

Towards a new spatial strategy for the Karoo

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Abstract.

The paper will deal with the challenges to manage economic development in an arid area.

The aim of the paper is to make a critical evaluation of the NSDP and to propose some changes to the framework

In the paper the challenges presented by the National Spatial Development Framework (NSDP) will be discussed. The NSDP serves as basis for economic development in South Africa. As will be indicated in the paper the NSDP is based on the number of inhabitants in an area and is also used to determine the area of “economic potential” and “poverty”. The appropriateness of the NSDP principles for the Northern Cape will be evaluated.

Research from the spatial development frameworks in other arid areas has indicated that it is possible to refine the NSDP to accommodate the unique

¹ Dr Mostert presents the paper in his private capacity. The views expressed in this paper do not represent the official view of the Department of Economic Affairs in the Northern Cape.

challenges of the Northern Cape and Karoo. Some proposals for a new spatial development framework will be proposed.

1. Introduction

The Karoo areas in South Africa share many of the characteristics of other arid areas in the world. These characteristics of low population numbers and relatively low levels of economic activity provide a unique challenge in terms of economic development.

In the first part of the paper a NSDP perspective of the Karoo will be provided. The NSDP principles will be used to determine the economic potential and the relative poverty in the Karoo.

Mostert (2008) provided a critical overview on the implications of the NSDP for poorer regions like the Karoo. In the second part of the paper a brief overview of this critique will be provided.

The paper will then provide a critical discussion of the different theoretical considerations that needed to be considered in proposing a new spatial framework for the Karoo.

Krugman (1998:1) developed the theory about the new economic geography indicating how historical accident can shape economic geography and how gradual parameters can produce discontinuous change in spatial structure.

According to Krugman it is possible that the poorer regions can continue to experience a convergence or divergence of factors that promote the location of investors to promote economic activity.

The new economic geography has also been criticized in the literature to indicate that it does not cover all issues related to the economic potential and develop of regions. This debate will be discussed with the few of making some policy recommendations with regards to spatial economic development in the arid areas of the Karoo.

Clustering provides an alternative to address the concerns raised in the New Economic Geography. In the last part of the paper the suitability of clustering for the Karoo will be investigated.

2. Spatial economics in South Africa.

The importance of spatial economics in South Africa went to a new level with the launch of the National Spatial Development Perspective (NSDP) in 2003.

The NSDP was approved by Cabinet in January 2003 as a framework to guide development planning at all levels and recommends mechanisms to bring about alignment between infrastructure investment and development programmes within localities. The NSDP provides a common framework and planning methodology for all these different spheres of government to coordinate their efforts and improve development impact (NSDP, 2006).

The NSDP aims to identify areas of so-called economic potential and areas of economic poverty.

The conclusion of the NSDP is that more than 75% of economic activities in South Africa are situated in the metropolitan areas of Gauteng, Western Cape and Durban. These three metropolitan areas also houses more than 75% of the poor people in South Africa. From a national policy perspective it makes sense to focus investment and economic development on these areas.

Mostert (2008) critically evaluated the usefulness of the NSDP as policy for spatial economic development. From the evaluation it is clear that the NSDP does not provide the real picture of the economic potential of the arid Karoo areas in South Africa. The policy recommendation for these areas, namely to provide basic services to enable people to migrate to the metropolitan areas, is also not sustainable.

In the next section and overview will be provided on the debate on the spatial economic of poorer regions. In the first section and overview will be provided about the new economic geography and its policy implications. In the second section other views on spatial economic development and the potential will be provided.

3. Towards a new spatial economic development framework for South Africa

Neil and Tykkyläinen (1998:34) provides an overview about the four basic arguments and approaches in regional economic policy over the past few decades.

The following four main fundamental principles could be identified:

- **Evenly distributed welfare.** The uneven development in regions should be compensated for by means of direct government intervention by means of regional development strategies and direct subsidies. These subsidies can towards the wage and settlements costs of new companies that want to move to the disadvantaged region.
- **Local endogenous opportunities.** According to Neil and Tykkyläinen (1998:334) this approach entails grassroots development schemes and a wide range of small-enterprise programmes. This links to the first

and second stage of LED development which focused mainly on small projects to boost the local economy.

- **Equal opportunities.** This argument recognizes that localities are in free and open competition to attract investments. The local attributes in terms of infrastructure (hard and soft) differs between regions and the economic performance will differ between regions. The solution to the uneven performance of the regions is the structural adjustment of the socio-economic conditions of the lagging areas in terms of providing investments in roads, communication and education (Neil and Tykkyläinen, 1998:335)
- **Free market competition.** Development must take place according to market-led principles. The argument rests on the traditional free market school of thought that market forces will lead to the optimum allocation of resources and infrastructure.

The NSDP is using a combination of the last two principles by providing infrastructure to the poorer regions to make them more competitive. The main focus on infrastructure development is in the cities where the market demand is the highest.

Since the nineties several attempts were made to theoretically explain the development of region. One key theory is that of Paul Krugman on the new economic geography. This theory will now be discussed in detail.

3.1 The New Economic Geography

According to Krugman (1991:493) the new economic geography model aims to show that a country can endogenously become differentiated into an industrialized core and agricultural periphery. In order to realize scale economies while minimizing transport costs, manufacturing firms tend to locate them in the region with the largest demand, but the location of demand itself depends on the distribution of manufacturing.

Krugman (1991:484) notes that Marshall mentioned three factors causing industrial locations to be in the core namely:

- Firms will locate in areas where there is a pool of workers with industry specific skills, ensuring that companies will have workers available and the workers in the area will have a good opportunity to obtain a job.
- Localized industries can support the production of non-tradable specialized inputs
- Informal spillovers can give clustered firms a better production function than isolated producers.

Krugman differed from Marshall and indicated that the emergence of core-periphery patterns depends on transportation cost, economies of scale and

the share of manufacturing in the national income (Krugman, 1991:483). The factors causing the core-periphery pattern will now be discussed.

3.1.1 Transport cost

Companies will locate their manufacturing factories at locations that will minimize the transportation cost. To minimize transportation cost, companies will locate to sites with relatively high levels of demand (Krugman, 1991:485).

In most countries the high level of demand will be in the cities. Manufacturing will tend to be situated in the cities.

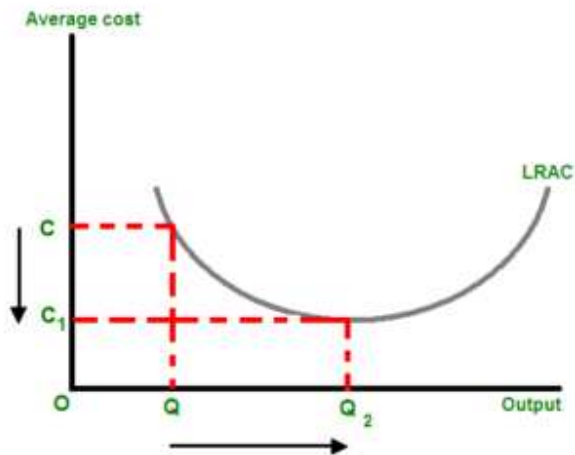
Other sites will then be served from these centrally located sites.

3.1.2 Economies of Scale

The principle of Economies of Scale is that companies will be able to produce at a lower average cost² if the scale of production is increased. The principle is depicted in Fig 1.

² Total Cost = Fixed Cost + Variable Cost. Average Cost = Total Cost/ Quantity

Fig 1. Economies of Scale



Source: Wikipedia (2009)

In Fig 1 it is indicated that the average cost of production will decrease from C to C_1 if the production is increased from Q to Q_2 . This reduction in the average cost is called economies of scale.

According to Krugman economies of scale will force companies to locate only at a few locations

Due to the lower average cost of production these manufacturers will also be able to pay their workers higher salaries than high cost producers in the periphery. Workers will tend to prefer to migrate to the cities.

3.1.3 Share of manufacturing in the national income

The share of manufacturing of national income is important in terms of the circular causation argument of Krugman. The circular causation argument arises from the fact that some of the demand for manufacturing output to be in the agricultural industry. According to this argument, all other things equal, the backward linkage may be reinforced by forward linkages, because people will prefer to live near the concentration of production because it will be less expensive to buy the goods this central place provides (Krugman, 1991:486).

Krugman highlights the fact that the circularity argument will not have a major impact if manufacturing only employs a small percentage of the population and if weak economies of scale exist and transportation cost are high.

In the real world, however, mass production, the reduced cost of transportation and the share of manufacturing in the national economy will all tend to cause manufacturing to be in the cities.

Krugman (1991:487) states that a region with a large non-rural population will be an attractive place to produce since it will create a large demand and because of the availability of goods and services produced there. This will attract even more population, at the expense of regions with initial lower production, until all the population stays in a few concentrated areas. This process depends on the initial conditions in each region.

3.2 Policy implications of the new economic geography

3.3

The new economic geography has specific policy implication for spatial planning in South Africa.

The link between the new economic geography and the NSDP will firstly be evaluated. An overview will also be provided for the implications for rural development policies in the Karoo.

3.2.1 New economic geography and the NSDP

The policy implications of the new economic geography theory supports the notion of the NSDP that the focus in terms of economic development should be on the metropolitan areas, since the initial conditions in the regions will cause an natural concentration of manufacturing, and economic development in the metropolitan areas.

The agglomeration effect in regional development is expressed in the observation that 50% of the global GDP is produced by 15% of the world's people. The poorer 50% of the world population only produces 14% of global GDP (Scott and Storper, 2003:585). Scott and Storper (2003:581) also states that 40% of jobs in America is available in only 1,5% of the land area.

Scott and Storper suggest that poorer regions should support agglomeration to promote economic growth and to ensure that the country stays competitive in the new globalized environment.

3.2.2 New Economic Geography and developing the periphery

The New Economic Geography seems to indicate that the process of agglomeration is a given and that regions who are in a disadvantaged position will stay in the position. The difficulty is to strike a balance between boosting overall productivity and growth, which is associated with agglomeration, and reducing regional disparities of wealth and employment, which is associated with dispersion

Brakman, et.al, (2005:49) indicated that government is moving away from trying to lure business to the periphery but rather focus on a more balanced approach in trying to obtain overall efficiency.

Brakman also indicated that growth in the cities due to agglomeration will also benefit the periphery but at a lower level than in the cities. The challenge for policy makers is to strike a balance in the equity-efficiency trade-off.

Fujita and Mori (2005:17) has shown that if transport cost becomes sufficiently low, the industry disperse to the periphery again. This effect was not explained in the original model of Krugman.

In ASGISA (2006) the cost of transport logistics in South Africa is highlighted as one of the growth constraints. This inefficiency is especially relevant to Transnet. The previous CEO of Transnet, Maria Ramos, started a turnaround to focus more on the transportation of freight.

In the Northern Cape the main focus is still on the Sishen Saldanha Iron Ore (Orex) line. The line provides 80% of the rail freight in the Northern Cape. This causes an increased dependence on road transport in the Karoo. The increased dependence on road transport in the Karoo will limit the changes of transport cost causing dispersion to the periphery.

a) Infrastructure

Brakman et al (2005:52) indicated that regional policy tends to be focussed on infrastructure. The bias stems from a simple argument. Adequate infrastructure adds to competitiveness, and competitiveness adds to regional growth. Hence, improving infrastructure helps lagging regions to catch up.

According to Brakman the success of investing in infrastructure depends on the openness of trade. If the openness of trade is pushed too far, the wage gap

between the city and the periphery will increase. This wage gap will entice workers to migrate to the cities for the higher wages and to support the agglomeration effect.

b) Labour.

It is agreed that policies to address the labour issue is the most successful to promote convergence and address the agglomeration as explained by the New Economic Geography, because workers tend to be less mobile to migrate to the cities.

Possible labour programmes include vocational training and subsidies to bridge the gap between the wage in the core and the periphery.

The conclusion is that the New Economic Geography theory seems to indicate that it will be difficult to promote economic development in the periphery.

4. Spatial economic development: a second opinion.

One option to counter these negative impacts of the New Economic Geography is to investigate the option of clustering in the rural areas.

Clustering

One option to address the concerns raised by the New Economic Geography policy is to develop a cluster strategy for the poorer regions.

Porter (2009) developed his diamond model to determine the competitive advantage of nations and regions.

According to Porter the traditional notions of competitiveness based on land, location, population size, labor and natural resources is no longer valid. Because these factors cannot be influenced it represents a passive model for economic development.

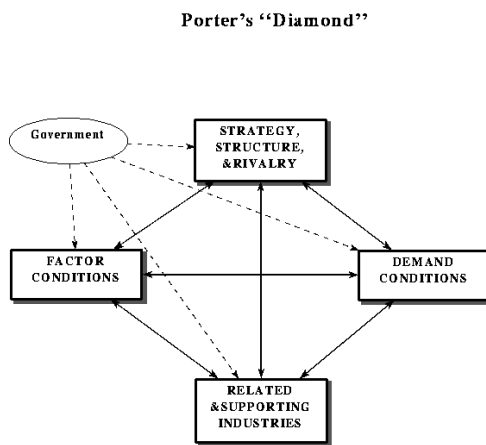
Porter (2009) highlighted four issues that could be influenced proactively to promote economic development. These include the following:

- **Firm Structure, Strategy and rivalry.** Increased competition will force firms to become more efficient to stay competitive.
- **Demand Conditions.** The more demanding the customers the higher are the pressure for firms to be more efficient and to improve their product offering.
- **Related supporting industries.** The close proximity of upstream and downstream industries enhances the share of information and improve the competitiveness of all the firms in the cluster

- **Factor conditions.** Porter differs from conventional wisdom by indicating the key factor conditions be skilled labour, capital and infrastructure. Raw materials can be imported to a region and is not a necessary condition for economic growth.

The role of government in the model is to challenge companies to become more effective, to create and early demand of new products and to ensure through competition legislation that enough competition exists between firms.

Porters diamond model is shown in fig 2



Source: Ruckman (2009)

Fig 2 shows the interrelationship between the four main issues that can be influenced to promote economic development

Definition

Porter (2009) defines cluster as *“Clusters are geographic concentrations of inter-connected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs such as components, machinery, and services, and providers of specialized infrastructure”*

Process to develop clusters

According to Cluster Navigators (2009 (b) 1) can be developed in 5 stages and 12 steps

Twelve Step process.

Stages	Steps
1. Mustering Support	1. Introducing the relevance of a clustering approach 2. Identifying and prioritising local clusters
2. Building the Base	3. Initial cluster analysis 4. Building the leadership group
3. Creating Momentum	5. Establishing the preferred future 6. Identifying the stepping stones 7. Immediate action agenda
4. Extending the Base	8. Launching the clustering initiative

	9. Formalising the cluster
5. Sustaining Momentum	10. Upgrading the strategic agenda 11. Process review 12. Linking the cluster

Clustering in the Karoo

The Department of Economic Affairs in the Northern Cape has developed a strategy to use clustering in the manufacturing sector to promote economic growth and development in the region.

Research by the North West University Centre for Advanced Manufacturing has indicated the potential to reverse engineer inputs for the mining and agricultural sectors in the Northern Cape province.

The approach addresses the main concerns of the new economic geography namely transport cost and location close to the demand. Because the manufacturing output will be consumed by the mines in the John Taole Gaetsewe district and the manufacturing also taking place in the same region, the transport cost will be minimized. The demand is also local.

This cluster strategy links to the notion of Scott and Storper (2003:584) that developing countries move ahead in sectors with strong externalities like small scale indigenous manufacturing, low-technology industries, craft-based industries and a wide array of services.

It is however important to note that the clustering concept can only be successful in the poorer areas if the local demand is the target of the strategy. The poorer regions still have a competitive disadvantage is competing with the manufacturers in the metropolitan areas.

Conclusion

From the theoretical debate in the paper on the development of poorer rural regions it is clear that the possible policies to develop the poorer regions is not a clear cut as implied by the national spatial development framework in South Africa.

As has been indicated the possible development potential of the rural sector is dependant on numerous factors including transport cost, the availability of infrastructure and the contribution of manufacturing to Gross Domestic Product.

This paper clearly identifies the need for further research on the possible role for government in terms of the economic development of the poorer Karoo regions in the Northern Cape.

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