbable, because of the overpowering force of the countless obstacles. Where the period reaches its maximum in the physical space, competition ends and the competition field becomes restricted. Stated differently, the force of competition does not have the power to span a distance greater than the radius of its field, irrespective of the time factor for all practical purposes. This principle contains the definition of basic form which is depicted as that unit of space of the relatively greatest time-weight, hence, of the relatively greatest stability and performance (Isard, 1956:37-39).

Thus far, a central place was defined and the complementary region identified, whether it be in the geographical or economic space. Locational constants were introduced to this model, thus forming the complete picture of a number of central places with its surrounding hinterlands in a combination of concrete and abstract space (polarised

region). These central places developing in different stages with various rates of development, constituting a certain hierarchy according to the relevant sectoral differentiation.

These theories form the basis for the identification of certain specific regions for the purposes of regional planning. With these theories as background, the functional region can be identified.

Goodall (1987:324) defines a functional region (also called a nodal or polarised region) as an area under the economic and social domination of an urban centre. These nodal regions are delimited on the basis of spatial interaction and emphasise functional interdependence between the different locations in the area. According to Goodall the boundaries of functional regions are not always clear-cut, and that the regions may overlap and interpenetrate. Glasson (1978:38) indicates that a functional region is also a geographical area that displays a certain functional coherence, an interdependence of parts, when defined on the basis of certain criteria. These functional relationships are usually revealed in the form of flows, using socio-economic criteria such as journey-to-work trips or shopping trips linking the employment or shopping centre with subsidiary centres. The topical idea of the city region that links a central town or city with its rural hinterland, has been put forward as much for the purpose of creating regions as for simply describing them.

The delineation of functional regions involves the grouping together of units displaying a considerable degree of interdependence, but is more concerned with flows linked to a central point rather than the uniformity of the region as a whole. Approaches to functional regionalisation include the *flow analysis* and *gravitational analysis* methods (Glasson, 1978:43-44).

2.3 Planning regions

The third type of regional classification is a planning region, which, according to Glasson (1978:39) and Richardson (1978:19) can consist of formal or functional regions or a combination of both (see Figure 2.3). Friedmann (1966:41) agrees, that for planning purposes, "... both types of

regions are relevant". As planning regions are "... an interpretation" of formal and functional regions (Geyer *et al*, 1988:311), or they provide a "...useful framework" for the classification of planning regions (Glasson, 1978:39), a clear definition of planning regions seems relevant for the purposes of this study.

A wide range of definitions exists for a planning region. Goodall (1987:359) refers to it as "... a legally bounded space delimited on an *ad hoc* basis for the purposes of government decision making". Boudeville (1966:16) defines planning regions (or programming regions) as areas displaying some "... coherence or unity of economic decisions", while Keeble (1964:41) sees a planning region as an area which is "... large and self contained enough to enable substantial changes in the distribution of population and employment to take place within its boundaries, yet which is small enough for its planning problems to be comprehended as a whole".

Richardson (1978*b*:23) contributes to these descriptions of the planning region by stating that it is "... most easily conceived as an area over which economic decisions and policy instruments apply, and this is its sole unifying force". According to Richardson the planning region is more characteristic of planned economies, where the country is divided into several parts to fulfil national economic objectives and also to provide the areal base for regional economic administration. Planning regions can also be referred to as development regions (Friedmann, 1966:41).

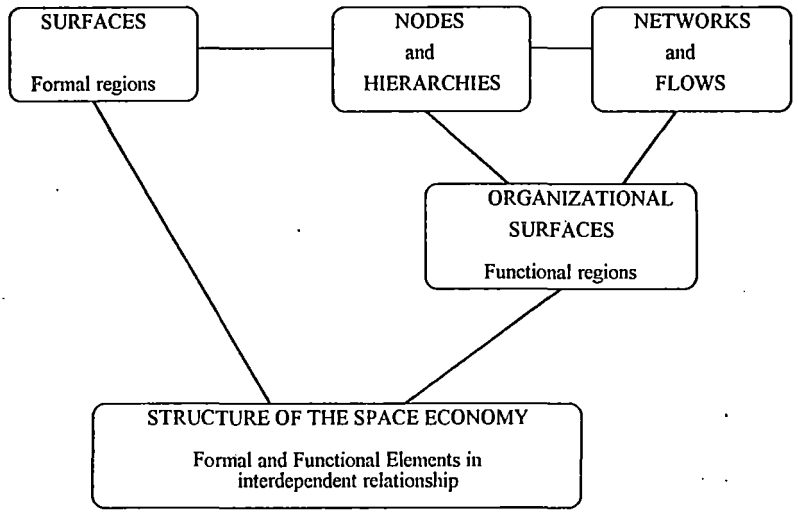


Figure 2.3 Structure of the space economy (Simplified after Board et al, 1970)

These development regions can be divided into two categories namely regions that refer to the region's state of development relative to that of others, and regions that refer to their attributes as development regions (Geyer *et al*, 1988:314). The former description will be used in this study in reference to the intermediate region.

The classification of areas according to its development status originates from Friedmann's classification of development regions. Friedmann (1966:41-44) identified the following regions:

(i) *Core regions* are characterised by their high potential for economic growth. Structurally, they consist of one or more clustered cities and encompassing an area that may be delimited by the extent of daily commuting or by the distribution of agricultural activities that furnish sustenance to central urban populations. Their problems include: how to sustain growth, how to absorb new-comers into the local labour force and provide for their needs, how to organise a liveable physical environment that is also efficient, and how to manage the increasingly complex affairs of a metropolitan society's hunger for space.

(ii) *Upward-transitional areas* include all settled regions whose natural endowments and location relative to the core suggest the possibility of a greatly intensified use of resources. These are also areas of immigration, and instead of being focused upon a single dominant centre, they may encompass several cities. Economic development in these regions usually occurs as a response to a rising commercial demand at the core. Their problems are consequently associated with rapid economic growth: agricultural adjustment to more capital-intensive farming, improvement in agricultural marketing organisation, improvements in farm to market and inter-city transportation, urbanisation, and industrial development. These areas are typically less concentrated and less urbanised than core regions. *Development corridors* connecting two or more core regions represent a special type of upward transitional area.

(iii) *Resource frontier regions* are zones of new settlement in which virgin territory is occupied and made productive. Contiguous and non-contiguous frontiers may be distinguished. A movement of population into new areas occurs in the former, usually along a broad front adjacent to already settled regions. Supply lines will be relatively short, and the new areas will be readily incorporated into the existing national economic structure. The non-contiguous resource frontier, on the other hand, is usually associated with large-scale investments in a mineral or forest development scheme and involves substantial urbanisation. These regions tend to occur as isolated pockets of development at a considerable distance from metropolitan cores, but may eventually become core regions themselves.

Problems encountered in the settlement of a contiguous agricultural frontier include the building of transport and communication lines, the founding of marketing centres, the construction of irrigation works, and the extension of basic administrative and social services to new communities. Problems in the non-contiguous resource frontier usually arise from the need to create a new locational matrix on the settlement frontier that is competitive with already established centres in attracting and holding a suitable labour force, and the need to integrate the new regional complex into the national space economy.

(iv) *Downward-transitional areas* are old and established regions whose essentially rural economies are stagnant or in decline, and whose peculiar resource combinations suggest as optimal a less intensive development than in the past. Occasionally, a downward-transitional area may also be a city whose economy is declining because of its ageing industrial structure or the loss of its primary resource base. Problems of such cities are typically associated with general obsolescence and with overpopulation, relative to existing possibilities for development. These problems also include the adaptation to the new external conditions of the transition to an economic order in which they can become re-integrated into the national space economy.

(v) *Special problem regions* demand a specialised development approach because of the peculiarity of their resources or location. These areas often include regions along national borders, water resource development regions, regions suited to the intensive development of tourism and fisheries, and military zones.

Friedmann (1966:43) visualises these development regions as forming an "... abstract pattern in which a core area occupies the center of a spatial system. This core would be surrounded by a band of contiguous areas whose economies are generally upward-transitional, and these, in turn, would be enclosed by an extensive zone in a state of downward-transition. At certain points along the rim of this zone would be the new settlement of resource frontier regions. Special problem areas would be interspersed at random throughout the system".

In using Friedmann's classification in his study of the South African space economy, Browett (1976:3) describes these development regions as areas of differential integration with the cores and with themselves, related to their potential for development in terms of natural resources, human resources and locational factors. According to this definition, the designation of development regions highlights the inter-relationships between regions and the space economy. Browett also shows in his delimitation of the national space economy that the areas of peripheral space (planning regions) "... constitute a combination of formal and functional regional characteristics (Browett, 1976:5). The Good Hope Plan (RSA, 1981*a*:70) divided South Africa into seven development regions. In this document a development region is described as an area that should consist of several geographical areas with similar development problems and supplementary development resources. Also, these regions should be dependent on the same industrial node and/or growth point in so far as industrial development is concerned.

From the above mentioned definitions it is clear that planning regions are geographical regions (often a combination of formal and functional regions) that also considers administrative boundaries in the designing and implementation of development plans on a regional level.

Glasson (1978,40) believes the use of qualitative intuitive approaches for the delineation of regions tends to lead to very "misty" regional boundaries. Geyer *et al* (1988:309) agrees with this view in stating that boundaries based on intuition rather than a quantitative approach "...tend to become controversial when they are analysed thoroughly". This intuitive or qualitative approach also leads to the delineation of regions which differ substantially from one another although based on similar criteria (Geyer *et al*, 1988:310). A shift towards a combination of quantitative and qualitative approaches seem therefore a more desirable goal in modern regional planning with it's improved availability of information.

An important distinction to be made in the identification of planning regions is between the quantitative and qualitative classification of these regions. Geyer *et al* (1988:315) refers to Friedmann's classification as "... an interpretative topology based on qualitative observations", while statistically derived development regions may be called a quantitative

classification. Browett (1976:5) confirms this statement in declaring that not even Friedmann "... explicitly tested his delimitation of the periphery ... within his empirical case study of Venezuela although he, at least, did establish the peculiar characteristics of each region".

In the delineation of planning regions, the most important issue seems to be as to what criteria should be used. This process of delineation may take several forms depending on the purpose of regionalisation, the criteria to be used and the availability of data. Traditionally, the most common criteria used for development purposes seems to be (Geyer *et al*, 1988:312):

- physiographic features
- economic activities
- urban nodes and their spheres of influence
- administrative boundaries

The first criterion can be regarded as to be fundamental in the determination of regional differences for development purposes, with the latter three being of secondary 'form-giving' nature. According to Weighmann (Isard, 1956:37-40), physiographic space in itself implies immobility, while primary, secondary, tertiary and quaternary economic activities - the second criterion - lead to the development of urban nodes with their market areas, and consequently to the need for administrative boundaries.

2.4 Defining intermediate regions

With the discussion on the regional concept, and especially planning regions, as background, attention is now focused on defining the intermediate region in terms of these concepts. Friedmann (1966:53) noted that an effective regional policy must deal as "... a system with the separate developments of core regions, upward- and downward-transitional areas, resource frontiers, and special problem areas". Resource frontiers and problem areas being special cases and therefore not

relevant to this study, the national space of a country is divided into *core regions*, *intermediate regions* and *peripheral regions*. Core regions being metropolitan areas with intermediate and peripheral regions referring to the inner and outer peripheries respectively, abutting the metropolitan regions in a national spatial context (see Figure 2.4).

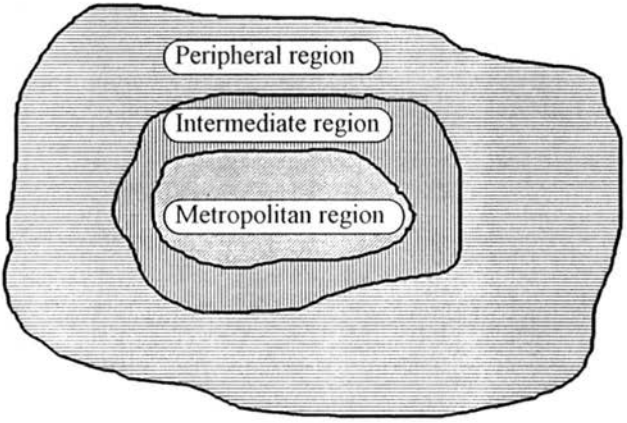


Figure 2.4 Schematic structure of space economy

Friedmann (1966:30) noted that economic activities may be arranged in space through: (a) a system of cities, arranged in a partial hierarchy, according to the functions performed by each city and, (b) the corresponding areas of influence, or urban fields, that surround each of the urban centres in the system. It is therefore clear that a distinctive region surrounding metropolitan areas, manifests itself in the space economy.

In their consideration of the South African space economy, Board *et al* (1970:376) referred to this approach - regarding space economy - as an integrated approach which is achieved by relating surfaces of socio-

economic character, the status of nodes, and flows and networks of traffic and communications. He stated further that "... principal components analysis isolates intensity of economic activity and welfare as main dimensions in the socio-economic landscape, whose peaks coincide with major poles of economic activity, leaders of the urban hierarchy and the foci of movement and interaction". Therefore, *core regions, intermediate regions*, and *peripheral regions* in the context of this study, form part of the space economy of a country.

Board *et al* (1970:367-368) describe these regions which are delimited in the space economy as "... *surfaces* of differing economic character and strength representative of the underlying formal regional landscape; the status, character and economic levels of *nodes*; the flows and *networks* of telephone calls, of road, rail and air traffic and of labour, all three elements together yielding a spatial structure that is both formal and functional in character".

Several different descriptions have been used indirectly to describe the intermediate region as an area in physical space. Friedmann (1966:41) called this particular planning region the "upward-transitional area"; Browett (1976:5) described these areas as "inner and intermediate regions", and Fair (1982:57) identified these areas as the "inner periphery" in the context of the South African space economy.

The intermediate region ("upward transitional area") is described by Friedmann (1966:41-42) as probably consisting of several cities or towns surrounding a core (metropolitan area). The distance of these cities from the core is of such nature and range that economic development of these regions will occur as a response to rising commercial demand at the core. Since their economies show a strong mixture of forestry, agricultural, and cattle-raising activities, these areas are typically less concentrated and less urbanised than core regions. Emerging from their empirically-derived South African spatial structure (Board *et al*, 1970:367-368), inner, intermediate and outer peripheral regions are distinguished on the basis of varying levels of integration with the core regions, levels of economic development, and potentialities for future economic development. According to this classification, cores and peripheries only have meaning in terms of the degree of interaction between them, therefore disclosing which elements of the space economy are related and the degree to which

this varies from region to region. Fair (1982:53) concludes that the inner and intermediate regions delimited by Board *et al*, show similar characteristics to Friedmann's *upward transitional region.*

In using Friedmann's development regions in the South African space economy, Browett (1976:5) concludes that "... peripheral areas with the urban centres, comprise no more than a conceptual model which aims at a qualitative synoptic view of changing spatial relationships between cores and peripheral areas. This approach was adopted because delimitation of the peripheral areas on the basis of exact quantitative data is an impossible task".

According to Fair (1982:54-58) a sharp contrast is distinguished between the outer and inner periphery as to the spread effects from the core. This can clearly be seen from the Gross Geographic Product (GGP) presented by each of these regions. While the core regions produced 66% of the South African GGP in 1975, the inner periphery produced 31% and the outer periphery only 3%.

In his assessment of the South African development area, Coetzee (1989:339) noted that the nine officially identified development regions all contained at least two of the above-mentioned planning regions (core, intermediate and peripheral regions). He observed that differences between and within these nine development regions depend on the presence and relative sizes of the core, intermediate and peripheral regions in each planning region. Regions containing a large share of the peripheral region are worse off than regions containing little or none, while the presence of a core region raises a development region's average income, output and employment levels. Coetzee (1989:336-337) also illustrated these interregional economic imbalances in terms of GGP, showing that 62% was produced in the core (metropolitan regions), 33% in the inner periphery (non-metropolitan areas) and only 5% in the outer periphery (rural areas mostly consisting of independent and self-governing national states) in 1986. Coetzee went further in identifying these planning regions by calculating the per capita output. He concluded that the particular distribution of economic activities and population resulted in a relatively high average per capita output in the core and inner periphery, namely R3 600 and R2 240 respectively in 1986. The per capita output of the outer periphery on the other hand, amounted to only R214 during the same year.

Using Gross Geographic Product contributions in the South African space economy, Hanekom (1982:18-20) identified (according to Friedmann's classification) core regions, contiguous upward transitional and non-contiguous upward transitional regions, downward transitional regions and resource frontiers (see Figure 2.5). From Figure 2.5 it is evident that the contiguous upward transitional regions' contribution to the GGP are generally in a higher category than its non-contiguous stalemates. The issue therefore questioned in this study regarding Friedmann's classification is whether these two regions (contiguous and non-contiguous upward transitional regions) could be classified as one.

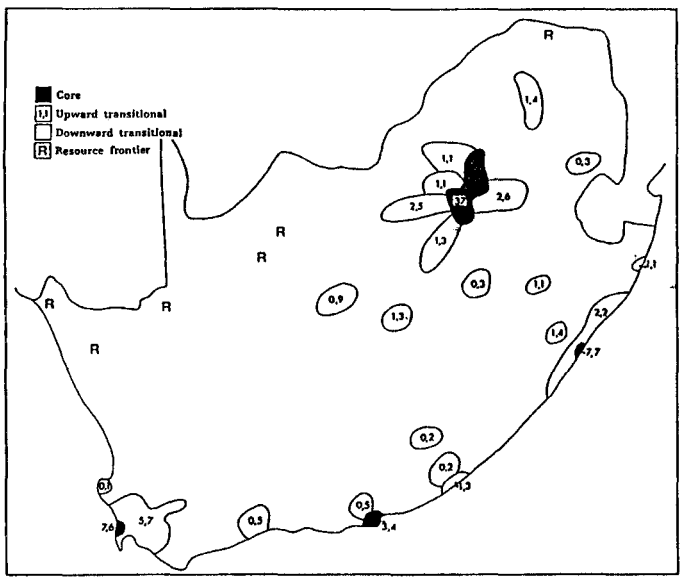


Figure 2.5 Development regions according to Friedmann's classification in South Africa (Hanekom, 1982:19).

This statement could be argued further. The core, intermediate and peripheral regions also show definite characteristics regarding population movement or migrational patterns. Friedmann (1966:41) noted that upward transitional areas (intermediate regions) are "...areas of net inmigration". Fair (1982:61), Coetzee (1986:387) and Coetzee (1989:336) indicated that each of these three planning regions contained roughly a third of the total population between 1970 and 1985. Apart from these statistics, a high rate of migration from mostly peripheral regions to the core regions up to the year 2000 seems evident. In a more detailed study, Geyer (1990:386) found on one hand the Blacks concentrating in the larger metropolitan areas (core regions), while on the other hand, the shares of Whites and Coloureds are increasing relatively in the "... core fringe zones and intermediate city regions". According to Geyer the former mainstream migration pattern suggests a continuation of the urbanisation process, while the latter migration pattern suggests early signs of the process of polarisation reversal in South Africa (see also section 3.2.3.1).

Tucker (1976:440) and Richter (1985:247-248) indicated three distinct regions regarding population growth in the United States (1960 - 1980), namely the metropolitan regions, adjacent non-metropolitan regions, and non-metropolitan regions. These regions were found to have distinct population and migrational characteristics and different stages of economic development in the country. Similarly, Zelinsky (1978:37) identified two primary concentric rings surrounding the metropolitan regions in Pennsylvania (1960 - 1970), namely an inner zone "... immediately surrounding the Urbanized Area", and an outer zone of "... presumably greater rurality". In this period, population growth had been most substantial in the former zone, while depopulation prevailed in the latter zone. Zelinsky concluded that this inner zone has grown not only in terms of population size, but also in extent, increasing from 25 miles in 1940 to 35 miles in 1960. Wardwell (1977:159) also 'identified' the intermediate region in the United States by noting that 63% of the inmigration process to non-metropolitan counties (1970 - 1975), takes place in those non-metropolitan counties that are adjacent to metropolitan counties. Gordon (1979:282) noted that the annual population growth in the 1970's (United States) was the greatest in those non-metropolitan counties which are most linked to the metropolitan region. The distinction between metropolitan

regions, adjacent non-metropolitan regions, and non-metropolitan regions seems to be well founded by empirical studies in the literature.

In an effort to delimit *development management regions* in South Africa, Geyer *et al* (1988:316-334) identified a set of development regions illustrating the core, intermediary, and peripheral regions in relation to each other. The following variables were used for demarcation:

- level of urbanisation
- non-urban population per square kilometre
- dependency rates
- per capita GGP
- the median income of the economically active population

In order to distinguish between these areas, 'rural-oriented' and 'urban-oriented' criteria were used. According to Geyer *et al* (1988:318), these regional divisions point to a high degree of dissimilarity in terms of this urban and non-urban economic parameters respectively on either side of such boundaries. The intermediate regions identified in that study coincide with the description of an intermediate region, containing most of the higher order centres abutting metropolitan areas except for special circumstances such as mining activities.

The evolutionary development of urban areas also contribute in defining the intermediate region. The urban development process, or polarisation, gets under way in an area of certain locational advantages. This head start becomes a cumulative causation process because of increasing returns to scale, the consequent polarisation of factor flows and the continued agglomeration of population. According to Richardson (1977*a*:19-20) the turning point when polarisation trends give way to dispersion, may be called *polarisation reversal* (see section 3.2.3.1). A sure sign as to the onslaught of polarisation reversal, is a "... persistent tendency for secondary cities located outside the core regions to grow faster than the primate cities. The qualifications are very important since it is not uncommon for secondary cities close to the primate city to grow faster than the primate city itself", and that "... there will be changes in migration patterns". Hall (1987:238-239) agrees, that at a certain development

stage, the growth of the primate city slows down with second order provincial cities beginning to grow faster. Eventually, the slowing of primate-city growth is such that its whole urban system begins to lose population.

The intermediate region have also been identified in terms of regional development policy as areas of deconcentration or decentralisation[2], i.e. the regions surrounding metropolitan regions where growth points were identified. It is well known that development policies have encouraged the decentralisation of industrial and other productive activities in reaction to the negative externalities found in the metropolitan regions. These decentralisation points were identified in non-metropolitan regions; regions therefore not functioning as part of the metropolitan region and partly isolated from its direct influence because of the friction of distance. According to Henning *et al* (1979:28), this metropolitan region, or catchment area of the metropolis, can generally be delineated as an area stretching 100 kilometres (about 70 miles) from the metropolitan centre. Numerous examples can be found of natural or planned decentralisation of people and/or economic activities, which will be concentrated on in the following chapter.

Two elements which can assist in the identification of the intermediate region can therefore be isolated, namely the decentralisation of economic activities as well as the decentralisation of population from metropolitan regions. Suarez-Villa (1988:5) shows this decentralisation phenomenon in terms of metropolitan evolution in which population and economic growth decrease in the metropolitan region over time. The areas which benefit initially from this decentralisation is first of all the metropolitan periphery, functionally located in the metropolitan region. A second and later form of decentralisation is that favouring the "...hinterland regions and more specifically, their largest cities. The latter is very similar to the process of polarisation reversal" (Suarez-Villa, 1988:13).

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2 The term 'decentralisation' is usually associated with movement of people and economic activities within an urbanised area while 'deconcentration' refers to movement in a country as a whole (Blumenfeld, 1972:44). In South Africa, however, deconcentration refers to movement within large urbanised areas and decentralisation to movement elsewhere in the country where economic development seems feasible (RSA, 1981*a*: 74). For the purpose of this study, the terms deconcentration and decentralisation will be used in a similar context as in the South African situation; more specific, deconcentration refers to movement in the metropolitan region, decentralisation to movement in the intermediate and peripheral regions.

It is important to note that the intermediate region being described in this study refers not only to its development status, but also to its location with regard to the metropolitan region. Therefore, any peripheral regions with the same growth rate as the regions surrounding metropolitan areas, can not be classified as intermediate regions. For the purposes of this study, intermediate regions refer only to the regions abutting the major metropolitan regions of a country. Obviously the definition of metropolitan regions will differ from developing to developed countries, thus influencing the identification of intermediate regions. Again, the definition of 'metropolitan', seems relative. Suarez-Villa (1988:6) noted that metropolitan regions reached 'world class' status after attaining a population of between 6 and 9 million, depending on the development status of the country. A useful definition of the metropolitan region describes the areas within the metropolitan system as integrally dependent upon each other, and, at least originally, upon the dominant city itself (Coombes *et al*, 1989:22). The size of the metropolitan region, however, becomes self-justifying after a certain threshold is attained (Suarez-Villa, 1988:6). Theoretically it could thus be said as many intermediate regions can be identified in a developed country as in a Third World country, but it is the stage of development of the metropolitan region which gives rise to firstly the identification, and secondly the development of an intermediate region.

The delineation of the national physical space into *core, intermediate*, and *peripheral regions*, therefore seems well founded in economic and physical terms as the above-mentioned statistics and observations reflect. It is the purpose of this study to determine the role of the intermediate region in the formulation of a regional development strategy in the South African development area, for it is believed that the Pretoria-Witwatersrand-Vaal Triangle (PWV) metropolitan region has reached a stage of growth resulting in the decentralisation of economic activities and population to a specific intermediate region surrounding it.

It could therefore be said that an intermediate region is first of all a planning or development region, and as mentioned before, development regions can be referred to in terms of their *development status* or their *attributes*. The former description accordingly refers to the regions which can be delineated in the space economy of a country. Therefore, an intermediate region is positioned in the space economy of a country

between the core region and the peripheral region. According to this description it is clear that intermediate regions in the space economy also show formal and functional region characteristics (see Figure 2.3). This approach to understanding a country's spatial organisation is shared by other authors such as Berry & Marble (1968), Hagget (1965) and Perloff *et al* (1960).

For the purpose of this study, an intermediate region can therefore be defined as the transitional region abutting metropolitan areas, and developing over time, constituting the physical and economic 'linkage' between the metropolitan regions and the peripheral regions. The intermediate region consists of numerous cities or towns in the sphere influence of the core, but being physically too far removed from the core as to be classified metropolitan. The distance from the metropolitan region as well as the size of the intermediate region, can also vary from country to country, and metropolis to metropolis, depending on spatial reserves and development status. The latter statement refers to Lösch's and especially to Weighmann's theories on the functional delineation of a region's boundaries. According to these theories, given more space and time, the region's boundaries will not enlarge any further. The service area of a metropolis is thus limited by these factors, thus the statement regarding the intermediate region surrounding the ultimate boundaries of the core region at a certain development stage, and receiving much of its growth through decentralisation. Unique characteristics define the intermediate region such as the type and heritage of economic activities as well as the immigration of people from metropolitan and peripheral regions. As Friedmann (1966:41) indicated, intermediate regions are regions of in-migration, and from the above, it seems evident that this immigration goes hand in hand with the decentralisation of economic activities to the intermediate region.

CHAPTER 3

THE DEVELOPMENT OF INTERMEDIATE REGIONS

3.1 Introduction

The intermediate region as a spatial and economic entity has been identified in the previous chapter. The actual manifestation and development of the intermediate region forms part of an evolutionary process of metropolitan growth. The stages of growth in the spatial system, and especially the metropolitan growth process will be discussed to serve as backdrop to a more detailed discussion on the processes of polarisation reversal, counterurbanisation and industrial decentralisation. It will be shown in this chapter that an intermediate region manifests itself as a result of the metropolitan growth process, as growth is rechannelled from the congested metropolitan region to the abutting, less congested intermediate region. The development potential of the intermediate region is consequently proposed and evaluated.

3.2 Stages of growth in the spatial system

Several theories and models exist regarding the physical development and economic structure of a spatial system. These theories have been developed with different goals in mind, whether it be for physical planning, economic development or policy issues. The theories relevant in describing the development potential of the intermediate region, have been narrowed to the economic sector, core-periphery, and metropolitan evolution models.

3.2.1 Economic sector model

Alfred Weber (1929) developed a theory to serve as general basis upon which any given historical system orients itself, or stated differently, a theory on the transformation of locational structures.

Weber inquired into the forces present when people occupy an undeveloped country and establish an isolated economic system. A first stratum (layer) of regions develop, consisting of the *agricultural stratum* necessary for subsistence. This stratum, or region, serves as the geographical foundation for all other strata (layers). It determines the places of consumption for the second stratum - the *primary industrial stratum* - which produces for the agricultural stratum. Accordingly, the primary industrial stratum serves as the centres of consumption for the third stratum, namely the *secondary industrial stratum*. According to Weber (Isard, 1956:29), these three strata form the core of the economic system.

A fourth stratum, which is called the *central organising stratum*, is heavily dependent on the three preceding strata. This stratum consists of officials, businessmen, professional people and persons living off accumulated wealth. Their pattern of locations, according to Weber (Isard, 1956:29), is determined by other than economic forces.

A fifth stratum, namely the central dependent stratum, is formed and tied to the central organising stratum in the same way as the secondary industrial stratum is tied to the primary industrial stratum. Seen as a whole, the locational structures of these five strata are interrelated, with forces playing back and forth among them.

This model gives structure to the spatial system in general. Specific aspects of this growth process in which the intermediate region plays a primary role can now be discussed.

3.2.2 Core-periphery models

With the principle of urban growth in the context of a market or central place with its hinterland as background (see also section 2.2.3.1), the influence of various urban centres upon each other can be analysed. Friedmann (1966) developed a theory as to the spatial manifestation of the economic growth process. The national economy passes through four stages in its drive from primitive pre-industrial society to industrial maturity.

The *pre-industrial phase* consists of independent local centres with no hierarchy. Each city lies at the centre of a small regional enclave, growth possibilities are soon exhausted and the economy tends to stagnate (see Figure 3.1). The *transitional phase* emerges when a single dominant centre develops. This structure is typical for the period of incipient industrialisation and a periphery emerging. Local economies are undermined in consequence of a mass movement of would-be entrepreneurs, intellectuals and labour to the centre. The national economy is virtually reduced to a single metropolitan region, with only limited growth possibilities and continued stagnation of the periphery. The core-periphery situation is gradually transformed as strong peripheral sub-centres emerge alongside the single dominant centre in the *industrial phase*. The development of these sub-centres reduce the periphery on a national scale to smaller, more manageable inter-metropolitan peripheries. Important resources from the periphery are brought into the productive cycle of the national economy, thus enhancing the growth potential for the nation. In spite of this economic growth, problems of poverty and cultural backwardness still persist in inter-metropolitan peripheries.

The last phase of spatial organisation, namely the *industrial maturity phase*, displays an economy consisting of a functional interdependent system of cities. According to Friedmann (1966:36), organised complexity is the final solution to be aimed for during this period of industrial maturation. Inter-metropolitan peripheries are completely absorbed and full integration of the economy is achieved, thus minimising regional imbalances and maximising the nation's growth potential.

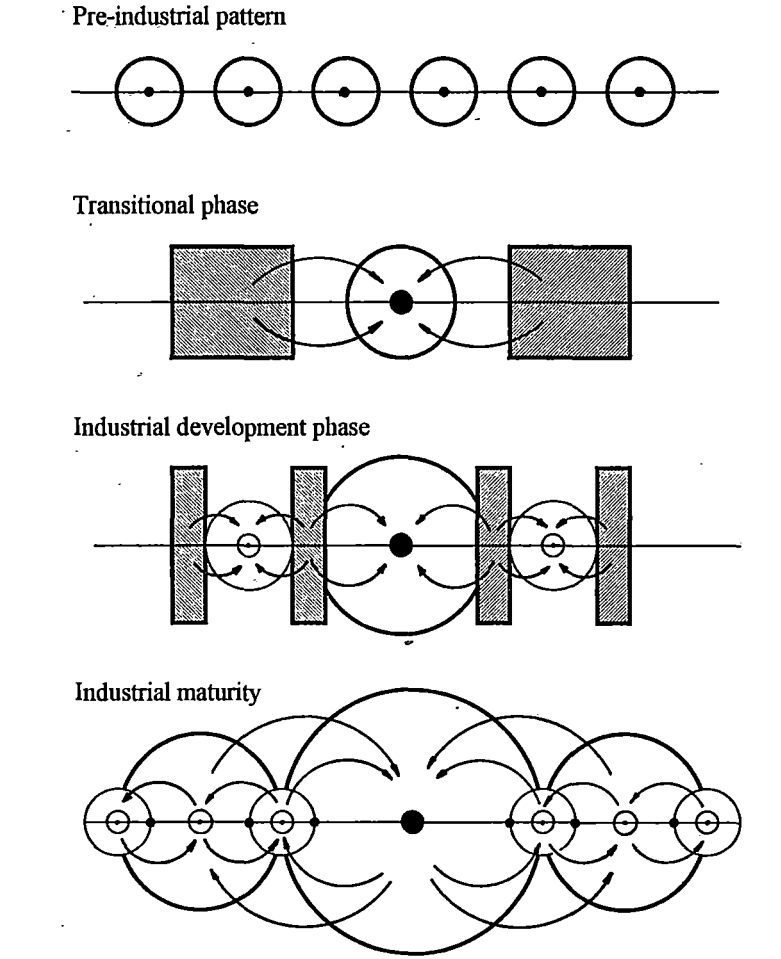

Figure 3.1 Core-periphery model (Friedmann, 1966:36).

To see the above theories in context, Christaller's market and service area can be seen as one of the independent local centres in an economy with no hierarchy pertaining. This market or central place develops over time according to von Thünen's principles regarding land value and land use (see section 3.3.3), until such a time when strong peripheral sub-centres emerge from the periphery inducing growth on a national scale.

Although these theories give insight regarding the development of urban regions, it is deemed necessary to evaluate metropolitan evolution more closely as an intermediate region is characteristic only in the development of a metropolitan region. Richardson (1977*a*:18) summarised the process of development as follows:

(i) the onset of industrialisation in a national economy is based upon economic expansion in one or two core regions and primate cities,

(ii) leaving the rest of the economy backward; subsequently, economic development is associated at some stage with decentralisation into other areas, and this dispersion process helps to integrate the national space economy;

(iii) regardless of the timing of polarisation and later decentralisation interregionally, growth within a region tends to be spatially concentrated, in the sense of close interdependence between urbanisation and industrial development and a focus of growth potential upon a limited set of large urban centres.

The reasons for polarisation in the cities within regions are well known. The development process gets under way in one or two areas only, the areas being determined by initial locational advantages. The head start becomes a cumulative causation[3] process because of increasing returns to scale, the consequent polarisation of factor flows and the continued agglomeration of population. Richardson (1977*a*:19) noted that eventually the strength of 'spread' (dispersion) and 'backwash' (polarisation) effects alter to favour spread effects. The backwash effects of resource movements begin to be outweighed by spatial diffusion of

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3 Richardson (1977*a*:18) defined cumulative causation as "... a process in which polarization becomes self reinforcing because of the pull of continuously increasing returns in the core".

technical know-how, a rising demand for the complementary products of backward regions, and the setting up of branch plants now made viable by the size of local markets, lower wages, and interregional transportation improvements. The turning point, when polarisation trends give way to dispersion may be called polarisation reversal. This phenomenon, in context within the evolutionary process of metropolitan growth, will be discussed in more detail in the following section.

3.2.3 Metropolitan evolution

In a detailed study, Suarez-Villa (1988:4) identified six phases in the metropolitan evolution process. As seen in Table 3.1, phases I and II are the typical rapid growth phases of urban expansion and concentration. These, and to some extent, phase III, are the 'growth pole' phases of metropolitanisation conceptualised by Perroux[4] and others. Similarly, metropolitan growth in these early phases may be related to various aspects of regional development policy (of which the relevant policies will be discussed later in this chapter), and to the dynamics of central place systems in metropolitan and hinterland regions as described in the previous chapter.

Phases III and IV may be considered more typical of metropolitan maturity. Many urban areas that reach these phases have to a great extent done so as a result of the growth of their manufacturing bases and the interrelationships that develop in the tertiary sector. In contrast, phases V an VI are more representative of metropolitan stability or decline. It is usually at such stages that a metropolitan region reaches 'world class' status, depending on whether a developed or developing nation is examined.

Francois Perroux (1955) conceived the term growth pole (*pôle de croissance*) to mean a dynamic sector of an economy. In Perroux's terms therefore growth poles comprise industries or firms that exert dominance through its inter-industry linkages over other manufacturing sectors. These interrelationships between the propulsive industry and other sectors are considered exclusively in abstract, economical space. A growth pole is capable of rapid growth and of transmitting that growth through multiplier effects to other sectors of the economy (Goodall, 1987:203) (See also section 4.3).

Changes in metropolitan structure are usually a result of agglomeration advantages presented by manufacturing industry. The growth of this sector and its impact on services and related activities then attracts substantial inmigration and demographic concentration. Once an urban economy manages to achieve a certain threshold size, the dynamics of the sectoral economic aspects can be assumed to influence demographic change and the city's prospects for future growth, stability or decline. At least initially, however, the importance of attaining a certain measure of population concentration cannot be disregarded (Suarez-Villa, 1988:6).

Table 3.1 Stages of metropolitan evolution

		Phase I	Phase II	Phase III	Phase IV	Phase V	Phase VI
GENERAL	**Population**	Increasing at increasing rate	Rapid growth	Increasing at decreasing rate	Slow growth, increasing at decreasing rate	Zero growth	Declining or zero growth
	In/Out-migration rate	Inmigration	High inmigration	Inmigration increasing at decreasing rate	Inmigration peaking or declining	Rapidly declining or zero in-migration	Outmigration possible
	Density	Concentrating	Rapidly concentrating	Rapidly concentrating	Declining concentration; diffusion toward periphery	Diffusion increases	More diffuse
SECTORAL	**Employment shares**						
	Manufacturing	Stagnant/slow increase	Increasing at increasing rate	Increasing at decreasing rate	Slow decrease	Decreasing at increasing rate	Decreasing
	Services	Slow decrease	Decreasing at increasing rate	Decreasing at decreasing rate	Slow decrease	Increasing at increasing rate	Increasing
	Other Employment						
	Manufacturing	Increasing	Rapidly increasing	Increasing	Slow decrease	Stagnant or slowly increasing	Declining
	Services	Increasing at increasing rate	Increasing at increasing rate	Increasing at decreasing rate	Increasing at decreasing rate	Slow increase or stagnant	Stagnant or slow increase
	Agglomeration economies	Low/increasing	Rapidly increasing	Increasing at decreasing rate	Peaking/declining	Rapidly declining	Low diseconomies possible
	Market Area	Local/metro-politan region	Metropolitan region	National	National/ international	International/ national	Global/inter-national, national
	Interregional Linkages	Very limited	Limited	Significant	Significant/ extensive	Extensive	Extensive/inter-dependent

Source: Suarez-Villa (1988:5).

The early phases of rapid population growth may then be followed by less significant increases during the middle stages, and stability or decline in the late phases (see Table 3.1). Metropolitan migration and density trends are closely related to population change. Inmigration and increased density are therefore typical of the early phases, while a gradual slowdown may set in during the middle phases. During the late phases, inmigration is likely to end and outmigration may become a clear possibility. Similarly, suburbanisation and sprawl will tend to be more pronounced during the later phases, thus contributing to a significant increase in the size of the metropolitan region.

The importance of manufacturing in the development of an economic base during phases I-III cannot be underestimated. Historically, the service base in many industrial metropolitan regions has never been fully developed until a significant level of manufacturing concentration has been reached. The manufacturing sector is an important source of innovation, knowledge and skills that considerably affect the tertiary sector in many subtle and direct ways (Suarez-Villa, 1988:7).

The overall employment dynamics of manufacturing and services (tertiary sector) reflect the changes and shifts occurring in the sectoral employment shares. Overall employment growth in manufacturing is therefore expected to surpass that of services in phases II and III (see Table 3.1). Much of the manufacturing employment in these phases may be expected to come from newly established branch plants, and the creation of new firms that may expand with the metropolitan economy, and the expansion of existing main plants. However, the expansion of the tertiary employment may be primarily the result of the growth of local or regional firms during these phases. Branch plants may account for a significant amount of manufacturing employment in the late phases, as metropolitan industries relocate towards the metropolitan periphery. During the late phases, the decline in manufacturing employment may be offset by the potential tendency of services income to rise toward that of the traditional manufacturing industries that are decentralising or moving abroad. A significant tendency may also appear in the later phases for small business creation in the metropolitan periphery, particularly in services.

Just as agglomeration economies are of great significance in the early phases of metropolitan evolution, agglomeration diseconomies, during the

late phases, contribute greatly towards industrial decentralisation and/or deconcentration (Suarez-Villa, 1988:8). Direct and indirect subsidies may also be provided through fiscal apparatus as decentralisation incentives. At this stage of metropolitan development, distinction can be made between natural and planned decentralisation (Bos, 1987:48). The view in support of decentralisation as an integral part of metropolitan evolution (as described by Friedmann, 1966; Richardson, 1973; Lo, 1978; Hall & Hay, 1980) can be regarded as natural decentralisation. This type of decentralisation of economic activities are seen as the result of several "push and pull factors" (Bryant, 1980:121-122) or "... forces of agglomeration and deglomeration that are at play" (Isard, 1975:113). These 'pull factors' refer to benefits found in regions other than metropolitan regions, such as cheap labour and land. It can therefore be seen that a metropolitan region must firstly 'develop' these push factors over time, thus resulting in a 'mature' metropolitan region ready for the decentralisation process.

Empirical results support this theory that natural decentralisation is part of the metropolitan growth process (Bourne, 1975:37; Lo, 1978:39; Mera, 1978:195-196 and Vining & Kontuly, 1978:68). According to these results, the decentralisation phenomenon only shows itself at a certain development stage of the country and its metropolitan regions. Countries in which it has manifested itself include Great Britain, France, Japan, and Canada.

It can be said that planned decentralisation is also the result of 'push and pull factors', the difference being the *origin* and *type* of benefits found in the non-metropolitan regions as well as the disadvantages created in the metropolitan regions (see also section 4.3).

As a metropolitan region grows, interregional linkages become a more significant aspect of its economy. The implications here are spatially very broad and extend well beyond the metropolitan borders. Such linkages have the potential to concentrate additional economic activities in a primate metropolis, but they can also allow the possibility to decentralise if infrastructural requirements are met and other locational attraction factors are present in hinterland regions. Forward and backward interregional linkages may be expected to be most significant in phases III-IV (Table 3.1). Vertical integration of industries within metropolitan regions may

become more significant during these early phases of rapid growth and concentration. In the last phases vertical disintegration, such as subcontracting or the separation of functions previously undertaken by a large firm within the metropolitan region, is most likely, as verticalisation acquires a broader spatial context that may include intermediate regions (hinterland regions), the immediate metropolitan periphery, and very possibly international linkages (Suarez-Villa, 1988:8-9). It seems therefore that shifts in population and sectoral economies may be closely related to secular patterns of metropolitan change.

The process of diffusion of development (decentralisation) is one of the key components in realising the development potential of the intermediate region, as the decentralisation process seems inevitable in the metropolitan growth process, thus lending credibility to the development of the intermediate region in economic space.

Having discussed the urban growth process in general, and relevant aspects of the metropolitan growth process in more detail, attention can now be focused on specific elements in this growth process relating to the development potential of the intermediate region. Certain processes of population movement are significant in this regard.

3.2.3.1 Population movement

The early phases of metropolitan evolution are characterised by rapid population growth followed by less significant increases during the middle stages, and decline in the late phases as already mentioned (see Table 3.1). Todaro (1982:215-216) developed a model illustrating the rationale behind these first phases of population concentration in developing countries. The Todaro migration model has four basic characteristics:

(i) Migration is stimulated primarily by rational economic considerations of relative benefits and costs, mostly financial but also psychological.

(ii) The decision to migrate depends on expected rather than actual urban-rural real wage differentials where the expected differential is

determined by the interaction of two variables, the actual urban-rural wage differential and the probability of success in obtaining employment in the urban sector.

(iii) The probability of obtaining an urban job is inversely related to the urban unemployment rate.

(iv) Migration rates in excess of urban job opportunity growth rates are not only possible but rational and even likely in the face of wide urban-rural expected income differentials. High rates of urban unemployment are, therefore, inevitable outcomes of the serious imbalance in economic opportunities between the urban and rural areas of less developed countries.

While inmigration and increased densities are typical of early phases, outmigration may become a clear possibility in the last phases. It is also evident from these urban evolution models that this process goes hand-in-hand with the decentralisation of economic activities, especially industrial decentralisation. The decentralisation of population vary strongly by comparison in developed and less developed countries, as will be seen in the following sections.

While most urban systems in less developed countries are still in a relatively early stage of development, a significant proportion of this growth continues to concentrate in a relatively small number of primate cities (Vining, 1986:1-3). Typically, the urban system of a less developed country in an early stage of development will possess either primate or intermediate city size distributions, with many smaller sized urban centres dominated by one or more large centres. It seems that less developed countries with small populations and/or land areas are often dominated by one or two primate cities, while those with larger populations and/or land areas may contain several regional primate centres (Geyer & Kontuly, 1993:160).

3.2.3.2 Polarisation reversal

Primate city immigration will not continue at the same high rate

indefinitely. Several cities, in a number of less developed countries (South and East Asia for example), have already started to show declining growth rates since the 1970's (Vining, 1986:20). In several of the more advanced developing countries, this decline has been associated with the growth of some cities adjacent to the primate cities. This phenomenon is referred to as polarisation reversal (Richardson, 1977:20).

The term *polarisation reversal* was used by Richardson to describe "...the turning point when spatial polarization trends in the national economy give way to a process of spatial dispersion out of the core region into other regions in the system" (Richardson, 1980:67). According to Richardson, the existence of this phenomenon is critical in the design of spatial strategies, especially concerning urban growth strategies in less developed countries.

One of the first signs of a turning point in the economic development process could possibly be found in Kutznets's (1955:19) analysis of economic growth and income inequality in the United States, England and West Germany. Kutznets came to the conclusion that a turning point in the relative distribution of income was evident, contributing to a reversal in the trend of a widening gap in income inequality. This led to the question as to the possible relation between this swing in income inequality and other important components of the growth process such as the population growth rate and the urbanisation rate.

3.2.3.2.1 Forces dictating polarisation reversal

Myrdal (1957:34) also noted the importance for the neutralisation of backwash effects (polarisation forces) by strong spread effects in a country which has reached a high level of development. According to Myrdal this process "... will spur on economic development, and so become an important factor in the cumulative process". In contrast, it seems that the low level of development in an under developed country can be ascribed to the weak spread effects. This means that as a rule the market forces at play in a poor country will work more powerfully to create regional inequalities and to widen those that already exist.

The forces working on these patterns of urban development in a nation include the growth of material output and an associated increase in the complexity of the national economy. Demographic transition, degrees of social and economic inequality, patterns of rural development, and the institutions and social pathways for the diffusion of information and innovations, may all work to increase or decrease concentration in the distribution of urban population. One group of factors works within the primate city, the other within the hinterland (Townroe & Keen, 1984:46). Continued growth in the metropolitan region brings about certain agglomeration diseconomies such as increases in congestion, crime, pollution, and infrastructural deficiencies. These negative externalities reinforce the pressure of rising land values in the primate city, which tend to rise faster than prices in general. As the economy develops, land intensive activities (tertiary sector) will tend to encourage an outward movement of land extensive activities (primary and secondary sectors). Similarly, if metropolitan growth results in the deterioration of the residential environment and in higher taxes and longer journeys to work, would-be immigrants are deterred and existing residents become prospective outmigrants.

However, for the resident or a firm to react to a slowdown or decline in the advantages found in the primate city, the possibility of an *alternative* location must exist. This is where the second set of forces instigating polarisation reversal is relevant. The possibility of an alternative location for the resident will normally mean the guarantee or prospect of employment in an intermediate sized city, access to public services of some national standard, and not more than a small fall in the real value of his money income. Similarly for the company, outward movement from the metropolis will normally be regarded as possible if the decentralised centres have relevant infrastructures, services and communication networks (Townroe & Keen, 1984:46). For the resident, the migrant, the existing company or the new investment, location or relocation to a intermediate sized city therefore rests on certain prerequisites before a calculation of advantage can be undertaken. These prerequisites are not absolutes in these forms of locational behaviour, but they form a base upon which locational choices are made by trading off the relative advantages of the metropolis against those of one or more intermediate sized cities. If the information is available, a company for example will compare relative land values, transport costs and wage levels just as the resident will

compare relative house prices, journey to work costs and income levels. Polarisation reversal will therefore be induced by changes in the aggregate pattern of choices.

3.2.3.2.2 Level of development

Seen in the context of the urban growth process, the process of polarisation reversal corresponds closely with the third and early fourth stage of Friedmann's core-periphery model. Less developed countries, however, vary widely in their development level, and according to Richardson (1977:20), polarisation reversal is undoubtedly also a function of development. It seems that polarisation reversal is a form of counterprimacy which manifests itself earlier in countries that have a non-primate urban structure or at the other extreme, where primacy has increased so rapidly in the past that scale economies and congestion hamper the efficiency of the primate city. Moderately primate economies, where the steady growth of the primate city is compatible with efficiency and increased agglomeration economies, are poor candidates for early polarisation reversal.

Although convergence in regional growth differentials is probably the earliest sign of polarisation reversal, its emergence should show itself as a change in the urban size distribution. This may or may not be associated with a slackening in population growth, but there will be changes in migration patterns, especially regarding intraregional migration flows.

In measuring polarisation reversal, one possibility is some measure of the interregional dispersal of industry, especially of leading sectors. Another, more in tune with this study, is a persistent tendency for intermediate sized cities located outside core regions to grow faster than the primate cities (Richardson, 1977:20). Various other indices have been suggested in the measurement of polarisation reversal. Townroe & Keen (1984:52) concluded, after using several indices in an attempt to measure polarisation reversal, that the proportion of urban population in a city region, that is in the core region, seems to be the principal index. Other indicators used in measuring population dispersal characteristics include the distribution of

gender, age, educational levels and occupational status (Brown & Lawson, 1989:166), ethnic groups (Geyer, 1990:386), *per capita* income (Vining, 1986:17), and several regional growth factors (Lee, 1989:152).

The key initiating factor in polarisation reversal is the interregional decentralisation of economic activities ('productionism') with population shifting in response. Most important of all, according to Richardson (1980:81), is that polarisation reversal is associated with population dispersal *within* the core region, at least initially.

The slowing down of metropolitan growth has occurred in several Third World countries. Metropolitan regions in several Latin American countries reflect strong signs of a slowing down metropolitan growth process between 1980 and 1990. Cities such as Mexico City (Mexico), Caracas (Venezuela), and Santiago's growth have slowed down significantly, with intermediate sized cities growing more rapidly than these metropolitan cities (Gilbert, 1993:726-727). Aguilar-Barajas (1990:180) explained that decentralisation occurred from Mexico City as a result of increasing growth of industry within the city. This led to a shortage of industrial land and property, and, combined with other diseconomies of agglomeration and pressure from the labour market resulted in the beginning of the polarisation reversal process. Vining (1986:9) indicated that population dispersal ocurred away from the Sao Paulo metropolitan region to smaller cities and towns within 150 kilometres from the metropolitan area. India's metropolitan cities (Bombay, Calcutta) have similar signs of slowed down growth, while growth seems to be focused on intermediate sized cities (Bangalore, Ahmedabad and Hyderabad) (Gilbert, 1993:727).

3.2.3.2.3 Policy issues

Another aspect regarding polarisation reversal is its policy implications for national spatial policy. Questions arise as to whether policy makers should attempt to induce polarisation reversal, and if so, when? If not, will national spatial policy be ineffective until the dispersion process is spontaneously underway? Linn (1978:9) argued that the policy

implications of polarisation reversal only affects the appropriate timing of a specific spatial policy. Prior to polarisation reversal, little can be done by economic policy to shake the regional development and urbanisation process out of its pre-determined channels leading to concentration, because the economic forces of agglomeration are too strong to be overcome by available spatial policy instruments. Once polarisation reversal occurs, the policy maker may have a better chance to influence the direction of factor flows, the location of economic activities, and the movement of population, because at that point he is working *with* the economic forces of decentralisation, rather than *against* them.

There also seems to be two contradictions regarding the policy implications of polarisation reversal. The first of these relates to the fact that while polarisation reversal makes it easier to achieve the redirection of regional and urban development, it may no longer be necessary to do so, since the most important concern of policy makers, i.e. concentration and polarisation, is already abating on its own accord (Linn, 1978:9). A second related contradiction results from the argument that fast growing intermediate sized cities are the most promising candidates for 'growth poles' or 'counter magnets', in the sense that they can most easily be made to attract additional migrants. But since it is also argued that it is the *growth rate* of cities, rather than their absolute *size*, which creates problems of adjustment in the process of urbanisation (Richardson, 1977:15), the question can be asked whether it is in fact desirable to burden already rapidly growing intermediate sized cities with further growth stimuli. It is at this point that urban *management* could arguably be propagated. It is said, for instance, even if air pollution is associated with city size and/or density, a strategy dealing with air pollution (for example, imposing standards via regulation or the pricing of emissions) would be much more effective than attempts to change the future size of the metropolitan region (Richardson, 1989:367). Urban management, therefore, refers to the provision of basic urban services to a rapidly growing population (Richardson, 1989:367), as well as improvement of productivity in the cities, alleviating urban poverty, introducing urban policies coherent with the goals of society, tackling environmental problems, and also involves important new roles for city managers and institutions (Urban Foundation, 1993:8-9).

3.2.3.3 Counterurbanisation

Counterurbanisation is defined by Berry (1976: 17) as a "... process of population deconcentration; it implies a movement from a state of more concentration to a state of less concentration". This definition suggests a similarity with polarisation reversal, but there are significant differences. Berry's analysis focused mostly on the slowing down in both population growth and economic growth and the expansion of population outside metropolitan areas in the United States.

Polarisation reversal in the developing country is not associated with a secular downward trend in economic growth, but is a consequence of economic growth, and its symptoms are most visible in those developing countries that have grown most rapidly. The key initiating factor in polarisation reversal is much more the interregional decentralisation of economic activity with population shifting in response ('productionism'), whereas counterurbanisation stresses the changes in people's tastes as to where they want to live ('environmentalism') (Richardson, 1980:80-81).

During the last two decades, long established patterns of metropolitan growth and rural depopulation in developed countries have changed. The dominant net migration movement is the redistribution of population down the functional urban hierarchy, thus a negative relationship between settlement size and population increase (Vining & Pallone, 1982:340; Robert & Randolph, 1983:76; Dean *et al*, 1984:177; Ogden, 1985:24; Champion, 1989*b*:84; Court, 1989:123, Frey, 1993:743). In their study on the Federal Republic of Germany (FRG), Kontuly & Vogelsang (1988:42) suggested that the phenomenon can also be measured in the form of a negative relationship between population size and the net migration rate. Apart from the occurrence of towns/cities next in rank showing more than usual growth, it was also recorded in various countries that these urban areas lie adjacent to, or around the metropolitan region (Court, 1989:123; Hugo, 1989:82; Tsuya & Kuroda, 1989:227; Winchester & Ogden, 1989:162).

Several authors have also echoed the fact that the spatial redistribution of population are heavily influenced by non-economic factors, or the so-called 'environmentalism' issue. The counterurbanisation process

definitely appears related to an increasing preference for smaller sized cities with natural amenities (Kontuly & Vogelsang, 1988:42; Champion, 1989b:58; Hugo; 1989:62). Berry (1976:24) indicated that every public opinion survey has indicated that popular preferences are for smaller and lower densities, with richer environmental amenities. These trends have been leading unremittingly toward the reversal of the process of population concentration unleashed by technologies of the Industrial Revolution, a reversal finally achieved in the United States after 1970. This process of counterurbanisation has also been documented in several other developed countries such as the Federal Republic of Germany (Kontuly & Vogelsang, 1988:51), Australia (Hugo, 1989:62), Great Britain (Champion, 1989:100), Denmark (Court, 1989:123), France (Winchester & Ogden, 1989:162), Italy (Dematteis & Petsimeris, 1989:187), Japan (Tsuya & Kuroda, 1989:227), and Canada (Anderson & Papageorgiou, 1992:138).

3.2.3.3.1 Economic activities

Fielding (1989:68-69) included the company and small firm in his explanation of population redistribution. According to him the following forces are relevant: the fragmentation of the production processes and the related demise of the mass collective worker[5]; the orientation of investment towards new products for highly specialised markets; the development of new work relations such as those intended by the word 'japanisation'; the use of new computer technologies (CAD/CAM); the subcontracting of parts of the production to small independent high-tech companies; and more generally, the growth of the small firm sector. Fielding noted that new investment also tend to be located away from the major metropolitan cities, but unlike branch plants, the only non-

5 Although this view is widely held that labour-saving technological improvements favours long-term economic growth, it only refers to developed countries. In a number of undeveloped countries this adoption of modern techniques had some unfortunate 'backwash' effects on established lines of employment, and some have attempted to restrict their use to product lines which do not compete with established manufacturing enterprises. This approach to policy builds primarily on Marxian thought (Barber, 1991:141).

metropolitan places that are deemed suitable are those that can attract and retain the highly qualified labour upon which these new activities depend.

Hartshorn (1992:422) echoes these statements made by Fielding, in stating that "... as corporations have grown in complexity, more separation by function also occurs, splitting up the administrative control function from production operations", i.e. vertical disintegration. He differs however from Fielding regarding the issue of vertical integration[6] . According to Hartshorn the use of branch plants has increased to contain costs and keep the firm competitive. Accordingly, more firms are also vertically integrated today as a firm may control all phases of the manufacturing process from raw materials to intermediate products and fabricated goods for the consumer. This helps them control costs and internalise more of the production process. Taking both issues into consideration, namely the subcontracting of production processes or firms being vertically integrated more than ever, they both seem to favour development in the intermediate region. A vertically integrated firm can locate itself economically in the intermediate region, while another firm, or subcontracted firm, can also settle in the intermediate region, having established necessary economic links.

These aspects eventually led to the employment growth and net migration gain witnessed in a number of prestige environments in the 1970s and 1980s. These places tend to have two characteristics, the first being scenically attractive. Secondly, they usually have a social base and a past history appropriate for an emergent entrepreneurial culture and an information-based economic development.

6 Differentiation is made between horizontal and vertical integration regarding the functioning of industry. Horizontal integration refers to integration between of preceding or succeeding productive processes and gives a dimension of size of the firm relative to the size of total industry. Vertical integration may be backward, i.e. when a firm constructs new facilities or acquires them from others to produce its own input materials, or it may be forward when a firm secures facilities for producing final products for example). The vertically integrated firm can perform a series of successive productive functions more efficiently than individual firms that each perform only one function. Economics of vertical integration are especially apparent where technologically complementary productive processes can be brought together in a single plant (Berry *et al.* 1976:115).

In an empirical study of the countries of the European Community, Keeble (1989:70) distinguished between three rural industrialisation processes experienced since the 1970s:

(i) branch plant colonisation by large, sometimes multinational companies (rural Ireland);

(ii) vigorous small firm indigenous growth in traditional industries (central Italy, rural Portugal and Greece); and

(iii) new firm formation by skilled and highly qualified entrepreneurs who have been migrating from large cities to small towns and rural areas for environmental and 'quality of life' considerations (East Anglia, South West England, rural France and Germany).

Dogan & Kasarda (1988:11-12) came to a similar conclusion in maintaining that - as with population growth - it is possible to develop a sequential topology indicating the transformation of economic activities in the urban growth process. In the *first stage*, informal economic activities dominate with low cost of entry, family ownership of enterprises, and labour intensive technologies. In the *second stage* (where many of the giant cities of the Third World today are), economic activities are partially transformed from family enterprises to corporate production units, capital grows in importance relative to labour, and wage and salary employment expands. With technological advancement and capital accumulation, development of an extended trading network and industrial concentration stimulates urban growth, often creating a primate city. As the national economy matures and transportation networks expand, competition from lower-cost outlying sites reduce urban manufacturing employment. During this *third stage*, large-scale production units move to peripheral areas and smaller cities and are replaced by knowledge-intensive firms in the core employing well-educated, skilled persons.

This leads to the question as to whether the counterurbanisation phenomenon can be ascribed to an employment-led process or a population-led process. Certain studies show this trend to be directly associated with job expansion in non-metropolitan regions (Beale, 1977:113), while the phenomenon in the United States supposedly reflects American locational preferences for low density amenity-rich areas (Berry, 1976:24). According to Geyer & Kontuly (1993:170), the need

for people to improve their personal circumstances in life is a fundamental one. Both productionism and environmentalism refer to this need. Therefore people must first improve their employment and remuneration position which in turn would improve their chances of attaining better environmental conditions.

3.2.3.3.2 Level of development

Robert & Randolph (1983:78) brought the terms 'decentralisation' and 'deconcentration' in context with counterurbanisation. They argued that population movement from the central city to suburbs or other areas in the 'daily urban system'[7] can be defined as decentralisation.

[7] This concept refers to an extended urban area defined on the basis of the ebb and flow of daily commuting and activity patterns and representing therefore the daily-life environment of the areas' residents (Hartshorn, 1992:81). The daily urban system develops as the influence of the urban area reaches out, absorbs and reorganises the surrounding territory (Goodall, 1987:111).

Movement down the urban hierarchy, between urban regions or peripheral regions is termed deconcentration[8]. The latter has followed the former in the urban evolution process; both being requisites for counterurbanisation. Consequently, counterurbanisation may be seen to have two distinct phases to it: loss of population from the central core areas to benefit the suburban zones; and movement down the urban hierarchy or out into wholly peripheral areas (Ogden, 1985:24-25).

Various studies (Vining & Strauss, 1977:757; Vining & Kontuly, 1978:68; Lo & Salih, 1978:39; Vining & Pallone, 1982:363) concluded that the decentralisation/deconcentration phenomenon is an essential phase of the development process of a country. Vining & Strauss (1977:757) indicated that since the United States is widely accepted to be the country most advanced along the course of modernisation and industrialisation, it might be anticipated that other countries move through similar stages of spatial development. The first phase of decentralisation being within urban regions which is occurring in most of the highly modernised countries of Europe and Japan. Secondly, decentralisation from urban to rural regions, which appears to be imminent in Western Europe and Japan, and third, decentralisation within rural regions. This third phase has only been observed in the United States and certain countries in north-western Europe (Vining & Pallone, 1982:362).

Diseconomies of metropolitan scale set in only at an advanced stage in a country's economic development, a stage, according to Vining & Kontuly (1978:68), not yet reached by most developing countries. It is possible however, that migration from the metropolitan regions may not occur even in the presence of diseconomies if undeveloped areas are limited in extent or only exist near the current areas of concentration. Where development opportunities do exist in regions remote to the core region, the diseconomies of metropolitan scale eventually express themselves in the outmigration of persons from the core regions. *When* these diseconomies appear, they seem to reflect the stage of economic development of the

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8 As noted in the previous chapter, the term deconcentration in the South African context is quite the opposite as noted here. Locally, the term deconcentration refers to movement from core areas to other areas within the daily urban system, while decentralisation refers to movement from the metropolitan region to the more rural-oriented regions, i.e. the intermediate and peripheral regions.

country as a whole.

After studying the counterurbanisation phenomenon in several developed countries of the world, Champion (1989*a*:236-237) concluded that the migration turnaround could be seen as the product of one of the following forces:

- The expansion of commuting fields around employment centres.
- The emergence of scale diseconomies and social problems in large cities.
- The concentration of rural population into local urban centres.
- The reduction in the stock of potential out-migrants living in rural areas.
- The availability of government subsidies for rural activities.
- The growth of employment in particular localised industries like mining, defence and tourism.
- Improvements in transport and communications technology.
- The improvement of education, health and other infrastructure in rural areas.
- The growth of employment in the public sector and personal services.
- The success of explicitly spatial government policies.
- The growth of state welfare payments, private pensions and other benefits.
- The acceleration of retirement migration.
- The change in residential preferences of working-age people and entrepreneurs.
- Changes in age structure and household size composition.
- The effect of rural-urban and return migration.

- The first round in a new cyclic pattern of capital investment in property and business.

Two schools of thought are found as to whether this counterurbanisation process actually started or not. The *'clean break'* school indicated that the higher growth rate of non-metropolitan areas compared to metropolitan areas is a "... clean and wholly unprecedented break with past trends" (Vining & Strauss, 1977:751). This school argues that this decentralisation trend is not confined to metropolitan sprawl, but affects non-metropolitan areas well removed from the metropolitan influence. It seems that (in the United States) "... non-metropolitan counties well-removed from the commuting range of our 250 or so SMSAs[9] are growing at a significantly higher rate than these SMSAs themselves, though at a somewhat lower rate than the non-metropolitan counties adjacent to these SMSAs". Coombes *et al* (1989:10) and Kontuly *et al* (1986:171) emphasised the importance for precise definitions of certain concepts in the study of counterurbanisation. It was suggested that a 'clean break' requires either that decline is not limited to the urban centre but extends through the whole metropolitan region, or that growth is endemic throughout substantial parts of the non-metropolitan areas and not limited to the peri-metropolitan zone.

In contrasting studies (Gordon, 1979:281-285; Stockdale, 1993:35), claims of a 'clean break' with past urbanisation trends were denied as suggested by Berry (1976:17), Vining & Strauss (1977:751), and Vining & Kontuly (1978:66). This 'spillover' school argued that any population growth taking place within the commuting fields of existing metropolitan centres cannot be considered as a break from past trends, but merely a continuation of the long established process of suburbanisation and metropolitan decentralisation involving shifts in people and economic activities from the core to the fringe in an urban region. According to this theory, the higher growth in the non-metropolitan areas can be seen as a continuation of the 'wave' effect.

This approach also points out that the prevailing tendency is for individual metropolitan centres to extend their spheres of influence over

9 Standard Metropolitan Statistical Areas

progressively wider areas, as transport improvements increase accessibility to the metropolitan core from more distant places and as the process of metropolitan restructuring leads more people to orientate their journeys to suburban nodes rather than to the central city. According to this viewpoint, this type of development cannot be defined as counterurbanisation or any form of 'clean break' because it is leading to an increase in both the physical extent and population size of the same metropolitan regions by effectively annexing the surrounding territory and its existing settlements.

When the 'clean break' theory was generally accepted as to explaining this 'turnaround' in the 1970s (Hall, 1987:239), new evidence suggested a reversal of counterurbanisation during the 1980s (Richter, 1985:261; Cochrane & Vining, 1988:241). Again, several opinions exist as to the current and future status of the counterurbanisation phenomenon (Geyer & Kontuly, 1993:159).

3.2.3.3.3 Policy issues

From a policy viewpoint as well as an academic perspective, it is extremely important to know whether counterurbanisation trends are merely a temporary phenomenon or represents the prevailing tendency for the future. According to Champion (1989*a*:241) it is difficult to visualise counterurbanisation as a long-term trend in the way that urbanisation was prevalent for over a century in most of the developed countries. This can be ascribed to the very nature of the phenomenon, because, defined as a negative association between net migration and settlement size, counterurbanisation contains "... the seeds for its own destruction in a way that was not true of urbanization. Whereas the latter can be considered a cumulative process in that the largest places grow fastest and thereby increase their attractive power, counterurbanization is self-defeating because the fate of the smallest places that, by definition, are the most attractive is that they should grow most rapidly and thus decline in their attractiveness. In theory, therefore, counterurbanization is merely the means by which a traditional pattern of population concentration is transformed into a more dispersed distribution". It is still not clear which

way the settlement patterns will evolve at a later date, except presumably that a relationship between growth rate and city size is likely. Relating several studies on counterurbanisation in various countries, Champion (1989*a*:241) concluded that the information gathered does not point unequivocally in one direction as to the duration of this phenomenon. Champion does however favour the idea that counterurbanisation is not a "... temporary blip" in an ongoing urbanisation process. He argues that deconcentration has been shown as a powerful force and that there are good reasons why it should have intensified during the post-war period and penetrated across national space.

Cochrane and Vining (1988:241), on the other hand, illustrated that the counterurbanisation phenomenon, when measured in terms of core to periphery exchanges, is temporary in nature: "Net outmigration to peripheral regions at the expense of the core regions seems only to be, however, a temporary phenomenon that occurs while an economy adjusts to the new spatial location requirements of post-industrial economic activity".

3.2.3.3.4 Post-counterurbanisation

As the United States was one of the first countries to experience the counterurbanisation phenomenon, some post-counterurbanisation experiences seem relevant. The counterurbanisation phase of the 1970s is referred to as a 'transition decade' for the redistribution of population in the United States. According to Frey (1993:741), the "... changing national industrial structure, the rise of the global economy and improvements in communications and production technologies, have changed the geography of opportunities across space and the ability of populations to respond to these changes. More so than in the past, the population and economic growth of regions, metropolitan areas and small places are dependent on how successfully these areas can adapt to rapidly changing circumstances". However, a return to urbanisation in the 1980s appeared evident from the 1990 census data - although not urbanisation as known in the 1950s and 1960s. This data reflects continuing shifts in industrial structure and favour areas with diversified economies, particularly those

engaged in advanced service and knowledge-based industries. Recreation and retirement centres also fared well in the 1980s.

This renewed growth in the 1980's of large-sized metropolitan areas seems to be related to industrial transformations in the nation's economy. The most consistent growth occurred in areas that served as advanced service and corporate headquarter centres, those that specialised in knowledge-based industries, and those that engaged in certain high-tech activities. According to Frey (1993:771), the new context for redistribution established in the 'transition decade' of the 1970's, will ensure that the rates of growth and decline across communities, regions and metropolitan areas, will be sharper than in the past. This is primarily a result of more immediate responses to national and global economic circumstances.

3.2.3.4 Differential urbanisation

Drawing from observations made on differences between polarisation reversal and counterurbanisation, the concept of differential urbanisation was introduced by Geyer (1989*b*:276). The intention of this concept was to span the development spectrum from less developed countries to developed countries. According to this model, rural-to-urban migration is dominant during the urbanisation phase of a country (See Figure 3.2). In most countries this is accompanied initially by concentration within the primate and other major city regions, followed by diffusion or urban sprawl toward the metropolitan fringes. A more advanced phase of urbanisation could be accompanied by some decentralisation from the major metropolitan areas, especially toward adjacent intermediate sized cities.

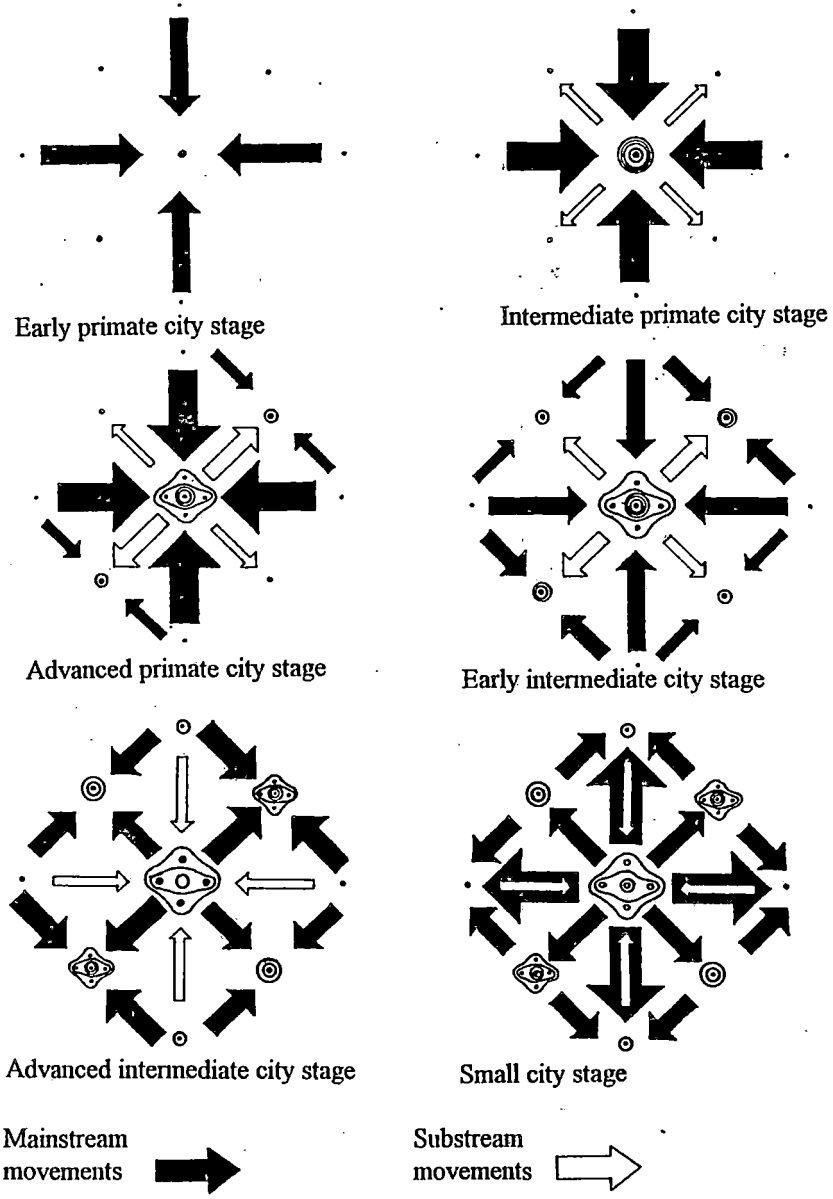
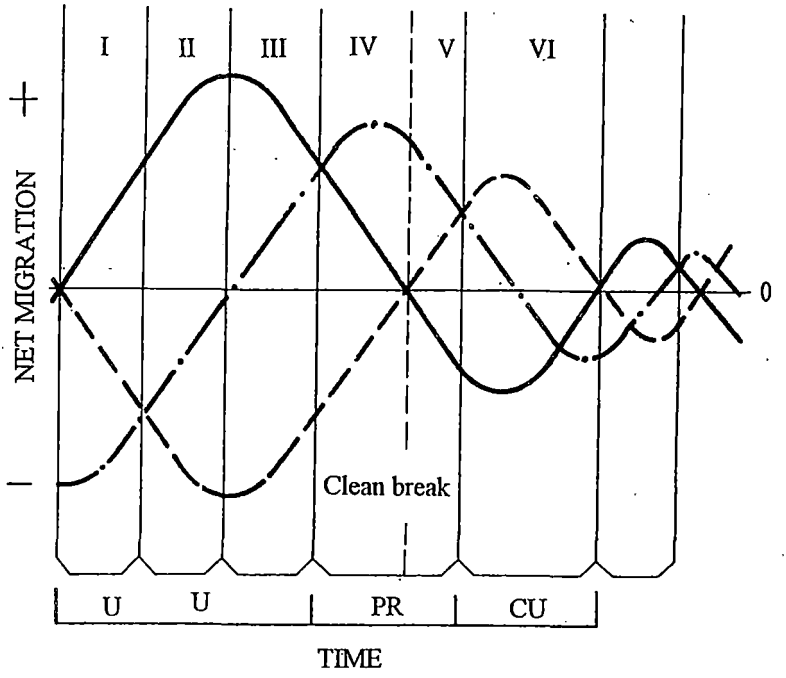


Figure 3.2 Sequence of stages in spatial organisation (Geyer & Kontuly, 1993:171)

In the next phase, decentralisation from urban to rural regions becomes the dominant migration pattern. Initially, intermediate sized city regions adjacent to the metropolitan regions (intermediate regions in the context of this study) gain more migrants, but subsequently migration to intermediate and small sized cities in areas further afield increases as well. The former process is described as polarisation reversal and the latter as counterurbanisation (Geyer & Kontuly, 1993:158). These three distinct development phases of urbanisation, polarisation reversal, and counterurbanisation are collectively referred to as differential urbanisation (see Figure 3.3).



I	Early primate city stage	**U**	Urbanisation
II	Intermediate primate city stage	**PR**	Polarisation reversal
III	Advanced primate city stage	**CU**	Counterurbanisation
IV	Early intermediate city stage		
V	Advanced intermediate city stage		
VI	Small city stage		

——— Primate city
—·— Intermediate sized city
— — Small city

Figure 3.3 Phases of differential urbanisation (Geyer & Kontuly, 1993:165)

These two processes, using a developed and developing country as examples, could possibly be illustrated by means of the following case studies. In his study on the Standard Metropolitan Statistical Areas in the United States, Berry (1976:21) found that much of the population decline is attributed to a "... post-1970 decline of central city white populations at a rate of 1 percent per annum ... Meanwhile Black and other minority populations have continued to decline in non-metropolitan America since 1970, and farm population has stabilized at approximately 9.5 million persons". Likewise, Geyer (1990:386) showed that the shares of Whites and 'Coloureds' are increasing relatively in the metropolitan core fringes and intermediate city regions, while the Blacks are still concentrating in the larger metropolitan areas.

The difference in these two examples is the direction of the mainstream migration pattern - in the United States the mainstream indicated in this text was towards the non-metropolitan or peripheral regions (counterurbanisation); in South Africa the mainstream was still towards the core regions (urbanisation) with the understream towards intermediate regions (polarisation reversal). The simultaneous occurrence of more than one migration pattern in the same area is referred to as differential urbanisation, whether it be the process of urbanisation in concurrence with polarisation reversal, or urbanisation and counterurbanisation occurring simultaneously.

According to Geyer (1989*b*:279), undercurrent population and economic dynamics are not necessarily revealed by mainstream migration patterns, and that this can lead to a disregarding of certain population migration patterns on a dis-aggregated level of assessment which may be of considerable developmental value. Seen in the context of counterurbanisation as well as polarisation reversal, it can be said that at different phases of development, productionism is coupled with the mainstream as well as substream migration patterns in a country - in the process of polarisation reversal, the mainstream is towards the metropolitan regions in an effort to seek employment opportunities (Todaro migration model). The migration understream is towards adjacent intermediate sized cities mainly because of environmentalism. Conversely, in the process of counterurbanisation, the mainstream towards non-metropolitan areas can be ascribed to environmentalism and the understream to productionism. The urban development process can thus,

at different stages and varying intensity, be ascribed to productionism and environmentalism.

With the relevant spatial growth processes influencing the growth of the intermediate region concluded, the second part of this chapter relates to the possible development opportunities, regarding the intermediate region, realised in these growth processes.

3.3 Development potential of the intermediate region

As noted in the previous section, the decentralisation of economic activities and population (outmigration) from metropolitan regions is an integral part of metropolitan evolution. The development potential of the intermediate region could therefore be realised in scrutinising the relevant aspects in this process. According to Richardson (1979*b*:169), the primary components of spread or decentralisation are the relocation of manufacturing plants, the decentralisation of population, and the diffusion of innovation. Other components could include agricultural development, environmentalism, relevant migration patterns and existing infrastructure. The time path of spread/decentralisation, if subject to similar influences, may be divided into three phases: a slow start; gathering momentum; and a slowing down process associated with saturation. These phases may, when considered together, take place over decades rather than years. Therefore, in identifying decentralisation trends in a country, while still in its early phases, leaves one with the opportunity to investigate potential development opportunities, and implementing them so as to function in the same direction as these 'natural' spread forces.

3.3.1 Diffusion of innovation

The concept of innovation[10] diffusion can firstly be illustrated by Hägerstrand's model on the spatial aspects of the diffusion of information. According to his theory, Hägerstrand stated that "... one cannot adopt an innovation which is not one's own invention unless one has first seen it, heard of it, or read about it" (Hägerstrand, 1965:27). For the purposes of this study, the diffusion of information implicates that goods and services which were not available in an area, become available after some time. Important in his theory, Hägerstrand noted that "... the leading cities within a country should give impulses first of all to towns next in rank. The further spread is then heavily regulated by distance friction; strong ties of the major towns with the capital over a rather long distance occur; then local influence is exerted on lower-order centres closer by" (Hägerstrand, 1965:42). From this statement it is evident that the spatial aspects of this theory closely relates to the hierarchy of central places in the Christaller-Lösch theories. Although using abstract terms such as "time" and "distance friction", Hägerstrand improvised on these theories in that he explained sequence of establishment of these central places in the geographical space. Although this model only refers to the diffusion of agricultural innovations, consumer goods and social institutions, the principle that the diffusion of innovation spreads from the primate cities (metropolitan region) to the abutting, and other secondary cities, and lastly to the smaller towns and rural areas, remains (Berry, 1972).

According to Stöhr (1972:89), innovation diffusion is closely related to distance in the early stages of development, i.e. it passes from one major centre to geographically neighbouring cities and in this way extends centrifugally outward. City size is less important than distance at this stage of development when communication networks are still poorly developed and informal contacts are still predominant. With the development of communication networks, innovation increasingly diffuses in a spatially discontinuous pattern from larger to smaller cities. It

[10] Innovation can involve a new good or a new quality of good, the discovery of a new method of production, the creation of a new market, or the location of a new source of supply (Salvatore & Dowling, 1977:24).

therefore appears that, as development proceeds, distance is replaced by city size as the major determinant of innovation diffusion.

In contrast, Pred (1977:166) concluded that "... only under quite unusual conditions can there be a firm basis for the assumption that growth is transmitted solely via hierarchical diffusion from cities of a given size to less populous nearby centres". This was the result of empirical findings in the Western United States, and partially confirmed Brown's (1981:262) findings, who stated that the diffusion process is more often found as a combination of diffusion processes which may be hierarchical, or random, or may occur through the effect of proximity.

The distance-size association with urban development, however, seems to be generally accepted by most students of regional planning (Geyer & Kontuly, 1993:159-160). Specific case studies have also confirmed this tendency: "... in the most recent years annual growth is greatest in those nonmetropolitan counties which are most linked to the metropolitan centers" (Gordon, 1979:282); people and jobs are continuing to move ... from central cities to suburbs, to adjacent nonmetropolitan counties [and to] remote, sparsely populated and even poor rural areas" (Hall & Hay, 1980:14); "... the growth of the 1977-1980 period was characterized by the expansion of metropolitan areas, with adjacent counties having the highest growth rates" (Richter, 1985:248).

Richardson (1979*b*:126), gave an accurate theoretical description on this theme, by distinguishing between *hierarchical* and *spatial* diffusion. Assuming the introduction of an innovation in the metropolis, the main diffusion path is via the urban hierarchy, but the innovation will also tend to be adopted via radiation from the metropolis into the surrounding region. Although the hierarchical pattern will initially be very strong, a more ill defined spatial pattern develops when lower levels of the hierarchy are reached. The adoption times begin to appear at random rather than being determined by town size. Richardson (1979*b*:128) concludes that spatial diffusion is more relevant in developing countries because of the lack of transportation facilities, while hierarchical diffusion appears to be more dominant in developed countries. Dewar *et al* (1986:32) confirm this viewpoint in concluding that the innovation potential of any town is a function of two factors: its functional rank in the overall hierarchy; and its accessibility relative to other centres which have

already adopted.

Most of these theories therefore show that diffusion of innovation occurs according to some form of predictability, especially in areas close to metropolises. It is especially the theories on spatial and hierarchical diffusion that lend much credibility to the development potential of the intermediate region, whether it be in a developed or developing country. If the diffusion process occurs in an hierarchical order, the intermediate sized cities (see also section 4.6) in this region - which is the intermediate region's 'growth engine' - will be the first to benefit, with the small sized cities in the intermediate region following closely. The same theory applies to spatial diffusion in a developing country. The towns in the intermediate region will be the first to benefit. Seen in its regional context for the purpose of this study, it can be said that consequently innovation spreads from the metropolitan region to the intermediate region, and finally to the peripheral region. The favourable locality of the intermediate region in the diffusion process, therefore secures the new developer or industrialist of new technological innovations introduced in the metropolis in an acceptable time period, without the agglomeration diseconomies experienced in the metropolitan region.

3.3.2 Industrial decentralisation

With this concept of the diffusion of innovation as background, the decentralisation of economic activities, and especially industrial activities, from metropolitan regions can be considered. Numerous definitions and concepts are related to the general process of decentralisation. Goodall (1987:113) describes decentralisation as the "... movement of people and activities from the centre or core of major metropolitan areas to suburban and outlying locations within their daily urban system". Fair (1974:95) noted that decentralisation sometimes refer to the direct movement from the core to the periphery, while other descriptions simply imply a deflection of new activities to the periphery, which otherwise might have gone to the core.

Scott (1982:188) observed that from the very beginning of modern

industrial development, even as far back as the middle of the nineteenth century, there was a slowly accelerating tendency for industry to decentralise from the metropolitan core and to locate in suburban and peripheral areas. Scott ascribed this phenomenon to the increasing capital-intensive forms of productive activity. It was observed in the United States that manufacturing activities were marked by a tendency toward increasing mechanisation (increasing amounts of installed horsepower per worker) with augmenting distance from the city centre. As capital intensification in industry proceeded, increasingly routinised, high-productivity technologies were put into place. This freed many kinds of manufacturers from the need to be close to major pools of labour, thereby allowing plants to escape from "... skyrocketing land prices in the core and to move out along rail, water, and, later, highway transport routes" (Scott, 1982:189).

To understand the process of industrial dispersal (i.e. deconcentration or decentralisation) in its historical fullness, it is deemed to enquire more carefully into the dynamics of the process to evaluate the implications of change for the *location* and *relocation* of industry. The forces dictating the specific locations of industries are numerous and vary according to the type and scale of industry. Some types of industry are scattered; others are concentrated at a few locations. Orderly principles underlie these patterns.

One of the most obvious features of reality is the fact that resources are unevenly distributed across the physical space. This is especially true of the raw materials required for heavy manufacturing. Classical location theory is founded on the work of Alfred Weber, who attempted to determine the patterns of manufacturing that would develop, given a certain set of normative restraints. Weber assumed that transportation costs are a linear function of distance and demand for a product was infinite at a given price. Each producer can sell as many units as he produces at a fixed price. He can sell none at a higher price, and charging a lower price will not affect the total demand for the product. The producer's strategy is therefore to produce the product at the lowest possible cost, thus maximising revenue. For this reason, Weber's system is called a 'least cost' approach (Foust & deSouza, 1978:129). Weber was concerned with identifying those forces which operate as economic causes of location, represented in each case by savings in cost as a result of

producing in one place rather than elsewhere. Weber (Isard, 1956:172) identified three basic location forces, namely transport costs, labour costs, and agglomeration economies and diseconomies. The latter force refers to the concentration and dispersion of industries within any given region. These forces are called *location factors*, referring to any of the forces that operate as a cause of industrial location.

Weber also distinguished between 'general' factors which apply to all industries (transport costs, labour, and rent) and 'special' forces which operate only on a specific industry. These general and special factors are further subdivided into 'regional' and 'local' forces (Foust & deSouza, 1978:130; Lloyd & Dicken, 1977:120). Regional forces determine the general locational framework of manufacturing and include transportation and labour costs. These forces are the result of spatial variations in raw material and labour costs. Local forces, on the other hand, cause the pattern of manufacturing to deviate from the optimum patterns produced by regional forces alone and tend to be economic in origin. Economics of scale and the high rent brought about by competition are examples (Foust & deSouza, 1978:130). Transportation sets the general regional pattern of manufacturing, but is in turn distorted by spatial variations in the cost of labour. According to Weber the final solution must consider the effects of local factors. Although many variations on the industrial location theory exist[11], basic principles are maintained throughout most of these theories and models.

In explaining the *relocation* of industry, the following phases of industrial development can be distinguished following the described location phase:

- First, more efficient production technologies combined with modern management strategies, enable firms to grow in size and to achieve vertical and horizontal integration of functions, and thus to secure significant internal economies of scale. These developments alone encourage the steady decomposition of old centralised industrial complexes made up of small-scale labour-intensive activities.

- Secondly, technological advances in any given industrial sector tend to lead to greater standardisation of production processes, and this

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11 Compare Isard (1956), Hoover (1948), and Smith (1971).

in turn leads to greater standardisation of linkage patterns. In combination with increases in the magnitude of inputs and outputs, the standardisation of inter industry linkages gives rise to dramatic reductions in unit transport costs, for quantity discounts become available on linkages and the more even flow of materials reduces the need for complex personal intermediation of orders. Consequently, industries come to depend less and less upon one another in purely spatial terms.

- Third, improvements in industrial technology invariably involve both the disintegration of specific skills originally residing in the hands and brains of workers and the re-embodiment of those skills in machinery and related equipment. It seems therefore that technological advances in industry tend to be associated with a process of secular deskilling, in which, as capital is substituted for labour, so also, on balance, is less skilled labour substituted for more skilled labour. Effectively this means that industries are increasingly freed from reliance upon the pools of labour skills that are typically concentrated in, and accessible only through the metropolitan labour market.

- Fourth, as industrial firms grow in size through capital deepening, restructuring, and mergers, and ultimately internationalisation, geographical specialisation of the internal functions of the firm comes about, with the result that blue-collar and white-collar functions within the firm often become spatially separated and assigned to different locations (Scott, 1982:191-192).

Hartshorn (1992:422) confirms that industrial activities within cities are far more *footloose* than they have been in the past. The term 'footloose' refers to the locational flexibility available to the firm to choose among several production sites. Hartshorn explains that access to "...water, rail, freeway, pipeline, and/or service tempers locations for many industrial firms, but a larger share of firms today are assembly and fabricating industries that require fewer bulky raw materials in the manufacturing process and a greater share of their value output is high-value-added products". Accordingly these operations can choose among diverse locations boasting a skilled labour pool and favourable costs, good educational facilities and many amenities.

This has led to many suburban areas and small towns being more competitive as to the location of industry, although mostly in the more developed countries. This decentralisation of industry has primarily occurred because of agglomeration dis-economies experienced in the urban/metropolitan areas (Alonso, 1975:77; Fair, 1974:94; Goodall, 1987:113; Hartshorn, 1992:422). Industrial decentralisation as an instrument of regional development policy, however, requires an understanding of the elements of external economies which probably contain the answer to the crucial questions of whether the principal cities are too big, or how big secondary growth centres must be to enjoy self-sustaining growth, and of what types of industry are proper subjects for this decentralisation policy, and at what stage of urban evolution? (Alonso, 1975:77). Hansen (1978:224) agrees with this cautious approach to decentralisation policy, and add that industrial dispersal programs which are not justified by sufficient local demand or linked to already established industrial regions, result in the waste of capital and organisational resources.

Empirical studies have shown that industrial decentralisation forms part of the urban development process. In their study of 22 countries, Vining & Pallone (1982:339) have shown that countries belonging to the developed world no longer have sufficient agglomeration economies in the core regions. Another distinguishing feature of these countries is that their less urbanised, peripheral regions offer sites for industrial development which are competitive with those of the core regions.

Hoover & Giarratani (1985:342) summarised the decentralisation process as follows: Firstly, "... an acceleration in the rate at which production processes that have become rather standardized have moved from the core to the periphery and [secondly] decentralization of the nation's innovative capacity, so that some new and rapidly growing industries have become less highly concentrated in the core". It is therefore the declining rate of dependence on locations with agglomeration economies - as a result of modern technology - which urges industries and other economic activities to decentralise firstly within the metropolitan region, secondly to nonmetropolitan regions, and lastly within these nonmetropolitan regions, that generate development potential for the intermediate region.

Finally, in combining Weber's locational factors of industry with

migrational changes, Fielding (1982:32) concluded that "... It is in continuing to do something they have always done - i.e. make changes in what, how and where to produce goods and services in such a way as to remain profitable - that firms have acted as the major agents of change in the distribution of population".

3.3.3 Agricultural development

In considering possible development potential of the agricultural sector in the intermediate region, a short summary on agricultural development theory seems necessary. The most elementary model demonstrating agricultural development can be found in von Thünen's *agricultural location theory*. His theory was designed to explain the type of agricultural production that would best be carried out at a given location. The model assumes a single market centre, which sets the price for all agricultural commodities, surrounded by a farmland of equal fertility. Transport costs are assumed to increase with distance at the same rate in all directions. Locations are therefore given, and the problem is to calculate the optimum crop and cropping system in response to market price and cost of transport to market (Hall, 1966:12-22).

Within this assumptive framework von Thünen developed a concept of land rent which illustrates that a farmer will produce the crop which has the highest land rent. Land rent is a function of production costs per unit of crop, market price per unit of crop, transport cost per unit of distance per unit of crop, the crop yield per unit of land, and distance from the farm to the market centre. All other functions kept constant; with increasing distance from the market, transport costs are greater and net revenue lower, until a point is reached where revenue equals transport cost, the land rent is zero and the extensive margin of cultivation has been reached.

If only one crop was being cultivated the intensity of production would decrease with increasing distance from the market, since intensity of production depends on the net return the farmers get for their crop. In von Thünen's crop theory, several crops are considered, with the importance of transport costs varying according to the bulk and perishability of the crops.

The crop on which the greatest savings in transport costs can be made will be grown nearest to the market and consequently pay the highest land rent. Crops with relatively lower transport costs will be grown at increasing distances from the market. A zonal pattern of land use is the result (see Figure 3.1). The model can be modified relaxing certain assumptions such as differences in soil fertility and adding a smaller market to the region. Although primarily a static model, the basic principle governing this model is highly relevant in describing the type and intensity of production at different distances from a market or central place.

As Isard (1956, 196-197) observed, urban land-use theory is a logical extension of the agricultural location theory. Those functions which gain the greatest advantage from locating at the point of maximum accessibility, form the innermost zone with the other uses arranged in sequence according to their location rents (Lloyd & Dicken, 1972:43-44). Thus the concentric zonation of land uses, from the centre of the city and through urban uses and the various agricultural products to the margin of cultivation can all be attributed to the operation of the land values and the land uses.

Sinclair (1967:77), however, noted that one significant fact differentiates most modern urban areas from the cities of von Thünen's experience. Von Thünen envisaged a static city with set boundaries, while for most modern industrialised nations the theme is urban expansion, with population growth and constantly expanding areas of urban land use. This spreading urban region influences rural land use far in advance of the built-up area. This influence has little to do with the market provided by the city, but is the result of the very nature of the expansion process. Although urban expansion is uneven and in many ways chaotic, there is evidence that it creates consistent agricultural land use patterns in the neighbourhood of most cities. According to Sinclair (1967:78), urban expansion is determined by many forces, the following being the most basic:

- urban and rural land price differences,
- the flexibility offered to all land users by modern automobile transportation, and
- the whims and judgements of human beings.

For the purpose of this study, these forces might translate into the following phenomena. With agricultural land not competing with urban land uses in the intermediate region, and the intermediate region being closest to the largest markets in the metropolitan region, a definite potential for agricultural development can be identified. Modern infrastructure, especially transport facilities lend the intermediate region high accessibility to the metropolitan region without transportation costs rendering it an uneconomical venture. Sinclair concluded that - in contrast to von Thünen's theory - although the absolute value of land increases towards the city, the relative value for agricultural utilisation decreases, i.e. the intensity of agricultural land use decreases. Therefore, the remaining agricultural land in the metropolitan region is not used as intensively as areas not deemed useful for speculation purposes. As Sinclair (1967:78) states it, "... land which the owner thinks might become urban land at some vague future date changes in value. It does not generally change hands, but the owner carries out his activities, or changes his activities, with the feeling that something is going to happen. In short, there is an air of anticipation associated with rural land near modern urbanised areas". Therefore, in broad regional terms the metropolitan region's agricultural potential is not fully exploited due to speculation purposes, rendering the intermediate region higher agricultural development potential.

It seems clear that agricultural land cannot compete with other urban land uses such as industry or commercial uses. As neither the borders of metropolitan, intermediate, or peripheral region remains static over time, definite borders can only be estimated at a certain time of development. Agricultural land in the metropolitan region therefore are always under threat of being shifted out for more profitable uses. As the agricultural land in peripheral regions are not really being threatened by urban expansion, the region remains static in its uses. The intermediate region on the other hand are much closer to large markets under no immediate threat of urban expansion, but ideally located to serve both metropolitan and peripheral regions.

In much of the development strategies implemented in developing countries, the agricultural sector has received little attention. Hansen (1978:223) noted that developing countries have become overly dependent on the "Western" view of development in concentrating on massive

infrastructure development, resulting in passed up opportunities in the agricultural sector, especially on small farms. In a study of rural development in Korea, Renaud (1981:94) also noted that "... the Korean growth strategy of the 1960s bypassed the agricultural sector to expand manufacturing. The combination of limited farm opportunities and the creation of manufacturing and other jobs in the Seoul region led to massive migration to Seoul". Much of the urbanisation problems in developing countries could therefore be related to growth strategies concentrating on urban developments such as the development of infrastructure and industry.

Tsuya & Kuroda (1989:228) confirm this statement with regard to circumstances in Japan: "There seems little doubt that non-agricultural job opportunities offered by urban areas have been the primary cause of the rapid urban concentration of population ... facilitated further by widening wage differentials between agricultural and non-agricultural jobs, mechanization of agriculture, and breakdown of the *i.e.*[12] system".

The development of the agricultural sector therefore seems worthy of receiving a development impetus, especially in the intermediate region where land is under no immediate threat of metropolitan expansion. Studies in various developing countries suggest that there are limited economies of scale in most forms of farm production (Hansen, 1978:223); combined with its locational advantages relative to the markets of the metropolitan region, the agricultural sector seems to hold some real promise of profitable development.

3.3.4 Environmentalism

From the various studies mentioned in this chapter, it seems evident that people and/or economic activities moving from metropolitan regions are attracted to 'ecologically favourable' towns/cities in areas adjacent to this

[12] Under the *i.e.* system, primogeniture had been the norm of succession, and the eldest sons were therefore obliged to stay in their native households, succeed their fathers in their business, and take care of parents in their old age (Tsuya & Kuroda, 1989:223).

metropolitan region. Geyer (1994:8) contend that the concepts of productionism and environmentalism seem to hold promise for explaining the forces underlying the processes of concentration and deconcentration respectively. In the development process of a country the need arises for lower densities and high environmental qualities, while still being in contact with the metropolitan market system. Apart from other relevant issues such as the vertical integration of plants and the use of branches in non-metropolitan areas, definite development potential for the intermediate region also exist in the form of non-economical decisions.

Migration into sparsely populated areas as well as any other area is either forced or voluntary. Forced migration is generally a result of economic and/or housing or health reasons at the origin[13] . Voluntary migration usually occurs when the expected utility at the new destination is higher than at the origin. The utility is not necessarily measured in economic terms but can be measured in social or cultural terms. The promotion of economic development should, however, involve voluntary migration which will ensure a higher utility at the destination with respect to satisfying the widest range of expectations. This implies that "... metropolitan peripheries are potentially more promising than regional or even national peripheries. Moving away in steps from the metropolitan areas rather than starting with a long distance "jump" ensures a more cohesive spatial structure" (Stern, 1985:5) (See also 4.7).

Environmentalism would therefore seem to be a powerful tool in the development of the intermediate region. On the one hand, Hall & Hay (1980:232) noted that on a very limited scale only, in certain countries there have been policies to secure local outmigration from larger urban areas - or from their congested inner cores - to local centres in the form of planned new town or urban satellites. While on the other hand, it was found that in Australia's counterurbanisation process, people moved to "... well-watered and attractive areas ... mostly in locations which are adjacent to and relatively accessible from the major metropolitan centres" (Hugo, 1989:81-82). - these 'adjacent areas' being up to 400 kilometres from the nearest city centre! It seems therefore that the counterurbanisation

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13 Another well known issue that could be deemed as part of environmentalism, could refer to an environments lacking the violence and criminal activities found in the metropolitan regions. This is found to be especially true in the current South African situation.

process, its underlying environmentalism phenomenon and its spatial manifestation, are much more prone to success in a 'natural growth strategy' than in 'forced strategies'.

3.3.5 Step-wise migration

Development potential of the intermediate region from another direction stems from the process of step-wise migration. This is a process by which the migrant gradually learns to adapt in an urban environment while gradually decreasing the alliance with his place of origin (Kok, 1985:85).

Stöhr (1972:87) observed that the flow and distribution patterns of labour, capital and innovation appear to be different at different stages of development. In less developed countries, migration and labour flows tend to pass in a hierarchical form from rural areas to the next small town, from there to larger (intermediate sized cities), and finally to the major city. Factors leading to this step-wise migration pattern are relatively small personal mobility, high transport cost, and great differences in social systems between regions. In contrast, migrational patterns of developed countries are less regular. Instead of passing through the urban hierarchy, they are oriented in a criss-cross fashion to the locations where the migrant perceives the best economic and social opportunities for his specific situation. Although these intermediate sized cities receive little benefit from this hierarchical migration process in terms of development (Stöhr, 1972:91), they offer some modest prospects for reducing the rate of migration to the primate city by retaining past migrants who might otherwise move on up the urban hierarchy (Rondinelli, 1983:119; Richardson, 1987*a*:213).

According to Conway (1980:4-6) step-wise migration has been indicated by some theories as a *spatial* pattern of moves (see Figure 3.4*b*), and by other as essentially an aspatial formulation (seen figure 3.4*a*), i.e. *hierarchical* step-wise migration. More commonly, Conway concluded, the notion of a series of spatial steps has been fused with the idea of step-wise procession upward in the urban hierarchy (see Figure 3.4*c*). This theory seems to share much common ground with Richardson's thoughts

on the diffusion of innovation, although approached from the opposite direction. Therefore, these two processes could theoretically 'meet' in the intermediate region, although not necessarily at the same time, but both lending credibility to the successful implementation of a development strategy in the intermediate region.

Especially the South African situation offers some potential regarding the intermediate region, as empirical studies have found that 95% of Black migrants to the Pretoria-Witwatersrand-Vaal Triangle (PWV) region originate directly from rural areas (Kok, 1985:86). An intermediate region strategy should therefore take cognisance of rerouting migrants from their original metropolitan destinations by permanently accommodating them, and therefore functioning as more than a 'half-way station'.

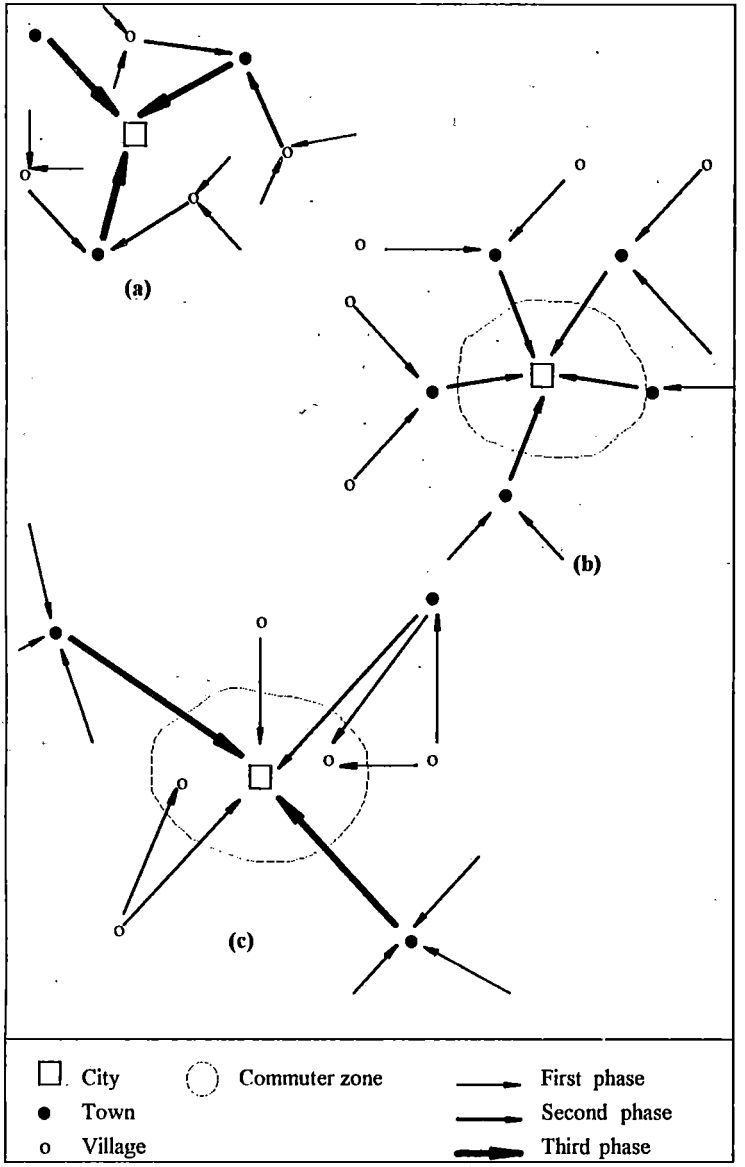

Figure 3.4 Step-wise migration patterns (Conway, 1980:5)

3.3.6 Infrastructure

People and economic activities that decentralise from the metropolitan region take cognicance not only of issues relating to environmentalism. These potential localities must also be econmomically viable to the new developer, and therefore offer necessary infrastructure.

As shown in the differential urbanisation process, decentralisation occurs firstly towards intermediate sized cities nearest to the metropolitan region, i.e. in the intermediate region. As most intermediate sized cities have usually grown because of specific locational advantages - such as rich mineral deposits or being close to major highways - these cities usually have a well developed infrastructure at their disposal, as well as infrastructural links with the metropolitan region. This includes the availability of necessary services such as ample electricity and water supply, telecommunication services, social and educational services, and high order roads linking the city with the metropolitan region.

Social infrastructure also ranks high in attracting and maintaining migrants (Richardson, 1987*a*:213), thereby developing attractive destinations and ensuring a high quality of life (Bos, 1987:354). Seen against this background, the cities in the intermediate region must have equal, or better services at the new developer's disposal.

In order to fully utilise the natural decentralisation of people and economic activities, investment should occur in Social Overhead Capital (SOC), as Direct Productive Activities (DPA) are usually only invested in areas where SOC have already reached an advanced level of investment[14]. Hirschman (1958:93) illustrates this point as follows: "... if we endow an underdeveloped country with a first-class highway network, with extensive hydroelectric and perhaps irrigation facilities, can we be certain that industrial and agricultural activity will expand in the wake of these improvements?". Hirschman (1958:93) as well as Cholanovitch

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14 These services, *i.e.* physical and social infrastructure, are collectively referred to as Social Overhead Capital, and must be distinguished from Directly Productive Activities. The latter term refers to the production of goods and services as a result of incentives introduced by government policy (Hirschman, 1958:83).

(1961:215) argued that it would be less risky and more economical first to make sure of such activities, and then let the ensuing pressures determine the appropriate outlays for SOC and its location[15].

3.4 Conclusion

From this chapter it is evident that the intermediate region manifests itself in the national economic space at a certain stage of urban growth. This occurs 'naturally' by means of polarisation reversal and counterurbanisation in developing and developed countries respectively.

The aim of this chapter was to illustrate the evolution of the intermediate region mostly by means of the 'natural decentralisation' phenomenon, and the role it plays in the functioning and development of the urban system in a country as a whole. The intermediate region manifests itself as a non-metropolitan region adjacent to a metropolitan region, whether it be by means of an understream migration pattern as found in developing countries (polarisation reversal) or a mainstream migration pattern in developed countries (counterurbanisation).

15 This point can also be illustrated on an international scale with a relevant example. American companies rather invest in South Africa than in the rest of Africa, mainly because of "... the nation's highly developed infrastructure", rendering it "... a good place for a company to establish an African home office" (O'Flaherty, 1993:6).

CHAPTER 4

REGIONAL DEVELOPMENT POLICY IN THE INTERMEDIATE REGION

4.1 Introduction

The theories and models discussed in the previous chapters could also serve as foundation for the formulation of regional development policies. In order to evaluate these policies and eventually South Africa's decentralisation policies over the past decades, attention is focused on various relevant regional development policies and instruments which affect, or could affect the development of the intermediate region.

It is the purpose of this chapter to relate the policies and instruments used in various countries in relieving the high density of economic activities and population in the higher order urban and metropolitan areas, and the consequences of such policies on the designated urban areas. It will be shown that most development strategies aim at slowing down primacy or developing rural areas, or to obtain a combination of these. The theoretical grounds underlying most regional development policies will consequently be discussed and applied to the relevant policies. Attention will also be focused on the correct timing of implementation of regional development policies in general.

4.2 Regional development policies

Over the past twenty years many developing countries have adopted different spatial policies to alter the national settlement pattern. Although the ultimate goals of such policy are usually the general goals of society, such as promoting efficiency, reducing interregional and interpersonal

income inequalities, a recurrent set of spatial policy objectives are also involved. These spatial policies include slowing down primacy, opening up new frontier regions (and improving the economic aspects of lagging regions), promoting intermediate cities, and reducing rural-urban migration rates via a mix of rural development strategies (Richardson, 1987*a*:208).

The distribution of population is determined by three sets of forces of which the individual impact is difficult, and perhaps even impossible to unravel. These forces are market trends and the dynamics of the aggregate development process; the implicit spatial impacts of macroeconomic and sectoral economic policies; and explicit spatial policies. According to Richardson (1987*a*:208-209) it is widely believed that explicit spatial policies are the weakest of the three sets of forces. Richardson observed that more often than not, implicit spatial policies are in conflict with explicit spatial policies, resulting in the redistribution of population being constantly undermined by primate city and core region biases inherent in many policies. These policies include import substitution, subsidised urban services, and internal terms of trade distortions. Where dispersion trends have been observed, usually in middle-income countries with a reasonably diversified economic base, these reflect much more the onset of the polarisation reversal process than the effects of explicit spatial policies. It seems therefore very misleading to ascribe shifts in the settlement pattern and the distribution of economic activity consistent with spatial policy objectives only to the impact of one or another policy.

Several issues need to be considered when spatial policies are formulated, whether they concern developed or developing countries. These countries vary widely with respect to their national urban systems, implying different spatial strategies. A strategy to combat a high primacy pattern would therefore be inappropriate for a country with a more balanced spatial structure. Also, strategies vary between countries with high urbanisation rates; generally, the lower the level of urbanisation the greater the scope for spatial strategies in the sense of flexibility in changing the urban size distribution. In many developed countries the spatial distribution is so fossilised and the urbanisation level so high that very little can be done to alter the distribution of population and economic activities.

Richardson (1981:272-273) identified certain general considerations in the development of spatial policies and strategies, the first being the size of a

country. It is obvious that a regional development strategy in small countries with only one primate city surrounded by its hinterland, will differ drastically from a large country with a space economy best represented as a group of interrelated but semi-independent regions each with their own urban hierarchies. In the latter countries the design of urban and regional development strategies is much more complex as it needs to embrace a wider number of regions and many more cities reaching further down the national urban hierarchy. Topography and transport are two other relevant spatial considerations, and often interrelated; for example, mountains constrain the evolution of the inter-urban road system. Many countries lack the homogeneous flat plain assumed in the discussed spatial theories, and high mountains limit spatial interaction between regions. In some countries (Indonesia and the Philippines), the sea separates the major cities so that sea and air transport are the major inter-urban transport nodes.

Differences in political structure among countries also affect the choice of spatial development strategies. A centrally planned economy will implement a development strategy in a different way from a market-oriented economy, largely because the choice of policy instruments is different. The most important distinction, however, is between unitary and federal government structures (Richardson, 1981:273). A unitary system of government typically has a much wider freedom of manoeuvre in allocating public investment among certain regions. Although a strong federal structure may make it more difficult to assign spatial priorities, it provides an existing institutional base on which to build further administrative decentralisation. Such decentralisation may result in more effective project execution, thereby improving the effectiveness of spatial development policy and/or strategies.

Finally, countries and regions vary widely in their cultural heritage and modes of behaviour. It is known that migration patterns are strongly influenced by cultural factors. Whether migrants move as individuals or families, the incidence of circular return migration, the strength of links with areas of origin, how fast migrants are assimilated in urban life, all these aspects of rural-urban migration are conditioned by cultural influences. Policies that ignore these heterogeneous cultural factors are likely to be ineffective.

Although the quantitative impact of explicit spatial policies is difficult to measure, with the result that it is not possible to draw conclusions with confidence about the overall effectiveness of these policies, there is considerable qualitative knowledge about what kinds of intervention have the better prospects for success.

It is the goal of most regional development policies to either slow down the further growth of negative externalities experienced in the metropolitan regions, or alternatively an effort is made to balance the economic development of rural or peripheral areas with the metropolitan regions. Some policies combine these two goals in one way or another, as will be shown in this chapter (section 4.5).

4.3 Objectives of regional development policy

4.3.1 Slowing down primacy

Slowing down the growth of the primate city remain a spatial policy goal in most countries in spite of the long-established association between increasing primacy and higher Gross National Product (GNP) growth as well as positive links between the growth of large metropolitan regions and social indicators.

Yet, developing country policy makers may still be able to make a case for slowing down primacy (Richardson, 1987*a*:211). First, although agglomeration economies persist in many primate cities and contribute to their superior efficiency, this may be offset by higher per capita absorption costs. Secondly, severe congestion costs and communication diseconomies have already developed in some primate cities (Lagos, Mexico City, Cairo, Caracas) and may be avoided in others, provided that growth rates are not too fast. Thirdly, shelter and services lags may become too severe at high primate city growth rates and per capita costs may soar because of implementation problems. Finally, a societal consensus that the primate city is becoming unacceptably large relative to

the national urban system as a whole, may be sufficient justification for intervention.

In practise, most policies to slow down primacy have been ineffective, short of chronic under-investment in the metropolitan capital stock (Cuba) or the forced removal of population (Richardson, 1987*a*:211). Where primate city growth has slowed down as it has in many cases (Sao Paulo, Mexico City, Lima), it has usually been the result of spontaneous forces or the spillover of development beyond defined metropolitan boundaries (Vining, 1986:7-10; Tolley & Thomas, 1987:10).

In most developing countries, policies designed to divert new industries away from primate cities have tended to concentrate investment in a few selected larger centres in the periphery, rather than scattering it nation-wide, for efficiency reasons. Often a limited number of intermediate sized cities is promoted on the basis of economic development potential. Since growth within a region tends to be spatially concentrated in this fashion, a concentrated spatial dispersion of economic development emerges. This concentrated spatial dispersion pattern of urban growth is consistent with Richardson's (1977*a*) polarisation reversal argument (Lee, 1989:148).

The intermediate region can be indirectly linked with policies pertaining to a decreased growth of the metropolitan region - most of these policies consisting of certain 'push' and 'pull' factors. These 'push' factors usually relate to external diseconomies, as well as a high level of competition already existent in the metropolitan regions. The 'pull' factors on the other hand, are usually the result of more favourable production factors such as labour or land, as well as spatial strategies favouring the intermediate and peripheral regions.

4.3.2 Rural development strategies

The development of the intermediate region can also be associated with the policy option of rural development. A rural development strategy refers to the promotion of small service centres in the lower tiers of the urban hierarchy. Such a strategy attempts in making rural conditions so attractive that the rural population has no incentive to migrate to the city.

The role of these promoted urban centres is to provide urban services to a rural population, to serve as the location for off-farm employment (in small-scale industry, agro-based industry as well as the service and informal sectors) and to diffuse social change and technical knowledge into non-metropolitan regions,

In the implementation of a rural development policy, however, there must be guarded against a lowering of productivity as found in several Asian Countries where most of the population increase was accommodated in rural areas (Friedmann & Douglass, 1978:166). According to Richardson (1981:274), attempts to accommodate all of the population surplus in these small service centres will be costly and probably only partially effective at best. Furthermore, infrastructure costs *per capita* would be higher than with a more concentrated pattern of urbanisation. It is therefore imperative that a regional development policy be drawn up for the core regions, the 'other urban' or intermediate regions as well as the peripheral or rural regions; not each policy as an entity but al being complementary to each other.

Richardson (1981:274) concludes that rural development strategies alone cannot solve all major spatial planning problems. In most of the developed and more advanced developing countries, the easiest way to raise rural incomes and welfare remains in absorbing surplus rural population in the larger towns.

Although the policy options of rural development and slowing primacy remain the major policy options in attaining spatial equilibrium, other policies such as opening up new frontier regions, continued metropolitan growth, the stimulation of administrative centres, and *laisez-faire-strategies* are also implemented by some countries. The means however, of attaining the primary goal set by most countries, namely attaining spatial balance or equilibrium differ from country to country and region to region. The theoretical foundations and various concepts dictating regional development policies will be discussed at lenght.

4.4 Theoretical underpinnings of regional development policies

4.4.1 Balanced and unbalanced growth

Baldwin (1972:82) noted that the most fundamental issue that policy makers must decide on, is whether to attempt a massive, 'big-push' development effort, or to concentrate upon raising growth rates in selective sectors. In spatial terms, these approaches can be related to the balanced and the unbalanced growth approaches respectively. Many economists maintain that successful development requires a large-scale investment programme involving many different lines of production, while others believe that a more modest, selective growth effort seems more feasible. These theories of balanced and unbalanced growth will shortly be discussed in order to serve as background in evaluating the uniform approach (balanced growth) for regional development against the various selective approaches (unbalanced growth).

The first and foremost applications for a policy of *balanced growth* in an economy was done by Rosenstein-Rodan (1943:205), Nurkse (1961:241), Scitovsky (1954:150), and Lewis (1965:283)[16]. Rosenstein-Rodan maintained that successful development requires a large-scale investment programme involving many different lines of production: "There is a minimum level of resources that must be devoted to ... a development program if it is to have any chance of success ... Proceeding "bit-by-bit" will not add up in its effects to the sum total of single bits. A minimum quantum of investment is a necessary condition of success" (Baldwin, 1972:82). Markets in underdeveloped or developing countries are so small for some products that the unit cost is above effective demand at all output levels. Consequently, these items are not produced domestically.

According to the 'big-push' proponents, it is firstly necessary to bring about a large increase in demand in order to establish these important industries.

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16 The first two authors stress balance in demand, the latter two balance in supply (Hirschman, 1958:51).

In particular, this school of thought advocates the importance of externalities that work on the demand side. Again, Rosenstein-Rodan (1943:205) gives an example to illustrate this point: "Let us assume that 20,000 unemployed workers in Eastern and South-Eastern Europe are taken from the land and put into a large shoe factory. They receive wages substantially higher than their previous meagre income *in natura*. It would be impossible to put them into industry at their previous income standard, because they need more foodstuffs than they had in their agrarian semi-unemployed existence, because these foodstuffs have to be transported to towns, and because the workers have to pay for housing accommodation. If these workers spent all their wages on shoes, a market for the products of their enterprise would arise representing an expansion which does not disturb the pre-existing market, and 90% of the problem (assuming 10%) profit would be solved. The trouble is that the workers will not spend all their wages on shoes. If, instead, one million unemployed workers were taken from the land and put, not into one industry, but into a whole series of industries which produce the bulk of the goods on which the workers would spend their wages, which was not true in the case of one shoe factory would become true in the case of a whole system of industries: it would create its own additional market, thus realising an expansion of world output with the minimum disturbance of the world markets. The industries producing the bulk of the wage goods can therefore be said to be complementary. The planned creation of such a complementary system reduces the risk of not being able to sell, and, since risk can be considered as cost, it reduces cost. It is in this sense a special case of 'external economies' ".

The theory of balanced growth therefore stresses the need for different parts of a developing economy to remain in step in order to avoid supply difficulties. Industry should not get too far ahead of agriculture, while basic facilities in transportation, power, and water supply (Social Overhead Capital) must be supplied in adequate volume to support and stimulate the growth of industry (Hirschman, 1958:51). On the demand side, the balanced growth theory argues that a new venture which gets underway in an underdeveloped country, is likely to turn into a failure: the workers, employees, and owners will obviously not buy all of its output, while the other citizens of the country are caught in an 'underdevelopment equilibrium' where they are just able jointly to afford their own meagre output. Therefore to make development possible it is

necessary to start, at one and the same time, a large number of new industries which will be each others' clients through the purchases of their workers, employees, and owners. For this reason , the theory has been annexed to the "theory of the big push" (Hirschman, 1958:51). A big push could result from one or a few big projects, or from a large number of projects of varying size that support one another. It is the latter alternative of the "big push" theory that is implied by the balanced theory.

What the one factory could not accomplish, would therefore become true in the case of a whole system of industries: it would create its own additional market. This form of balanced growth soon received the name of "balance in consumer demand" or alternatively "horizontal balance" (Hogendorn, 1987:326). The case for the 'big-push' therefore rests on two points. Firstly the existence of significant scale-economies in many productive lines means that the demand for many items must be high even for a break-even point to exist. Secondly, in order to raise the demand for any one particular line it is usually necessary to raise income levels substantially over the entire economy. This can only be accomplished with a massive al-out investment programme (Baldwin, 1972:83-84).

Thirlwall (1972:154) contended that the balanced growth doctrine has since been extended, to refer to the *path* of economic development and the *pattern* of investment, necessary to keep the different sectors of the economy in balance so that lack of development in one sector does not impede development in others. According to Thirlwall, this does not necessarily mean that output in all sectors should grow at the same rate, but according to the income elasticity of demand for products, so that supply equals demand. The notion of equilibrium is therefore implied as an absence of shortages and bottlenecks.

The balanced growth theory led to the conclusion that, when an economy reached some adequate size, the inhibiting effects of small markets would tend to disappear. On this score, growth was easier as income grew and was more practical for the rich than the poor.

Hirschman (1958) carried the concept of balanced growth further in suggesting that the creation of deliberate imbalances might be a superior way to achieve growth, i.e. *unbalanced growth*. According to Hirschman (1958:183-184), there can be little doubt that an economy, in order to acquire higher income levels, it must first develop within itself one or

several regional centres of economic strength. This need for the emergence of growth centres in the course of the development process means that international and interregional inequality of growth is an inevitable concomitant and condition of growth itself. Therefore, in a geographical sense, growth is necessarily unbalanced.

Hirschman explained that, when looking at an economy that has experienced growth at two different points in time, many parts of it will be found to have pushed ahead. Industry, agriculture, capital goods and consumer goods industries and many other sectors each has its own rate of annual increase. Just as the demand side of the market can absorb 'unbalanced' advances in output because of cost-reducing innovations, new products, and import substitution, so it is possible to have isolated forward thrusts on the supply side as inputs are redistributed among users through price changes, and at the cost of some temporary shortages and disequilibria in the balance of payments or elsewhere. Hirschman (1958:62-63) maintained that development has "... proceeded in this way, with growth being communicated from the leading sectors of the economy to the followers, from one industry to another, from one firm to another. In other words, the balanced growth that is revealed by two still photographs taken at two different points in time is the end result of a series of uneven advances of one sector followed by the catching up of other sectors. If the catching-up overreaches its goal, as it often does, then the stage is set for further advances elsewhere". Myrdal (1957:26) supports this view by maintaining that if "... things were left to market forces unhampered by any policy interferences, industrial production, commerce, banking, insurance, shipping and, indeed, almost all those economic activities which in a developing economy tend to give a bigger than average return - and, in addition, science, art, literature, education and higher culture generally - would cluster in certain localities and regions, leaving the rest of the country more or less in a backwater". The play of forces in the market, therefore, tends to increase, rather than to decrease, the inequalities between regions.

The advantage of this viewpoint over balanced growth, where every activity expands perfectly in step with each other, is that it leaves considerable scope to induced investment decisions, and therefore economises the principal scarce resource, namely genuine decision-making.

Therefore, in the "all-out" (balanced growth) approach every industry takes a giant step forward. This includes consumption-goods industries in the manufacturing and agricultural sectors, capital-goods industries, and even social-overhead investments. Under the selective approach (unbalanced growth), giant steps are taken only in a small number of productive lines at any one time (Baldwin, 1972:85).

Finally, Hansen (1978:221) concluded that the balanced growth theory generally implied "... more emphasis on rural development". In the spatial context, Glasson (1978:30) made distinction between 'balanced growth' and 'regional balance'. Regional balance differed from balanced growth in that it does not imply equality, uniformity, or conformity. 'Regional balance' implies equality of opportunity for each region to redress demographic, economic, social and environmental weaknesses and to achieve its full potential, thus ensuring that the quality of life is not a function of the region in the country in which people happen to live and work. Regional balance is therefore a goal to be endeavoured in regional planning, and could be attained, arguably, by means of balanced or unbalanced growth (see also section 6.2.2).

4.4.2 Efficiency and equity

Based on much the same principles and viewpoints on balanced and unbalanced growth, the concepts of efficiency and equity are introduced as a means of implicating theoretical economic concepts on specific aspects of regional planning. A choice, from a national development policy point of view, could therefore also be illustrated by means of the classic trade-off between efficiency and equity. Richardson (1979*b*:161) and Alonso & Medrich (1972:229) indicated that the potential conflict between aggregate efficiency and interregional equity is perhaps the most crucial dilemma in regional economics, and a major obstacle in the way of effective implementation of regional policies. Giving priority to some cities could be interpreted as promoting aggregate efficiency (usually measured in terms of maximum Gross National Product (GNP) growth

with a given level of resources[17]), whereas giving priority to others might be more consistent with interurban equity if the selected cities stand below the national urban average in indices of income, welfare, and growth (see also section 4.7.2.1). It is generally assumed that the set of cities favoured by the efficiency goal will not overlap very much with the set indicated by the equity goal (Richardson, 1987*b*:281). Thus policy makers have to trade off efficiency against equity.

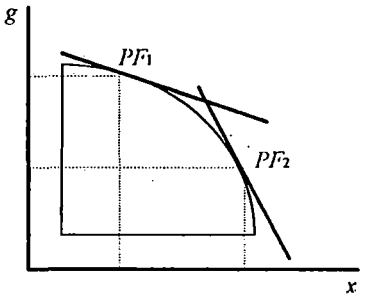

Figure 4.1 Trade-off between efficiency and interurban equity (Richardson, 1987b:281)

Conceptually, this can be illustrated in terms of a trade-off function (see Figure 4.1). An efficiency measure (GNP growth rate = g) is labelled on the vertical axis and an equity index (a measure of urban disparities = x) is

17 A parallel argument which also refers to the efficiency approach, apart from output maximisation subject to given resource constraints, is environmental quality. The relocation of polluting industries from a densely populated core region to an underdeveloped periphery may lower the rate of capital return if the new location is a high-cost site, but it may promote interregional income convergence and it may be 'efficient' in a broader sense in that the relocation may create substantial net social benefits. The implication is that cost-benefit analysis is superior to output maximisation as an efficiency criterion (Richardson, 1979*b*:165).

measured on the horizontal axis, with movement to the right representing more equity. This trade-off function represents the technical possibilities for substituting equity for efficiency in the economy. Policy makers can therefore choose a northwest point (rapid growth and interurban inequities) on the function, or a southeast point (slow growth and more interurban equity), or a more intermediate point, representing a balance between efficiency and equity. In terms of a specific regional development policy, this 'balance' between efficiency and equity could argueably refer to an intermediate sized city-strategy (see section 4.5.1.3).

Richardson (1987*b*:282) suggested that this trade-off problem could be resolved by specifying a set of policy makers' preference functions which also slope downward to the right, where the slope represents the policy makers' preferences of how efficiency should be traded off for more equity. A relatively flat preference function (PF_1) implies a growth-oriented society, whereas a steeper function (PF_2) implies greater emphasis on interurban equity. The optimal trade-off is where the highest preference function is tangential to the trade-off function, representing an optimal mix between aggregate efficiency and interurban equity. This can be converted into spatial priorities if the policy makers have developed a transformation function that converts each GNP growth rate-interurban equity index combination into a particular set of priority cities within the national urban system. Most likely, this transformation model would imply some attention to all cities, but with the relative amounts of infrastructure investments and other resources allocated to each city changing with each point on the trade-off function. Richardson (1987*b*:285) illustrated the point that efficiency-equity compatibility does exist, by means of the Brazilian example. An interregional development strategy promoting the northeast region is difficult to justify on efficiency grounds. However, a national urban policy giving priority to selected intermediate sized cities in every region (including the northeast) may be consistent with efficiency and may promote both interurban and interpersonal equity, certainly more so than a strategy emphasising the metropolitan areas - which in Brazil would be both inefficient and inequitable.

4.4.3 Pre-selection or self-selection

Another basic which needs mentioning before discussing specific development strategies, refers to the distinction between 'pre-selection' and 'self selection'. Although these strategies refer primarily to aspects or elements of unbalanced growth or the efficiency principle, they seem justified because of its wide use in development planning.

Under a national urban policy approach, certain cities would be selected either by the national government or as a result of negotiations between the national and regional governments. These cities would then receive disproportionate shares of infrastructure investments and/or be major beneficiaries from local incentives. An alternative approach, is where cities select themselves for priority development and take appropriate measures to generate the resources for financing development projects locally (Richardson, 1987*c*:239). The instrument used to operationalise this idea refers to a 'development fund' from which funds can be borrowed to initiate projects which subsequently facilitate the generation of resources for repaying the loans. For example, cities may receive loans in the order of their date of application or the government may introduce eligibility criteria to jump up the application list. If the government's fiscal resources are sufficient, a grant-loan combination may be offered with the grant proportion varying by type of project or by city. The reasoning behind this idea is that it requires only a modest amount of seed capital because once the scheme gets into full swing, periodic repayments finance new loans.

In comparing the merits of these two approaches, several issues need to be considered. The first is that self-selection combines 'top-down' and 'bottom-up'[18] planning in the sense that the government lays down the foundation for local participation - the extent of participation depending on the city's self-reliance and dynamism. The end result of this 'development fund' is approved central-local communication, co-operation, and co-ordination. On the other hand, pre-selection does not involve the individual cities at all except to pressure the government for inclusion among priority cities.

Under normal circumstances, the early beneficiaries from the self-selection scheme are likely to be cities with demonstrated municipal managerial capacity and at least an embryonic local revenue base. To the extent that there is a positive association between local government capacity and economic potential, these are likely to be the better-off cities. From this point of view, the self-selection approach is more appropriate if policy makers are growth-oriented rather than equity-oriented (Richardson, 1987*c*:239).

The problem with pre-selection is that national government investment resource constraints severely limit the number of cities that can participate in a priority investment programme. The self-selection strategy, on the other hand, helps to overcome resource limitations by fostering local resource generation. If the eligibility criteria for lending includes the design of effective cost-recovery plans, these funds will help cities to improve their long-term viability. This permits replicability and the eventual inclusion of a large number of cities within the scope of this scheme. The self-selection approach, however, also has certain risks. The first is that complicated loan preconditions requiring detailed feasability

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18 In spatial planning, the 'top-down' approach refers to the identification of growth centres in a geographical context. The development of these centres is supposed to create spread effects in order to initiate economic development in underdeveloped areas, and thereby promote national growth. On the other hand, the 'bottom-up' or basic needs approach was introduced to improve the standard of living of the poor in developing countries by means of increased participation in the planning and decision-making process. This approach, with its emphasis or regional equilibrium, is in strong contrast with the 'top-down' aproach which stresses physical, social, and economic disequilibrium as the main instruments for development. Scholars seem to be preoccupied with rural development in focussing on the 'bottom-up' approach, while excessive urbanisation is being presented as an inevitable result of the 'centre-down' approach (Geyer, 1989*d*:29-33).

studies, cost recovery plans and other technical packaging may encourage the growth of a consultancy industry geared to helping cities to obtain loans. While this is not intrinsically bad, a danger exists that priority in disbursements may depend more on the quality of the consultants than on the merits of the development projects. A second risk is that, if the eligibility rules place considerable power in the hands of the funding bureaucrats, corruption may be serious (Richardson, 1987*c*:239-240).

4.5 Development policies

With these economic planning principles as background to indicate the development thinking behind most spatial strategies, attention is now focused on specific regional development strategies which affects the development of the intermediate region in one way or another. Most regional development strategies favour either an 'all-out' approach or a more selective approach, and as indicated, these approaches refer to the concepts of balanced and unbalanced growth. These strategies will consequently be described under the heading of balanced and unbalanced growth.

4.5.1 Unbalanced growth: development policies

4.5.1.1 Countermagnets

A countermagnet strategy requires the strengthening of one or two major cities at a considerable distance from the primate city, with the idea of building them as competitors to the primate especially for industry and migrants. The specific location is not critical provided that the primate city and the countermagnet are at least "... several hundred miles apart" (Richardson, 1977*a*:54). Such a policy of decentralisation implicates the government interfering with the natural process of concentration or centralisation (Du Pisanie, 1980:39). The theory behind planned

decentralisation is based on the presumption that there is an ultimate city size. If growth was further stimulated, the city would operate less efficiently (Lo & Salih, 1978:260-261). Unfortunately, no agreement can be found as to the size levels at which such diseconomies occur[19] (Suarez-Villa, 1988:8).

The key element in countermagnet strategies is the idea of using a form of polarised development to combat polarisation forces of the primate city. It is therefore representative only of a certain *type* of decentralisation policy. The drawback to this approach, besides only being applicable in certain types of city systems, is the danger of replicating elsewhere the negative aspects of polarisation observed in the primate city (Richardson, 1981:274; Richardson, 1984:283). Another drawback is that countermagnets can rarely be found where they are needed. Countries with candidate countermagnets (such as Colombia, South Korea, and the Philippines) tend to have reasonably balanced national urban hierarchies, while countries with very primate city size distributions (such as Thailand and Peru) have no suitable cities large enough to become an effective countermagnet (Richardson, 1987*a*:217). The development of Brasilia can be indicated as the most successful example, while the development of Islamabad and Taxila in Pakistan similarly led to the creation of a third metropolitan region in the country (Richardson, 1977*a*:54).

Richardson (1977*a*:58) concluded that the countermagnet approach implies the relative neglect of much of the country, and therefore needs to be accompanied by complementary measures such improvement of the rural settlement pattern. Also, a countermagnet makes little sense unless it is regarded as being only an early phase in the construction of a spatially integrated national urban hierarchy.

Although the focus of this strategy are situated outside the existing primate cities, and as such does not implicate one of their intermediate regions, this strategy still relates to the development of a possible new metropolitan centre, and therefore an intermediate region over a certain period of time. This strategy also implicates the intermediate region if the development

19 A contrary view has also evolved, indicating that productivity even increased with city size (Alonso, 1975:434.; Richardson, 1977*a*:61; Richardson, 1989:355).

axes is implemented to connect metropolitan regions with the countermagnet/s.

4.5.1.2 Growth centres and growth regions

The concept of *pôles de croissance*[20] and its related theory were originally developed as a tool to describe and explain the anatomy of economic development in an abstract economic space (Hermansen, 1972:160; Lasuén, 1972:20). However, during the course of time the scope of the theory has been broadened and reoriented to include also the normative issues of policy intervention and planning. Based on the observation that development does not appear everywhere at once, but at different points or development poles with variable intensities; it spreads along diverse channels and has varying terminal effects for the whole of the economy. Perroux argued for the conception of development as essentially polarised in the sense that forces inherent in the development process worked toward clustering of economic activities and growth and toward imbalance between industries and geographical space. Although Perroux was not particularly concerned with the spatial aspects of development in its geographical sense, applications for the growth pole theory have been concentrated mainly on problems of inter- and intraregional planning (Hermansen, 1972:161).

The growth centre[21] or decentralisation policy usually involves the selection of a limited number of urban centres with demonstrated

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20 The concept of growth poles or *pôles de croissance* was founded by the French economist Francois Perroux in 1955. In his article ("Note sur la notion de 'pole de croissance'") he used the growth pole to indicate a dynamic sector in the economy (Lasuén, 1972:22-23). The growth pole therefore consisted of propulsive industries that exerts dominance through its interindustry linkages over other manufacturing sectors. These interrelationships between the propulsive industry and other sectors are considered exclusively in abstract, functional economic space. A growth pole is capable of rapid growth and of transmitting that growth through multiplier effects to other sectors of the economy (Goodall, 1987:202-203).

21 As discussed, the term 'growth pole' refers to a propulsive industry in economic or abstract space, while a 'growth centre' refers to a location (usually a city) in geographical space. Connecting these concepts, i.e. the 'industry' with its 'location' has received much attention in literature (Boudeville, 1966:113-114; Darwent, 1975:545)

economic potential. The centres would function as sites for decentralising industries, i.e. the process of industrial decentralisation (see 3.3.2), or the foci of development of new propulsive industries and as regional holding centres for migrants. Prerequisites for this policy include highly developed infrastructure at the growth centre, the provision of centrally supplied public and social services, a demand for labour and other resources from the hinterland, and the diffusion of growth mentality from the city over a wider region.

Regional policy, it was held, could induce growth centre development, which in turn would generate several inter-related benefits. First, the centre's own growth would directly promote regional development. Secondly, the growth centre would attract migrants from lagging regions who might otherwise go to large, over-congested cities. Thirdly, the growth centre would eventually produce positive spread effects in its hinterland. Finally, the growth centre would fulfil a major relay function in the process of innovation diffusion through the hierarchical system of cities (Hansen *et al*, 1990:285). Seen against this background, growth is therefore assumed to be unbalanced (Blum, 1986:326).

In the 1960's and 1970's, developing and developed countries alike applied the growth centre concept in their urban, regional, and national development planning. Most often, these applications were a reaction to the wave of frustration arising from the failure of the 'big-push' paradigm of the 1950s (Higgins, 1983:3). This was also very much the thinking behind the development of new towns. A new town refers to a free-standing urban centre - located outside commuting distance of an existing city (Egan & Bendick, 1986:218) - on a completely new site, although it was later broadened to include the expansion of existing towns (Richardson, 1984:283). The earliest examples of this planned decentralisation policy can be found in and around the London metropolitan area with the development of these new towns. The development of these towns was part of a wider policy for the distribution of population and employment as a response to the problems of urban

congestion and represented a logical extension to the *garden city*[22] concept (Goodall, 1987:323).

Due to restrictions placed on the physical growth of London since 1945 and the simultaneous implementation of an overspill programme with the identification of new and expanded towns. This process was facilitated with development of housing facilities and the decentralisation of jobs by public action. These new towns proved very successful for business and industry development and even attracted admiring visitors from all over the world (Hall, 1984:40-41). Greater London self, lost 540 000 people to decentralisation between 1961 and 1971, and another 739 000 between 1971 and 1981. Existing and new towns in an area of 30 to 65 kilometres from central London grew into major centres. While some of these people looked at Greater London for a living, the majority of the people found work locally (Hall, 1984:25). The London experience also saw these decentralised towns as attractive magnets to industry and the development of modern shopping centres. This decentralisation of economic activities went hand in hand with the decentralisation of people form Greater London. In the 1950s, Greater London lost 165 000 people while the surrounding Outer Metropolitan Area (25-60 kilometres from London) gained nearly one million (see Figure 4.2). During the 1960s Greater London's loss accelerated to more than half a million; the Outer Metropolitan Area gained 800 000 people (50-100 kilometres from London). The 1970s saw London losing nearly three-quarters of a million people and the more isolated areas of 100 kilometres and more from London showed the fastest growth (Hall, 1984:26-42).

22 The formal exposition of the garden city concept was undertaken by Ebenezer Howard (1898) in which he advocated the garden city as a satellite town incorporating the best of both urban and rural environments. The garden city movement was a forerunner of the post-war new towns programme (Goodall, 1987:186).

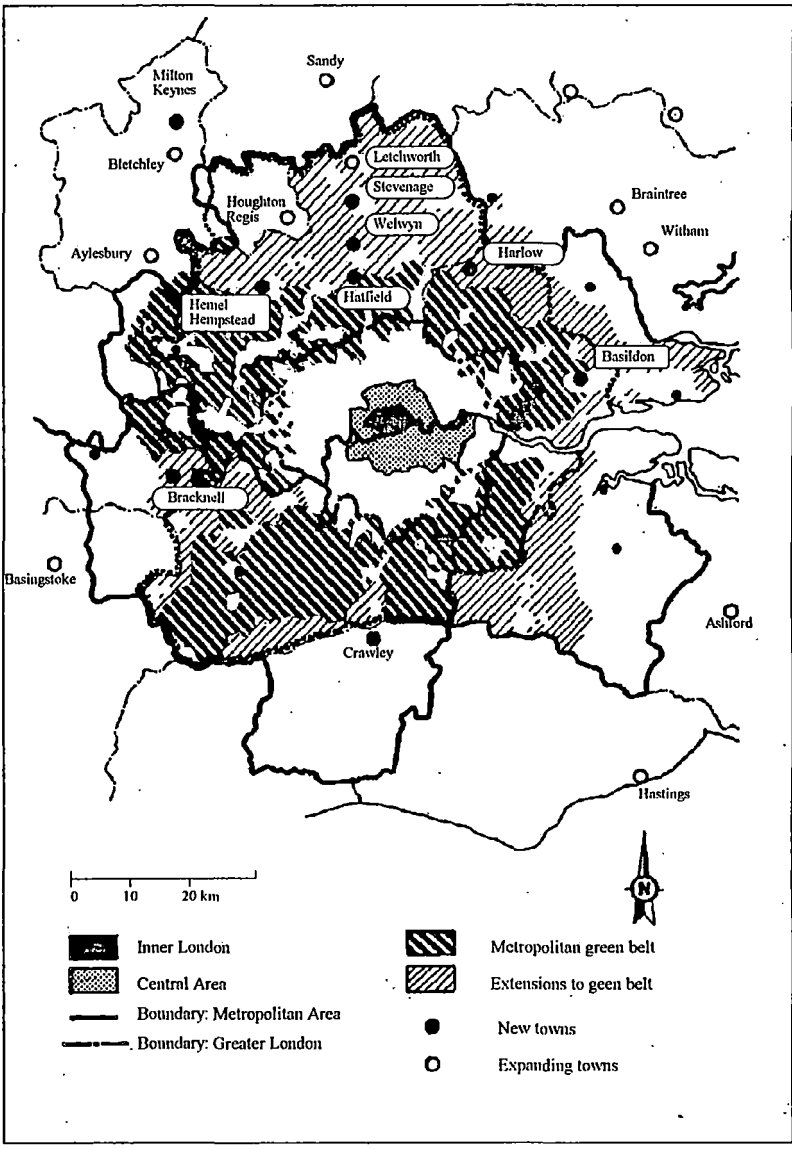


Figure 4.2 The London Metropolitan Area (Hall, 1984:24)

Perhaps the clearest application of growth poles could be found in France with the designation in the 1960s of eight *metropoles d'equilibre*. These growth poles were based on a major provincial city or group of cities, as a means of combating the excessive concentration of national life in Paris (Hall, 1987:246). The designation of these growth poles in the inner (*proche banlieue*) and peripheral *départments* (*banlieue*), led to the four outer *départments* being the fastest-growing area in the whole of the Paris region between 1975 and 1982. Positive inducements to industry, in the form of grants from special funds, were allocated for decentralisation from Paris. These incentives were supplemented with negative restrictions on industry in Paris itself. New towns were identified and built, and financial incentives implemented to encourage the total movement of people from the region (Hall, 1984:78). While the City lost 131 000 people and the inner suburbs lost 77 000, the outer départments - consisting of an area between approximately 20 to 60 kilometres from the inner départments - gained 387 000 (see Figure 4.3) (Hall, 1984: 54-63). The implementation of growth centre strategies also occurred in Italy (Minshull, 1987:173), the Netherlands and Sweden (Pred, 1977:191-196), as well as the former Soviet Union (Gokhman *et al*, 1981:261), mostly showing positive results. Even in developing countries such as Venezuela and Korea, growth centre strategies were successfully implemented to combat the negative externalities experienced in the primate cities (Simmons, 1981:95).

This strategy has however also received much negative reaction mostly because of its failure to diffuse development intra-regionally, their limited labour absorption, and the lack of courage and tenacity of policy makers who have frequently abandoned the strategy before it could be expected to show results (Richardson, 1981:275). Also, Hansen *et al* (1990:285) maintained, whatever the economic efficiencies that might be realised, it seems virtually impossible to carry out a growth centre strategy in a democratic society[23]. By definition, the implementation would leave out more places and people than it would include. Other problems associated with this decentralisation policy include urban sprawl, deterioration of the core, social imbalance, and investment insecurity (Bourne, 1975:49). These points of criticism are perhaps best explained with the London

[23] Richardson (1977*b*:229) went as far as to say that growth centre strategies "... are not inconsistent with socialism".

example. The economic activities which decentralised from the core were dominated by skilled and semi-skilled jobs, and therefore failed to attract substantial proportions of the lower income groups who remained 'trapped' in poor housing conditions in inner London (Hall, 1984:41). In many countries, including South Africa, too many designations were made, mostly as political concessions. However, little has been done to put the strategy into effect on economic grounds, rendering these growth centres as merely centres on paper (Hansen *et al*, 1990:285). However, much in line with the purpose of this study, Richardson (1978*a*:151) argued that growth centres which are directly linked with the primate city as well as with smaller urban centres within the region, form the critical nodes for diffusion of development and social change and for national spatial integration.

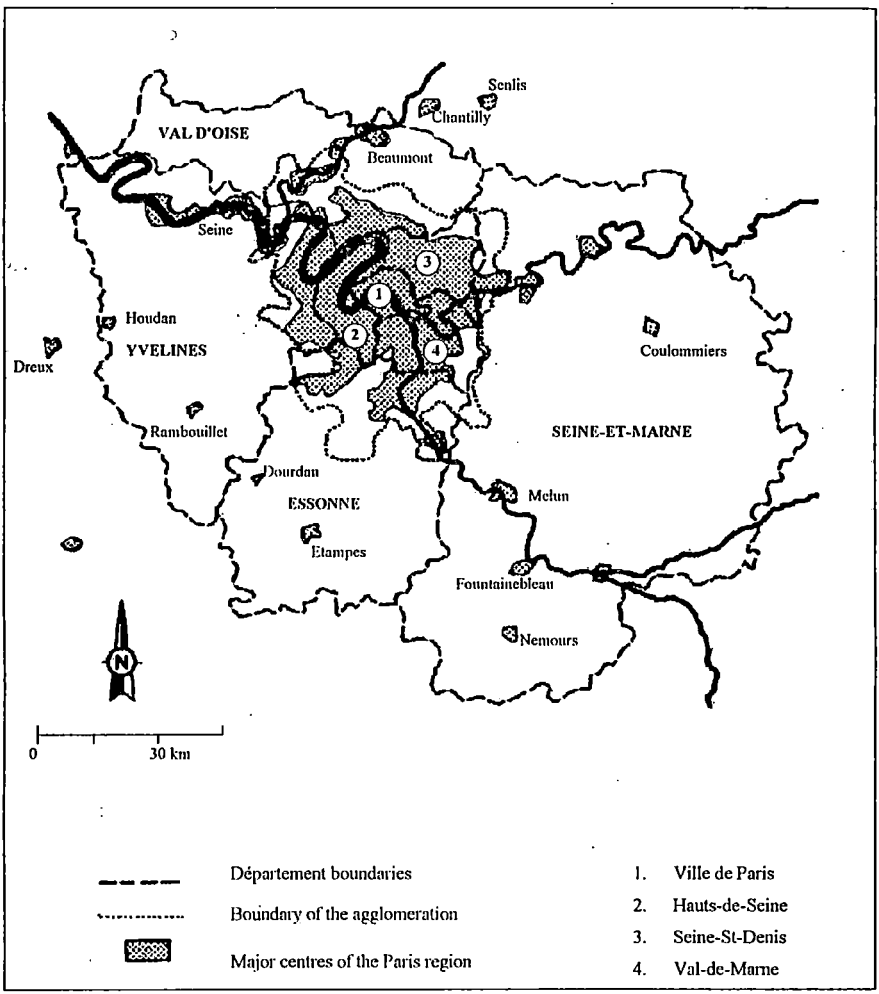


Figure 4.3 The Paris region (Hall, 1984:55)

Also consistent with the growth centre strategy, Stern (1985:7-9) suggested the development of a growth region as policy option (see Figure 4.4). The growth region differ from the growth point mostly in terms of the allocation of resources, which in the former case is channelled only to several nodes in the urban periphery. The growth region and its proposed communities should be based on the following principles:

- The growth region should be developed in an area that already has a central town as a core but investment and any other economic assistance should be directed to the area rather than the core.
- The selected region should be located in an inter-metropolitan periphery, preferably in reasonable proximity to one or more major metropolitan regions.
- The communities in the region should be characterised by an urban life-style within a rural environment.
- The communities should be based primarily on high technology industry and quaternary sector activities.
- Industries to be promoted should be of a sophisticated nature and neutral in locational terms where raw material and final product transportation costs are negligible in the expenditure budget. Electronics, computer software development, optics, and medical engineering are a few examples.
- The industries promoted should be skilled labour intensive, producing high value products, and be environmentally compatible.
- The communities should be located in an attractive environment and characterised by high physical standards.
- Attention should be paid to developing a cohesive system of social and cultural activities.
- A research institute and/or university branch should be seriously considered so as to provide the research and development back-up to the sophisticated industries in the region.

According to Stern (1985:8), growth regions can be motivated to form either linear or sectoral development patterns with the development of transportation corridors between metropolitan regions. The sectoral pattern presents basically the concept of decentralisation regions encouraging the expansion of the metropolitan field. The linear pattern is more generally associated with development along national axes presenting penetration into the inter-metropolitan periphery.

It is evident from the description on a growth region - especially the sectoral development strategy - that it has much in common with the characteristics of the intermediate region (see Figure 4.4). This growth region is also geographically bound to the metropolitan region and also relies partly on the decentralisation of economic activities.

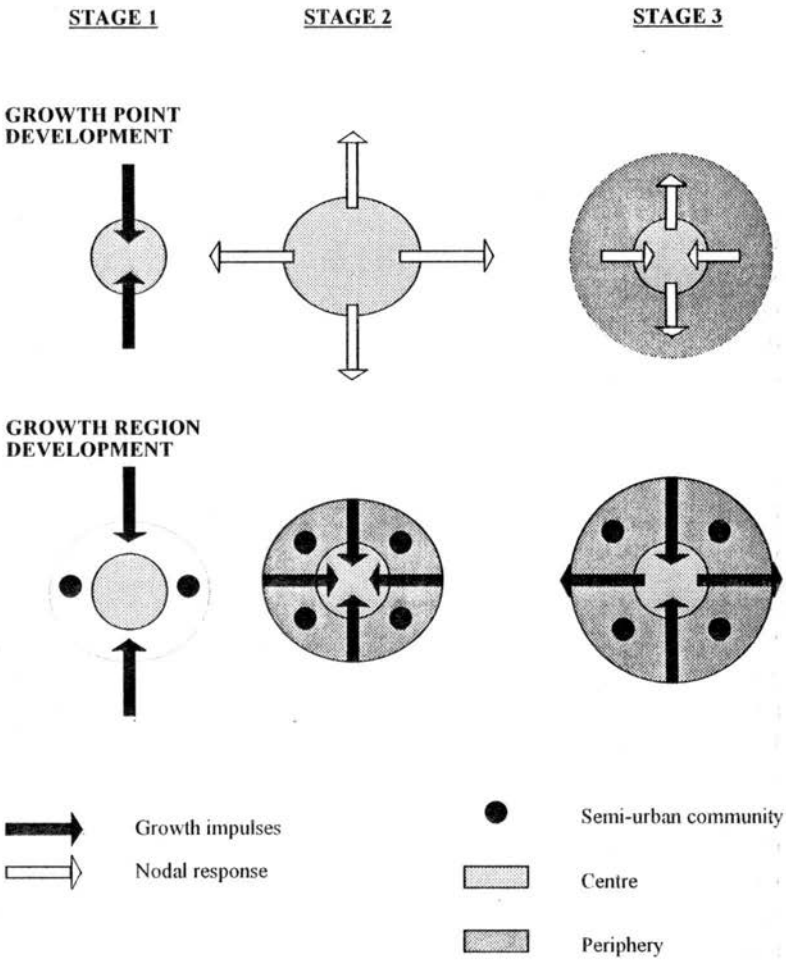


Figure 4.4 Development stages of a growth point and a growth region (Stern, 1985:7).

4.5.1.3 Intermediate sized cities

Intermediate sized, or secondary cities can be defined as those cities in the hierarchy of towns and cities of a country which functions as cores within territorially organised sub national regions, but being subordinate to the core regions within the national spatial area (Bos, 1990:21). Such a strategy involves the promotion of a limited number of intermediate sized cities where economic development potential is a key criterion in determining which cities should be selected. It therefore represents an efficiency-oriented strategy that retains a decentralisation element (Richardson, 1981:275). Stöhr (1972:75) argued that a "... simultaneous spread of development over the entire country usually appears unfeasible, and so the creation of new growth centres outside the few developed areas is often looked at as the best strategy for reducing geographic duality. The underlying rationale is to make use of external and scale economies and to promote urbanization and industrialization in intermediate-sized cities".

It is important to distinguish intermediate sized city strategies from growth centre strategies. The former are not primarily concerned with the attraction of large-scale industry to generate regional development. Instead, they focus much more on indigenous development which implies much more attention to measures that stimulate small-scale industry and the informal sector. Since these intermediate sized cities are often high-order service centres for the surrounding rural hinterland, the strategy also implies attempts to strengthen urban-rural linkages via the development of agro-based industries and expansion of the production of agricultural inputs. Because of their existing size, experience has also shown that these cities relieve some of the congestion found in metropolitan regions by attracting migrants who would have moved there originally (Okafor, 1985:144). Regarding infrastructure, an intermediate sized city strategy gives equal attention to social infrastructure and industrial infrastructure, rather than being biased in favour of the latter (Egan & Bendick, 1986:217). Because the development of growth centres are usually biased toward the manufacturing sector, these differences suggest a stronger orientation to welfare improvement and equity considerations in the case of intermediate sized city-strategies.

Each developing country must fashion its own unique strategies for generating a "... strong, widely dispersed, and spatially integrated system of secondary cities. The objectives of promoting more balanced urbanization and greater equity in the distribution of benefits do not imply that all secondary cities must be developed simultaneously or that national resources must be distributed equally among them" (Rondinelli, 1983:197). In those countries where governments are seeking to formulate strategies for intermediate sized city development, three actions seem essential:

(1) The strengthening of the intermediate sized city's economy by extending basic social services and municipal facilities and infrastructure that support productive activities and improve human resources; by improving physical structure to make these cities more efficient and conducive to productive economic activities; by strengthening the economic base and employment structure; and strengthening the planning, administrative, and financial capacity of local governments to manage urban development.

(2) Stimulating the growth and diversification of smaller towns and market centres to increase the number and geographic distribution of intermediate sized cities within the national settlement system.

(3) Strengthening the physical, economic, social, and political linkages among intermediate sized cities and between them and larger and smaller settlements to provide greater access to urban services, facilities, and job opportunities to people living in rural areas, and to create an integrated system of urban centres through which the benefits of urbanisation and economic development can be spread more widely (Rondinelli, 1983:198-199).

Because resource constraints dictate only a few designations, this strategy alone is unlikely to make much of a dent in primacy in a strongly primate

economy. Although it would help to promote a modest degree of development outside the core regions, it is suggested that it needs to be combined with other strategies for maximum effectiveness (Richardson, 1981:275). Hansen (1972:279) concluded that the most efficient use of public funds is to encourage the growth of intermediate sized cities, especially those that have already given some real evidence of possessing growth characteristics. In these centres public funds may be integrated with the actual or potential external economies to produce rapid growth with a minimum of external diseconomies of congestion. Intermediate sized city-strategies have been implemented in countries such as Denmark, France, Japan, Sweden, United Kingdom and the United States. Incentives implemented included relocation allowances paid to workers who moved from areas of high unemployment to areas where jobs were available, housing and industrial location subsidies, as well as preferential state subsidies (Hansen, 1972:279).

4.5.1.4 Development axis

Although not a development policy in itself, the development axis is often found as an instrument in aid of regional development strategies. The development axis could predominantly be linked to the growth centre approach, compensating for the limited viability of individual growth centres by stressing their mutual reinforcement when two points are located at the end points of a development axis (Richardson, 1987*a*:217). Friedmann (1966:*xv*) described the development axis as a type of upward-transitional area (see section 2.3) connecting two or more core regions. The intensity of corridor development tends to be directly proportional to the product of the core region economies and inversely proportional to the distance separating them.

Geyer (1988:120) concluded that a development axis must possess the following attributes to be regarded as a development axis:

(i) It must at least have a primary development centre at both ends with a communication axis linking the two centres - the term 'primary referring to each centre's economic dominance as compared to that of secondary centres within a development axis system.

(ii) The development centres on the axis must be mutually dependent in order to support communication on the axis.

(iii) Interaction on the axis must create potential for further development.

(iv) The axis must be growing physically and economically.

It could therefore be said that the purpose of a development axis is to reduce transport costs along a given route function in much the same way as agglomeration economies, i.e., stimulating economic activity through lower production costs (Richardson, 1987*a*:217).

Several examples can be found where the development axis was implemented in the urban and regional development process:

(i) Development axes connecting Paris with certain new towns were identified in order to facilitate polycentric city growth (Hall, 1984:80).

(ii) In Copenhagen the development axis concept was used to decentralise development along "fingers" (towns) in all directions from the metropolis. These towns were also connected to the centre and each other by means of a rapid-transit line (Blumenfeld, 1972:76; Hall, 1987:245).

(iii) In the United States, development axes were identified in order to improve coastal development and to link coastal development with interior development (Hartshorn, 1992:126).

(iv) In South Africa, several development axes were designated in order to decentralise development from the PWV-region to certain 'industrial development centres' (RSA, 1981*b*:17).

Geyer (1990:393) indicated that a combination of the development axis concept and an intermediate sized city-strategy could prove to be quite useful as an instrument to stimulate industrial leapfrogging from the PWV metropolitan region towards certain decentralisation points. Similar to London and Paris during the seventies, the PWV area is showing early signs of urban maturity which is accompanied by aspects such as a slower rate of population and industrial growth. Intermediate sized cities, closely tied together with the PWV-region in a possible system of cities, can play an important role for the sustained growth of the latter area. In addition it would on the one hand provide an additional option for advanced but low capital-intensity development halfway between the core and the intermediate sized city. On the other hand it would serve as alternative points of location for future rural-urban migrants on their way to the metropolitan region (Geyer, 1987:283-284). However, in order to develop a functional system of cities, priority need first be given to the development of development axes between the metropolitan region and adjacent intermediate sized cities (Bos, 1990:191).

4.5.2 Balanced growth: development policies

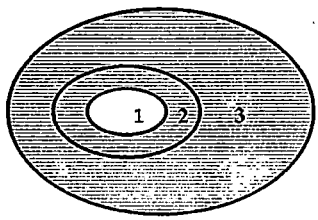
Apart from the above-mentioned regional development strategies which are based on the unbalanced growth theory, some other strategies are based primarily on the balanced growth theory. Consequently, attention is turned to the spatial application of the balanced growth concept, and its manifestation in a regional development strategy. These strategies ususally refer to rural development strategies and the uniform development approach.

4.5.2.1 Uniform approach

The uniform approach refers to strategy in which new industrial development is encouraged in the country as a whole, the most developed regions excluded, by means of subsidy grants or other locational

advantages (POE, 1989*b*:178; Black & Roux, 1991:454). The primary objective, therefore, is the decentralising of growth to the intermediate or peripheral regions, or stated differently, the slowing down of metropolitan growth. The most important advantage associated with the uniform approach is the freedom of choice (Black & Roux, 1991:454).

Accordingly, it is argued that industrialists for example, may be better informed than public administrators about market conditions as they are likely to expend a greater effort in searching for profitable opportunities. It is said that they are in a better position to identify the type of development best suited for a particular location. This implies that the pattern of industrial location would tend to reinforce prevailing market trends and consequently promote a more efficient spatial allocation of industrial activity than a growth-centre strategy. With information flows being more extensive and reliable in the private sector than in the public sector, as argued, it could be expected that individual firms will become profitable fairly rapidly under this scenario. The need for subsidies would eventually disappear, rendering the uniform approach a presumably more economical policy than a growth centre approach. Policy makers who propagate this approach contend that there exist strong spontaneous forces of concentration and polarisation in any market-driven economy, and therefore disregard criticism of spread effects of intervention being too thinly implemented.



1 Metropolitan region
2 Intermediate region
3 Peripheral region

Uniform approach (periphery)

Figure 4.5 Spatial application of the uniform approach

Armstrong & Taylor (1978:161) noted that complex subsidy systems tend to create confusion and uncertainty amongst prospective applicants, with the result that most do not even bother to investigate them properly. Thus, due to the simplicity of the uniform approach, it is argued that this approach will result in low administration and frictional costs (Black & Roux, 1991:454). The most positive characteristic of this approach, it can be argued, is the fact that it may prove to be politically more correct than a selective growth centre strategy. All cities and/or towns and industrial enterprises in the designated regions have equal chance of receiving the relevant subsidies, without discrimination on irrelevant grounds.

A shortcoming of the uniform approach is that it may prove to be unworkable in certain countries. If a sufficiently attractive incentive were offered to all manufacturers outside the metropolitan regions, the policy may turn out to be unaffordable. Conversely, if the policy is affordable, the incentive may have to be set at such a moderate level as to render it largely ineffectual (POE, 1989*b*:179).

Practically however, these strategies were mostly implemented by means of the identification of the most underdeveloped areas in a country. These regions, mostly designated on the basis of unemployment, low income levels, and a high net outward migration rate, were usually assisted by means of redistributing taxpayers' money in order to promote economic growth (Frost & Spence, 1982:105).

An application of this uniform approach was implemented in the Federal Republic of Germany in 1969, which was a shift from *ad hoc* granting of aid for specific locations to a seemingly more systematic approach. Development assistance was concentrated in specifically defined development areas which consisted of:

(i) the Republic's eastern frontier areas (Zonenrandgebiet);

(ii) areas whose economic strength is considerably below the Federal average or is in danger of falling below such level; and

(iii) areas where the economy is dominated by branches which have undergone or are threatened by structural change in such a way that

considerable negative consequences have arisen or are expected to arise (Jung, 1982:90).

The majority of this Regional development Programmes covered thinly settled peripheral regions with population densities considerably below the Federal average and low levels of industrialisation. The total area receiving development aid within this programme (Improvement of Regional Economic Structure) in 1975, accounted for 62% of the total area of the Federal Republic of Germany. However, overall economic deterioration since the mid-1970's has been accompanied by increasing criticism of the inefficiency of this kind of regional policy directed towards the mobilisation of capital (Jung, 1982:83-90).

Great Britain identified similar regions with the designation of 'Assisted Areas' or 'Development Areas' since the mid-century, primarily on the narrowly-defined basis of high unemployment and out-migration levels (Hansen, 1981:118). Frost & Spence (1982:100) reported that, prior to 1979, some 40% of the employed population in Great Britain was found in these Assisted Areas.

Another application of the uniform approach is currently found in the Regional Industrial Development Programme of South Africa, which was implemented in 1991. The programme identified non-metropolitan South Africa as an area eligible for financial assistance in developing new industry. Save the metropolitan and abutting intermediate regions, the rest of the South African spatial area received 100% incentives (mostly in terms of tax holidays and establishment grants). The preliminary results of this programme - which is a direct shift from previous policies - will be discussed in Chapter 6.

Having discussed metropolitan evolution and relevant spatial development policies, the successful implementation of any policy relies on the correct timing of the proposed intervention.

4.6 Timing of intervention

In the early stages of economic development, spatial policies are likely to be ineffective because there are few alternatives to the combination of a dispersed rural population and a high degree of urban concentration in certain primate cities. Policies to promote industrial decentralisation or the growth of intermediate sized cities are likely to waste scarce investment resources (Richardson, 1984:263).

Richardson (1987*a*:209) maintained that spatial policies are much more likely to be effective at intermediate stages of development when regional markets begin to cross scale economy thresholds, pecuniary diseconomies and congestion costs may be emerging in the primate city and metropolitan region, and polarisation forces show signs of spontaneous weakening (see also section 3.2.3). Although in some cases this may be influenced by policy measures, in general these trends appear to be spontaneous. In certain developing countries, intermediate sized cities are already growing faster than the primate city. The primary question at issue is whether policy makers should give decentralisation a push, how big and when (Richardson, 1977*a*:61).

Hall (1987:242) indicated that empirical evidence seems to suggest that the decentralisation of the first-order city may come somewhat earlier than the accelerated growth of second-order cities. Even though these two processes may overlap in time, the conclusion is that the *first* effort should be to promote the orderly deconcentration of the metropolis, the *second* to promote the early development of selected second-order cities, and the *third* to promote spread effects into their rural and small-city hinterlands. The deconcentration process could further be divided into two processes in order to facilitate orderly metropolitan growth. The first phase in the deconcentration process could be aided by means of 'guide plans' which guides metropolitan crawl along the development axes emanating from the metropolitan region. The second phase implicates guidance of the deconcentration process to intermediate sized cities, adjacent to, or within the daily urban system of the metropolitan region. A third phase of decentralisation, refers to the development of intermediate sized cities in the periphery (Bos, 1990:80)

Therefore, when businesses begin to take a serious look at decentralised locations they may suggest the time is ripe for government to internalise some of the externalities. The provision of industrial estates, infrastructure investments or relocation subsidies figure among policy alternatives which could be considered at this stage of development. In short, the time of implementation of a chosen development policy must be in accordance with the development status of the region or country, and preferably of such a nature as to strengthen existing or predicted trends.

4.7 Conclusion

The purpose of this chapter was to illustrate the two major schools of thought in regional development planning, i.e. the uniform versus the selective approaches. It was indicated that both strategies have received much attention, whether it be negative or positive, and both have been implemented in various countries over the last few decades. In most cases it was illustrated that a larger investment in a limited number of towns or cities are less risky than minor investments in a large number of locations. A major problem with regard to the successful implementation of these policies seems to be the appropriate time of intervention in the metropolitan evolution process.

Population distribution patterns have long been used as an indicator for appropriate regional policy. Population and migration change can no longer be regarded as a discriminating indicator of labour market imbalances (Robert & Randolph, 1983:97-98). Areas benefiting from regional aid are, demographically speaking, changing in divergent ways, suggesting that similarly designated growth areas have very different needs. This in turn argues for flexibility in the policy responses at a more local level rather than the implementation of policy instruments on rigorous nation-wide criteria. The latter statement is in accordance with Richardson's ideas on the formulation of a threefold development strategy regarding the metropolitan region, the 'other urban' areas of intermediate region, and lastly the rural or peripheral region.

CHAPTER 5

THE EVOLUTION OF REGIONAL DEVELOPMENT POLICY INFLUENCING THE DEVELOPMENT OF THE INTERMEDIATE REGION IN SOUTH AFRICA (1955-1982)

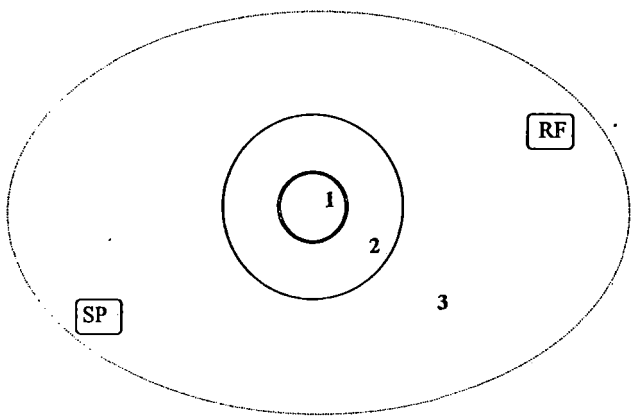
5.1 Introduction

It is the aim of this chapter to give insight in the evolutionary development of regional development policy in South Africa. In the previous chapters it has been attempted firstly to identify the intermediate region in its spatial and economic context, and secondly to illustrate the manifestation of intermediate regions whether it be the result of decentralisation policy or the spontaneous movement of people and economic activities from the metropolitan regions.

This chapter will follow the regional development policies influencing the development of the intermediate region as implemented in the South African development area over the last few decades. South Africa is quite a unique example because of its policy of separate development instigated in 1948 by the Nationalist Party that came into power. To evaluate these policies in the context for which they were developed, it is deemed necessary to give a short historical perspective on the spatial development of the South African development area.

5.2 The development of the South African space economy

Using Friedmann's (1966) core-periphery model (see Figure 5.1), Browett (1976:9)[24] identified four periods of development of the South African space economy.



1.	Core region	RF	Resource Frontier
2.	Upward transitional region	SP	Special Problem
3.	Downward transitional region		

Figure 5.1 Schematic structure of Friedmann's (1966) Development Regions (Fair, 1982:12).

[24] Various models have been used in explaining the development of the South African space economy, such as Houghton's (1973:9-25) model based on Rostow's stages of economic growth. As Friedmann's (1966) theory on regional development is at issue in this study, the decision was made to feature Browett's (1976) application of this theory in the South African space economy.

Browett (1976:6) used several qualitative and quantitative measures in providing a unifying organisational framework which allows one to trace South Africa's changing spatial structure over time. Each of the peripheral regions is defined and differentiated on the basis of their degree of interaction with the core regions, their levels of economic development and their potential for future growth as governed by their natural and human resources and their locational advantages and disadvantages (Fair, 1982:48).

(i) Pre-industrial period: Pre-1870

The South African space economy in 1870 (see Figure 5.2*a*) could be described as one in which national political unity was severely lacking, economic activity patterns were almost entirely of local agrarian character, and the sparsely-settled population lived predominantly in isolated farmsteads, kraals or small towns, between which there existed few transport connections.

In the absence of national core regions, what may be recognised in the South African space economy at this time was one major core (Cape Town), two minor regional political cores (Bloemfontein and Pretoria), and three sets of dual nodes cores in which, on one hand, the commercial and export and, on the other, the administrative functions were divided (Durban and Pietermaritzburg; East London and King William's Town; and Port Elizabeth and Grahamstown) (Browett, 1976:10).

Several differences need to be pointed out between the South African situation and Friedmann's model. Firstly, the presence of a large indigenous Black population as opposed to Friedmann's assumption of White colonisers moving into a sparsely populated area. Secondly, instead of diffusion of settlement proceeding inland from several isolated beachheads, the original lines of settlement by Whites in South Africa emanated largely from Cape Town alone. Moreover, there followed a period of political fragmentation unlike the unilear sequence from uninhabited area to a single national unit as Friedmann hypothesised. Thirdly, a brief subsistence stage was not followed by a long colonial agricultural stage, for the discovery

of minerals in the interior created quite different conditions (Fair, 1982:48-49).

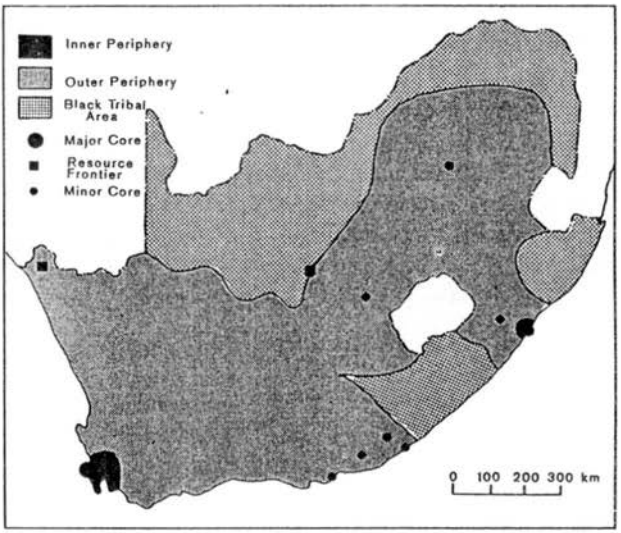


Figure 5.2a *Development regions in the pre-industrial period (Browett, 1976).*

(ii) The Transitional Period: 1870-1911

The *Transitional Period* (see Figure 5.2*b*) opened with the injection of new foreign enclaves of economic growth, namely mining. This new development tended to bring about a greater differentiation in

the spatial organisation of economic activities. On the one hand, the mining centres were connected by railways to the ports so that this transport network served not as linkage between the major agricultural consuming and producing areas, but as a space-linking innovation which "... bridged the gap between the inselbergs of modernisation in the economic landscape" (Browett, 1976:19).

Three major cores had emerged by the close of the Transitional Period. With Cape Town already established as major core in the previous period, Durban emerged as result of continued development of the 'White' commercially arable activities in their contiguous hinterlands as well as the stimulus they received by serving the mining centres of the interior.

One of the mining centres comprising the Witwatersrand urban complex, Johannesburg, constituted the third major core. It was not only in terms of population size, but also in terms of economic growth, the new dominant core in 1911 (Browett, 1976:21). The demand for particular commodities, especially food and agricultural supplies, stimulated their production further in different parts of the inner and intermediate periphery. The outer periphery, by contrast, remained an area of low intensity arable farming, on one hand, and the supplier of Black labour to the cores from the tribal areas, on the other (Fair, 1982:50). As the transport network grew and focused heavily on the core areas, so did the structure become more polarised. Growth became concentrated in the cores and did not spread outwards for there was little incentive for growth to decentralise.

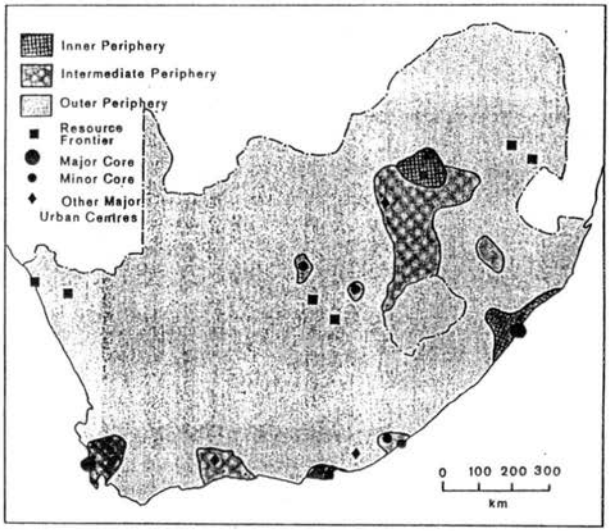


Figure 5.2b Development regions in the transitional period (Browett, 1976)

(iii) The Industrial Period: 1911-1936

In the first twenty-five years of the Industrial Period the patterns of spatial differentiation and spatial integration were subject to two major sets of forces, namely economic and political. On the one hand, economic forces made for an increasing differentiation of the national space economy as capital, labour, entrepreneurs and industrial enterprise became concentrated in the three primary core areas, especially on the Witwatersrand. On the other hand, economic forces were also working towards an increasing spatial integration of the national space economy as inter-area trade and interaction multiplied in response to railway branch lines and road motor services reaching out into the agricultural periphery.

Political forces, however, severely modified the patterns of spatial differentiation resulting from the economic forces, and constrained those making for national integration. The Government modified patterns of spatial organisation through the adoption of policies which promoted levels of economic welfare amongst Whites and which encouraged further economic development in the "White' areas, both rural and urban. Conversely, policies of assistance for the Black population and the Black areas were either not pursued or not given equal financial aid as to those for Whites and 'White' areas. The spatial differentiation was therefore not only between the core and periphery, but also between Whites and Blacks in both areas. Policies for spatial segregation rather than spatial integration were designed and implemented through legislation which attempted to separate Whites and Blacks in the rural areas and to deny permanent residence, employment, and decision making in the urban areas. Consequently, the economic forces which were contributing to a convergence in the spatial distribution patterns of population and economic opportunity were retarded (Browett, 1976:29-30).

(iv) The Industrial Period: 1936-present

The twenty-five years prior to 1960 witnessed a consolidation and continuation of many of the forces shaping the national spatial arrangement in the previous period. The growth and expansion of the modern exchange economy resulted in greater internal self-sufficiency, a greater regional specialisation of economic enterprise and a corresponding increase in inter-area trade. Economic forces were thus leading to an increased level of spatial integration in the economic sphere and to patterns of spatial differentiation which became manifest through a national heartland, a number of core areas, contiguous areas of high levels of economic development and a locationally obsolete outer periphery.

At the same time, political forces continued to exert a countervailing impact upon the organisation of the national space economy. An endeavour to achieve racial segregation led to the designation of Black Homelands (Bantustans) in mostly peripheral areas. Dominating the national spatial arrangements at the end of this

period, is the Pretoria-Witwatersrand-Vaal Triangle-region as well as two other principal regions, namely the Cape Town and Durban metropolitan regions. This concentration of economic activities was responsible for the presence of relatively lower levels in the intensity of economic development in the remainder of the country, whilst the much lower percentage of the total population residing in these cores resulted in considerably lower levels of economic welfare outside them (Browett, 1976:36-40). Figure 5.2*c* indicates areas of inner, intermediate, and outer periphery which have been distinguished in terms of their levels and potentials for future economic development as well as their spatial integration with the core areas.

Finally, Browett (1976:49) indicated that, should the South African space economy proceed its evolutionary development along the lines suggested by Friedmann's model, the forces and parameters of economic and political systems which have shaped the patterns of the national spatial organisation in the past are expected to remain dominant.

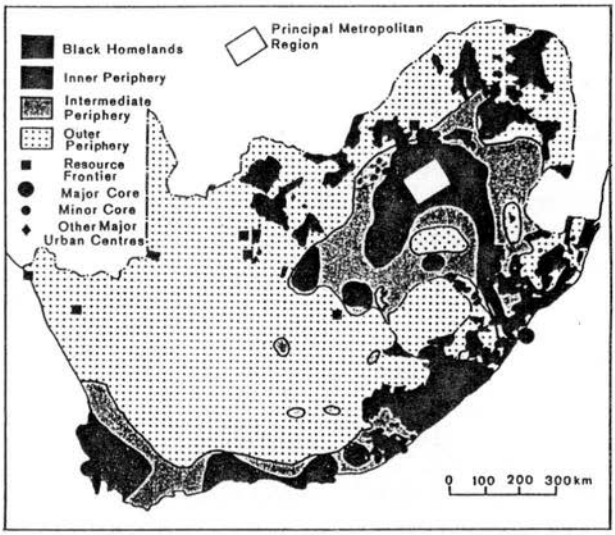


Figure 5.2c *Development regions in the industrial period (Browett, 1976).*

5.3 Regional development policy in South Africa

In the following discussion on specific regional development policies there will be concentrated on the specific aspects shared with the concepts relating to the intermediate region, i.e. the slowing down of primacy and the decentralisation of economic activities. Although the growth centre concept formed the cornerstone of regional development policy, and especially industrial development policy, certain basic points of departure rendered the South African situation unique among other countries

Although industrial development policy received some attention in terms of grants and establishment incentives, it was only after 1948 that decentralisation policy became official. The need to support industrial development was first identified with the establishment of the Industrial Development Corporation in terms of Act 22 of 1940 (IDC, 1974:7).

5.3.1 Tomlinson Report

When the National Party came into power in 1948, it gave way to a new direction in development thinking, i.e. development based on principles of racial segregation. The Tomlinson Commission (Union of South Africa, 1955) was appointed to conduct an enquiry into a possible framework for the socio-economic development of the Bantustans or 'Black reserves', with the intention to maintain the social structure and culture of the Blacks in these Bantustans. In an attempt to find a suitable method to stimulate economic development in the Bantustans, three possible industrial development policies were investigated by the Commission, namely:

(i) Industrial development in the White areas but close to the borders of the Bantustans.
(ii) Industrial development within the Bantustans but close to the borders of the White areas.
(iii) Industrial development within the Bantustans but as far away as possible from the borders (Geyer, 1989*a*:253).

The Commission recommended the latter two alternatives on a partnership basis between Blacks and Whites (Union of South Africa, 1955:200). It was argued that industrial development centres should be established both in the border areas as well as within the Bantustans, but preferably deep in the interior (Houghton, 1956:41). This recommendation was however rejected by the Government in favour of a minority report supporting the option of industrial development under White supremacy near the Bantustan borders, but on the White side. The Government was convinced that the development of White industry near the Bantustans would provide necessary employment to a sufficient number of population living in the Bantustans to establish the tertiary activities which would allow the desired number of the population to remain there (Nieuwenhuysen, 1964:18; Pretorius *et al*, 1986). It was also argued that if industrial development on a Black-White partnership basis was allowed within the Bantustans, there would be no grounds to prevent similar partnerships within the White area - a policy believed to be counterproductive to the concept of apartheid (Geyer, 1989*b*:380).

The Government was convinced that industrial development of the border areas was the most promising solution to the problem as to how to bring about development in the backward Bantustans (Palmer, 1980:36). It was argued that, taking the employment opportunities to the areas where labour was readily available, as well as housing, water, power and transport, was preferable to bringing labour to existing industrial agglomerations where all these facilities had to be created at very high cost (Kotzenberg, 1973:142). The diversion of industrial growth from the metropolitan areas was therefore justified by this policy in order to develop, and encourage new development, in the Bantustans (Prins, 1975:31).

In 1959 the Natural Resources Development Council (NRDC) were instructed by the government to identify suitable areas for industrial development near the borders of the Bantustans. The following areas were identified in terms of favourable amenities - 'favourable' mostly referring to locations close to Bantustans:

- The central Natal region, and especially areas adjacent to the Main railway between Pietermaritzburg and Newcastle as well as areas adjacent to the Glencoe-Paulpietersburg railway.

- The Natal coastal region, which was indicated as favourable, included the whole of the coast with the exception of Durban-Pinetown.
- The Eastern Transvaal region consisted of Nelspruit, Komatipoort, Barberton, and possibly also Malane, Hectorspruit, Sabie and Karino.
- The Pretoria Northwest region included the towns of Brits, Hammanskraal, De Wildt and Pretoria North.
- The main towns in the Northern Transvaal region were Warmbaths, Potgietersrus, Pietersburg, Louis Trichardt, Soekmekaar, Duiwelskloof, Tzaneen, Letsitele, Hoedspruit, Groblersdal, and Marble Hall.
- The most important centres of the Ciskei region were Queenstown, King William's Town, Stutterheim, Berlin, and Fort Beaufort.
- Towns identified in the Western region were Lichtenburg, Mafeking, Vryburg, Hartswater, Warrenton and Christiana.
- The Transkei, South Natal, and Eastern Free State region included the towns of Harrismith, Zastron, Bergville, Winterton, Kokstad, Matatiele, Maclear, Elliot, Indwe, Dordrecht, Aliwal North, and Lady Grey (Union of South Africa, 1959:25-36).

5.3.2 Decentralisation policy is official: 1960

A decentralisation policy was made official in 1960 with the implementation of the border region programme (Kleu Report, 1983:17). Between 1960 and 1970 the Permanent Committee for Industrial Establishment was founded with the task to identify growth points adjacent to the Bantustans. In the then Prime Minister's blueprint on border area industrial development in South Africa, certain growth points were identified within these border areas. These border industrial areas were defined as "... those localities at regions near the Bantu areas, in which industrial development takes place, through European initiative and control,

but which are so situated that the Bantu workers can maintain their residences and family lives in the Bantu areas, and move readily to their places of employment" (Verwoerd, 1960:6).

Incentives for industrial decentralisation compensated the entrepreneur who settled at one of these points, for lack of locational advantages, markets and agglomeration advantages in these border areas, compared to the four metropolitan regions of the country. This included reduced income taxes, the option to rent or buy fully furnished factory buildings, loans to buy buildings and land with no or low interest rates, the provision of basic services such as water and electricity as well as financial assistance for the provision of houses to White personnel (Kleu Report, 1983:17-18).

In 1969 this incentive programme was extended to areas which did not necessarily have a labour surplus, but were believed to generate more balanced growth in the country as a whole. In the same year, Whites were allowed for the first time to operate industries in the Bantustans on an agency basis.

Apart from the above-mentioned decentralisation strategy, distinction was also made between decentralisation to the far-off periphery and decentralisation to the metropolitan fringes (deconcentration). Being a natural process, it was indicated that the latter type of decentralisation should be welcomed when it occurred, as the former strategy was more difficult to implement successfully (Union of South Africa, 1959:56). It was indicated that deconcentration points could still utilise agglomeration economies of the metropolitan region without exerting more pressure on the metropolitan infrastructural system. Although deconcentration points were even identified, i.e. Brits, Babelegi, and Rosslyn in the PWV-region (Kleu Report, 1983:270), and their development potential realised, the decentralisation strategy still favoured the 'border areas' (decentralisation points) in terms of financial incentives. Some of the deconcentration points (for example Rosslyn in the PWV-region) were even dropped from the list of places receiving concessions as further financial assistance was deemed unnecessary (RSA, 1971:15-16).

Complementary to the incentives for the decentralisation of industry, the Physical Planning Act[25] was established to regulate the construction and

25 Act 88 of 1967, which later became the Act on Environmental Planning (Act 73 of 1975).

extension of factories (RSA, 1967:4-5). In order to contain the inflow of Blacks from the Bantustans into the main industrial centres and in order to speed up the process of industrial decentralisation and to ensure planned development, Section 3 of the Physical Planning Act provided that, without the prior approval of the Minister of Planning and the Environment, new factories might not employ any Blacks, and existing factories might not employ any additional Blacks in excess of the numbers employed on the 18th January 1968 (Prins, 1975:32-33).

In an official declaration in 1971 (RSA, 1971:6), the policy of decentralisation of industry to border areas was reaffirmed. It was still regarded by the Government as being the most effective instrument to stimulate development inside the Bantustans, but in addition it was then also regarded as a means to counterbalance industrial development in the major industrialised areas of the country (Geyer, 1989*a*:255). In an effort to continue co-ordination of industrial decentralisation, the Permanent Committee for Industrial Establishment was restructured to form the Industrial Decentralisation Board.

Decentralisation policy in South Africa, in contrast to most other countries, was evidently not the result of external economies in the primate cities or an instrument for a more balanced spatial economy, but an instrument used primarily to facilitate socio-political objectives.

5.3.3 National Physical Development Plan

The politically motivated decentralisation policy which became official in 1960, was once again echoed in an official policy document in 1975 (RSA, 1975). In the first National Physical Development Plan of South Africa, numerous growth points were again identified, this time through the Decentralisation Board. This plan contained various planning instruments aimed at the arrangement of physical development in South Africa according to specific development and political ideals (Geyer, 1989*a*:255-256). Fair (1975:130) divided the report into two parts. First, a growth centre strategy was proposed in order to obtain more balanced spatial poles. Secondly, a framework which divided the country into 38 planning

regions was proposed. The National Physical Development Plan could therefore be regarded as the overall framework through which the decentralisation policy was implemented (Bos, 1987:257).

For the purpose of this study, attention is however focused on specific aspects in the spatial application of the growth centre strategy in the development plan. Distinction was made between 'main towns', 'growth points', 'growth poles' and 'planned metropolitan areas' (RSA, 1975:15). 'Main towns', 'growth poles' and 'planned metropolitan' areas were mainly regarded as nodal points focused on regional development in the 'White' areas, while 'growth points' were mainly aimed at the development of the Bantustans (see Figure 5.3). The 'main towns' would, according to the plan, serve as intraregional economic and administrative centres, while 'growth poles' and 'planned metropolitan areas' were aimed at development in the 'White' areas, but were of a higher order than the 'main towns'. These points provided a basis for the development of growth axes which was seen as an instrument with which economic development could be directed away from the metropolitan regions (Geyer, 1989*a*:256).

It is however the growth poles which are of special interest to this study. They were defined as towns or urban complexes with vested growth potential and could therefore be developed further without much incentives. These growth poles also had to be situated far enough from the metropolitan regions, in order to develop independently (RSA, 1975:18). These growth poles were identified with the primary objective of extending the existing infrastructure in order to stimulate industrial development. The following towns/cities were identified as growth poles: Pietersburg, Rustenburg, Middelburg, Witbank, Potchefstroom, Klerksdorp, Utrecht, Ladysmith, Bloemfontein, Kimberley, and George. Significant in this respect, however, is the fact that five of the eleven growth poles are situated adjacent to the PWV-region (Rustenburg, Middelburg, Witbank, Potchefstroom, and Klerksdorp) (see Figure 5.3).

In the designation of the growth points[26] however, development indicators such as population distribution, labour requirements, market characteristics, and economic potential in the Bantustans were totally disregarded by the compilers of the plan, which to a great extent ridiculed the inclusion of growth points. Apart from the political injustice of this policy, it had distinct socio-economic disadvantages. Firstly, it disregarded industrial development potential and population distribution patterns within the Bantustans. Secondly, the competitive disadvantage of these Black communities would make it extremely difficult for Black entrepreneurs to start their own undertakings in these dormitory towns. Even if they did succeed, this would lead to an unnecessary duplication of urban areas, i.e. two urban centres juxtaposed, one on either side of the boundary serving an area which otherwise could have been served by one centre only (Geyer, 1989*c*:382).

It was also recognised that the Black labour force in these rural areas did not suit the labour requirements of technically advanced industry which was often associated with the growth centre concept (Geyer, 1989*c*:382). Also, the educational backlog seemed to be too great at that stage to expect it to advance to levels ideally suiting these labour requirements in the immediate future.

As seen in Figure 5.3, many of the officially proclaimed industrial points in South Africa are located in sparsely populated areas as well as in the peripheral economic space of the country. Many studies have indicated that the development of sparsely populated areas should take place in stages, emanating form a strong economic core. Efforts to 'plant' a growth point away from a national or regional economic core, unless it has unique unexploited locational advantages, have proved fruitless (Stern, 1985:5; Bloch, 1989:147). Rondinelli (1983:219) confirms this statement by concluding that the "... creation of isolated industrial 'growth poles' in rural regions of a developing country is not sufficient to stimulate widespread economic growth in rural areas or to spread the benefits of urbanization equitably throughout a developing country".

26 The specific growth points and the respective Bantustans they were situated in, or adjacent to, were King William's Town (Ciskei), Blaney (Ciskei), East London (Ciskei), Butterworth (Transkei), Umtata (Transkei), Mapumulo (Kwazulu), Empangeni (Kwazulu), Harrismith (Kwazulu), Newcastle (Kwazulu), Rustenburg (Bophuthatswana), Brits (Bophuthatswana), Babelegi (Bophuthatswana), Potgietersrus (Lebowa), Pietersburg (Lebowa), and Phalaborwa (Gazankulu). Kimberly, which was identified as both a growth point and growth pole, is not situated close to any Bantustan.

The proposed development initiatives in both instances (growth poles and growth points) have as primary objective the provision of work opportunities. Industrial development, however, is stimulated in the growth points by means of financial incentives, while it is stimulated in the growth poles by means of extended infrastructural development (Bos, 1987:261).

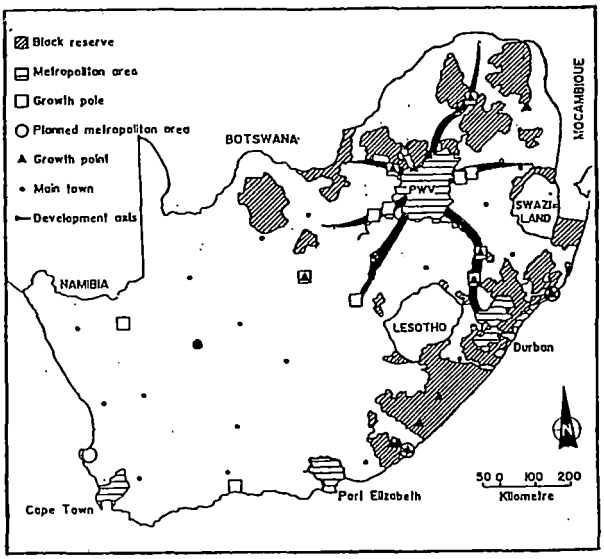


Figure 5.3 The National Physical Development Plan of South Africa, 1975 (RSA, 1975).

Geyer (1979:271*a*-271*b*) also indicated that no development axes could develop over such long distances without another major core at the end

(see Figure 5.3). Efforts, however, to develop growth centres closer to the metropolitan region, such as Rustenburg, Witbank-Middelburg and Klerksdorp-Potchefstroom would result in the overall strengthening of the PWV-region and its environs (Fair, 1975:130). Geyer (1989c:382) concluded that the most important disadvantage of the South African growth centre policy was the "... fact that it is ideologically founded and not based on sound economic principles which are necessary for success".

5.3.4 Good Hope Plan

The beginning of the eighties witnessed a marginal shift in emphasis in development thinking away from the extreme practices of White paternalism of the past (Geyer, 1989*c*:382). After deliberations between the government and private sector, the Good Hope Plan was announced in 1981 (see Figure 5.4). The plan contained a number of industrial development guidelines for the country as a whole, a framework through which the Government intended to implement its industrial decentralisation policy. Altogether, a total number of 47 'industrial development points' and 11 'deconcentration points' were designated to be developed simultaneously (RSA, 1981*a*:83).

These 'industrial development points' were defined as "... points where alternative agglomeration advantages could be created to counterbalance the existing metropolis and thus create employment opportunities in the specific regions". The Kleu Report (1983:271) indicated that, for development points to act as counterbalance for metropolitan regions, they had to fulfil the following requirements:

- They must be situated far enough from the metropolis in order to escape its economic influence.
- They must be situated on the development axes between important economic centres.
- The necessary infrastructure must exist.
- A developed core must exist.

- They must be located in areas which provide work for the inhabitants of the Bantustans.

'Deconcentration points' were identified adjacent to metropolitan regions in order to relieve the pressures of industrial concentration in these areas (RSA, 1981*a*:72). Similar to the National Physical Development Plan, almost all of these 'deconcentration points', as well the overwhelming majority of the 'industrial development points', were located within border areas. Of the seven 'deconcentration points' identified, only Atlantis which is situated adjacent to the Cape Town metropolitan region, was not located close to any Bantustan. The other 'deconcentration points' were Pietermaritzburg (Kwazulu)[27], Tongaat (Kwazulu), two points near Durban (Kwazulu), Bronkhorstspruit (Kwandebele), Brits (Bophuthatswana), Babelegi, (Bophuthatswana), Garankuwa (Bophuthatswana), and Ekangala (Kwandebele) (RSA, 1985*a*:15-16). Although these deconcentration points were officially identified as areas of "natural growth" (RSA, 1982:3), they obviously had the same political connotation as in the former border development strategies of the 1960's. The designation of Bronkhorstspruit and Brits as secondary development centres on the evolving development axes between Pretoria and Witbank-Middelburg and between Pretoria and Rustenburg respectively did however, make sense in the long run (Geyer, 1989*a*:263).

Therefore, although these deconcentration points were situated adjacent to metropolitan regions, these were mostly undeveloped rural areas with little, if any agglomeration economies. In addition to the already mentioned 'industrial development points' and 'deconcentration points', *ad hoc*-cases were also evaluated according to specific merits. 'Industrial development points' were to receive priority regarding the level of incentives, followed by the *ad hoc* locations, and lastly, the 'deconcentration points' (RSA, 1981*a*:76). The incentive levels in locations nearby, or within metropolitan regions were therefore lower than areas deeper in the periphery.

27 The names between brackets refer to the various Bantustans adjacent to which the deconcentration points are located.

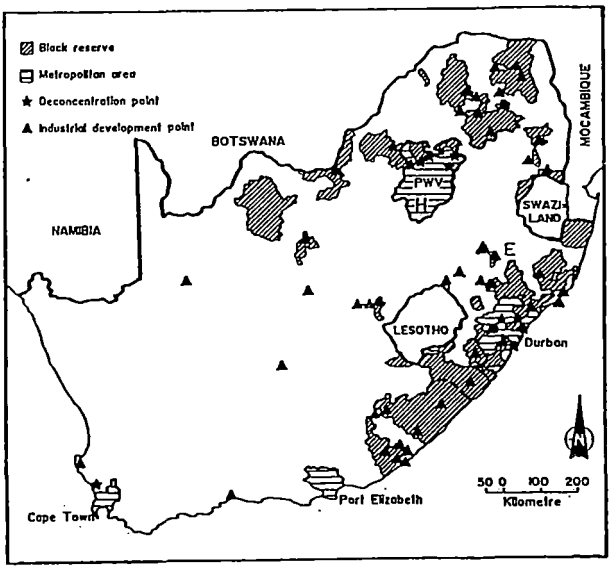


Figure 5.4 The Good Hope Plan of South Africa (RSA, 1981).

Apart from their impractical locations from an economic point of view, too many of these points had been identified - a target which did not seem within the reasonable means of South Africa's present financial, entrepreneurial, and market capabilities at that stage (Geyer, 1989*c*:384). Incentives had been spread over too many geographical areas with the result that infrastructure development suffered - fewer development points should have been designated in order to provide a higher quality infrastructure development (Holden, 1990:231). The dispersed pattern of too many growth points also raised doubts as to whether such a strategy could be implemented successfully, especially when taking into account the limited human resources and the ongoing urbanisation trend in this country (Stern, 1985:4)

In their evaluation of the growth centre strategy in South Africa, Black & Roux, (1991:453) also concluded that too many industrial development points were identified and too few capable of achieving rapid industrial growth. The fact that more than 50 industrial development points were eligible for the full range of subsidies meant that the development effort was spread much too thinly to achieve meaningful agglomeration economies. Many industrial development points were chosen for political rather than economic reasons and did not constitute growth centres in the true sense of the word. "In short, the failure of the decentralisation policy was attributed to an inordinately large number of inappropriately chosen industrial development points". This argument was repeated by several authors in the past (Brand, 1982:103; Oosthuizen, 1982:87; Kleu, 1983:270; Addleson *et al*, 1985:179-180; Maasdorp, 1985:224-225; Pretorius *et al*, 1986:244; Bos, 1989:58-59; Geyer, 1989*c*:384; Geyer, 1990:385; Holden, 1990:230), and was confirmed by the Panel of Experts in their final analysis on regional development policy in South Africa, stating that there were no international cases of successful industrial decentralisation programmes on the scale[28] attempted under the Regional Industrial Development Programme (POE, 1989*a*:139).

As alternative to the above-mentioned strategy, Geyer (1986:263; 1990:394) proposed the strengthening of 'equalisation centres' on primary development axes emanating from the PWV-region. According to Geyer these centres should, in terms of business and industrial development, provide a much better result than most 'industrial development points' and 'deconcentration points' scattered throughout the country. Bos (1987:346; 1989:75) also indicated that a policy of concentrated decentralisation, based on the channelling of metropolitan sprawl along main transport axes to specific intermediate sized cities should be implemented, i.e. 'facilitating interference'. The provision of infrastructure in these intermediate sized cities would result in an orderly decentralisation process, while also guiding the urbanisation process simultaneously.

[28] Until 1985, approximately 185 regional locations have been designated as 'growth points' in South Africa (Holden, 1990:230).

5.3.5 Strategies influencing metropolitan growth (1981-1992)

The minor changes in the South African approach to the growth centre concept introduced in 1981, made way for a new and more flexible differentiated approach. Greater flexibility in incentive measures and development policy on a regional level due to possible differences in development circumstances regionally were announced (RSA, 1985*a*:12). The new integrated approach to industrial development was reaffirmed in the White Paper on future industrial development in South Africa (RSA, 1985*b*:2). Recommendations included:

- Industrial development alone will not be sufficient for the attainment of the goals of South Africa's regional development policy.. An integrated and comprehensive development programme offers the best chance of success; attention should particularly be focused on agriculture, commerce and services.
- A policy aimed at a more even geographic distribution of economic activities should not be taken to the point where it is so detrimental to the economic position of the metropolitan areas that the result for the economy as a whole is less growth and less employment.
- Indirect control of economic activities in the metropolitan regions such as the abolition of subsidies on services or the levying of differentiated taxes is preferable to direct control measures (such as section 3 of the Physical Planning Act).
- Industrial decentralisation should be productive if prejudice to economic growth and employment in the economy as a whole is to be prevented. Where it can not be productive in a purely economic sense, it should at least be effective in terms of the socio-political goals of the programme. This requires that a fragmentation of the decentralisation programme should be avoided and that too many inefficient industrial development points should not be encouraged.

These 'new' points of departure in development planning were accompanied by the drafting of spatial strategies for the three primary metropolitan regions in the country, namely Pretoria-Witwatersrand-Vaal Triangle (PWV), Durban-Pinetown-Pietermaritzburg (DPP), and Cape Town-Belville (CTB) metropolitan regions. The political undertones which were apparent in the national industrial decentralisation policies between the fifties and the seventies, were also detectable in these spatial development policies.

For the purpose of this study (see Chapter 7), as well as the fact that it is the largest metropolitan region in South Africa, the Pretoria-Witwatersrand-Vaal Triangle-region (PWV) will be used to illustrate the 'thinking' behind metropolitan strategies implemented in South Africa. The first comprehensive development strategy for the PWV-region, comprised proposals for a guide plan which appeared in 1974 (RSA, 1974). According to this study, important development axes emerged between Pretoria and Rustenburg, and between Pretoria and the Witbank-Middelburg complex. Rustenburg, Brits, Witbank-Middelburg, and Potchefstroom-Klerksdorp were identified as possible decentralisation points (see Figure 5.5). Following these proposals was the appearance of a spatial development strategy for the PWV Complex (RSA, 1981*b*). The following were some of the important points made:

- The solution of metropolitan problems should not be sought in the categorical limitation of metropolitan growth, but rather in the deconcentration of economic activities to areas within or adjacent to the metropolitan region itself.
- It became clear that the decentralisation programme (border regions) had not achieved the desired results.
- Unimpeded urban sprawl was unacceptable.
- Future growth should be directed towards a multi-nodal urban region consisting of three metropolitan areas (Pretoria, Witwatersrand and the Vaal Triangle) in which provision was made for deconcentration points within the megalopolitan framework and the development of additional growth points adjacent to the PWV-region (RSA, 1981*b*:19-22).

These metropolitan development strategies were however never officially approved. In the White Paper on Urbanisation (RSA, 1986*b*), the policy of restricting industrial growth in the core areas, and stimulating growth at deconcentration points in the metropolitan regions were confirmed (Palmer, 1986:40). The principle was accepted that regional planning should not be hindered by Bantustan borders, and that the relevant Bantustans form part of any functional metropolitan region. The White Paper also indicated that the number of decentralisation points must be restricted - decentralisation must be concentrated and stimulated only in those areas with existing growth trends until such a time that further incentive measures were unnecessary. The development potential of locations situated on existing development axes was also indicated - it was proposed that these locations be especially utilised for the purpose of the deconcentration or decentralisation of economic activities (RSA, 1986*b*:25-32).

The Physical Planning Act of 1967, which prohibited normal industrial growth in the metropolitan region (see section 5.3.2) was replaced in 1991 with a revised Physical Planning Act (RSA, 1991*a*). These previous discriminatory legislations (Section 3) were omitted, and the Act further provided for the preparation of regional development plans in which the public had a greater degree of input and participation (RSA, 1991*a*:9). This revised Act was soon followed in 1992 by a draft spatial development strategy for the PWV Complex. In conjunction with the Physical Planning Act of 1991, this strategy called for the abandonment of policies which had previously curbed the growth within the PWV-region (RSA, 1992*a*:5). The strategy called for the creation of a more compact and efficient metropolitan structure as well as a move away from previous attempts to limit the supply of industrial land in the core areas of the PWV-region.

This point of view moved away from the historical control-oriented approach in terms of which industrial land in the metropolitan core areas became scarce. In order to make industrial land more accessible to all entrepreneurs, a policy of deregulation and oversupply of industrial land was proposed (RSA, 1992*a*:34-35). In conjunction with the regional industrial development programme implemented in 1991 (see Chapter 6), this strategy had moved away from the growth centre concept, but still retained high regard for the development axis concept. This is evident from similar development axes identified in the previous regional development

strategies (see Figure 5.5). The policy reaffirmed that the PWV-region cannot be "... divorced from the development of its hinterland. Special attention will therefore have to be given to the interaction between the Potchefstroom-Klerksdorp area, the Witbank-Middelburg area, and the Trichardt-Evander-Kinross-Secunda area" (RSA, 1992*a*:10). Although this strategy differed much from previous development plans, it received much criticism from the private sector in not doing enough to move away from concepts of apartheid[29] (Urban Foundation, 1992:3-5).

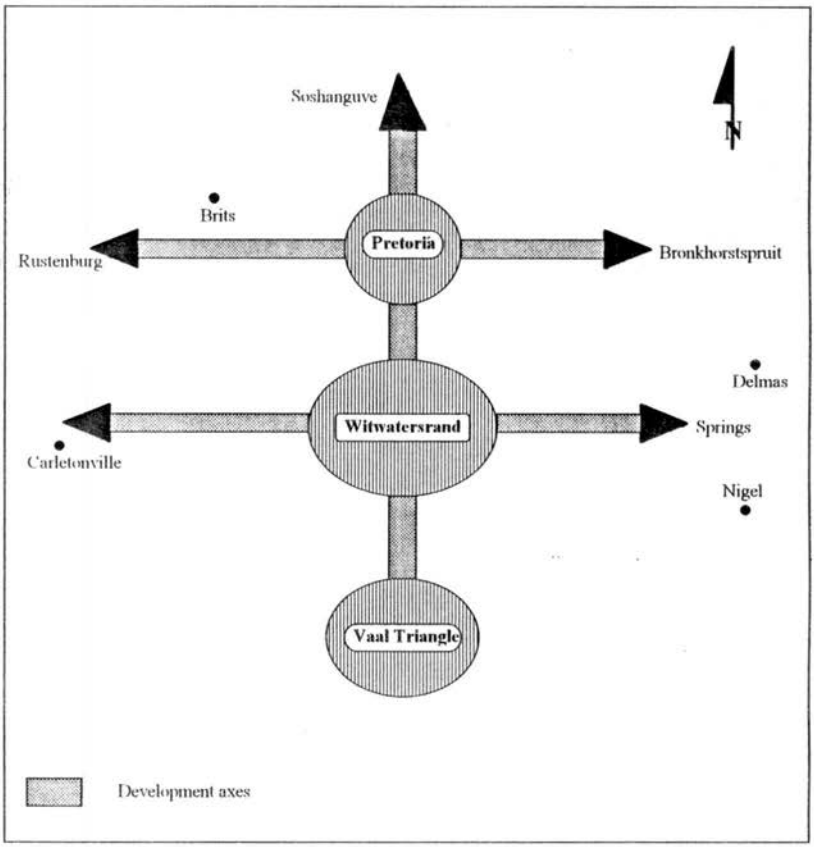


Figure 5.5 The 1992 PWV spatial complex (RSA, 1992b).

29 'Apartheid' refers to the concept of separate development for ethnic groups and was promulgated in the Representation of Blacks Act, no 12 of 1936 (Geyer, 1989*a*:253).

The principle that growth should not be limited in South Africa's metropolitan regions was also conformed in the President's Council Report on urbanisation in order to capitalise on "... economies of scale" (RSA, 1992*d*:64), and to avoid encouragement of satellite settlements at the expense of the densification of existing metropolitan regions (RSA, 1992*d*:70). The Council further indicated that from a national urbanisation policy point of view, the emphasis of South African development efforts should gradually shift to intermediate sized cities on the inner periphery, nearer to the core regions. The intermediate sized cities included Bloemfontein/Botshabelo/Thaba'Nchu; Free State Goldfields; East London/Mdantsane; Pietermaritzburg; Kimberly; Pietersburg/Seshego; Middelburg/Witbank; George/Mossel Bay and Potchefstroom/Klerksdorp (RSA, 1992*d*:64).

5.4 Conclusion

It is evident therefore that decentralisation policy, implicating a certain growth centre strategy, played a major part in development thinking in South Africa since its inception in border region development in the 1950's. It was seen as part of a larger plan to establish a more balanced development pattern in the country, i.e. to take the work to the worker in the Bantustan, and thereby keeping him from migrating to the major cities. A major shift in decentralisation policy occurred in 1991 with the implementation of a new, apolitical, regional industrial development programme, based on the uniform development approach.

CHAPTER 6

REGIONAL INDUSTRIAL DEVELOPMENT PROGRAMME (1991)

6.1 Introduction

From its inception in 1982, it was envisaged that the regional industrial development programme (RIDP) would be evaluated on a regular basis to assess its effectiveness in achieving its overall objectives, and that refinement and corrective actions would have to be undertaken when necessary (Ligthelm & Wilsenach, 1991:1). From an evaluation of the RIDP by an independent panel of experts (POE, 1989*b*), certain structural shortcomings were identified which eventually led to the development and implementation of the new RIDP. These shortcomings were (RSA, 1991*b*:71):

- too many development points had been designated, with the result that there was a lack of concentrated regional industrial establishment at a number of the development points;
- several of the development points had been incorrectly established in terms of their spatial location in relation to comparative cost benefits, so that there was a lack of self-sustaining industrial development; and
- the relative success that had been achieved to date at certain development points could be attributed to the very attractive financial incentives of the programme, which resulted in cost disadvantages being compensated for, rather than economic viability being promoted.

These findings of the Panel of Experts were accepted by all relevant parties and a strategic framework proposed for future regional development policy was also endorsed.

6.2 Regional Industrial Development Plan (1991)

6.2.1 Points of departure

Based on the proposals of the Panel of Experts (POE, 1989*b*), as well as finding of the short-term and long-term investigations regarding the development point and uniform approaches, the Regional Monitoring Committee made proposals on the following:

- the nature of the profit/output based incentive scheme;
- the level of incentive; and
- the spatial application of the incentive scheme.

Special emphasis was placed on the following principles (RSA, 1991*b*:71):

- the development of an integrated Southern African economy;
- the promotion of regional development as an objective in its own right;
- the promotion of regional development in such a way as to contribute to the improvement of the performance of the Southern African economy, with emphasis on the development of the less developed areas;

- a market-oriented development approach;
- free flow of production factors;
- a multi-sector development approach, backed by the regional development strategies and based on comparative cost advantages; and
- a market-oriented profit/output-based incentive scheme.

On 25 April 1991 the Ecosa[30] Ministers responsible for Regional Industrial Development achieved consensus regarding an adjusted RIDP (Ligthelm & Wilsenach, 1991:4-12).

6.2.1.1 Nature and level of incentives

Because of the supposedly "... limited achievement, so far, of self-sustaining growth at industrial development points" (POE, 1989*b*:239), and the assumption of inability of the growth centre to support the above mentioned principles (RSA, 1991*b*:71), a new regional industrial development programme was proposed and implemented in May of 1991 (RSA, 1992*c*). Incentives included a tax-free establishment allowance in cash based on an investment of up to R15 million subject to a minimum entrance requirement of 35 per cent of owner's equity in order to qualify for concessions; a tax free cash allowance based on the profits of the enterprise payable for a further three years; and the reimbursement of relocation cost of foreign industries up to a R1 million per project.

The underlying principles for the programme are the following:

- The incentives are of a short term nature.
- The amount of the incentive is based on capital, which means that the industrialist must take establishment risks into account.

30 Economic Community of Southern Africa

- Transfers are available for only two years, after which the level of the incentive is determined by performance.
- Performance is not measured only by profits, but good asset management is rewarded while low profits and/or poor asset management reduce performance (RSA, 1991*b*:72).

Therefore, in view of the alleged inability of the previous approach to give effect to the accepted principles and a declared policy of a greater democratisation of the economic processes, the uniform approach based on the above-mentioned guidelines was formulated.

6.2.1.2 The spatial application of the incentive scheme

Distinction is made for three levels of incentives according to an area's development status (see Figure 6.1). Accordingly, entrepreneurs settling in the PWV complex or the Durban core area will receive no incentive for industrial development, while new developers in the Cape Peninsula, Durban/Pinetown/Pietermaritzburg and the greater Durban Functional Region (excluding the Durban core area) and the area surrounding the PWV-region will receive 60 per cent of calculated establishment allowance (100 per cent after two years) (see Figure 6.2). The rest of the South African spatial area renders the new industrial developer eligible for 100 per cent of the established allowance for the five year period (RSA, 1992*c*:8).

This programme is said to have moved away from the system in which the industrialist is compensated for establishment disadvantages, since the incentives are based on the economic and financial performance of the enterprise. According to the National Regional Development Programme (RSA, 1991*b*:72), the programme is intended to "... exploit natural establishment advantages, which means that the industrialist will take his investment decisions on economic grounds. This will ensure permanent and self-sustaining growth".

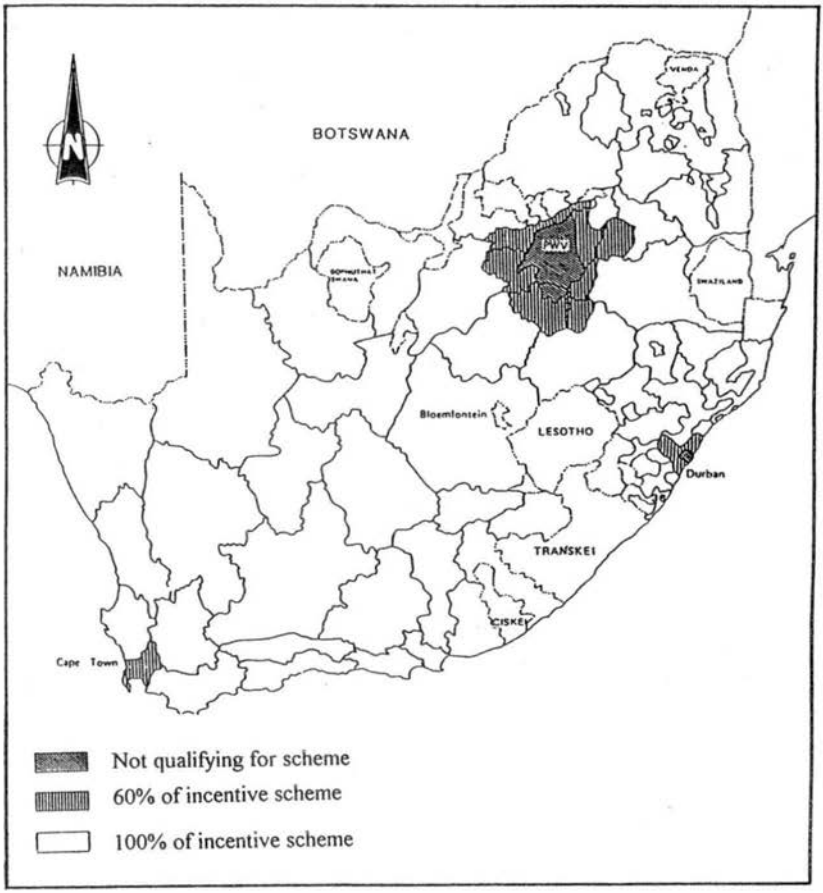


Figure 6.1 Spatial application of the RIDP (1991) in South Africa (RSA,1992c:8).

In evaluating the newly implemented RIDP based on the uniform approach, attention is turned again to the original theories underlying the principles of economic growth strategies. In section 4.4, the principles underlying the balanced and unbalanced growth strategies were outlined. In order to evaluate the current Regional Industrial Development Programme (1991) in South Africa, the pro's and cons of these concepts are consequently discussed. Over-and-above the theoretical aspects of these concepts, much has been said about the practical implementation of such strategies.

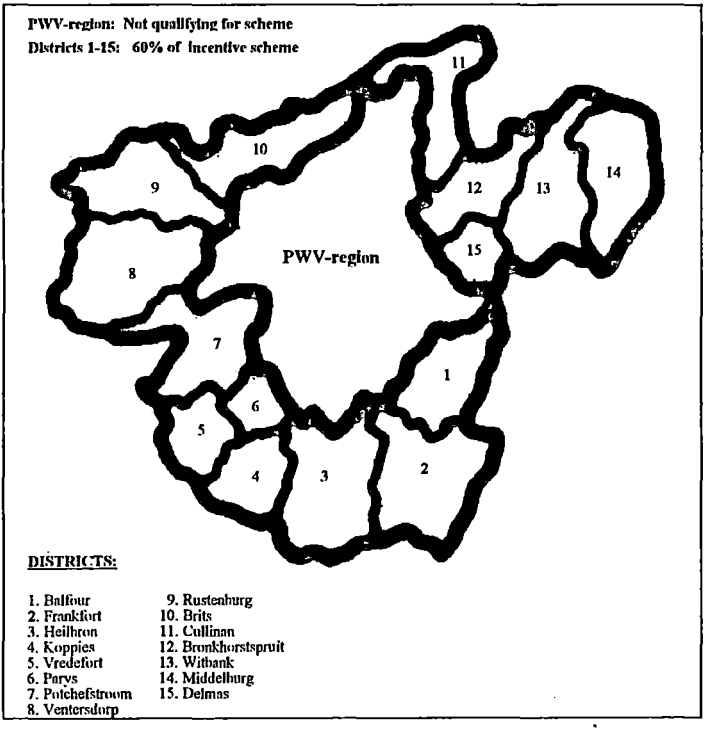


Figure 6.2 Spatial application of the RIDP in the PWV and surrounding region (RSA, 1992c:8).

6.2.2 Balanced growth versus unbalanced growth

As noted in the section 4.4.1, the uniform approach can be seen as part of the balanced growth theory on development. The South African application of balanced growth by means of the uniform approach illustrates this point well. According to this programme (RIDP), growth is stimulated over the whole of South Africa, save the metropolitan regions. The RIDP formed the foundation of a programme (the National Regional Development Programme) said to develop all sectors of the economy. Therefore, in order to implement this programme, the major part of the South African spatial area is designated - according *only* to its development status - as being eligible for growth incentives. With this programme, a situation is presented where an area of more or less 90 per cent of the country's geographical area is designated to receive incentives, i.e. a nearly perfect example of a balanced growth strategy. The primary advantages to potential developers resulting from this approach include a market-orientated programme, freedom of locational choice, and a programme which attempts at being politically unbiased.

Several disadvantages, however, can also be pointed out against the principles of the balanced growth theory. Hirschman (1958:51-52) was especially critical of this theory in contending that the theory fails as a theory of development. According to Hirschman, development means the process of change of one type of economy into some other advanced type. Such a process is evidently given up as hopeless by the balanced growth theory which finds it difficult to visualise how the 'underdevelopment equilibrium' can be broken into at any one point. The conception of the traditional economy as a closed circle dismisses the abundant historical evidence about the piecemeal penetration by industry that competes successfully with local handicraft and new products which are first imported and then manufactured locally. It also disregards the evidence that some products of modern industrial civilisation are always found sufficiently attractive to make people stop hoarding, restrict traditional consumption, work harder, or produce more for the market in order to acquire them. But, Hirschman (1958:53) argues, a people that is assumed to be unable to do any of these things and that is therefore entirely uninterested in change and satisfied with its lot is then expected to "...

marshall sufficient entrepreneurial and managerial ability to set up at the same time a whole flock of industries that are going to take in each others' output! ... It is altogether inconceivable that a one-floor economy could set up such a "second floor" with its own forces or even with limited help from abroad".

Attempts at 'balance' fail because of lack of knowledge, bottlenecks in supply, and critical skills absent at the wrong time (Hogendorn, 1987:327). While on the other hand, intensive investment effort in particular industries and sectors, can pay high dividends by eliminating bottlenecks and stimulating a higher investment rate in other industries. In these leading sectors investment complementarities and resource elasticity can be effectively utilised (Baldwin, 1972:85).

Friedmann (1966:51) also questioned the validity of this balanced approach in spatial organisation. He firstly asked the question, "*which* regions should be balanced?" According to Friedmann the balancing task becomes more difficult the smaller the regional unit, and argues that it is unlikely that all kinds of balances can be achieved in all possible regions at the same time. Secondly, Friedmann also questioned the issue of *what* should be balanced? Should investment occur in the aggregate or in each sector? Is a balance achieved by having all regions grow at equal rates or should the poor regions grow at a faster rate, allowing them to catch up?

According to Boudeville (1966:103), the problem of balanced growth may at first appear in the shape of some "... oscillations around uniform growth, as long as technical and capital coefficients, as well as socio-economic consumption coefficients, remain stable. But these heroic assumptions become questionable as soon as we go further than the five-year period. Development and economic progress, on the other hand, presuppose a substitution of capital and labour, and changes in the proportions of goods which society desires at any one time. The uniform sectoral growth model, discarding the disparity of regional growth, is therefore utterly unrealistic".

Thirlwall (1972:165) searched for a compromise between the balanced and unbalanced growth theories. He argued that, since balanced growth is consistent with sectors growing at different rates, provided supply and demand are in balance, the distinctive feature of the alternative strategies must be the imbalance between supply and demand. Unbalanced growth

policy would concentrate resources in a few selected areas, creating shortages elsewhere. But this seems quite consistent with the 'big-push' version of the balanced growth doctrine provided the scale of investment is sufficient to overcome indivisibilities and complementarities. Therefore, if unbalanced growth is defined not so much in terms of shortages as in terms of concentration on certain activities, according to comparative advantage or the existence of increasing returns, balanced and unbalanced growth strategies can be complementary strategies. There is no reason why development strategies should not draw on the strong points of both theories so that an optimum strategy of development combines some elements of balance as well as imbalance.

In the spatial context, an unbalanced growth policy could therefore refer to a process in which investment is concentrated in certain growth points, sometimes only in certain economic sectors. Theoretically, this creates a demand for goods or services in the remaining spatial area - especially in the metropolitan region - and results in economic growth for these growth poles. On the other hand, a policy of balanced growth will result in the most backward or less developed regions to qualify for development aid, whether it be only in certain sectors or across the economic spectrum. This will theoretically create a demand for these goods or services in the remaining extent of the country. It could therefore be said that both theories create a demand in the areas not invested in, thereby resulting in growth for the identified growth centres or regions. Of relevance in this situation would probably be the *scale* at which these two approaches are attempted.

Singer (Hogendorn, 1987:326) concluded that a country with the large supply of resources necessary for the implementation of a balanced growth strategy, would in the first instance not be a poor country - it could therefore be argued that, "Unbalanced growth ... is the way the world works" (Hogendorn, 1987:328).

Thus far, it is primarily the theoretical aspects of the balanced and unbalanced growth which have been dealt with. The spatial application of these theories in regional development planning usually vary according to the delineation as assisted areas and the level of incentives in these areas. The failure of regional development policy based on the balanced growth theory was most evident in the (then) Federal Republic of Germany (see

also section 4.7.2.1). Since the 1950's, their regional policy has switched emphasis from assistance to *specific* locations with development problems to a systematic programme of development aid. Within the Common Task 'Improvement for Regional Economic Structure', an area embracing 62% of the country's total area has received aid for establishing new industries, expansion of existing manufacturing industry and rationalisation, and for developing tourism (Jung, 1982:90-94). It was however shown in the 1970's that this development policy led to a deterioration rather than an improvement in the regional economic structure in most regions. Questions were raised regarding the effectiveness of this regional policy in decreasing regional imbalances. Although a reduction in income disparities was effected during the period 1970-1974 (the coefficient of variation per capita income in all 58 regions fell from 7.6% to 6.9%), it was not the result of only more favourable economic development opportunities, but also by means of the outward migration of population from core regions (Jung, 1982:94).

In view of these findings, two issues were of special concern with the introduction of the Tenth Framework Plan in 1981. Firstly the importance of spatial *concentration* and grouping together of assistance measures was stressed, as well as greater *selectivity* in the designation of enterprises qualifying for assistance. In terms of this policy, aid is not automatically granted to all enterprises willing to operate in development areas, and specific sectors or forms of enterprise which do not have sound prospects should be excluded from assistance.

For the most part, the philosophy of British regional policy has been that assistance of some sort should encourage economic development that will ultimately become self-supporting (Frost & Spence, 1982:104). Unfortunately, it is argued that nearly fifty-years of assistance - with the designation of 'Assisted' or 'Development' areas - has not yet achieved their ultimate goal, and the question remains whether it will in fact ever be achieved (see also section 4.7.2.1). Also, such a narrowly defined set of areas eligible for assistance, runs the risk that potentially favourable 'natural' changes cannot be integrated in government policy. Furthermore, there is always the risk that too great an emphasis on assistance to areas suffering the highest levels of unemployment, will produce a growing list of places that are simply dependent on continuing government support to maintain their local economies. Frost & Spence (1982:105) therefore

questioned the successful implementation of this particular balanced growth strategy by arguing that it "... does not seem sensible to expect that all areas in the country should develop at the same rate or to the same degree". Consequently, emphasis in regional policy was duly shifted to favour the concept of *selectivity* in order to *concentrate* economic growth in specific parts of the national territory considered marginal in viability terms.

The same basic principles underlying these strategies in the Federal Republic of Germany and Great Britain could be found in the described RIDP of South Africa. Large areas of a country are designated by means of 'narrowly defined' criteria, i.e. its status in terms of economic development, and an attempt to balance the differences by identifying them as areas receiving incentives for new development is lodged. In evaluating the current regional industrial development programme in South Africa, attention will be focused on the principles underlying the spatial aspects of this programme.

6.3 Evaluation of the current regional industrial development programme (RIDP)

In terms of the discussed theories on balanced and unbalanced growth, it seems evident that the current RIDP attempts to achieve a more balanced spatial economy with the introduction of balanced growth incentives. Instead, as has been pointed out by many authors, attempts at balance can only be achieved by unbalanced growth, especially in developing countries.

In evaluating the uniform approach, attention is first turned to the major points of criticism (see also section 6.1) of the former RIDP based on the growth centre approach. This is deemed necessary as the new RIDP based on the uniform approach was primarily accepted because of these alleged deficiencies in this approach. These 'deficiencies' will shortly be indicated and evaluated.

6.3.1 Criticism against the previous RIDP:

According to the National Regional Development Plan (RSA, 1991*b*:71), the structural shortcomings of the previous approach is a choice of *too many* development points, situated at *incorrect locations*. It is also said that the limited success achieved at certain points is only due to the lavish financial incentives introduced to compensate for locational disadvantages.

The Panel of Experts (POE, 1989*b*) who evaluated the RIDP implemented in 1982, indicated that a major shortcoming of the growth centre approach at that time, was that it did not provide specific criteria for identifying the location of potential growth centres, how big they should be, or what kind of investment should take place. The absence of these guidelines means that the selection of growth points is left to the political process where it becomes subject to the pressure of specific vested interests (POE, 1989*b*:115). The identification of more than 50 points at which incentives are provided is indeed the criticism most encountered in the literature evaluating the previous RIDP. This resulted in a lack of concentration, especially as a result of the considerable difference in development potential at the various growth centres (see also section 5.3.5).

(i) Too many growth points:

Because of the described shortcomings, the Panel of Experts went ahead and recommended a "... spatially uniform and firm-selective" (POE, 1989*b*:252) policy option regarding regional industrial development. Although the reasoning behind this recommendation was illustrated (see also section 5.3.4), an issue raised by the Panel themselves must also be mentioned. The Panel of Experts (POE, 1989*b*:116) admitted that the RIDP under evaluation had only been in operation for a short period of six years (under recessionary economic conditions), whereas natural processes of concentration are "... slow evolutionary phenomena during which competition, expressed through the forces of survival and attrition, exerts the decisive influence on selection and finally, concentration". The panel conceded that the few years since the commencement of the RIDP had not

permitted these competitive forces to develop to their fullest, and for that reason, it might be necessary for regional policy makers to "... identify a limited number of points" (POE, 1989*b*:117).

The logical reaction to this evidence would seem to reduce the number of growth centres, especially these totally inappropriate points. One would further reason that, in order to attain self-sustained growth at designated development points - which is the main purpose of the RIDP - it is necessary to achieve a concentration of economic activities. The advantages and economies of scale are accentuated if, in this instance, factories are in close proximity to each other. Specialisation of functions can be carried further since some factories can provide services for others and the output of one factory can become the raw material of the next. As these characteristics of agglomeration economies come into being, a development point becomes more attractive to the new entrepreneur, and more capable of growth and competing with larger centres.

This, however, can only be attained if decentralised industry is channelled into relatively few selected locations through a drastic reduction in the number of development points eligible to receive incentives. The uniform approach on the other hand, extends the number of development points without limit to embrace any site in South Africa, save the two largest metropolitan regions. Although it is argued that concentration will eventually occur in a limited number of centres (Ligthelm & Wilsenach, 1993:371), the question could be raised why these centres are not identified beforehand from an unbiased regional planning point of view. South Africa surely has the necessary expertise and international examples in developing a sound economically-based development strategy. This argument on selectivity versus uniformity is also echoed in a Minority Report which was included in the Panel of Experts' evaluation of the previous RIDP (POE, 1989*b*), and considered the uniform approach to be "... quite the wrong approach, because the possibility of achieving agglomeration effects and self-sustained growth at places removed from the metropoles, under such circumstances, is non-existent" (POE, 1989*b*:267).

Thus, this major point of criticism, namely the simultaneous development of too many development points has the necessary merit as already indicated. It is therefore not this point of criticism which seems lacking,

but the implication that the growth centre approach is not capable of achieving economic growth, and the recommendation - and implementation - of a uniform approach because of this 'structural deficiency'. The approach which has been implemented in place of the previous RIDP, however, consists theoretically of every single location in non-metropolitan South Africa.

With this said, it could now be argued that the Board for Regional Industrial Development may not *only* approve applications in intermediate sized cities with existent agglomeration economies, as this would implicate an intermediate sized city-strategy - and an intermediate sized city-strategy is just another form of a growth centre strategy. On the other hand, the approval of a seemingly economically viable firm in any other than an intermediate sized city, the question could be asked whether the firm would not operate even more profitable in an intermediate sized city. In this instance, the new firm would also contribute to the further development of existing agglomeration economies, and simultaneously effect a positively influenced multiplier-effect, resulting from new development.

To approve all economically viable applications in the country is a very ambitious economic ideal, and the principle therefore does not seem lacking. It is however the application of such a strategy - similar strategies did not even succeed in developed countries such as Great Britain and the FRG - in a developing country such as South Africa that is regarded as being totally unrealistic, especially in the light of this specific point of criticism.

(ii) Inappropriate locations of growth points:

Secondly, regarding inappropriate locations, the Panel of Experts found that of the 50 points at which incentives were provided, 32 of them were so grossly inappropriate that it is doubtful that much growth could be achieved even if all the resources of the RIDP were focused exclusively on them (POE; 1989*b*:266). The biased reasoning behind the allocation of development points has already been pointed out, and criticised by most

parties as indicated in this study (see section 5.3.5). It was shown that these designations had mostly political objectives with the result that no agglomeration economies and, ultimately, self-sustained growth could be reached at any stage.

To use this argument to promote a totally different regional development strategy to the growth centre strategy, therefore seems totally inappropriate in South Africa's current phase of development. The question could be raised as to the merits of the criticism regarding *inappropriate designated development points*, seen against a strategy lacking any *appropriate designated development points*, such as proposed by the new RIDP. The only meaningful difference between this uniform approach (RIDP) and a *laissez faire* approach is the fact that incentives are available to new entrepreneurs settling in non-metropolitan South Africa. In most developed countries it was indicated that growth at certain centres was achieved because of government decisions such as the location of government and administrative offices (Ingham, 1993:1811), the location of new infrastructural development, and the locations at which incentives for new development are made available (Rondinelli, 1983:38). To make such decisions however, there must be some form of spatial guidance which spells out specific development priorities.

Hirschman (1958:204) also indicated that a government has a dual responsibility regarding development, namely as 'inducing' and 'induced' or 'unbalancing' and 'balancing' agent. Hirschman argued that in developing countries, purely *permissive* sequences may be ineffective in inducing growth and that the government should take the first step in the more *compulsive* sequences that may be indicated (for example through active leadership in industrialisation, i.e. an unbalancing process) (Hirschman, 1958:203). In the wake of the economic activity that for instance follows the industrialisation process, power and transportation shortages appear and inadequacies in education become far more apparent than before, impelling the government to improve its performance in these fields (balancing process). Seen in the context of selectivity and uniformity, Hirschman consequently concluded that development is only attained by means of a development strategy in which "... the choice of priority areas must ... proceed from an examination of the economy as a whole, it may be best, once the choice is made, to concentrate on detailed concrete programs for these areas".

It is consequently argued that the government should function as 'unbalancing agent' by means of identifying certain growth points which are best suited for their specific development strategy, whether it be agricultural, industrial, commercial, or service-oriented. Thus, a *choice* must be made by the government as to the location of induced growth incentives.

(iii) Lavish incentives

It is evident from literature reviewed in this study that growth occurred at certain growth centres under the previous growth centre approach just because of the generous incentives available. The argument is that the previous incentive scheme had structural shortcomings such as compensating industrialists for costs (such as labour, interest, rent, and electricity), instead of being related to output or profits. This resulted in a deliberate inflation in costs in an effort to maximise the amount of incentives 'required' by an industrialist (Ligthelm & Wilsenach, 1993:365). Another outstanding feature of the previous incentive package was the extraordinary high levels of subsidisation which created distortions in the market. This meant that industrialists often established operations at locations with limited or even no potential for sustaining industrial development.

This argument however, is an *economic* issue which, while being an integral part of any regional development programme, is definitely removed from any *spatial* application of a scheme. This is an argument which could now be lodged against the new uniform approach, in which incentives are paid to any reasonable developer in non-metropolitan South Africa. Although it is stated clearly that the incentives used in the revised RIDP, only rewards the "... economic and financial performance of the enterprise" (RSA, 1991*b*:72) or its "... profitability" (Reinhardt, 1993:3; Gobey, 1993) instead of its "... costs" (Czypionka, 1992:21), this incentive is hardly tied to the principle of a uniform development approach only.

Should the industrialist therefore establish by means of 'trail and error', which is the location with the best "... natural establishment advantages" (RSA, 1991*b*:72) for his establishment? The only exception to this theory are the instances when an enterprise establishes at a location with specific natural resources (Friedmann's Resource Frontier) and already - or potential - established agglomeration economies favouring those specific enterprises. While, on the other side of the coin, concentrating financial resources in terms of infrastructure in a few locations of 'natural growth', will render almost any enterprise economically viable.

It seems also, that in its spatial application, the RIDP is working against the natural forces of regional development - the 'intermediate region' in the RIDP receives less incentive measures than the peripheral region, while this intermediate region is the area of natural growth. While the new incentive scheme is said to be available only to economically viable establishments, it is not necessarily tied to only the uniform approach, and could therefore also be made applicable on a more selective growth centre strategy. It is therefore argued that this major point of criticism holds no water against the spatial application of a development strategy, i.e. to choose between the selective and uniform approaches.

The incentives of the uniform approach could also be criticised from this point of view, because all those entrepreneurs who would in any case have developed in non-metropolitan regions, will receive a subsidy at the cost of the taxpayer, for locating in the place of their choice without advancing the cause of self-sustaining decentralisation. This is regarded as an unjustifiable misapplication of public funds (POE, 1989*b*:270). This criticism is however directed at the *spatial* application of the scheme, and not the purely *economic* aspects of the incentive scheme. This distinction is quite important in the further evaluation of the uniform approach as implemented in South Africa.

The ultimate goal of achieving self-sustained growth, and therefore an end to subsidisation and incentives, is a goal in itself. This goal should be set in conjunction with the identification of specific growth centres or growth regions, with the potential of developing into self-sufficient areas without the time delay experienced by the individual in searching for an economically viable location.

It should also be noted at the time of evaluation, the RIDP had only been implemented for a period of six years (POE, 1989*b*:277), which is much too short a time in which to expect a significant impact on the rest of the regional economy, or the creation of forward and backward linkages or agglomeration economies. It therefore seems that, without definite reason, that the RIDP was drastically changed because it failed to produce results in six years which can only be expected to be attained over a much longer period.

In conclusion therefore, the growth centre strategy as implemented since the 1960's in South Africa, was shown to be a strategy consisting of a large number of growth points situated in poor locations, while receiving most lavish incentives. Accordingly, empirical results over a period of six years were not favourable. This strategy was however indicated as being the *essence* of a growth centre strategy, mostly in order to justify the implementation of the uniform approach. A growth centre strategy however, could for the purpose of the argument focus on a limited number of well chosen growth points, while still retaining the incentives as currently implemented in the RIDP.

6.3.2 Criticism against the uniform approach:

(i) Growth centre approach:

Most relevant parties agreed that the previous RIDP, as implemented in South Africa, did not achieve all its original objectives (Bell, 1987:217; Wellings & Black, 1987:181; Tomlinson, 1988:7; RSA, 1992*d*:37; Ligthelm & Wilsenach, 1993:364-365). An important point to be made, however, is whether it would be correct to dismiss the growth centre concept as a process *per se* in South Africa, or as a means for developing Bantustans (Wellings & Black, 1986:27).

It must be made clear therefore that the previous growth centre strategies in South Africa had major shortcomings, but that the move to a totally new regional development strategy in times of negative economic growth, does

not seem realistic. Such a strategy, as indicated in this study, was not even successful on a much smaller scale in developed countries. Also, the primary shortcomings, namely too many growth points inappropriately situated, were not solved by the new RIDP; in fact, it is argued that its been made worse under the cover of being economically more feasible and politically unbiased. As mentioned, the incentive measures based on the effective management of an enterprise can not be criticised, but its spatial application seems misplaced and renders the plan uneconomical at this stage of the country's development.

However, most authors evaluating the growth centre strategy as implemented in the previous RIDP concluded that the main drawback to this strategy was the excessive number of growth points receiving incentives for industrial development. Similarly most agreed that the total number of growth points should be drastically reduced to only a few more economically viable locations (Du Pisanie, 1989:14). The RIDP implemented in 1991 did therefore not represent the majority of proposals regarding shortcomings of the previous growth centre strategy as implemented in South Africa.

This point could further be illustrated by seemingly contradictory recommendations on an urbanisation strategy by the President's Council. On the one hand, they recommended an intermediate sized city-strategy (RSA, 1992*d*:64,137) by indicating that "Larger towns[31] with proven potential should be identified and assisted to achieve their optimal economic development in order to increase and spread the number of economic development nodes, thereby providing a wider choice of destinations for people who intend to move to the city". On the other hand, the Council supports the RIDP (1991) in terms of its spatial application (RSA, 1992*d*:78), and indicates that within the next decade industrial undertakings will tend to locate primarily in existing metropolitan regions, intermediate sized cities, and the more successful industrial development points.

So, on the one hand, the Council recommends that intermediate sized cities should be *identified* and *assisted* in its growth process in order to attract migrants, while on the other hand they support the uniform approach of the

[31] Bloemfontein/Botshabelo/Thaba'Nchu; Free State Goldfields; East London/Mdantsane; Pietermaritzburg; Kimberly; Pietersburg/Seshego; Middelburg/Witbank; George/Mossel Bay and Potchefstroom/Klerksdorp.

RIDP but mention that these industries will nevertheless probably locate in metropolitan and intermediate sized cities.

Black & Roux (1991:455) confirmed this point by indicating that a "... uniform policy should thus be consistent with the ensuing pattern of urbanisation in South Africa". The question could therefore be asked as to why specific intermediate sized cities are identified as centres attracting migrants (naturally), while no specific indication is provided for the establishment or relocation of industry? It could be argued that industrial development could be attracted to certain intermediate sized cities which serves as 'stepping stones' in the urbanisation process - so why implement an intermediate sized city-strategy as well as the uniform RIDP-strategy to attain the same goal of decentralised concentration? This point clearly indicates that no multi-sectoral co-operation has taken place in selecting and implementing development policies which are in practice inseparable, namely regional industrial development policy and urbanisation policy.

Finally, a preliminary evaluation of the RIDP (1991) indicated that a certain level of "... concentration of capital investment is occurring, especially in the metropolitan areas and some secondary cities" (Ligthelm & Wilsenach, 1993:377). This statement again confirms that metropolitan areas and intermediate sized cities attract most new or expanding economic activities as well as most migrants. Shouldn't a regional development policy therefore consist of a multi-sectoral development approach, and be implemented by means of a strategy which anticipates the specific spatial implication of long-term development trends?

(ii) Multi-sectoral approach:

Proposals before the implementation of the RIDP in 1982 (RSA, 1985*a*:12), as well as proposals for the implementation of the 1991 RIDP (RSA, 1991*b*:71) stated clearly that regional development policy should consist of a multi-sectoral approach, but up to date the RIDP is the only "... sectoral support programme with recurrent benefits currently in operation" (Ligthelm & Wilsenach, 1993:377). This structural shortcoming is also evident from the President's Council Report on

urbanisation, which stated that the current RIDP is not "... linked to a viable economic policy framework, and, in effect, undermines the potential for small business and the informal sector" (RSA, 1992*d*:39).

This point also raises the question that *if* the uniform approach were based on a multi-sectoral approach, could it be afforded? It is argued in this study that even the current uniform approach based on the development of only the industrial sector, could not be afforded by a developing country such as South Africa. The financial costs incurred in promoting a uniform approach which provides financial incentives to all economic sectors seems quite unimaginable. Maybe more money would be available if it was not spent on incentives for only the manufacturing sector, but also for different economic sectors in fewer locations.

A prerequisite for a successful regional development strategy seems to be the multi-sectoral application thereof. Therefore, the application of a multi-sectoral incentive scheme at a limited number of viable growth centres, would probably be met with more successful results than the same application for the whole of non-metropolitan South Africa, i.e. according to the uniform approach.

(iii) Locational freedom

The first major advantage of the new RIDP, namely locational freedom allows the new industrial developer to pick a site of his choice anywhere in the country - save metropolitan regions - and receive 100 per cent establishment incentives (Black & Roux, 1991:454). The regional economy is primarily dictated by its specific urban structure. Urban development on the other hand, is also dictated by specific morphological processes (as described in Chapter 3), and to expect the new developer or industrialist to have sufficient knowledge of these processes in general as well as its merits for his establishment specifically, seems unrealistic.

As already noted in this section, in theory, the goal of locational freedom has all the necessary merits to be implemented as a regional development strategy. The poor results however achieved in developed countries utilising this approach render it even more uneconomical in developing

countries, mostly because of a lack of funds to balance economic growth in a country as a whole. This problem is multiplied in a developing country with relatively large peripheral areas, such as South Africa.

The second primary advantage of the RIDP is its 'political correctness' (Black & Roux, 1991:454). Although much criticism was lodged against the political motives of the growth centre approach implemented in South Africa, and, while this statement is true, it is also alleged that the current RIDP is politically unbiased. While this also seems true, it seems that this was the *major* goal of this policy, i.e. everything possible was done in order to initiate a regional development programme without political connotation, with the result that locational guidance received minimum attention in this programme.

Although this viewpoint has some merit from a political point of view, it is argued that a regional development strategy should only be based on sound regional development principles tested in many countries, along with sound urban morphological concepts. Should not issues such as the existence of polarisation reversal in South Africa, with its spatial and economic consequences already tabled in other countries, be taken into consideration?. Should we not therefore go *along* with the tide of development instead of propagating a 'politically unbiased' *laissez faire*-type development strategy? It is therefore argued that this strategy could pose the same threats of economic failure as the previously politically biased growth centre approach did, albeit from a totally different angle.

The question therefore asked is whether this programme is fundamentally also a politically-instigated plan, i.e. with the major objective of *not* being politically inspired? The primary objective of the programme could therefore be seen as to please all political parties in South Africa. Such an action could result in the failure of decentralisation initiatives in most areas, the primary reason being that "... Appeasement is the enemy of effectiveness in regional planning" (Richardson, 1978*b*:176)

6.4 Conclusion

This chapter has indicated that the new RIDP has much merit in terms of the incentive scheme implemented to promote industrial development in non-metropolitan areas. It is however the spatial application of this scheme, as well as the reasoning behind the application which seems lacking. As already argued, the incentive scheme is not necessarily tied to the uniform approach, and could just as easily be applied to any growth centre strategy.

The spatial economy conforms to certain laws - as explained in this study - which provide policy makers with the necessary knowledge to establish a policy which regards these phenomena with the necessary attention. Black & Roux (1991:456) argued that the choice between uniform and selective approaches depends on the nature of information networks that exists between the information networks within the private and public sector of an economy. This point could be taken further in maintaining that the information networks in general should also be an indication of the type of policy to follow. In a developing country such as South Africa, where communication networks in general, as well as between the private and public sectors are far from ideal, the question could be raised as to the successful application of a uniform development strategy.

Most economic activities tend to concentrate in metropolitan regions and consequently in intermediate sized cities at different stages of development, and these morphological characteristics and empirical knowledge should be used to the advantage of all relevant parties and establishments. The choice between a spatially uniform or a selective approach for a regional development policy would therefore be much influenced by the development status of a country or region.

It would seem that the uniform approach was justified firstly in terms of alleged shortcomings in the previous growth centre-oriented strategy, and secondly, seems to be politically unbiased because it allows the market forces to indicate the most favourable locations.

CHAPTER 7

PROPOSALS FOR THE DELINEATION AND DEVELOPMENT OF INTERMEDIATE REGIONS

7.1 Introduction

In Chapters 2 and 3, the basic theoretical principles guiding regional development were outlined and the various development regions in economic space identified, including the intermediate region. Different forces and policies dictating the growth of these regions were reviewed in detail in Chapter 4. Chapters 5 and 6 reviewed the development of relevant regional development strategies in South Africa from 1960 to the present. With these theoretical and historical aspects as background, this chapter aims at developing a model regarding spatial development with the emphasis on the intermediate region.

In the first section, an intermediate region will be delineated with the PWV-region as empirical example, while the second section will deal with the principles in developing an intermediate region-strategy.

7.2 The delineation of the intermediate region

The steps which were followed to delineate the intermediate region are as follows:

1. Delineation of the study area.
2. Identification of commensurable criteria for delineation purposes.
3. The choice of the delineation method used.

4. Implementation of the delineation method:

   4.1 Determining the cut-off points in respect of the criteria used.

   4.2. Determining the relative weights of each data value regarding the various points of criteria.

   4.3 The delineation of the intermediate region.

7.2.1 Delineation of the study area

With the PWV-region as foundation, a study area was identified which includes a circular area of approximately 400 - 500 kilometres from the centre of the PWV-region, i.e. more than double the radius of the PWV-region. A larger study area will also not be sensible as this area stretches to the boundaries of other metropolitan regions such as Bloemfontein, Pietermaritzburg, and the Welkom-Virginia-Odendaalsrus complex. Theoretically, the study area should consist of a metropolitan region, intermediate region, and peripheral region. It is however the primary objective of this section to delineate the intermediate region surrounding the core region of the PWV. A large study area of more than 50 non-metropolitan magisterial districts was therefore chosen to identify the intermediate region objectively. Provincial and planning region-borders were ignored as this study focuses on economic entities in a geographical area (see Figure 7.1).

Magisterial districts (excluding the Bantustans) are regarded as the most acceptable geographical area units for the purpose of this study; firstly, all the population and economic data which are used in this study are published in this form and, secondly it should serve as building blocks to form a continuous area.

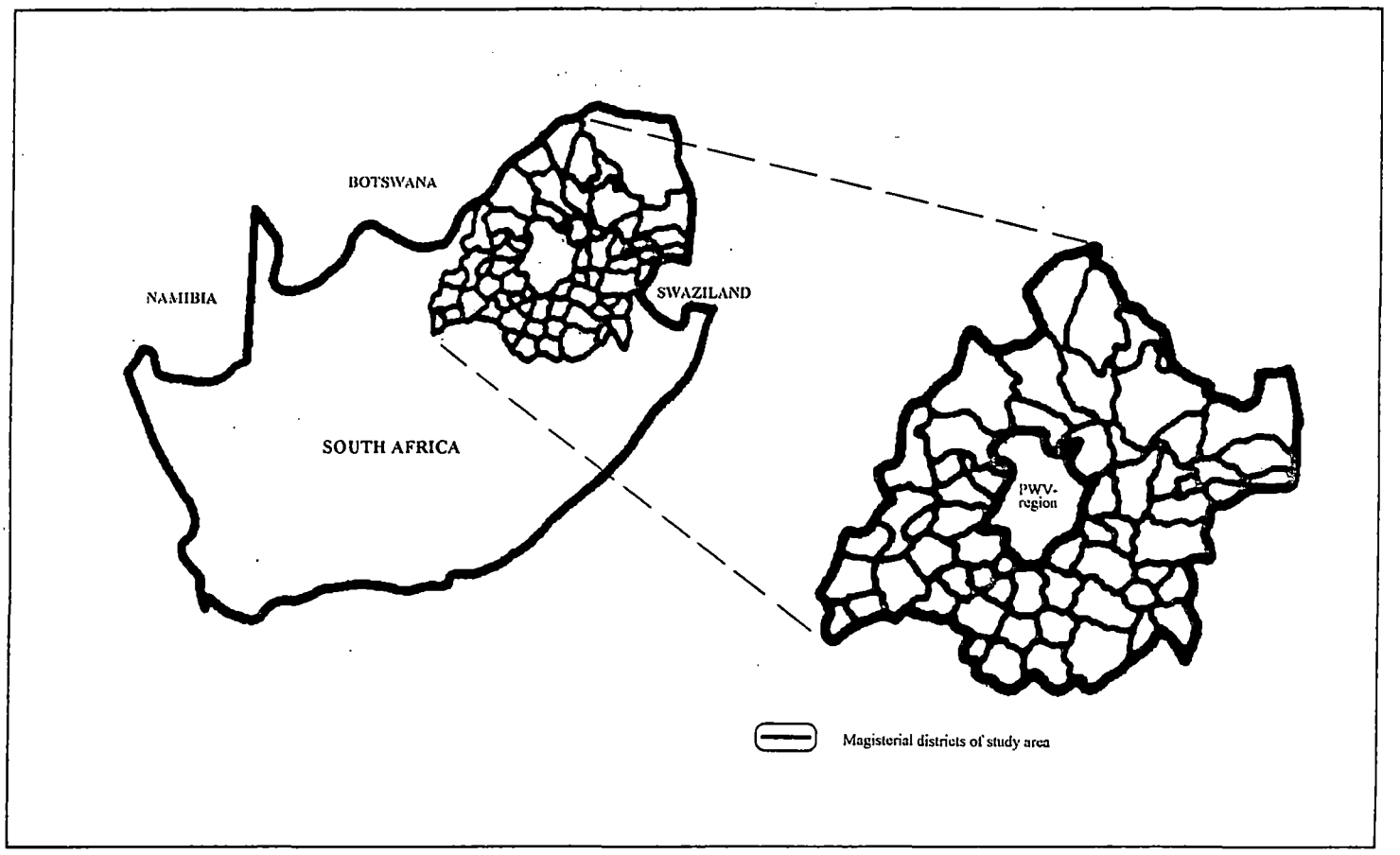
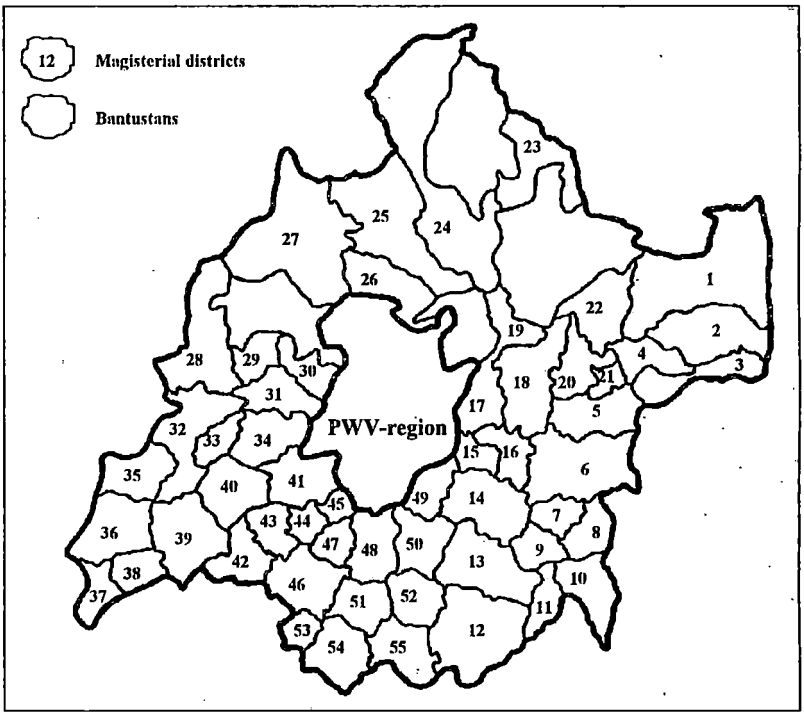


Figure 7.1 The study area



1. Pelgrims Rest
2. Witrivier
3. Barberton
4. Nelspruit
5. Carolina
6. Ermelo
7. Amersfoort
8. Wakkerstroom
9. Volksrust
10. Utrecht
11. Newcastle
12. Harrismith
13. Vrede
14. Standerton
15. Highveld Ridge
16. Bethal
17. Witbank
18. Middelburg
19. Groblersdal
20. Belfast
21. Waterval Boven
22. Lydenburg
23. Pietersburg
24. Potgietersrus
25. Waterberg
26. Warmbad
27. Thabazimbi
28. Marico
29. Swartruggens
30. Rustenburg
31. Koster
32. Lichtenburg
33. Coligny
34. Ventersdorp
35. Delareyville
36. Schweizer Reneke
37. Christiana
38. Bloemhof
39. Wolmaransstad
40. Klerksdorp
41. Potchefstroom
42. Bothaville
43. Viljoenskroon
44. Vredefort
45. Parys
46. Kroonstad
47. Koppies
48. Heilbron
49. Balfour
50. Frankfort
51. Lindley
52. Reitz
53. Ventersburg
54. Senekal
55. Bethlehem

Figure 7.2 Magisterial districts of the study area.

7.2.2 Delineation criteria

According to criteria outlined in sections 2.4 and 3.3, the intermediate region could theoretically be delineated by means of some of the following criteria, namely the spatial implication of diffusion of innovation, the availability of infrastructure, the Gross Geographic Product per district, agricultural development, the population sizes, environmentalism, step-wise migration, and specific areas experiencing a net population gain. Other criteria mentioned in the previous sections refer only to possible development potential, such as industrial decentralisation, but no empirical data for this phenomenon exists in South Africa (see also sections 3.3.2 and 7.4.1.2). The availability of infrastructure and the process of innovation diffusion will be discussed simultaneously under *infrastructure* as a criterion, while *population growth* as criterion is used as an indication of population size, environmentalism, step-wise migration. Each criterion will now be discussed in detail.

7.2.2.1 Population density

It is argued that, because of its favourable distance from the metropolitan region, higher population densities would probably be found in the intermediate region. According to von Thünen and Sinclair's theories on land use, a higher density of land use is found adjacent to the urban core or primary market than further in the periphery. Also, the process of land speculation especially comes to mind, as such a trend is realised in the study area. The magisterial districts in the study area which have the highest population densities are all situated adjacent to the PWV metropolitan region[32]. These are the magisterial districts of Highveld Ridge, Klerksdorp, Witbank, Rustenburg, Parys, and Potchefstroom (see Table 7.1). With the PWV-region's boundary as inner boundary of the intermediate region, an obvious cut-off point can be derived from

32 The non-urban population density per district corresponded very closely with the total population of each district, which was used in this section. In this particular area, it is therefore not only the urban centres which are characterised by high densities, but the total number of districts, which further emphasises the intermediate *region* as such.

Figure 7.3 - thereby visually dividing the study area in three distinctive sections regarding population density.

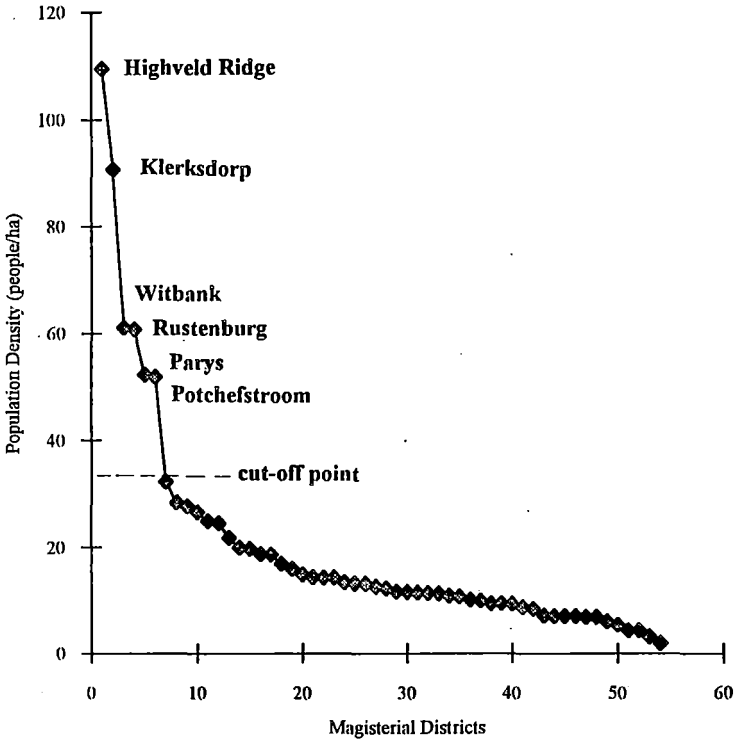


Figure 7.3 Population density per magisterial district

7.2.2.2 Agricultural production

According to von Thünen's theory on urban land use, as well as Sinclair's improvisations on it (see section 3.3.3 for detailed discussion), the potential of a higher than average agricultural production figure seems to

be situated in the intermediate region, although not indicated as such in the above mentioned theories. As urban land use enjoy priority in specifically metropolitan regions, the adjacent, non-metropolitan region could theoretically therefore be identified as an important agricultural production area - producing not only for its own hinterland, but also the metropolitan region.

These theories however assume an idealised landscape which is not present in the study area, as the study area encompasses a large geographic area, with climatic, geological, topographical and other relevant conditions differing much from one another - thereby rendering some more productive than others. Some magisterial districts are also much larger than others, for example Potgietersrus encompasses an area of 16 016 hectares, while Parys consists only of an area of 930 hectares. However, the various magisterial districts' agricultural contribution to the Gross Geographic Product was established and is shown in Table 7.1. Although several districts adjacent to the metropolitan region have high agricultural production volumes (such as Middelburg, Potchefstroom and Standerton), other major agricultural districts were also implicated with their high production figures. Visually, a cut-off point seems to exist at around R130 000, implicating Barberton, Harrismith and Middelburg as primary agricultural districts (see Figure 7.4).

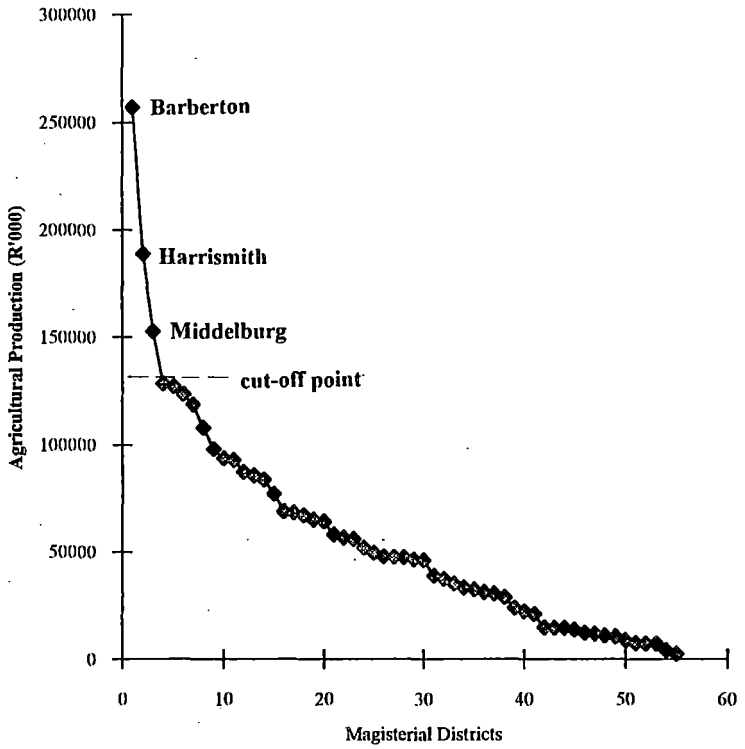


Figure 7.4 Agricultural production per magisterial district

7.2.2.3 Gross Geographic Product (GGP)

The gross geographic product seems to be a promising qualitative measure to be combined with the population parameter which enables one to differentiate between the relative productive capacities of the urban communities, and it also renders an identification of leading economic

sectors as well as a comparison of the relative economic performance of different economic sectors (Geyer & Steyn, 1989:10-11).

The GGP is an enumeration of the magnitude of production activity and, therefore, the total money value of production generated by production factors over a certain period of time within a specific area. It is a yardstick of economic performance of a geographical unit, which contains all those economic factors determining the availability of commercial and industrial agglomeration economies in the specific unit. The GGP further reflects the magnitude of production of that area as a result of the combination of human, economic and natural resources in the production process[33].

In the chosen non-metropolitan study area, the following magisterial districts were identified according to highest GGP, namely Klerksdorp, Highveld Ridge, Witbank, Middelburg, Rustenburg, and Bethal (see Figure 7.5). From Figure 7.5 it is also evident that a distinctive class-difference regarding the GGP could be identified off-hand at around R100000 - possibly indicating the outer boundary of the intermediate region according to this point of criteria. All of these highest-ranking districts are situated in the immediate vicinity of the PWV-region.

33 In order to attain the *spatial structure* of the country's economic system, Hanekom (1982:15) also divided the South African space into core regions, the inner periphery, and the outer periphery. This was done by means of the GGP per district as measurement of total economic activity in that area. This resulted in the core region contributing 66%, the inner periphery 31%, and the outer periphery 3% of the total GGP for the country.

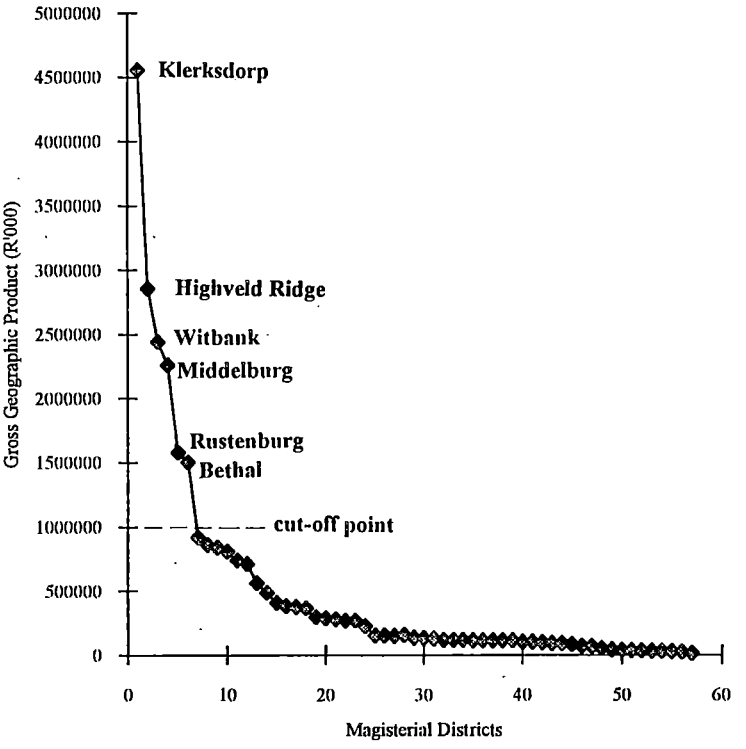


Figure 7.5 Gross Geographic Product per magisterial district

7.2.2.4 Infrastructure

Infrastructure is one of the few instruments in development planning which has proven effective in changing the distribution of population. It is however not only the development of social and economic infrastructure that is of relevance, but just as important is its location in physical space which renders it successful or not (Richardson, 1981:280). Therefore, a combination of population and economic parameters (which could serve as

a measure of existing intra-urban infrastructure), and distance between centres and especially the forming of development axes (which gives an indication of interurban infrastructure), seem to be appropriate in rendering an estimation of the distribution of infrastructure in the study area.

Bos (1990:173-175), in his study on intermediate sized cities in South Africa, calculated the Total Economic Index-value (TEI) of each town/city in South Africa. The TEI-value of a town/city is based not only on the centre's economic potential in terms of its population size and existing economy, but also on its distance from other centres, especially primate cities as in the case of the study area. An intermediate sized city, for example, located close to the metropolitan region, will consequently boast a higher TEI-value than a similar sized-city located deeper in the periphery[34].

Therefore, in creating a visual impression of the distribution of infrastructure surrounding the PWV-region, the following areas were rated especially high (in declining order): Klerksdorp, Highveld Ridge, Witbank, Middelburg, Potchefstroom, Rustenburg, and Bethal[35] (see Figure 7.6). Similar to the results of the afore-mentioned criteria, all of the above-mentioned districts are situated adjacent to the PWV-region.

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34 A theoretical concept which supports this statement is the diffusion of innovation. In section 3.3.1 it was indicated that the diffusion of innovation spreads in a hierarchical and spatial fashion simultaneously. Richardson (1979*b*:129) noted that, with the introduction of an innovation in the metropolis, the "... main diffusion path is *via* the urban hierarchy, but the innovation will also tend to be adopted *via* radiation from the core metropolis into the surrounding region". It is contended that innovation will not be as quickly adopted over time in an intermediate sized city situated in the peripheral region as will be the case for the same sized city in the intermediate region. The same argument could be applied to the economic development process. Results of new economic growth will be felt first of all in the intermediate sized city situated in the intermediate region.

35 These results are supported by the occurrence of identified development axes emanating from the PWV-region, *viz.* the Warmbaths, Witbank-Middelburg, Secunda-Evander, Potchefstroom-Klerksdorp, and Brits-Rustenburg development axes (see also section 5.3.5). In combining the urban hierarchy with existing development axes, and therefore with its physical distance from the metropolitan region, the following magisterial districts come into the picture: Warmbaths, Highveld Ridge (RSA, 1992*b*:11), Middelburg, Witbank, Potchefstroom, Klerksdorp, Rustenburg (Geyer, 1990:394).

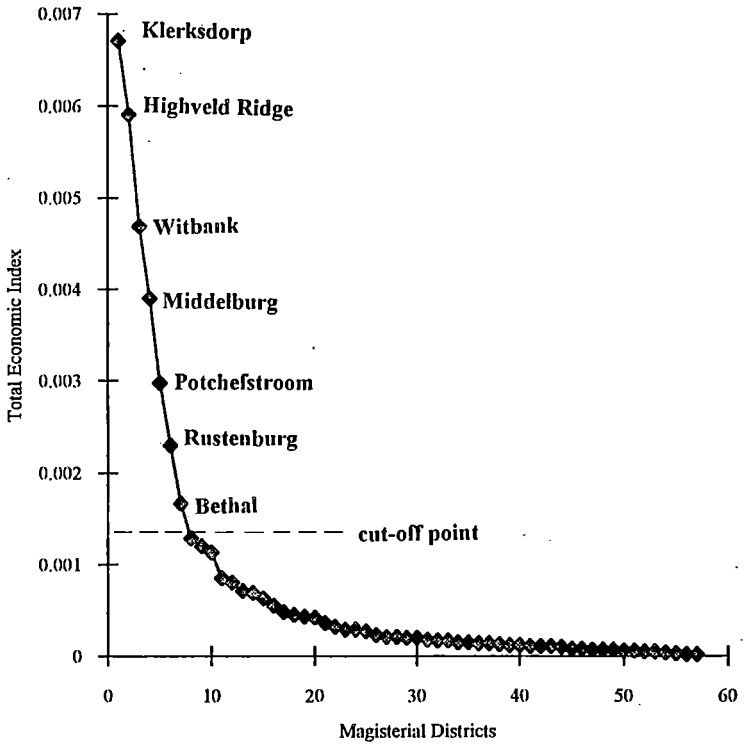

Figure 7.6 Distribution of infrastructure per magisterial district

7.2.2.5 Population growth

The population growth of a specific area is influenced by several processes such as polarisation reversal, counterurbanisation, and step-wise migration - processes which are collectively referred to as, and described by the concept of differential urbanisation. The processes underlying the concept of differential urbanisation (see sections 3.2.3.2; 3.2.3.3; and 3.2.3.4), have also been brought in context with the concept of environmentalism

(Kontuly & Vogelsang, 1988:42; Champion, 1989*b*:101; Hugo; 1989:62). According to these concepts, the decentralisation of people to the metropolitan fringes and subsequently to adjacent intermediate sized cities[36], forms part of the metropolitan evolution process. Geyer & Kontuly (1993:170) explained the decentralisation of people and economic activities by maintaining that 'productionism' and 'environmentalism" go hand-in-hand - the former places emphasis on improved employment circumstances and monetary conditions, while the latter refer to the improvement of immediate living conditions (see also section 3.2.3.3.1).

In South Africa, and specifically the PWV-region, Geyer (1990:386) indicated that the relative concentration of different population sectors has changed in a differentiated manner since the 1960's. Distinguishing between the inner core, outer core, core fringe, intermediate city, and outer periphery of the PWV and surrounding region, Geyer indicated that the number of Blacks has increased proportionally in the inner core of the PWV-region, while the share of Whites increased relatively in especially the core fringe and intermediate city regions. Differential urbanisation does however not constitute only the decentralisation of people from the metropolitan region. The decrease in the White population numbers - i.e. the high income group - in the inner core, also went hand-in-hand with a proportional decrease in commercial activities in the same area[37].

Apart from migration patterns dictating the relevant phase of differential urbanisation, the intermediate region presumably also serves as a 'stepping-stone' in the urbanisation process, i.e. step-wise migration. Although it is not realistically possible to measure step-wise migration in an overwhelmingly third-world country such as South Africa, certain tendencies could well be isolated. As Blacks in South Africa are only 56% urbanised at present, it can be expected that the urbanisation process will mostly consist of Blacks, as the Whites, Indians, and Coloureds are already largely urbanised. In the case of Black urbanisation it is possible to distinguish between three migration patterns, *viz.* an increase in density

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36 It has also been indicated by Geyer (1994:9) that environmentalism could possibly also be attained in exclusive areas in the metropolitan region. This is a trend which have been realised in areas such as London, Edinburgh, and Toronto where urban renewal schemes have met with the taste and expectations of the 'environmentalist'.

37 The described process refers specifically to the 'intermediate primate city stage' of Geyer & Kontuly's (1993:171) model on differential urbanisation.

in certain rural areas, the movement of agricultural workers mainly to the larger towns, and migration to the larger cities and metropolitan regions (RSA, 1991*b*:26). This phenomenon corresponds closely with Conway's (1980:4-6) model on step-wise migration which indicates that migration occurs in a series of spatial steps up the urban hierarchy (see also section 3.3.5).

With these two processes, i.e. polarisation reversal and step-wise migration occurring simultaneously in South Africa, it is therefore argued that the intermediate region should show above-average growth in overall population figures, in contrast to the peripheral region. Using 1985 and 1991 census-data, the population growth in each magisterial district was measured, and is indicated in Table 7.1.

The following magisterial districts therefore seem relevant in reflecting the 'decentralisation phase' of differential urbanisation as well as being important centres in the step-wise migration process. These are Groblersdal, Highveld Ridge, Klerksdorp, Parys, and Potchefstroom (see Figure 7.7). These districts of above-average population growth are without exception situated adjacent to the PWV-region. These are the areas which are presumably related to the concept of environmentalism in this specific phase of development. These areas could arguably also play a functional role in harbouring migrants - temporarily or permanently - in the primate city urbanisation phase.

Although Geyer's (1990:387) study area regarding differential urbanisation does not correspond totally with the relevant study area, all those districts[38] showing signs of the decentralisation of people, correspond closely with the districts of above-average total population growth in this study area.

[38] Although this study area encompasses a larger area than used in Geyer's (1990:387) empirical study, the following districts were identified in showing proportional increase in the White and Coloured population, i.e. the high income groups: Middelburg, Witbank, Highveld Ridge, Balfour, Potchefstroom, Klerksdorp, Rustenburg, and Warmbaths.

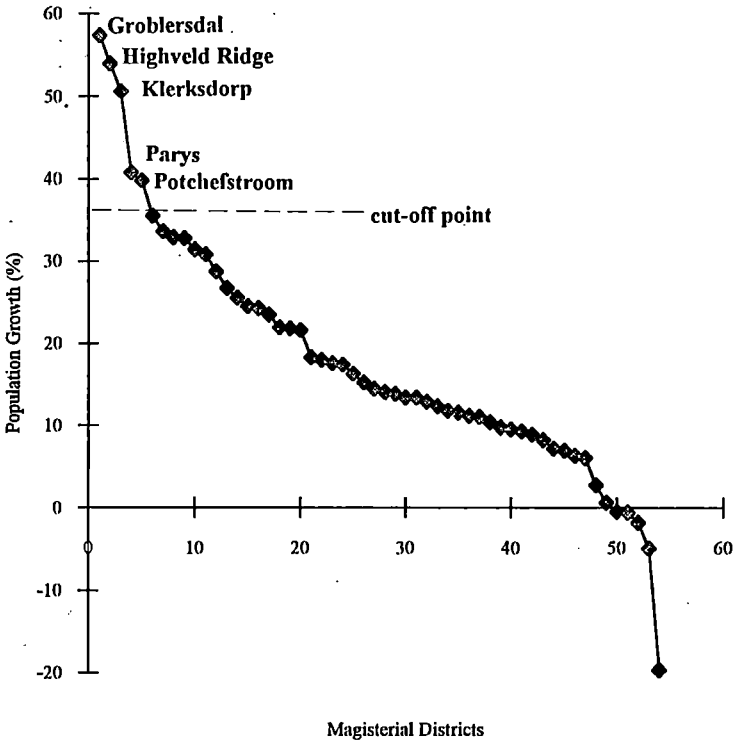

Figure 7.7 Population growth per magisterial district

Similarly, the areas identified in the National Regional Development Plan (RSA, 1991*b*:75) as the most significant areas in relieving the urbanisation problem in the PWV-region, also rank very highly regarding total population growth in the given period[39].

7.3 Choice of delineation method

The criteria used to delineate the intermediate region are used to indicate a specific homogeneity or uniformity of character of the intermediate region, i.e. in terms of a formal region. As the data used in the previous section are not comparable with each other in mathematical terms, such as population growth and Gross Geographic Product, a 'weighing' method such as described by Glasson (1978:41-41) is required in order to identify similar trends and characteristics.

In accordance with the *weighted index number method* of delineating regions, which is especially a method for the delineation of intermediate regions (see section 2.2.2), a numerical weight is appointed to each magisterial district in each category of criteria. The criteria used to delineate the intermediate region illustrates also indirectly the functional relationships between the magisterial districts in the study area and the metropolitan region. Consequently, these functional relationships are taken into account in the form of 'homogeneous criteria', i.e. magisterial districts showing similar functional associations with the metropolitan region. Accordingly, the weighed index method of regionalisation are implemented to delineate the intermediate region.

[39] The National Regional Development Programme (RSA, 1991*b*:75) indicated that although the dominant role of the metropolitan regions in the future urbanisation process is acknowledged, the important role larger non-metropolitan cities can play in alleviating urbanisation pressure on the metropolitan region must be noted. It is indicated that apart from the four metropolitan regions in South Africa, the national urbanisation pattern is further characterised by the occurrence of a number of higher order towns such as Bloemfontein, the Orange Free State Goldfields, Kimberley. East London, George, Pietermaritzburg, Klerksdorp, Potchefstroom and Witbank (RSA, 1991*b*:28).

7.3.1 Determining cut-off points for the criteria

The method was applied as follows in order to delineate the intermediate region from the calculated data in Table 7.1:

- For each set of data (for example population density), the *mean* is calculated (see Table 7.1*c*).
- Consequently the *standard deviation*[40] for each set of data is calculated (see Table 7.1*c*).
- The specific *standard deviation* for each criterion is established and used as an indication for the various cut-off points.

7.3.2 Determining the relative weights of data

The relative weights of data were determined as follows:

- The data in each set of criteria is given a weight according to its deviation from the *mean.* A weight of one is given to each data value according to the number of standard deviations it is located from the mean value.
- Data anywhere below the *mean* score zero (0).
- Data values between the mean and the first standard deviation are given a weight of one (1). Data values between the first and the second standard deviation are given a weight of two (2), and so forth.

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40 The *standard deviation* is calculated from the following formula: $\sigma x = \sqrt{\frac{\sum x^2 - n\bar{x}^2}{n}}$

- For example, the mean value for population density is 19,93, with a *standard deviation* of 20,71. The data value for Bethal (32,29) is located between the *mean* and the first *standard deviation* (i.e. 19,93+20,71=40.64). A weight of one is allocated to this value. The value for Highveld Ridge (109,54) is situated between four and five *standard deviations* from the *mean* (i.e. 19,93+(4×20,71)=123,48). The fourth *standard deviation* being 103.55 and the fifth being 123,48. A weight of five is therefore allocated to this specific data value.

- This process is repeated for each value and each set of criteria. By calculating the various weighed indexes, a total weighed index value could be determined for each district.

From the criteria chosen, the following magisterial districts were the highest ranking areas (in numerical order): Highveld Ridge, Klerksdorp, Middelburg, Witbank, Rustenburg and Potchefstroom. Visually, the results are interpreted in Figure 7.8. It is evident from Figure 7.8 that an obvious breaking point exists between the afore-mentioned magisterial districts and the rest, thereby illustrating probably the first phase of development of an intermediate region. The most obvious characteristic of these specific magisterial districts, is that they are all situated adjacent to the PWV-region, thus forming the proposed intermediate region.

Table 7.1 Calculated values for regionalisation criteria

DISTRICT	POPULATION DENSITY (people/ha) *	AGRICULTURAL PRODUCTION (R'000) **	GROSS GEOGRAPHIC PRODUCT (R'000) **	INFRASTRUCTURE (TED)***	POPULATION GROWTH (%) ****
Amersfoort	18.72	11 828	37 131	0.00003	35,50
Balfour	16.91	2 760	297 018	0.00055	2,75
Barberton	13.45	188 931	560 545	0.00036	18,34
Belfast	9.55	65 004	133 795	0.00015	14,11
Bethal	32.29	49 585	1 503 376	0.00167	6,04
Bethlehem	21.79	93 687	384 016	0.00071	8,24
Bloemhof	8.83	7 440	35 559	0.00007	25,58
Bothaville	19.95	30 414	129 027	0.00021	6,31
Carolina	6.97	77 075	131 817	0.00010	12,90
Coligny	14.46	12 403	41 276	0.00006	15,25
Christiana	7.15	10 629	34 823	0.00006	23,53
Delareyville	11.01	51 835	92 245	0.00007	21,63
Ermelo	14.34	127 075	740 961	0.00120	10,38
Frankfort	13.20	64 120	114 527	0.00018	17,98
Groblersdal	19.79	68 800	225 960	0.00020	50,63
Harrismith	8.47	152 713	279 683	0.00032	9,30
Heilbron	11.43	47 779	112 678	0.00021	12,35
Hoëveldrif	109.54	46 638	2 858 362	0.00591	33,62
Klerksdorp	90.66	31 102	4 557 232	0.00671	32,89
Koppies	12.69	14 775	51 148	0.00007	0,64
Koster	10.84	46 241	66 428	0.00008	24,57
Kroonstad	26.63	37 267	484 801	0.00129	9,80
Lichtenburg	14.97	92 761	407 838	0.00048	17,59
Lindley	13.29	47 631	85 449	0.00011	24,30
Lydenburg	7.09	47 390	374 896	0.00029	11,09
Marico	5.38	22 232	153 731	0.00020	-4,91

Sources: * (RSA,1992*a*); ** (RSA, 1993); *** (Bos, 1990:226); ****(RSA,1986*a*; RSA, 1992*a*).

Table 7.1 (*continued*) Calculated values for regionalisation criteria

DISTRICT	POPULATION DENSITY (people/ha) *	AGRICULTURAL PRODUCTION (R'000) **	GROSS GEOGRAPHIC PRODUCT (R'000) **	INFRASTRUCTURE (TEI)***	POPULATION GROWTH (%) ****
Middelburg	24.56	256 954	2 261 019	0.00298	21.84
Nelspruit	27.77	128 391	920 212	0.00043	9.48
Newcastle	24.99	13 740	712 925	0.00113	7.23
Parys	52.34	11 099	102 949	0.00045	54.01
Pelgrimsrus	2.00	123 571	285 140	0.00017	16.31
Pietersburg	9.55	107 840	840 875	0.00069	-14.72
Potchefstroom	51.90	97 902	807 070	0.00309	30.80
Potgietersrus	4.34	87 396	366 332	0.00029	-0,41
Reitz	11.47	68 158	104 335	0.00011	11,58
Rustenburg	60.77	67 196	1 580 277	0.00230	40,75
Schweizer-Reneke	11.56	56 559	100 071	0.00008	31,46
Senekal	11.66	56 103	119 250	0.00013	8.89
Standerton	18.63	118 789	860 700	0.00080	6,95
Swartruggens	7.17	4 233	26 922	0.00005	14.50
Thabazimbi	4.38	58 176	154 670	0.00027	21,94
Utrecht	7.09	28 867	114 107	0.00011	-0.55
Ventersburg	11.77	20 983	31 696	0.00004	26.76
Ventersdorp	10.22	83 726	113 791	0.00012	13,40
Viljoenskroon	28.43	33 298	116 943	0.00023	13.85
Volksrust	15.99	14 664	91 362	0.00017	17.46
Vrede	6.92	85 569	113 008	0.00012	11.21
Vredefort	10.08	14 611	25 957	0.00005	-1,77
Wakkerstroom	14.31	23 905	30 337	0.00002	28.74
Warmbad	9.40	32 351	149 635	0.00042	11,77
Waterberg	3.13	35 088	146 151	0.00085	-19,66
Witbank	61.10	38 939	2 441 782	0.00469	32,77
Witrivier	6.07	8 925	265 763	0.00014	-9,37
Wolmaransstad	12.36	7 512	116 245	0.00015	13,39

Source: * (RSA,1992*a*); ** (RSA, 1993); *** (Bos, 1990:226); ****(RSA,1986*a*; RSA, 1992*a*).

Table 7.2 *(continued)*

WEIGHTED INDEX						
DISTRICT	POPULATION DENSITY	AGRICULTURAL POTENTIAL	GROSS GEOGRAPHIIC PRODUCT	INFRASTRUCTURE	POPULATION GROWTH	**TOTAL**
Middelburg	1	4	3	2	1	11
Nelspruit	1	2	1	0	0	4
Newcastle	1	0	1	1	0	3
Parys	2	0	0	0	3	5
Pelgrimsrus	0	2	0	0	1	3
Pietersburg	0	1	1	0	0	2
Potchefstroom	2	1	1	2	2	8
Potgietersrus	0	1	0	0	0	1
Reitz	0	1	0	0	0	1
Rustenburg	2	1	2	2	2	9
Schweizer-Reneke	0	0	0	0	2	2
Senekal	0	0	0	0	0	0
Standerton	0	2	1	1	0	4
Swartruggens	0	0	0	0	0	0
Thabazimbi	0	0	0	0	0	1
Utrecht	0	0	0	0	0	0
Ventersburg	0	0	0	0	1	1
Ventersdorp	0	1	0	0	0	1
Viljoenskroon	1	0	0	0	0	1
Volksrust	0	0	0	0	1	1
Vrede	0	1	0	0	0	1
Vredefort	0	0	0	0	0	0
Wakkerstroom	0	0	0	0	1	1
Warmbad	0	0	0	0	0	0
Witbank	2	0	3	3	2	10
Witrivier	0	0	0	0	0	0
Wolmaransstad	0	0	0	0	0	0

Source: Own calculations

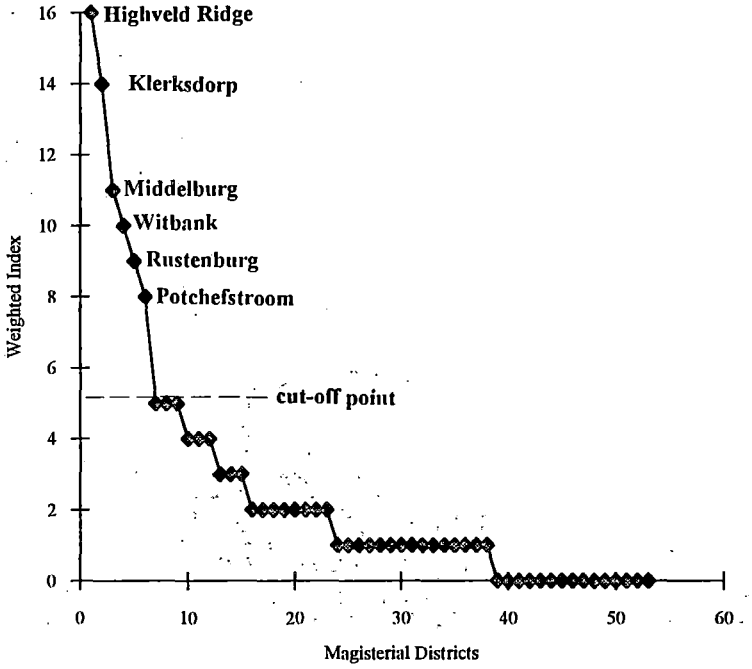
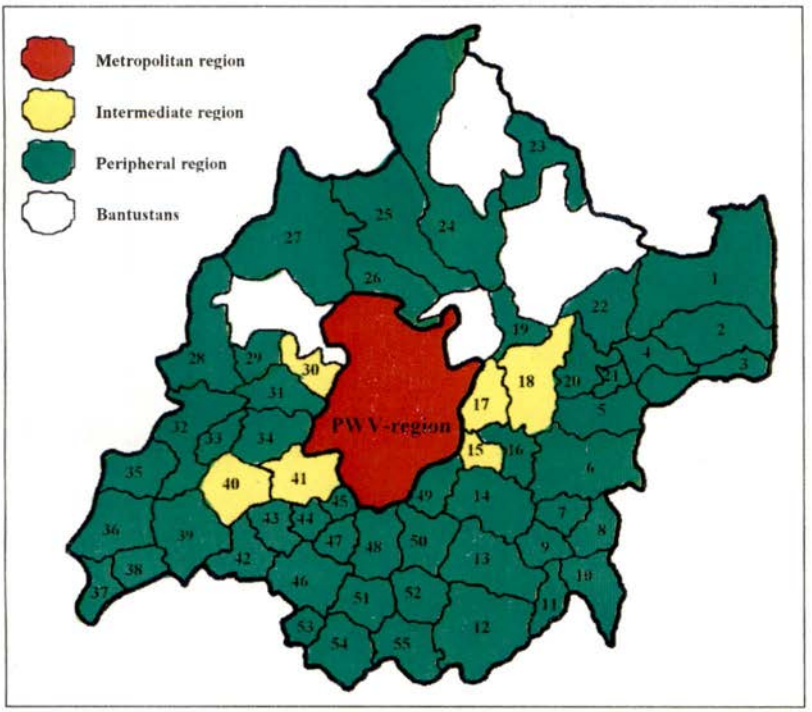


Figure 7.8 Weighted numbers per magisterial districts



1. Pelgrims Rest
2. Witrivier
3. Barberton
4. Nelspruit
5. Carolina
6. Ermelo
7. Amersfoort
8. Wakkerstroom
9. Volksrust
10. Utrecht
11. Newcastle
12. Harrismith
13. Vrede
14. Standerton
15. Highveld Ridge
16. Bethal
17. Witbank
18. Middelburg
19. Groblersdal
20. Belfast
21. Waterval Boven
22. Lydenburg
23. Pietersburg
24. Potgietersrus
25. Waterberg
26. Warmbad
27. Thabazimbi
28. Marico
29. Swartruggens
30. Rustenburg
31. Koster
32. Lichtenburg
33. Coligny
34. Ventersdorp
35. Delareyville
36. Schweizer Reneke
37. Christiana
38. Bloemhof
39. Wolmaransstad
40. Klerksdorp
41. Potchefstroom
42. Bothaville
43. Viljoenskroon
44. Vredefort
45. Parys
46. Kroonstad
47. Koppies
48. Heilbron
49. Balfour
50. Frankfort
51. Lindley
52. Reitz
53. Ventersburg
54. Senekal
55. Bethlehem

Figure 7.9 The intermediate region surrounding the PWV-region.

A second phase of development could probably consist of the next six highest ranking areas, which would be Barberton, Groblersdal, Parys, Bethal, Nelspruit, and Standerton. Similar to the first set of identified areas, most are situated adjacent to the PWV-region - Barberton and Nelspruit being the only exceptions in this set of twelve identified magisterial districts. The inclusion of Nelspruit and Barberton in this set of data could most probably be related to a particularly strong agricultural sector in this part of the country, as well as a high immigration rate from Swaziland and Mozambique. The theoretical manifestation of an intermediate region surrounding a metropolitan region which was pictured in previous sections therefore seem to be a realistic entity - at least in the instance of the PWV and surrounding region (see Figure 7.9).

With an intermediate region now delineated, an intermediate region-strategy could be proposed. In an attempt to formulate such a strategy, some of the pre-conditions and concepts dictating regional development strategies in general, seems called for.

7.4 Principles dictating successful development strategies

In order to develop an intermediate region-strategy for South Africa, a condensed look at basic characteristics of successful development strategies seems necessary. In this section, basic principles underlying development strategies will be identified in an effort to integrate these fundamental issues with the intermediate region-strategy.

Firstly, any significant development strategy should be co-ordinated with the country's national development strategy and overall planning process. Otherwise, they would merely "...'tinker' with weak spatial policy instruments while the dominant trends in the geographical distribution of population and economic activity are the joint outcome of market forces on the one hand and the unintended spatial impacts of macro and sectoral policies on the other" (Richardson, 1987*c*:240). The key to a successful and effective spatial policy is therefore the integration of spatial elements with economic and social development strategies.

Table 7.1 *(continued)*

STATISTICAL SUMMARY	POPULATION DENSITY (people/ha)	AGRICULTURAL PRODUCTION (R'000)	GROSS GEOGRAPHIC PRODUCT (R'000)	INFRASTRUCTURE (TEI)	POPULATION GROWTH (%)
TOTAL	1 056.43	3 097 572	26 747 695	0.040520	858.68
MEAN VALUE	19.93	58 444.75	504 673.49	0.000765	16.201509
STANDARD DEVIATION	20.71	49 833,18	836 452.56	0.001411	13.529112

Source: Own calculations

Table 7.2

WEIGHTED INDEX						
DISTRICT	POPULATION DENSITY	AGRICULTURAL PRODUCTION	GROSS GEOGRAPHIC PRODUCT	INFRASTRUCTURE	POPULATION GROWTH	TOTAL
Amersfoort	0	0	0	0	2	2
Balfour	0	0	0	0	0	0
Barberton	0	3	1	0	1	5
Belfast	0	1	0	0	0	1
Bethal	1	0	2	1	0	4
Bethlehem	1	1	0	0	0	2
Bloemhof	0	0	0	0	1	1
Bothaville	1	0	0	0	0	1
Carolina	0	1	0	0	0	1
Coligny	0	0	0	0	0	0
Christiana	0	0	0	0	1	1
Delareyville	0	0	0	0	1	1
Ermelo	0	2	0	1	0	3
Frankfort	0	1	0	0	1	2
Groblersdal	1	1	0	0	3	5
Harrismith	0	2	0	0	0	2
Heilbron	0	0	0	0	0	0
Hoëveldrif	5	0	3	4	2	14
Klerksdorp	4	0	5	5	2	16
Koppies	0	0	0	0	0	0
Koster	0	0	0	0	0	0
Kroonstad	1	0	0	1	0	2
Lichtenburg	0	1	0	0	1	2
Lindley	0	0	0	0	1	1
Lydenburg	0	0	0	0	0	0
Marico	0	0	0	0	0	0

Source: Own calculations

A successful regional development strategy will also 'complement' the market forces, and market trends should thus be read in advance by policy makers in order to identify areas of future growth. The sooner points with proven economic growth potential are identified, the sooner agglomeration economies can be established, and the sooner economic growth overall would be possible, without the heavy burden of granting incentives to establishments all over the country. While these establishments may operate profitably, they do so at the expense of other economic activities which could have taken advantage of agglomeration economies being developed in an economically viable environment. Geyer & du Plessis (1994:16) confirm this issue in maintaining that "... explicit spatial policies should as far as possible be in harmony with spontaneous spatial tendencies, and ultimately, this should lead to a more optimal exploitation of the country's resource base".

Secondly, a comprehensive economic development strategy should include the following elements: provision of land for industrial and commercial expansion, infrastructure capacity sufficient to meet the needs of industrial and commercial undertakings; amenities and a business environment attractive to the private sector; a skilled labour supply adequate to meet both current and future demands of expanding local industries or new industries moving to the area; modernisation of industrial, commercial, and residential facilities and structures to provide an adequate physical environment. Furthermore, programmes and incentives that reduce front-end costs and risks and alleviate cash flow problems should be included, so that private investment would be profitable and sound. Provision of capital at a reasonable cost for land, plant and equipment, should also receive attention (Stern, 1985:4).

Thirdly, as no development strategy could prove successful without the distribution of population, and because most policies fail in this attempt (Richardson, 1987*c*:227), forces encouraging such movement should be realised in any attempt to formulate a new development strategy. There seem to be consensus regarding the major determinants of migration in developing countries:

- *Economic incentives* such as increased employment and income opportunities, seem to be the major determinants accounting

typically for over 50% of the variation in migration rates between geographical areas.

- *Non-economic incentives* such as improved housing and public services are viewed as a major secondary determinant, the exact strength of which remains unknown because of difficulties in quantifying the variables involved.

- *Distance* also has a substantial deterring effect beyond the financial costs involved in moving great distances.

- Migrants reveal *selectivity* in the form of age, sex, education, and income biases. Migrants are generally younger and better educated, and have better incomes than non-migrants. Sex selectivity varies according to culture and stage of development (Fuchs & Demko, 1981:80).

In combining the above-mentioned pre-conditions of successful development strategies with specific physical planning strategies and instruments, the following aspects seem to be of primary concern:

- Only a *few* carefully selected growth centres or, alternatively, growth regions, should be selected (Stern, 1985:5; Maasdorp, 1985:221).

- Priority should be given to the *metropolitan peripheries* rather than the more sparsely populated areas. The implementation should therefore be carried out in stages from the economic core to the periphery. The centre-periphery structure characterising the South African space economy (Board *et al*, 1970:389; Fair, 1982:57; Browett, 1976:4) will change gradually towards a more balanced structure of central places.

- Innovative planning should be applied in the establishment of the growth points in order to create advantages beyond mere economic ones (Stern, 1985:5).

- Most important of all, a development strategy should seek to anticipate trends and guide them, rather than opposing them. The latter is bound to be futile, the former has the same chance of success (Hall, 1987:258).

Characteristics identifying potential development centres should however consist not only of the above mentioned prerequisites - cognisance should also be taken of principles proven to be 'unsuccessful' in a specific country's development history. A successful development strategy should therefore be built on principles dictating proven success as well as steering away from principles proved to be unsuccessful from an economic development point of view.

From the above-mentioned guidelines, it seems clear that an effort to provide all these 'requirements' simultaneously at a large number of urban centres seem far from feasible in South Africa. It would seem that concentrating on a few carefully selected locations would serve as models for later imitation in other locations. This seems more manageable and realistic as a starting point. Secondly, several towns and cities could boast the existence of all or most of the afore-mentioned features, and should be utilised in the most economic way. It is argued that most of the above-mentioned principles underlying the efficient implementation of a regional development strategy are found especially in the larger towns of the intermediate region. Where infrastructure such as housing or educational facilities are lacking, the regional development incentives come into the picture. Migrants and economic activities go hand-in-hand - if migrants could be attracted to designated urban centres, its implication is not only felt in a larger labour market, but also increase economic activities rendering services to a larger urban population, i.e. the multiplier-effect. A much smaller investment in regional development should be needed to 'upgrade' an urban centre in the intermediate region than in the case of any other proposed development centre.

7.5 An intermediate region-strategy

The intermediate region is a region which has been identified for specific development purposes and 'identified' by natural urban growth processes. The potential of the intermediate region emanates from evolutionary processes changing the urban system over time. These processes include:

- the processes, polarisation reversal or counterurbanisation implicating *contiguous* or *adjacent non-metropolitan regions;*
- the *decentralisation* or *deconcentration* of economic activities;
- a most important link in the process of *diffusion of innovation;*
- step-wise migration and the development of 'interceptor' towns/ cities;
- the development of *axes* between metropolitan regions and intermediate sized cities.

With these processes and characteristics of the intermediate region in mind, the implementation of an intermediate region-strategy could be based on the following principles.

7.5.1 Principles of an intermediate region-strategy (IRS)

The principles of an IRS could be described with reference to the correct *timing* of implementation, the *spatial* implication of such a strategy, as well as its *structural* contents.

7.5.1.1 Timing of implementation

Hall (1987:242) noted that empirical evidence seems to suggest that decentralisation from the primate city may come somewhat earlier than the accelerated growth of intermediate sized cities. If this is true, even though the two processes may overlap in time, the conclusion is that the *first* effort should be to promote the orderly decentralisation from the metropolis, the *second* to promote the early development of selected intermediate sized cities, and the *third* to promote spread effects into their rural and small city hinterlands. Therefore, immediate planning efforts should be concentrated on guiding growth from the primate city in order to

exploit its income-generating potential and to reduce, as far as possible, the concomitant negative externalities.

It could therefore be indicated that an intermediate region strategy should be promoted in metropolitan environments where signs of a 'clean break' from previous migration patterns seem evident. The following changes may guide policy makers (Richardson, 1977*a*:21-22):

- evolution of the industrial structure to the stage when branch plants seem feasible;
- emergence of scale diseconomies in the primate city (congestion, deterioration in the quality of life, inability of the public sector to keep infrastructure provision in step with population growth);
- when the capital constraint has been relaxed as a result of a strong recent growth record in respect to the Gross National Product (GNP);
- when at least a skeletal national transportation network has been built;
- when political and social pressures build up for interregional equity and similar spatial objectives;
- after the introduction of rural development and small-scale industry programmes that offer the prospect of demographic stability in peripheral regions;
- when per capita incomes in the periphery have risen to levels to justify industries catering for local demand;
- when stable export products have been subject to chronic instability;
- when the country's supply of administrators, planners, managers and professional personnel reaches levels that permit decentralisation of planning, economic and political functions; and
- when some non-metropolitan activities begin to grow faster than the primate city.

Although all these signs will not emerge at the same time, the coincidence of several of these signs would imply a relatively sophisticated economy in which polarisation reversal might be expected to begin spontaneously in the near future[41].

An intermediate region-strategy is therefore a means of 'capturing' growth potential *when* emanating naturally from metropolitan regions. However, urban management should be promoted in all urban environments in order to decrease the development of economic externalities and to absorb the growing population and economy of this region. The promotion of urban management should eventually lead to a decrease in the development of economic externalities in all the developing cities of the intermediate region. This strategy therefore is based strongly on Friedmann's core-periphery model which has defined urban development in almost every country and every city in the world. The above-mentioned signs of polarisation reversal only give an indication of the time of implementation of an IRS - the specific spatial manifestation of such a strategy still needs to be realised.

7.4.1.2 Spatial manifestation of an intermediate region-strategy

The recently published President's Council Report on a revised urbanisation strategy for South Africa (RSA, 1992*d*:64), recommended that, from a "... national urbanisation policy point of view the emphasis of the South African development efforts should, according to evidence received, gradually shift to intermediate sized centres on the inner periphery, nearer to the core regions ... unless the development of these intermediate sized cities is linked to smaller and larger places, it is unlikely that they will play a catalytic role in stimulating regional development because spread effects tend to weaken rapidly with distance ... a system of

41 Although the first signs of polarisation reversal have been identified in South Africa (PWV), this process ('early intermediate city stage') (Geyer & Kontuly, 1993:171) may possibly be extended longer than usual because of the removal restrictions limiting new industrial development in the metropolitan regions and the migration of Blacks to these cities (see section 5.3.2). Consequently, the normal process of urbanisation will continue strongly into the future, thereby resulting in the further development of the metropolitan regions - it does however also render the intermediate region a favourable location for temporary or permanent settling, i.e. step-wise migration.

intermediate sized cities that are connected to the existing metropolitan areas and to smaller cities and towns - which in turn should be linked to rural service centres and farming areas - therefore seems necessary to ensure the diffusion of innovation, the integration of urban and rural areas and the stimulation of economic activities in a particular region or sub region". This is clearly a definition, and an indirect call for the implementation of an IRS for regional development.

The specific spatial manifestation of an intermediate region is therefore not necessarily inhibited or dependent on physical distance, but more by means of the spatial characteristics of a country or region. It has been indicated in this study that the processes of counterurbanisation/ polarisation reversal occurs at lower-ranking centres in the urban hierarchy. These centres are primarily situated adjacent to the metropolitan region. The specific distance from the metropolitan region would therefore differ from country to country, according to its level of development and physical size. These processes have been identified in centres up to a 150 kilometres from Sao Paulo (Frey, 1993:727), while it has also been identified in centres up to 400 kilometres from the Australian metropoles (Hugo, 1989:82) - these centres still being *adjacent* to the metropolitan region. The emphasis therefore seems to be on the nearest centre of non-metropolitan character.

The proximity of the intermediate region, and its dependence on the metropolitan region could be well-founded from certain development policies and instruments. An intermediate sized city-strategy, the growth centre-strategy, the growth region-strategy, and the development axis concepts (see section 4.5), all contribute in identifying the spatial manifestation of the intermediate region. In a study on intermediate sized cities in South Africa, it was concluded that priority-wise, intermediate sized cities close to the PWV-region (100-120 kilometres) should receive priority in terms of development (Bos, 1990:190; Bos & Geyer, 1992/3:57-58). Geyer (1987:284) also noted that the intermediate sized cities 'tied' to the PWV-region by means of development axes, can play an important role in developing a 'regiopolis', or urban system. Consequently the development axes could fulfil a useful role as an instrument stimulating industrial 'leapfrogging' from the PWV-region towards decentralised points in the intermediate region. This could however only occur if these decentralisation points form a truly viable system of cities with the

metropolitan region (Geyer, 1990:393). It has been shown that development axes has much potential in regional development, but international experience has also indicated that most successful development axes (such as Washington, Copenhagen, Hamburg, and Frankfort) do not exceed 100 kilometres (Geyer, 1987:285). The spatial manifestation of the development axes and polarisation reversal/counterurbanisation concepts is also echoed by the process of industrial decentralisation which usually occurs over a maximum distance of 120 kilometres from the metropolitan region (Bos, 1990:190). This is in accordance with the successful development of a growth region (see section 4.7.1.2) as visualised by Stern (1985:7), which is dependent on "... reasonable proximity to one or more metropolitan areas".

The spatial manifestation of these concepts and instruments results in an objective picture as to the spatial manifestation of the intermediate region, i.e. probably a roughly circular region surrounding the metropolitan region and consisting of intermediate and small sized cities normally situated between 100 and 150 kilometres from the boundaries of the primate city[42]. The intermediate sized cities in the intermediate region are linked to the metropolitan region by means of primary development axes, while the smaller sized cities are tied to the intermediate sized cities and/or metropolitan region by means of secondary development or communication axes (see Figure 7.10).

[42] In terms of the three primary migration processes, the evolving intermediate region could therefore be shown to have a positive correlation with the process of polarisation reversal and counterurbanisation. Similarly the metropolitan region could be associated with urbanisation and the peripheral region possibly also with counterurbanisation. The development of intermediate regions can thus be seen as the spatial manifestation of growth in the intermediate phase between urbanisation and counterurbanisation.

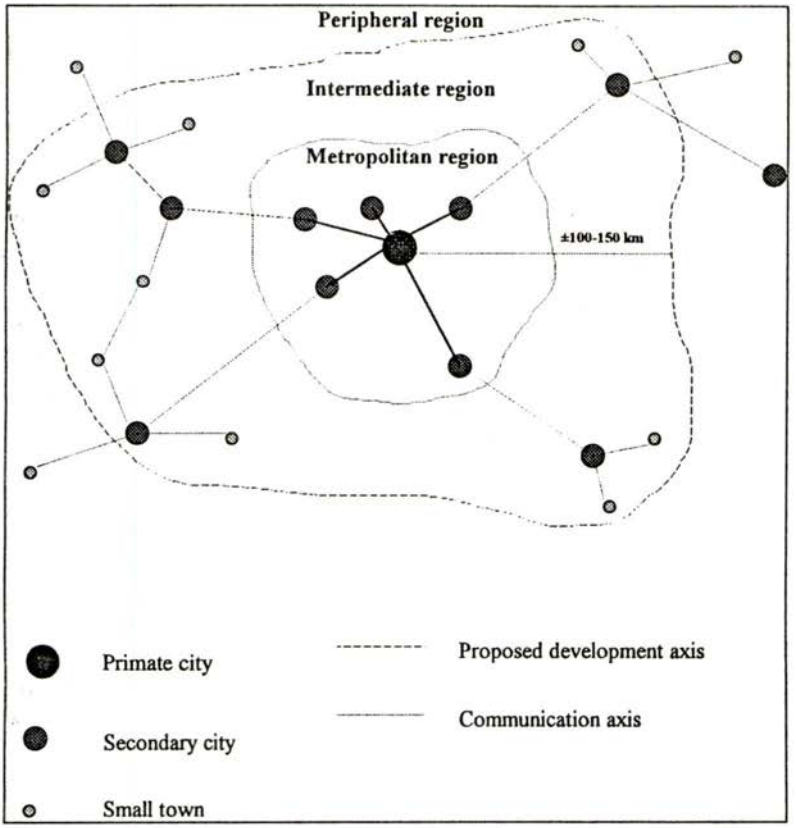


Figure 7.10 Spatial structure of an intermediate region

The intermediate region as visualised above, is however not yet present in most developing countries, while it constitutes a certain phase of development in more developed countries. In its morphological context therefore, the development of the intermediate region could be visualised as follows (see Figure 7.11):

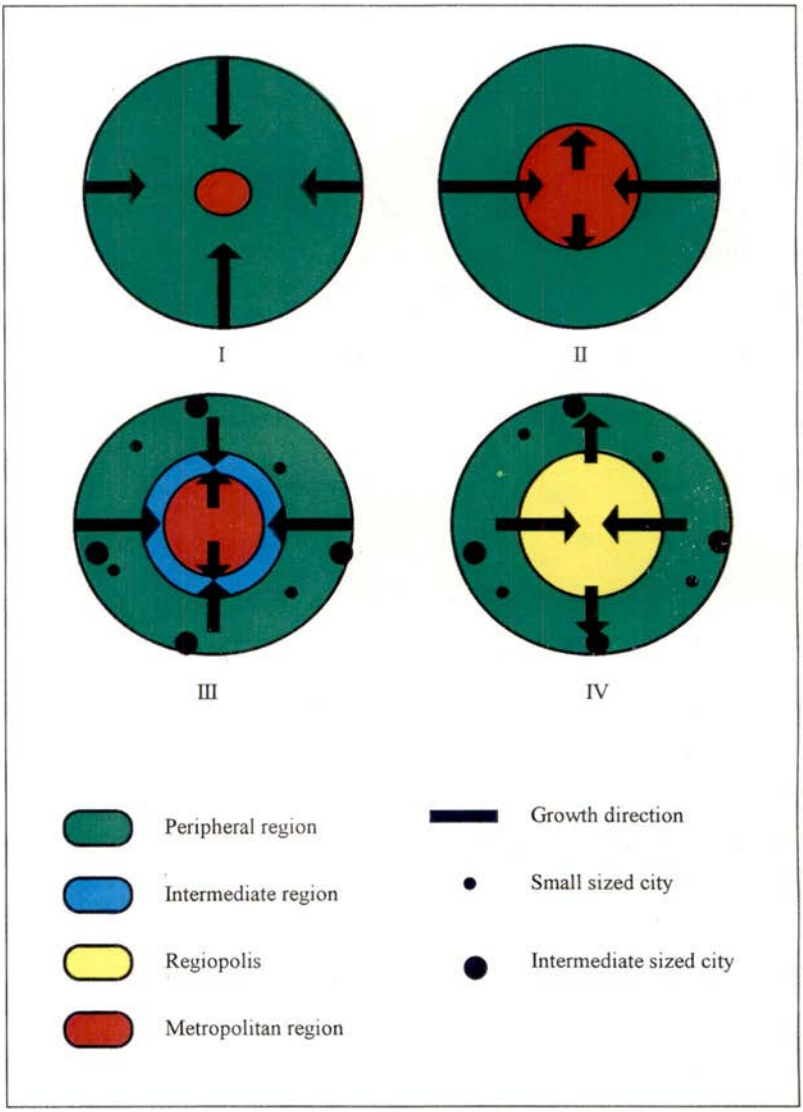


Figure 7.11 Evolutionary development of the intermediate region

- Phase I indicates the natural development of an urban centre because of its location and/or specific locational advantages. This is primarily a phase of concentration regarding population and economic activities.

- The development of agglomeration economies results in the further development of this area, such as the development of satellite towns. This centre eventually develops into a metropolitan region. Growth, i.e. the movement of people and economic activities, therefore originates not only from the periphery, but from within the metropolitan region itself (phase II).

- Phase III indicates the manifestation and development of the intermediate region (consisting of the non-metropolitan area surrounding the metropolitan region). This region develops because of people and economic activities decentralising from the metropolitan region into the periphery, as well as people migrating to the urban centre in the intermediate region as stepping stone to the metropolitan region. In the South African context, regional development incentives are available in the peripheral region and partially in the intermediate region. It is therefore suggested that the available financial incentives be applied only in the intermediate region (100%), as it is the region - in this phase of development - with the highest development potential in the national economic space - metropolitan regions excluded. A small sized city in the intermediate region would therefore have a higher potential for development than an intermediate sized city in the periphery, further away from the metropolitan region.

- The following phase, which has occurred in only a few developed countries (such as USA), refers to the development of intermediate sized cities in the peripheral region. Phase I could then again be applied to the development of the intermediate sized city. It develops at this stage because development-opportunities were possibly more favourable in the above-mentioned centre (phase I). Agglomeration diseconomies have since developed in the metropolitan region, rendering the development of the intermediate sized city in the periphery more favourable. Incentives should in

this phase be made available to specific intermediate sized cities with favourable development opportunities.

The intermediate region therefore needs to be identified firstly at the correct time for the purpose of implementing an IRS, and secondly at the correct location. A third aspect, namely the contents of an IRS still needs to be clarified, and will be discussed consequently.

7.5.1.3 Structural contents of an intermediate region-strategy

It has been shown that an intermediate region has the characteristics of attracting migrants and economic activities from the metropolitan region. It has also been illustrated that migrants from the periphery move in a step-wise fashion up the urban hierarchy towards the metropolitan region. An IRS should therefore provide facilities for industrial, retail, and service expansion in physical terms such as land and infrastructure as well as economic incentives for the relocation or development of these activities. As explained in Chapter 4, this may occur with the financial help of the government - as implemented in South Africa with the Regional Industrial Development Plan - or conversely, the town, city or region could establish a development fund in order to finance the proposed development projects (see also section 4.4.3). Priority should however be given with regard to the development of the intermediate region as far as these incentives and infrastructure provision are concerned.

Against this background, an IRS could be implemented as follows:

- Existing trends regarding metropolitan development and migration patterns should be evaluated in search of the signs of metropolitan maturation as discussed in Chapter 3.

- If the 'tell-tale'-signs are present, the intermediate region needs to be identified and delineated according to the relevant criteria. The intermediate region's size will vary from country to country, and metropolitan region to metropolitan region. In the case of the PWV-region it consisted of six magisterial districts surrounding the metropolitan region.

- An extensive marketing programme of the intermediate region's development potential should be lodged. If a certain urban area in the intermediate region has specific development possibilities regarding an economic sector (for example chemical companies), this should especially be 'advertised'. A short list of specific industries, businesses, and services needed could be made available to future entrepreneurs.

- Incentives to strengthen the existing trend of decentralisation could be made available to the migrant as well as the entrepreneur relocating his business or starting a new business in the intermediate region.

- The development axis as planning instrument should be implemented in order to attain the orderly development of a system of cities, i.e. consisting of the metropolitan region being linked to the intermediate sized cities in the intermediate region. The upgrading of transportation routes between the core and intermediate sized cities should receive priority in this regard - as visualised by Bos (1990:191) and Geyer (1987:283; 1990:394-395).

- Subsidies to the local authorities should be made possible in order to prepare the necessary regional infrastructure for future development, with emphasis on social and physical infrastructure. Hirschman (1958:84) emphasised the importance of the establishment of infrastructure (SOC) in urban centres by maintaining that it "... permits and, in fact, invites DPA to come in". From the point of view of the economy as a whole, the objective is to obtain increasing outputs of directly productive activities (DPA) at minimum costs in terms of resources devoted to both DPA and SOC.

- The implementation of the strategy in all sectors should be monitored by an independent body of experts. Its success must be evaluated against the success rates of previous regional development strategies. Specific modifications or alterations could then be considered.

In implementing above-mentioned IRS in South Africa, attention should also be turned to the *status quo* of regional development planning in South Africa. It was argued in this study that South Africa could firstly, regarding financial implications of the current RIDP, and secondly, because of a *laissez faire*-type of approach regarding its spatial application, not afford such a strategy. This strategy could arguably also not be afforded because of economic implications such as the loss of agglomeration economies in a limited number of centres, which would be attained by a limited growth centre approach.

As alternative, it is suggested that regional development in South Africa be based on a limited number of pre-selected growth centres, collectively representing an intermediate region. Incentives should be channelled to the development of the intermediate region as a whole, i.e. a multi-sectoral approach. An intermediate region-strategy differs from the current RIDP by cutting across most economic sectors, instead of focusing solely on industry[43]. An urban area, as well as its hinterland consist of many sectors of the economy (industry, wholesale, retail, services), therefore, any proposed development of the region should comply to these rules of development. Additional to these incentives, attention should also be turned to the integration of the informal economic sector with formal structures, especially in a developing country such as South Africa.

It should be evident that the development of the intermediate region surrounding the PWV-region, consisting of only six magisterial districts in this stage of the region's development status, has a much greater chance of economic success than for example the application of the uniform approach in the same study area. It has been indicated in this study that the intermediate region has the greatest development potential in the study

[43] Although regional development policy is said to consist of a multi-sectoral approach (RSA, 1991*b*:71), it currently only consists of the Regional Industrial Development Plan (RIDP) implemented in 1991.

area (PWV-region excluded), so why should such results not be made available to the potential migrant, whether it be from the peripheral or metropolitan region, or whether it be to the individual or the company? Much of this knowledge is known to various migrants and firms, therefore the ongoing process of polarisation reversal in the PWV and surrounding region.

Under the current RIDP, a new entrepreneur in the peripheral region would probably lodge an application for the available incentives in his hometown, wherever that may be. It may be approved, for the sake of the argument, in which case he could probably run the business successfully. When however not approved, what is the entrepreneur's second choice with his probably limited knowledge regarding regional economics and urban growth?

It is therefore suggested that in the current phase of development (phase III) of the South African space economy, that the metropolitan and peripheral region receive no incentives for new developers or migrants, while the intermediate region receives a 'full house' of incentives - as currently applicable in the peripheral region (see Figure 7.11).

Also, contrary to the spatial application of incentives under the current RIDP, Geyer & du Plessis (1993:13) indicated the development potential of the intermediate region in identifying the tendency for "... technologically more sophisticated industries [to relocate] towards fringes of the metropolitan areas as well as the surrounding intermediate sized cities". Under the RIDP, these specific areas receive no, or only 60% of the incentive package. Geyer & du Plessis further argued that this tendency will put industrial development in step with the proportional increase in the number of higher educated people in the higher income categories in these areas. It is said that the informal sector cannot provide all services for upliftment of the poor, rendering the stimulation of technologically sophisticated industries for a sustained high economic growth rate, which is necessary to increase the government's income. This will accordingly enable the government to provide the population with those capital intensive services which cannot be provided adequately by the informal sector.

Consequently, the fact that the Black labour force in rural areas earmarked for industrial incentives - under the current RIDP - does not suit the labour requirements of the above-mentioned technically advanced industries, seems to be ignored. These facts, in conjunction with the increasing proportion of skilled and highly skilled population component in the intermediate sized cities adjacent to the PWV-region, adds to the development potential of the intermediate region. Stern (1985:9) confirmed this trend by indicating that high technology industrial communities as a base for growth region development, involve low volume migration movements and should therefore be seen as more realistic than attempts to stimulate massive development of many urban growth centres. Also, incentives supporting vertical and lateral industrial disintegration - implicating decentralisation as principle - rather than industrial and commercial integration and amalgamation should be investigated (Bos, 1990:135; Geyer & du Plessis, 1993:16).

It is contended that an IRS can further be described by means of emphasising the different characteristics between this strategy and an intermediate sized city-strategy, which could serve as an ancillary strategy. It is firstly contended that the direction of development-stimulation differs in that the intermediate sized city is stimulated by means of agglomeration advantages or incentives, or both, in order to attract new developers from the periphery in the intermediate sized city-region; thus resulting in the development of the intermediate sized city as well as its hinterland over time. In its being it is thus a nodal development strategy.

On the other hand, the intermediate region strategy can only be facilitated in developed countries and certain of the more advanced developing countries. This is primarily because of decentralised growth which must first of all occur naturally. The stimulus *direction* therefore stems from the metropolitan region by means of decentralisation of economic activities and certain sectors of the metropolitan population from an over-congested metropolitan environment. As agglomeration economies develop over time, the urban environments also attract people from the periphery by means of step-wise migration.

An IRS need however not necessarily involve only intermediate sized cities, as was indicated in this chapter. The primary criterion of any urban environment for the purpose of identifying the intermediate region, is first

of all its location relative to the metropolitan region, and secondly only its existing, or future potential for developing agglomeration economies. Therefore, the intermediate region should, over time, be developed before the implementation of an intermediate sized city-strategy (phase III, as indicated in figure 7.11), which represents the next phase of development (phase IV).

Thus, an IRS serves in structuring the 'engines of growth' in the national economic space by strengthening existing trends and patterns of metropolitan development. On a lower level, the promotion of intermediate sized cities as regional service locations should attribute to orderly urban development in the various locations in the country. In a developing country, such a strategy would presumably consist of a self-selection approach. Self-selection not in terms of selecting itself - which should also be in the hands of planners at government or regional level - but in terms of establishing development funds from government loans. It should thus rest in the hands of the local authority to promote itself in the surrounding market area. Where financially possible, establishment incentives as in the case of the intermediate region, could also be considered as a secondary priority (see also Figure 7.11).

Finally, it was noted in this study that certain groups of people and economic activities tend to decentralise from the metropolitan regions in a certain phase of development to the intermediate region; therefore acquiring the advantages of the intermediate region, such as cheaper land, environmental quality, natural growth properties, the lack of external economies experienced in the metropolitan regions, while still being within 'striking distance' of the major markets, i.e. the primate and intermediate sized cities in the metropolitan region. The hypothetical argument therefore exists, that stimulating growth of these towns and cities in the intermediate region, will eventually also lead to further development of external economies. Much progress has however been made in urban planning with theories which ranged from limiting urban growth up to a certain *size* or limiting its *growth rate* overall, but emphasis has since shifted to a policy of *urban management* (see section 3.2.3.2.3). The timely implementation of urban management schemes would therefore curb the development of these congestion costs in the intermediate region cities after a certain stage of development.

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