UNIVERSITY *of the*
WESTERN CAPE

DEPARTMENT OF ECONOMICS

Clustering and Incubation in Africa's Small Business Development: Some Experiences and Lessons

DESMOND CHALWE CHISENGA

SUPERVISOR: PROFESSOR WOLFGANG H. THOMAS

Research report prepared in partial fulfilment of the requirements for the Master of Economics (structured) degree at the University of the Western Cape

August 2012

DECLARATION

I hereby declare that *Clustering and Incubation in Africa's Small Business Development: Some Experiences and Lessons* is my own work. I have never submitted this report for any degree or examination at any other university, and all the sources used or quoted from have been indicated and duly acknowledged as complete references.

Desmond Chalwe Chisenga
June 2012

DEDICATION

"True greatness lies not in doing one great thing but in doing many small things greatly"

I dedicate this research report to a truly great friend and dear brother, Kaunda Kaunda

ACKNOWLEDGEMENTS

Foremost, I would like to thank **the Lord** for giving me the ability and strength to come this far in my studies.

I also want to acknowledge the love and efforts from my family during my university studies, especially my Dad, **Evans Dean Chisenga**, for the confidence to invest his time and money in me and his continuous inspiration; my Mum, **Christine Bwalya Chisenga** for her prayers and quiet encouragement; my older sister, **Kaluba** for all her financial contributions when I desperately needed them; and my older brother, **Eugene** for the moral support and financial aid.

I thank **Professor Wolfgang Thomas** for being patient with me, mentoring and supervising me through my dissertation. I also want to thank his wife for letting her husband do so much for his students even when she was very sick.

Other people I want to personally extend my gratitude towards are **Professor Lieb Loots**, the Head of Department for Economics, and **Mrs. Elizabeth Stoltz** for their encouragement; **Mrs. Amiena Bayat** for teaching me the fundamentals of research work and how to put economics into practice; **Mrs. Frances Esterhuizen** who, in the physical absence from my mother, has fulfilled the role of a mother-figure throughout my studies; **Dr. Ephias Makaudze** for mentoring me; and **Mrs. Chrystal Dilgee** whom I consider to be a super administrator because of her ability to do anything and everything right all the time.

To the friends I salute and hold dear, **Kaunda Kaunda**, **Rayline Constance Nathan**, **Gracious Miti**, and **Henry William James**. I thank you guys for all your contributions to my studies in any way.

ABSTRACT

There is a general recognition and acceptance that small and medium enterprises (SMEs) are important contributors to social and economic development. However, in Africa which hosts many developing economies, SMEs must endure numerous challenges that tend to repress small enterprise development. Formal cluster development programmes have been identified as one progressive way of assisting SMEs to overcome the obstacles. It involves deliberately instituting and supporting small enterprise clusters. Although this idea of formal clustering of firms is relatively new to Africa, cluster development programmes are increasingly taking the form of small business incubation. Business incubation essentially aims to provide a systematic method of rendering business support services to fledgling small businesses to help them continually rise above market challenges and thrive.

Some governments in Africa have embraced the notion and are incorporating plans into their local economic development (LED) programmes to enhance small business development through incubation. Countries like South Africa, Ghana, Kenya, and Nigeria have amongst the most conspicuous incubator programmes and cluster experiences on the African continent. This study interrogates the effectiveness of and hence the scope for formal business incubation or rigid clustering programmes in Africa. It assesses examples of both rigid and flexible clusters in a few African countries in order to identify their main differences and to thus establish some critical areas of business clustering needed for useful small and medium enterprise development in Africa.

Upon reviewing case study literature, it is observed that formal incubation programmes are likely to be less effective in creating new SMEs compared to the more flexible clusters in Africa. Rigid clusters also tend to rely heavily on state funding, are more subjected to political interference, are prone to expansion capacity constraints, and are unlikely to sustain themselves financially in the long run. The study notes that rigid

clustering mainly favours a high-tech environment. Hence, incubation programmes may be more suitable for advanced economies. For low-tech industries, on the other hand, formal business incubation may be inappropriate.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

AGOA	African Growth and Opportunities Act
AIN	African Incubator Network
AUC	African Union Commission
BEE	Black Economic Empowerment
BIC	Business Innovation Centre
BTI	Business Technology Incubation
CEE	Citizens Economic Empowerment
CPI	Corporate Private Incubator
CSES	Centre for Strategy and Evaluation Studies
DTI	Department of Trade and Industry
Furntech	Furniture Technology Centre Trust
GDP	Gross Domestic Product
ICDC	Industrial and Commercial Development Corporation
ICT	Information and Communication Technology
IDC	Industrial Development Corporation
*Info*Dev	Information for Development
IPI	Independent Private Incubator
KIE	Kenya Industrial Estates
LED	Local Economic Development
MCTI	Ministry of Commerce, Trade and Industry
NBIA	National Business Incubation Association
NGO	Non-governmental Organisation
OECD	Organisation for Economic Co-operation and Development
SABTIA	Southern African Business and Technology Incubation Association
SBDC	Small Business Development Corporation
SED	Small Enterprise Development
SEDA	Small Enterprise Development Agency
SID	Small Industries Development

SIDO	Small Industries Development Organisation
SMEs[1]	Small and Medium Enterprises
STP	SEDA Technology Programme
TNC	Transnational Corporation
UBI	University Business Incubator
UNCTAD	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission for Africa
UNIDO	United Nations Industrial Development Organisation
ZDA	Zambia Development Agency

[1] Other researchers respectively use MSEs or SMMEs (MSMEs) instead of SMEs as a more precise exclusive or inclusive descriptor of firms not categorised as large. MSEs refers to Micro and Small Enterprises and SMMEs (MSMEs) stands for Small, Medium, and Micro Enterprises (Micro, Small, and Medium Enterprises).

CHAPTER 1:
INTRODUCTION

1.1 BACKGROUND TO THE STUDY

It is now commonly accepted that small and medium enterprises (SMEs) form an important part of the economic and social development process in a country. Their role as sources of employment creation, income generation and poverty reduction makes them particularly significant for developing countries. Hence, perhaps unsurprisingly, many countries in Africa are striving to prioritise small enterprises in their economic development agenda (Rogerson, 2001).

However, small enterprises in Africa encounter a myriad of constraints. They grapple with issues like inadequate access to financing, insufficient access to markets, excessive regulations, and low levels of education and skills, which often lead to high rates of small business stagnation and failure. These hurdles stifle the establishment and expansion of new businesses as well as the growth of existing ones. It is therefore critical to ensure that SMEs are able to withstand these challenges if they are to positively contribute to economic development. One avenue of doing so is to foster the clustering of small enterprises.

Porter (2000:15) defines clusters as geographic concentrations of interconnected entities in related industries and other associated parties in a particular field that compete and cooperate with one another. Among other things, serendipity, natural resource endowments, proximity to demand, and the availability of physical infrastructure can draw firms to a particular place (Enright & Roberts, 2001:68). This phenomenon of enterprise clustering has received extensive research and policy attention around the world. In fact, clustering of activities was traditionally one way through which communities sustained themselves. By operating in close proximity, groups were able to use their synergy to achieve greater results.

As presently understood, clustering of enterprises is central to achieving collective efficiency, improved competitiveness, and greater industrial capacity (Rogerson,

2008:324), because firms can access the benefits of agglomeration such as economies of scale, positive externalities or spill overs, and social capital networks. In addition, clustering makes it feasible to trigger developments that would not be tenable in the absence of a cluster. For instance, banks and other financial institutions can be launched in a locality with many people and a lot of business activity; and transport, communication, and other infrastructure can also be justified in such an area. Simply put, the presence of the cluster can spur a less developed region into prosperity (Schmitz & Nadvi, 1999).

Cluster formation can be natural and informal or artificial and more structured. The former is a relatively slow process that has been at the heart of industrial growth and economic development processes of entire cities and regions while the latter, specifically in the form of small enterprise incubators has gained momentum as a possibly faster process. Overall, cluster development programmes are now increasingly shaping up as small business incubation programmes. A primary aim of business incubation is to systematically help both fledgling and maturing small businesses to overcome the challenges they encounter either at the micro, meso, or macro level.

This dissertation largely focuses on cases of business clusters for small enterprise development in South Africa which is a major economic hub in Africa. The study endeavours to draw attention to clustering as an instrument for small enterprise development within an African context. Its author, who originates from Zambia and has studied in South Africa, wants to highlight the need for economic development policy in his country and the rest of Africa to actively target SMEs in order to exploit their latent ability to catalyse its general development.

Thus, whilst much of the study focuses on the evolution of small business clustering in South Africa, lessons are to be drawn for Zambia (and other Southern African countries) and their efforts to stimulate local economic development through SME clustering.

1.2 RESEARCH PROBLEM

Clustering is currently being hailed as a propeller of small enterprise development in both developed and developing countries alike. Nevertheless, despite its emergence as a crucial intervention for SME development in many parts of the developing world, deliberate cluster development remains underutilised in economic development policy in Africa (Meagher, 2007). Thus, although informal business activity clustering in African societies has existed for many years, more formal clustering of firms like hives and incubators are a relatively novel idea in African development strategising.

Notwithstanding the infancy of the small business incubation phenomenon in Africa, some governments have embraced the notion and are incorporating plans in their local economic development (LED) programmes to enhance small businesses through incubation. Countries like South Africa, Ghana, Kenya and Nigeria already have noticeable incubator programmes and cluster experience. The main question now is whether these programmes are effective in their quest to enhance small enterprise development and what lessons can be drawn from them to improve future cluster development in Africa.

In this context, an enterprise incubator or cluster programme is effective if, among other things, it fosters small enterprise start-ups, helps them negotiate their way through inherent market and non-market barriers, enhances their growth through innovation and technology diffusion, and contributes to regional development. As argued by the Centre for Strategy and Evaluation Studies (CSES), an incubator or cluster must not only be effective but also relevant, efficient, utilised, and sustainable for it to achieve the goals of small business development promotion.

1.3 AIMS OF THE STUDY

Against the above background, this study tries to summarise and critically assess South Africa's small business clustering process, taking into account the different types of clustering and the way government and other stakeholders have supported the process. As a second goal, the study aims to draw lessons from the South

African experience which are relevant for other Southern African development environments. In all of this, particular emphasis is to fall on the role of local government in the promotion of small business clustering.

1.4 APPROACH TO THE RESEARCH

The study first of all tries to put the clustering process into a broad historical context, distinguishing between spontaneous and 'steered' clustering and between flexible and tightly structured incubator clustering. Against that background we try to show how important these clustering processes could be for Africa's local economic development.

Case studies are predominantly used in a lot of cluster literature to assess the impacts of clusters and clustering on small enterprise development. This study uses cases in South Africa and also refers to a few others in Ghana, Kenya and Nigeria to form inferences about clustering and incubation in Africa. The two cases in South Africa are a group of seven Furniture Technology Centre (Furntech) incubators and the Witwatersrand Clothing Cluster respectively, representing a rigid and structured approach to clustering and a flexible or unstructured one. The international references to small firm clustering also fall within this spectrum.

The study mainly employs qualitative research methods in its attempt to answer the research questions and achieve the stated aims. It mostly relies on secondary sources including annual reports, journal articles, books, and relevant internet-based papers and official websites to extract and gather the background data and information for the literature review and a few international case studies that contextually describe the process of small enterprise clustering and incubation in Africa.

1.5 DELIMITATION OF THE STUDY

One of the main limitations to the study is the unavailability of detailed data and information. The case study analyses in the project are therefore not very detailed, especially for the flexible clusters as these usually have inadequate records about their structure and operations or do not keep any records at all. The preceding concern also limits the study to only focus on cluster-level features of small enterprise development and as such no firm-level factors are comprehensively considered in the analysis. Furthermore, this thesis confines its discussion to small and medium-sized firms within a cluster. Even though the presence of larger and mature firms may be significant for a cluster, the matter is ignored, because cluster and clustering effects on large firms is a theme that falls outside the aims of the dissertation. The study considers clustering as a tool for SME development from the perspective of accelerating the creation of thriving new SMEs. Besides, smaller firms are most in need of support to survive and grow.

1.6 STRUCTURE OF THE STUDY

The research paper consists of seven chapters. The next chapter identifies and explains the three different forms of clustering which are found in the literature. Chapter 3 then discusses the importance of clustering for small enterprise development in Africa, where governments are keen to harness the potential of SMEs to reduce unemployment and poverty. In Chapter 4, the South African case studies – the Furntech Business Technology Incubation (BTI) programme and the Witwatersrand clothing cluster experience – are analysed. This is followed by a chapter on four other African cases of cluster developments. This (Chapter 5) also covers efforts or opportunities for pro-active cluster developments in Zambia. Chapter 6 draws lessons from the case study analyses and suggests courses of action for cluster policy in Africa. The last chapter summarises the report and its conclusions.

CHAPTER 2:
FORMS OF SMALL ENTERPRISE CLUSTERING

2.1 INTRODUCTION

Clusters of firms are geographic concentrations of interconnected companies, specialised suppliers, service providers, firms in related industries, and associated institutions like universities, standards agencies, and trade associations in a particular field (Porter, 2000:15). Among other things, natural resource endowments, proximity to demand, and the availability of physical infrastructure can draw firms to a particular place (Enright and Roberts, 2001:68). The formation of firm clusters can also be a result of serendipitous events. In the cluster literature an *industrial cluster* or simply a *cluster*, in fact, refers to any cluster of firms in related industries, irrespective of the sizes of these firms. However, any reference to a *cluster* in this study refers to a *cluster of small and medium sized firms in related industries*. Moreover, cluster formation can be natural or artificial.

Natural clustering occurs when firms are attracted to a specific locality for whatever reason without any deliberate intervention from any source. These kinds of clusters usually begin as small entities but can eventually become bigger, more competitive, and evolve into regional centres, albeit in a slow and less systematic but dynamic manner. In contrast, artificial clusters tend to be formed for a specific purpose in addition to the greater goal of accelerating small enterprise development in a sector and/or region. Enterprise development is synonymously used with business development in this study and it essentially means an increase in the establishment of new firms and the expansion of existing firms. Artificial clusters can furthermore be flexible or rigid. The flexible ones are not confined by strict rules while the rigid clusters follow a specific operating framework.

Much of the cluster literature presupposes an already existing cluster. It usually ignores the factors that make a cluster appear in the first place and thus does not explain the requisite conditions for it to form (Brown & McNaughton, 2003;

Feldman & Francis, 2004). This chapter reviews cluster literature, with the focus on the three categories of small enterprise clusters: natural clusters, flexible clusters, and rigid clusters. It considers what they are, their formation, and their main characteristic features. In essence, the review explores why either the flexible or inflexible clusters are desirable tools for faster and structured small business development. Such insight will help to identify fundamental distinguishing features of these forms of small enterprise clusters which should not be ignored in cluster development policy.

Whilst this study tries to make a contribution to the strategising of small enterprise clusters and incubators in Africa (i.e. countries like Zambia), we first have to get the broader (historical) process of clustering into perspective. It is for this purpose that the distinction between natural, flexible and rigid clustering seems relevant.

2.2 NATURAL CLUSTERING

A cluster can be deemed as natural if its formation is the result of a "spontaneous tendency for SMEs of the same sub-sector to locate close to each other" (UNCTAD, 2005:11). It may not be readily traced to any intentional and planned decision from a certain source like a large company or state policy. Natural clustering thus entails the self-organisation of entrepreneurial activity in a random manner (Feldman & Francis, 2004:131). As such, the natural clustering process takes time. In an attempt to explain the origins of Silicon Valley, one of the most investigated clusters, Sturgeon (2000:16) stresses that the natural industrial development of an area is never instantaneous. The beginnings of such a cluster very much depend on place and historical context. Many natural clusters are the result of an unplanned external stimulus. This stimulus or a combination of stimuli, be it corporate downsizing, a crisis, a discontinuity in an industry, or a technological opportunity, urge potential entrepreneurs to engage in starting companies (Feldman & Francis, 2004:131). This section looks at some examples of natural clustering processes.

2.2.1 Urbanisation

The long run process of urbanisation, i.e. the shift of people from dispersed settlements in rural areas to more concentrated settlements in urban areas constitutes one of the most basic forms of business clustering. It is also a process where the differences between developed and un(der)developed countries has been most striking. Most developed countries have 65-85 percent urbanisation compared to 25-45 percent for most African countries.

Amongst others, urbanisation relates to the level of industrialisation in urban areas. Industrial expansion in these areas usually is the result of growing urban populations. Historically in many economies, according to Enright and Roberts (2001:67), as an industry emerges new firms are founded. In this process, other supporting firms to supply inputs and services also appear and soon the area begins to bulge. The authors indicate that economies develop through the emergence of regional clusters. Regional clusters forming in urban areas are likely to have a greater impact on industrial progress than those in rural areas, if there are any at all. These urban regional clusters are not static. Their boundaries evolve continuously as technological and market developments produce even more new industries, create more new linkages, and change the nature of existing markets (Porter, 2000:18).

While it is clear that urbanisation in Africa is low, it is rising and the number of urban SMEs is increasing rapidly (Helmsing, 2003:70). This means that industrialisation in the developing countries of Africa is not a distant prospect, especially if African governments create enabling environments for this type of clustering process to expand. For example, governments can concentrate public infrastructure in some locations to attract new firms and the formation of urban clusters could follow naturally.

Over the past few decades the pace of urbanisation in Africa has been quite unequal. Whilst a number of the capital cities in African countries have grown to mega-centres of 2-10 million people (with much scope for clustering), the range

of dynamic, medium-sized urban centres has been limited (which dampened the clustering process).

2.2.2 Product specialisation and supply chain development

Since regions are not equally endowed with natural, human and other resources, it is natural for local enterprises to specialise in production activities according to regional endowments. Thus, firms will tend to cluster to take advantage of the economies of agglomeration. Enright and Roberts (2001:81) observe that the process of specialisation and global integration occurring in small regional firms and industries is leading to the development of local clusters and industry networks. With such clusters developing, a supply chain inevitably develops. In the supply chain, SMEs have the capability to provide goods and services which reduce the costs and dependency of large firms on imported supplies (UNCTAD, 2005:36). All of this can gradually strengthen a spontaneous clustering process.

2.2.3 Ad hoc factors

Once-off events occurring in a certain place often present SMEs with new prospects to serve as suppliers. In this way, firms from different specific sectors become attracted to an emerging cluster and partner around the occurrence. This may relate to developments in tourism, agriculture, transport (e.g. a harbour) or public administration sectors. For example, major sporting occasions may draw relevant enterprises together, because some of the tenders may be too large for existing firms to handle. Even when a calamity befalls a nation or war breaks out, the need arises for enterprises to provide the required products and services and clusters form. Thus, over the ages complex historical factors and forces have shaped much of the business clustering process in developing countries.

The selfish approach of Africa's Colonial powers, who primarily looked for people (slaves), natural resources (minerals) and export opportunities during the colonial era throttled most of the natural clustering opportunities on the continent.

Leaving aside natural (or incremental) clustering processes, we now come to deliberate efforts by (local) government or other development stakeholders to pro-actively support, steer or accelerate the clustering process at local level. Here we can distinguish two types of strategies: the more flexible support of clustering opportunities – which we call "flexible clustering" – and the more focused development of business incubators, which we call "rigid clustering". Each of these will be discussed briefly.

2.3 FLEXIBLE CLUSTERING

A cluster that is formed and sustained on premeditated grounds, especially through governmental action, is a flexible "artificial" cluster, because it did not emerge naturally, but was the result of a planned policy. Empirically, this latter definition of an artificial cluster points to a cluster that is more likely to be successful than a rigid one. Feldman and Francis (2004:129) state that many attempts to artificially establish a cluster where none existed previously (for example the Science Park in Taiwan or some of the Bio-Regio clusters in Germany) have failed.

Unlike a rigid cluster, a flexible one does not necessarily follow a fixed operating programme. It may be geographically bound within a specific location and initially confined within a building, but it usually has scope for expansion. Proximity of firms defines the cluster, i.e. the participating firms gain from external economies and joint action. These clusters do not form as a direct result of a strict policy or programme. Rather, the need for supportive intervention arises when the firms begin to cluster around each other in a certain local activity or place. Thus, the cluster and its characteristics develop from the individual activities of the entrepreneurs and the organisations and institutions that emerge to support them (Feldman & Francis, 2004). This section briefly describes a few examples of flexible clusters.

2.3.1 South African Small Business Hives

In South Africa, the idea of small business "hives" was an example of artificial clusters that followed a relatively flexible, though carefully planned approach. It was initiated by the Small Business Development Corporation (SBDC, now Business Partners), based on the idea of beehive activity. According to Thomas (2009:9), the corporation tried to expedite small enterprise establishments and expansion by offering comprehensive support to small and medium enterprises clustered around a centre, building or narrowly demarcated area. These centres were usually old buildings which were no longer in use. The rationale was to provide resident enterprises with cheap accommodation as well as various business support services supplied in the area.

During the years 1984-94 the SBDC created about 40 such hives across the country, utilising old factory complexes or other vacant structures. With the help of government funds, these larger structures were sub-divided into smaller units, with some of the larger hives having about 150-200 subdivided premises. In a few cases public funds were used to construct new factory clusters, much like industrial parks.

The hives were leased at relatively very low rentals, which was one of the incentives for the small business tenants. In addition, SBDC established information offices, training facilities, exhibition space and other services for the tenants. In some cases this included the establishment of machinery facilities which were needed by industrialists but could not be afforded by them (e.g. specialised sewing machines in clothing clusters).

It was the intention with these SBDC-hives that the (SBDC-employed) hive manager could, in close cooperation with the hive-tenants or local entrepreneurs, organise all the important support services which the cluster needed. This might include getting local bankers to open an office in the hive (to be in closer contact with tenants as potential bank clients), organising regular exhibitions and/or training courses or getting different local operators to work together more closely in order to reap the benefits of scale economies.

The results of the 10 years of hives were mixed. Some were managed well and showed dynamic growth. Others, especially where management was weak or the hives were too small, struggled to survive. When the SBDC was transformed into Business Partners, most of these efforts unfortunately ended, since government funding stopped.

Thus, the hive initiative had mixed results, often falling short of its intended targets as the initial support structure was either too weak and/or discontinued (Thomas, 2009:12). It shows that clusters without continued top down support are seldom self-sustaining.

2.3.2 Private Business and Office Parks

Business parks fall in the same category as industrial estates, managed workshops, and enterprise centres. According to CSES (2002a:6) industrial estates, and by extension business parks, normally do not have a strict process of admitting firms. Besides, they provide little or no management support and have no structure regarding business activities and level of technology. These types of artificial clusters, in the very least, only provide operating premises for SMEs which is better than nothing because they are usually properly located to give the small firms a head start. The strategic location of business parks allows for the formation of regional economic zones in which the benefits of clustering such as product specialisation and regional development can be harnessed. Moreover, the fact that firms are also in close proximity to related SMEs gives them a chance to interact and learn from each other.

2.3.3 Linkages between Transnational Corporations and SMEs

Transnational Corporations (TNCs) are usually responsible for foreign direct investment in developing countries. Their impact on local economies can, however, be double-edged. TNCs are potential sources of technological and skills transfers and other spill overs to existing firms, but they also possess the ability to crowd out domestic firms. Not least affected by TNCs are SMEs. Relatively

smaller enterprises can benefit a great deal from being able to supply to large corporations in a particular area. Despite such possibility for the smaller enterprises, UNCTAD (2005:25) notes that most SMEs are not linked to TNCs at all. They perceive the large firms more as threats than opportunities to their growth. Thus, such positive interaction is not automatic and requires concerted efforts from both the TNCs and SMEs as well as the government, who should foster linkages between them. Linkages between TNCs and SMEs through local sourcing can be critical because the corporations then have a cheaper and more flexible source of inputs and other supplies and the SMEs have a market for their products. History is full of examples where SMEs cluster around TNCs. For instance, a large mining company could have different suppliers to cater for its various needs ranging from shaft equipment, transport, stationery, food and services.

2.4 INCUBATORS AS THE CORE OF RIGID CLUSTERING

Small business incubators offer a paradigm for the rigid clustering model. These are usually organised centres with strict admission rules, providing comprehensive management and administrative support, and having a specialised focus with respect to the technology level of tenant firms.

2.4.1 Defining small business incubation

Small business incubation is the process in which new small enterprises are effectively created in an environment providing a significant range of essential services which the firms would struggle to access otherwise (Adegbite, 2001:157). It is a "dynamic process where young firms are nurtured to help them to survive and grow during periods of uncertainty, particularly during the start-up phase" (Bhabra-Remedios & Cornelius, 2003:3). Ideally, incubation involves all activities from the time a start-up or fledgling company is screened for admission into an incubator up to the time it is required to exit the incubator to operate independently. The small business incubator facilitates this incubation process.

Thus, incubators are one form of agglomeration meant to enhance the survival and growth rates of new and fledgling establishments respectively. A business incubator is commonly described as a facility that provides favourable controlled conditions to aid the growth of new business undertakings (Petree, Petkov & Spiro, 1997:3). By design, incubators deal with inherent market failures such as asymmetric information and poor access to capital through the use of pooled resources. Hackett and Dilts (2004:57) define a business incubator as a shared office space facility that seeks to provide its incubatees with a strategic, value-adding intervention system of monitoring and business assistance. Put differently, incubators are mostly about business support networks and technological innovation programmes. Like the flexible clusters, business incubators also stimulate an entrepreneurial spirit and the materialisation of newly founded SMEs and, more broadly, they encourage the innovation and adaptation of technology as well as spurring local and regional economic development (Al-Mubaraki & Busler, 2010:2).

The four prominent components of small business incubators in existing research are: shared office space; a pool of shared support services that reduce operating costs; professional business advice; and network provision.

Notwithstanding the similarities between different definitions, the practicality of the incubator concept remains murky. According to Bergek and Norrman (2008:21), one of the issues around this concept is the disagreement regarding whether an incubator is an organisation or simply an entrepreneurial environment. Another issue is the period of incubation needed for a fledgling firm to be discharged from the incubator. Thirdly, uncertainty surrounds which part of the enterprise development process is to be taken into account as "incubation", which differentiates incubators from technology or science parks.

In addition, Bhabra-Remedios and Cornelius (2003) are of the view that the term *business incubator* could be used to describe a span of organisations, like techno-poles and science parks, which somehow help entrepreneurs to develop their ideas from scratch to full commercialisation. In that context, incubators are also referred

to as innovation centres, business enterprise centres, and technology centres. Despite this description issue, most researchers seem to agree that incubation is related to the early phase of a business establishment. Bergek and Norrman (2008:21) thus conclude that the incubator concept should be reserved as a descriptor for support aimed at the development of "immature" enterprises and not for aid channelled towards organisations like science parks which are generally designed to support more mature firms.

2.4.2 Types of incubators

The properties of a well-established and fully-functional incubator make the prospects of its existence attractive to government, local economic development agencies, and research institutions. As discussed in the previous section, various interested parties have adopted incubators because therein lies the prospect of reducing start-up failure and accelerating the process of new business creation.

Incubators could be grouped on the basis of their use or by their sponsorship (Bhabra-Remedios & Cornelius, 2003). From a functional perspective an incubator can be involved in developing products or manufacturing. This means that the firms targeted for incubation would have a sector-specific function or belong to a particular industry. With respect to funding, Allen and McCluskey (1990) categorised sponsors as private, public, university, or a combination of these, including the public-private partnership hybrid. Another feature that could differentiate business incubators is geographic location, for example CBB-based, industrial area based, located near a university, close to the harbour (for exports) or in a distinct geographic setting (for tourism or agriculture).

Incubators inside these different groupings are very likely to be similar in terms of their missions, policies, services, and performance. Moreover, public incubators generally subscribe to the non-profit motive while private ones seek profit. The preceding distinction is critical because it helps to explain differences in the activities and outcomes pursued by different incubators. Non-profit incubation programmes usually embrace missions focused on economic development

outcomes. The majority of for-profit programmes may strive to maximise shareholders' return on investments (Al-Mubaraki & Busler, 2010:3), although large corporations could also have a strong development motive, especially if some public-private partnership is possible.

Four different groups of incubators identified by Allen and McCluskey (1990:64) are for-profit property development incubators; non-profit development corporation incubators; academic incubators; and business development for-profit seed capital incubators. The authors define "for-profit property development incubators" as those that essentially want to take advantage of "real estate appreciation" while the non-profit incubators fundamentally focus on job creation and the enhancement of an entrepreneurial climate. Non-profit incubators have been found to be dominant in the United States of America accounting for an approximated 85 percent of the total incubator population in 2002 (Linder, 2002, as cited by Al-Mubaraki & Busler, 2010:3). Academic incubators are those that pursue the commercialisation of university knowledge and technology, and the for-profit seed capital incubators primarily want to cluster the firms in their portfolio in order to exercise proper control over them.

In Europe, public incubators include business innovation centres and university business incubators, whose research can lead to, among other things, the diffusion of technology (Chiesa & Piccaluga, 2000; Schutte, 1999). Private incubators can also be segmented into two groups: corporate private incubators (CPIs) that are owned by large companies and established in order to support the rise of new enterprises; and independent private incubators (IPIs) owned by individuals venturing to help rising entrepreneurs in creating and growing their business (Von Zedtwitz, 2003, as cited by Grimandi & Grandi, 2005).

Adegbite (2001) grouped business incubators in the Nigerian context into two broad types. The first of these involves industrial business incubators "which are generalised industrial nurseries for nurturing new business start-ups with a view to promoting entrepreneurship and stimulating the emergence of industrial establishments at the small/medium enterprise level". The other type includes the

technology-focused business incubators "aimed at innovative, technology-oriented small and medium scale enterprises desirous of commercialising research and development results, especially from the research institutions, with a view to promoting technological innovation and entrepreneurship development" (Adegbite, 2001:158).

2.4.3 Virtual Incubators

The incubator literature also identifies a type of incubator that does not restrict incipient firms to a physical building located at a particular site, but allows incubatees to access incubator services while having their own premises. This is known as virtual incubation. It offers a more flexible approach to incubation. Petersen (2011:38) does, however, point out the complexity of such an incubator model with respect to its ability to cater for all the firms under its auspices. The author attributes this to the absence of a contiguous environment between the firms and the service providers.

We shall return to the potential role of virtual incubation after the case study chapter, when we look at practical approaches to clustering in Africa.

2.4.4 The economic role of incubators

The importance of incubation in small business development cannot be over-emphasised. Business incubators have a burgeoning role to play in encouraging entrepreneurship, promoting start-up businesses and cultivating economic development (Qian, Haynes & Riggle, 2011). NBIA has researched the circumstances of business incubators in America since the mid 1980s. It has tracked the progress of incubators and their economic impact on local communities. A study by McKinnon and Hayhow (1998, as cited by Bhabra-Remedios & Cornelius, 2003) showed that incubators were meeting their goals as important tools of economic development, providing a wide range of services to incubatees.

Incubation programmes are able to achieve several objectives, like helping minority entrepreneurs, commercialising novel technologies from universities, diversifying local economies, developing markets and creating jobs (Al-Mubaraki & Busler, 2010:2). The economic role of incubators is therefore to catalyse the formation and successful operation of small enterprises and to foster the diffusion and commercialisation of innovative production technology.

Naturally, the role of incubators will differ significantly in local economies which have different levels of development. Thus, there is a vast difference between "hi-tech incubators" in the United States and the developed European and Asean economies and incubator efforts in underdeveloped African cities. It is the accommodation of these differences which constitutes the ultimate challenge in any incubator strategy. And it is here where lessons learned in South Africa may be of particular significance for other African economies.

2.5 INCUBATOR PERFORMANCE INDICATORS

Since the goals of an incubator are inextricably linked to its type or the focus of its activities, it is common to evaluate incubators on the basis of meeting their objectives. For instance, most public incubators would pursue job creation, which can thus be used as a performance indicator to assess such incubators. In the incubator evaluation literature the concept of incubator performance mainly encompasses the goal achievement of an activity (Ramluckan, 2010). It means that measuring incubator performance needs to relate the actual outcomes to expected goals or planned objectives. Incubator performance is hence defined as "the extent to which incubator outcomes correspond to incubator goals" (Bergek & Norrman, 2008:22).

A generally accepted set of incubator performance indicators is until now still evasive (Phan, Siegel & Wright, 2005:170). Different researchers have identified different performance indicators for incubators in their research. For instance, Scaramuzzi (2002) outlines indicators recommended by UNIDO (1997) for evaluating incubator performance in developing countries. Some researchers have

even distinguished between indicators that are relevant for specific regions. In their literature review Allen and McCluskey (1990) mention performance measures such as changes in tenants' number of employees; how long the incubator has operated; and the survival rate of the incubatees. Mian (1997) identifies four dimensions in his performance assessment criteria of university technology business incubators: growth and sustainability of the incubator programme; tenant survival and growth; extent to which the mission of a sponsoring university is achieved; and community-related impacts.

The value that a business incubator would like to add to its clients entails providing a combination of facilities and services that are difficult to access otherwise (Bhabra-Remedios & Cornelius, 2003). The nature of services and how they are delivered are likely to impact on the survival and growth of incubatees and by extension the performance of the incubator. An effective incubator would thus be one which adds significant value to its tenant firms. In this case, value is judged in terms the availability of the relevant services necessary for incubatees to succeed. Mian (1997) suggested that among the performance measures for incubators, and consequently their effectiveness, should be an increase in rentable space and an increase in tenant sales as well as the number of visitors to the incubator.

According to Aerts, Matthyssens and Vandenbempt (2007), when the variable(s) to be used to measure incubator performance have been chosen, the next step is to decide on the unit of comparison that enables the researcher to validate the outcome of the performance measure. Direct comparisons between tenant and non-tenant firms' survival rates could prove to be meaningless as the use of selection criteria in admitting tenants to the incubator results in a selection bias. Moreover, the rate of firm survival is likely to suffer from an endogeneity issue as incubators are particularly designed to increase life span (Phan *et al.*, 2005:170). The authors deem it more worthwhile to rather compare tenant survival rates among different incubators.

2.6 CONCLUSION

Despite the lack of an explicit distinction in the literature, the chapter attempted to separate the clustering process into two broad forms namely the natural and the artificial. Artificial clustering was further divided between rigid and flexible type of clustering. The model of a rigid cluster used is the small business incubator that follows a set of rules from admission to incubation to discharge, while the flexible cluster does not have such a structure.

Both the rigid and flexible clusters are established to help small businesses overcome growth constraints through the provision of fundamental support services at the initial stages of establishment. Whether this is achieved or not boils down to the few but significant characteristic differences between the extent of rigidity and flexibility of the cluster.

CHAPTER 3:
CLUSTERING FOR SMALL ENTERPRISE DEVELOPMENT IN AFRICA

3.1 INTRODUCTION

Small businesses in Africa face a plethora of difficulties like inadequate access to financing and insufficient access to markets which often lead to a high rate of small business stagnation and eventual failure. These constraints hinder the establishment and expansion of new businesses as well as the growth and development of existing ones. A need thus arises for a multifaceted approach to ease, or prevent, the effects of such challenges. Clustering of business activities represents one relevant approach. The formation of clusters brings with it economies of scale attached to agglomeration, positive externalities, and social capital networks. Thus, support for clustering is seen to be central to achieving "collective efficiency" and the improved competitiveness of localised clusters of activity (Rogerson, 2008:324).

Despite its emergence as a crucial intervention for small business development in many parts of the developing world, cluster development remains underutilised in economic development policy in Africa (Meagher, 2007). A primary aim of cluster development is to help both fledgling and maturing small businesses to thrive and continually overcome the challenges they encounter either at the micro, sector, and macro level so that they can grow and make a meaningful contribution to local economic development. Regional or local economic development entails elevating the economic potential of a particular area through activities that lead to poverty reduction by creating jobs and other income-generating activities; the creation and expansion of new businesses and strengthening the entrepreneurial spirit.

This chapter delves into some of the more general constraints to small business development in Africa. It thereby highlights some of the ways through which clustering interventions can mitigate the challenges and culminates into some specific aspects of cluster development policy that validate its use as an LED

intervention in Africa. We first look at the "drivers" of local development in the emerging African economies, followed by a discussion of different roles through which clusters can advance the local business development process. Thereafter, we come back to the differentiation of flexible and rigid clustering in Africa, showing that the flexible type may initially be the more important one through which one can accelerate the LED process.

3.2 DRIVERS OF AFRICAN BUSINESS DEVELOPMENT

If we look at the long term process of African business and economic development, a number of forces can be seen as driving that process. These forces include

- the population growth rate and the steady increase in urbanisation levels, leading towards small, medium and larger urban agglomerations;
- the steady rise in average income levels, which leads to a widening of consumer demand and expansions in the production base;
- the wider and better utilisation of local raw materials and land resources, leading to mining and agricultural developments (for local use and exports);
- the gradual expansion in local infrastructure facilities to cover more areas in countries and a greater part of local communities and
- the gradual diversification of local economies, including the growth of local industrial sub-sectors and services.

In all of these processes, small business development can and should play a significant role, even though there are many obstacles in its way. It is here where the clustering process can play such an important role in facilitating small business development and thereby helping to accelerate the local development process.

One fundamental concern to economic development in Africa is that many of the micro and small scale enterprises in leading economies like South Africa as well as the greater sub-Saharan African region are survivalist. A survivalist endeavour is one that is not primarily driven by a profit motive but rather the subsistence of its owner, usually because the owner is unable to find paid employment (DTI White Paper, 1995:7). In addition to having too many survivalist ventures, even those small enterprises striving for profitability and growth face diverse obstacles and challenges. These include inadequate access to skills, training, and information; poor regulations; inadequate access to finance; inadequate market demand; insufficient infrastructure; and crime (Richter, 2003:9). Moreover, although globalisation and liberalisation of markets may be hailed as creating opportunities for SMEs in Africa to thrive, the consequent international competition, coupled with other issues are often impediments to the establishment, growth, and proliferation of small businesses on the continent.

Because SMEs are exposed to so many challenges, a lot of private as well as public sector interventions have been undertaken to curtail these hurdles. Among these are economic empowerment programmes, like Black Economic Empowerment (BEE) in South Africa and Citizen Economic Empowerment (CEE) in Zambia, the establishment of microfinance institutions to deal with the financing issues faced by the smaller enterprises and infrastructure development programmes.

Lately, cluster development programmes have received increased attention as channels for such small business development. Clustering of firms appears to potentially offer a set of comprehensive solutions to the myriad problems associated with small enterprises.

The next subsections try to show how clustering can help address some of these challenges.

3.3 CLUSTERS AS DRIVERS OF SECTOR SPECIALISATION AND INNOVATION

Cluster development falls within the ambit of local and regional economic development initiatives of government. The success of any national economic development programme is very much a function of its local economic development programmes as stronger regional economic bases can strengthen the national economy. Raines (2001) notes that many industrialised countries, particularly in Europe, have incorporated cluster development policy into national development policy. In that context, Rogerson (2008:317) emphasises the importance of integrating localised processes and networks in clusters into regional economic development programmes in Africa.

Helmsing (2003:69) posits that not only does cluster development involve specialisation in a market framework but it also entails overcoming obstacles met during the pursuit of specialisation. On one hand, clustered firms gain access to *Marshallian* externalities, which essentially means that firms can access more suppliers and specialised support services, experienced and skilled labour pools and the inevitable knowledge leakage that occurs where people meet and talk about business (Rosenfeld, 2002:5). On the other hand, the development of industry-specific clusters of firms means specialising in producing goods or providing services distinctive to that industry and region. Specialised production is seen to be at the heart of most successful local and regional economies albeit to different extents. A few examples of prominent places in the United States clearly associated with unique industrial activities are computers and semiconductors in Silicon Valley, movies in Hollywood, automobiles in Detroit, biotechnology in Boston, and medical devices in Minneapolis (Feldman & Francis, 2005:127).

It is the competition amid cooperating firms within a specialised cluster that leads to better production methods (Porter, 2000). Where social capital is high, there are strong interpersonal communication channels improving the likelihood of innovation being diffused to members of a specific cluster. As a result, unlike those in isolated locations, firms in a cluster are more flexible in that they are able to discern changes in market demand much quicker; they can experiment with

ideas at cheaper cost; and they can adopt new production technology faster and adapt to technological changes better (Enright & Roberts, 2001; McCormick, 1998).

In an environment where innovation is rife, clustering can potentially increase the industrial capacity of African countries and make it possible for them to deal with some of the obstacles to industrial development and urbanisation. Industrialisation refers to the increased capacity of adding value to raw materials to produce useable goods. In Africa where the industrialisation process is still lagging behind and most active clusters are nothing more than groups of very small firms operating at low levels of technology, enterprise clustering is a platform for such a process to accelerate because it allows for firms to specialise and differentiate themselves (McCormick, 1998).

3.4 CLUSTERS AND ACCESS TO LOCAL AND INTERNATIONAL MARKETS

Low demand at the local level is another key constraint which small businesses in Africa have to contend with (Liedholm & Mead, 1999:30). Large firms tend to capture a considerable part of the market which leaves small firms with an even smaller share amongst themselves. Moreover, the market of tenders for governmental procurement, the market of subcontracts with big firms and the export market are usually beyond the reach of small firms due to a lack of relevant technology or skills, and their incapacity to meet required quality standards and regulations (Richter, 2003:13). In fact, non-financial constraints, most notably access to markets, loom large among their needs with key issues being those of finding buyers for their products and suppliers for needed inputs (Rogerson, 2001:121).

Due to globalisation and the liberalisation of markets, the capability of SMEs to compete within international markets is severely hampered, which can be ‘fatal’ to emerging industries in African countries. Brown and McNaughton (2003) emphasise the intense international dimension attached to present market

frameworks because of globalisation. They cite this as a reason why small firms, which are weary of international competition, would benefit from operating in a cluster of identical firms.

Globalisation and liberalisation do not, however, only present a competitive threat but also present opportunities (Helmsing, 2003). With greater mobility of production factors, clusters can increase exports and attract foreign investment (Porter, 2000:16). This means that firms in clusters may gain access to bigger markets. Therefore, it is imperative for government to consider placing the focus of export promotion on clusters. Due to the benefits of operating within a cluster, firms grow their industrial capacity and by extension the cluster expands in its industrial capacity. The specialisation in production means that the cluster becomes more productive and competitive and can therefore use its competitive advantage to tap into export markets (Helmsing, 2003).

3.5 CLUSTERS AND THE ACCESSIBILITY OF FINANCE

The inadequacy of sources of finance is amongst the most cited barriers to small business establishment, let alone growth and development (Adegbite, 1997; DTI White Paper, 1995; Liedholm & Mead, 1999; Richter, 2003; Rogerson, 2001; Rosenfeld, 2002; Thomas, 2003). Every small business needs finance. In the absence of such funding, it is difficult for the entrepreneur to establish and grow a business. Formal lending institutions like commercial banks are often reluctant to provide the financing because the risk of failure attached to smaller ventures is significant. Hence, many entrepreneurs, particularly owners of micro enterprises, rely on their own savings and/or help from their friends and family in order to venture into business (Phillips & Bhatia-Panthaki, 2007). This, however, is normally insufficient for growth into viable enterprises.

Clusters can attract formal sources of funding from both the private and public sectors because the risks and thus the chances of business failure are reduced. Incubators can particularly be more successful at accessing formal sources of finance because they are well-structured. For flexible clusters, informal sources

such as professional moneylenders, also become more reachable. From a cost and profitability viewpoint, it is more feasible to provide financial services when firms are clustered in a specific area than when they are scattered. Thus, Rogerson (2001:129) finds enough grounds to conclude that many credit-providers in Africa are able to cover most of their cost using group lending systems and achieve economies of scale via lending to large numbers of people.

3.6 CLUSTERS AND ACCESS TO SKILLS, TRAINING AND INFORMATION

A basic level of knowledge and skills is essential for the running of any enterprise, whether a large or small one. The most competitive and technologically advanced SMEs are usually run by well-educated entrepreneurs (UNECA, 2001:13). It is usually the owners of survivalist and micro enterprises that are most constrained by not having the appropriate skills and the general lack of access to training. There is also ample evidence across Africa that SME owners find it difficult to access immediate and reliable information about business conditions and opportunities, which in turn hinders informed business decision making (Richter, 2003:10).

While there seems to be a similar degree of willingness to start a business regardless of education level, in South Africa, for instance, people with Matric or tertiary education are significantly more likely to start a new firm than those without Matric. Tertiary education certainly helps entrepreneurs to build a sustainable and long term business (Foxcroft, Wood, Kew, Herrington & Segal, 2002:22). Mead (1998:7, as cited in Rogerson, 2001:121) argues that by virtue of undertaking some further education and training, entrepreneurs may, in fact, be better able to exploit market opportunities, especially where there is need for targeted capacity building.

Any area where a cluster of firms has been established indicates the availability of a business opportunities. With the easier accessibility to information within clusters about products, services, and suppliers, perceived gaps that need filling

can be readily identified. The daily contact found among firms in incubators can be quite advantageous in this regard. Hence, because of the clustering of business activities individuals that see the gap and acquire the skills needed to set up a business.

An entrepreneur that emerges out of an existing cluster already has established relationships, faces lower barriers to and risks of entry, and is likely to be aware of the potential customer base (Porter, 2000:24). Moreover, the entrepreneur can relatively easily gather the required manpower, skills, and production or service inputs. Besides attracting potential entrepreneurs from within the cluster, established entrepreneurs elsewhere will also be lured to relocate to such locations to establish themselves and exploit the opportunities presented by the cluster. This means that the cluster may end up benefiting from the rich experience coming with the migrant entrepreneurship.

3.7 CLUSTERS AND INTER-FIRM NETWORKING

Entrepreneurial activity thrives on the strength of social ties and networks. Hence, the impact of cultural differences due to ethnicity, religion, race and gender on entrepreneurial activity cannot be ignored. Africa is fraught with ethnic fights. The failure to form networks is often seen as a cultural issue responsible for the lack of social networks in African societies. Brautigam (2003:452) is of the view that African networks are weak because African businesses fail to rise above ethnic divisions. Meagher (2007:475) points to other researchers who argue that a cultural propensity to clientism, corruption, and communal conflict amongst African networks, where present, tends to stifle the establishment of rational economic institutions. The main assertion is that cultural embeddedness in Africa rather hinders collective efficiency than fosters it.

Isolated and dispersed firms may network with each other, but to a lower extent compared to firms that are in close proximity. In a cluster of firms that usually have identical products or provide goods and services to identical markets, inter-firm networks are easier to form. Through the sharing of information, associations

within clusters can also help disseminate reliable information that allows groups and communities to make efficient and appropriate decisions (Ostrom, 2000:198). Firms that take advantage of inter-firm relationships and networks benefit from the economies of agglomeration. Agglomeration economies involve minimisation of costs because of the sheer association with other firms. For example, Caniëls and Romijn (2001) stress that transaction costs are greatly reduced when a firm links up and networks with other firms; more so in a cluster setting. Localisation can indeed reduce costs of negotiating and monitoring contracts and costs attached to opportunistic behaviour (Enright & Roberts, 2001:69). While Schmitz and Nadvi (1999:1508) stress the lack of systematic attempts to quantify the influence of inter-firm cooperation on the performance of industrial clusters, it is still clear that greater local cooperation strengthens cluster performance.

In societies where face-to-face communication is the norm, such as many African societies, inter-firm networks formed as a result of business clustering are especially relevant and perhaps more beneficial, because they foster joint action which leads to collective efficiency even amid cultural and ethnic differences. The main challenge in Africa, though, as Brautigam (2003) points out from existing research on African ethnic groupings, is whether the networks that are formed are the "right" ones for entrepreneurial endeavour. This may help to explain why cluster development programmes in the African context can be a daunting task.

3.8 CLUSTERS AND LOCAL GOVERNMENT SUPPORT

The need for concerted and pro-active support by local governments for the small business sector is generally known and accepted. In the African context, however, two dilemmas interact:

- low urbanisation levels imply that the bulk of the population lives in rural areas, which don't even have municipalities, let alone capacities for municipal support action for SMEs;

- in the urban areas many of the urban government structures are extremely weak, given, *i.a.*, a lack of regular local income, inadequate transfers from higher levels of government, lack of skilled officials and widespread corruption.

Under these conditions we can hardly expect that local authorities will lead or initiate constructive and effective SME support programmes. In fact, the sequence has to be reversed: The creation and expansion of local clusters (initiated by other forces, like local resource development, new transport links or corporate projects) could be attractive for the local authority as a potential source of revenue or local employment. This could motivate the local authority to give more attention to this (new) growth force.

Once local authorities realise the significance of such clustering, the door could open for constructive support action by the municipality for such local clustering. To succeed, much emphasis would have to be placed on partnership action (between the public and the private sector) and prodding by the business sector. Naturally, the larger and/or more diverse such local clustering, the greater the chances to influence local authorities towards pro-active, development supporting action. Such action can – and should – relate to:

- local infrastructure developments (especially electricity, roads, refuse removal, security, water supply, postal services, etc.);
- achieving appropriate levels of regulatory flexibility for local SMEs;
- providing incentives for new SMEs in cluster-related subsectors.

Rogerson (2001:124) points out that despite clusters not being seen as an outcome of deliberate state intervention, local government can facilitate the healthy development of clusters. For instance, it can provide infrastructure and a regulatory environment which is conducive for small firms. There is a logical argument as to why clusters can enhance state participation and support at the local level. Clusters, by nature, involve localised processes that are best

understood by local authorities who are in touch with the people, firms, and systems on the ground so much that interventions by local government are most likely to be well-targeted and effective at delivering services (OECD, 2004:32). Hence, if cluster development is placed within the jurisdiction of local municipal councils, it may even help to resuscitate ailing councils. Raines (2001) indeed finds that links between cluster policy and the development of local competitive advantages are stronger than with national competitive advantage.

3.9 CONCLUSION

This chapter has pointed out some of the general challenges that continue to ravage small enterprises and their development on the African continent. Major obstacles such as inadequate access to sources of finance, poor infrastructure, low urbanisation, and insufficient access to markets confine small businesses with limited growth prospects.

Present interventions to the hurdles faced by SMEs in Africa fall short of the need of small enterprises. In theory cluster development programmes offer a span of solutions to many of the constraints to small business development. Where clusters have been employed in practice, whether via natural establishment or planned state efforts, they have shown great potential to enhance business development. Clusters of small businesses have the potential to drive regional development, to improve the competitiveness of regions, to encourage small business formation and to raise the export potential of firms.

However, attempts at cluster development policy should bear in mind that every region is unique and must be tailored to meet the specific requirements of local industries. Simply put, because of the endogenous nature of regional cluster development, cluster strategies that worked in the Americas or European regions, for instance, should not be expected to work in Africa without appropriate adjustments.

CHAPTER 4:
CLUSTER EXPERIENCES IN SOUTH AFRICA

4.1 INTRODUCTION

In many fields of African small business development, including the rationale of this research, South Africa provides an ideal environment from which case studies on small enterprise development can be useful to understand the African context. It portrays the best and the worst features of two disparate worlds, i.e. the First World and the Third World. At best, the country has a well-developed modern infrastructure and effectively functioning institutions while at worst it has high income inequality, huge unemployment and major challenges in the SME sector. It is estimated that 80 percent of small businesses in South Africa fail within the first five years. Amongst others, such statistics also call for the use of small business clustering as a tool for small business development.

In this chapter we shall focus on South African cluster development, with the next chapter looking at examples in other African countries.

Informal business activity clustering has existed in African societies for many years. Such informal clustering has been recorded in countries like Ghana and Kenya. More formal clusters like hives and incubators are a relatively novel idea to Africa. Despite the infancy of the small business incubation phenomenon in Africa, incubator programmes in South Africa have been active over the past three decades. Presently, the Small Enterprise Development Agency (SEDA) through its SEDA Technology Programme (STP) supports twenty nine incubators in different sectors across the country with the aim of strengthening small business support provided by various government departments and agencies (Ravjee, 2010:3). The two cases used in this chapter, the Furniture Technology Centre Trust (Furntech) STP incubator group and the Witwatersrand clothing cluster are examples of small business clustering in South Africa.

This chapter compares and differentiates the performance of the two clusters in order to identify their strengths and weakness, especially in terms of achieving the main goal of clustering i.e. small business development. The exercise will also help to recognise cluster features that can improve cluster development policy. Ramluckan (2010) provides a summary of four main components of key performance indicators for an STP incubator performance assessment framework, namely: *efficiency, effectiveness, utility,* and *sustainability*. Evaluation of the Furntech incubator will be based on three of these concepts. Raines (2002) identifies the typical spatial development evaluation approaches which will be used to assess the Witwatersrand clothing cluster. Specifically, the evaluation focuses on the operational issues like the number of SMEs and jobs created through the clustering process.

4.2 FURNITURE TECHNOLOGY CENTRE TRUST (FURNTECH)

Furntech is one of the oldest sets of small business incubators, having the largest number of centres under the STP in South Africa. It has seven centres in both urban and rural areas countrywide: Cape Town and George in the Western Cape, Mthatha in the Eastern Cape, Umzimkhulu and Durban in KwaZulu Natal, Johannesburg in Gauteng and White River in Mpumalanga. All the centres have workshops which are fitted with advanced machinery (Ariefdien, 2011b). The Furntech incubator follows a rigidly structured *modus operandi*. In contrast, the Witwatersrand clothing cluster, which spans from the Inner City of Johannesburg into surrounding suburbs and townships has a far more flexible structure. According to Rogerson (2000:699-700), the cluster has facilities ranging from those with large modern machines to those with only home-based operations.

The furniture industry is one of the largest low-tech sectors in the world. Production methods in the industry are labour-intensive, making it particularly attractive to developing countries which have high pools of unemployed labour. China is an example of such a developing country. In fact, China is a leading exporter of furniture, accounting for about 20 percent of global furniture exports (DTI, 2008:6). Sub-Saharan Africa accounts for less than 1 percent of global

furniture exports. To this small share of global exports, the South African furniture industry contributes 97 percent.

The furniture industry in South Africa is part of the greater manufacturing sector. It contributed 1.6 percent to total manufacturing output in 2007 (IDC, 2008, as cited by DTI, 2008:8). Even though its contribution to aggregate GDP is low, it is an important industry since it can be one of the drivers of rural area development. The South African DTI recognises the potential held in this sector and has ventured to also provide sector support programmes in the furniture industry. The Furniture Technology Centre Trust, trading as Furntech, is one of the highly visible STP incubators in the country. It is a registered non-profit organisation.

Furntech was launched in 2000. The DTI approved a 5-year funding plan to establish Furntech and the centre was required to be self-sustainable after that period (Mbewana, 2006:20). The first centre operated in George in 2001 with four units. Currently, Furntech has space to accommodate more than 70 clients in the abovementioned seven centres. Its objectives are stated as follows:

- Facilitate the development and growth of start-ups and existing SMEs in the furniture sector;
- Operate and manage an effective and efficient administration system for clients;
- Facilitate the creation of wealth and jobs through the incubation programme;
- Facilitate access to professional services like business planning, funding and marketing;
- Provide technical skills development at a subsidised rate to the incubatees;
- Establish satellite centres that will enable Furntech to extend the full range of services on a national basis;

- Create awareness of new technologies through technology demonstration; and

- Become a world class Centre of Sectoral and Occupational Excellence.

Furntech provides support to both existing and start-up businesses through the incubation facilities The Furntech incubation model is designed to help existing and potential entrepreneurs and small businesses withstand the challenges faced in the early stages of developing and growing their business. The model incorporates skills training and business development processes as well as infrastructure development (Furntech Annual Report, 2011:9).

Furntech has standardised its systems and operations with respect to the layout and type of machinery in the workshops across the seven centres. A tour around the Cape Town centre located in the industrial area of Paarden Eiland allowed the researcher to inspect the workshop and training facilities and the surrounding area. The facilities in the centre are modern and advanced. In fact, most small firms would not be able to afford such tools and equipment on their own.

Aside from its equipment and the provision of training, the incubator also offers mentorship and assistance in critical business areas like human resource management and financial management. It furthermore provides linkages to relevant networks through which firms can access suppliers, business support service providers, and government tenders. Above all that, it gives post-incubation services to graduating firms.

The incubatees are involved in a wide array of furniture manufacturing and wood production activities. Many of the furniture products at Furntech are essential, high utility wooden goods including chairs, tables, office and school desks, cupboards and cabinets, window frames, doors, and coffins (Furntech Annual Report, 2011).

4.2.1 Furntech urban centres

There is a Furntech centre located in each of three major South African cities: Cape Town, Durban, and Johannesburg. The Cape Town and Durban centres were both launched in 2004 while the Johannesburg centre was launched four years later in 2008 (www.furntech.org.za). The Cape Town centre, which is also the head office, has 8 incubation units while the Durban and Johannesburg centres have 14 and 16 units, respectively (Ariefdien, 2011a; Furntech Annual Report, 2010; Furntech Annual Report, 2011).

At first glance the urban centres are expected to possess certain advantages over the rural ones because differences in regional dynamics invariably bring forth differences in opportunities and challenges faced. Regional differences and the corresponding differences in opportunities and challenges faced in the different regions are not detailed in the paper as the sources used do not distinguish cluster performance between urban and rural regions. However, it is clear from the research that feasibility studies conducted for cluster development policy can benefit from a comprehensive understanding of the differences.

On closer inspection, the urban centres do in fact stand at an elevated vantage point, compared to the rural ones as they have access to better physical infrastructure, can source production inputs quicker, are closer to the market, and generally have staff with higher levels of education (Ariefdien, 2011a). In addition, the provision of water and sanitation to people living in close proximity, as well as access to health, education, and many other social and cultural services, are all more manageable (www.worldbank.org). Hence, a proper understanding of regional differences is important for cluster development policy formulation.

4.2.2 Furntech rural centres

Furntech has four rural centres: the George centre launched in 2002, the White River and Umzimkhulu centres launched in 2004, and the latest centre added in Mthatha in 2009 (www.furntech.org.za). The George centre currently has only 4 incubation units and there are 10 in White River, 22 in Umzimkhulu (including 10

for post-incubation purposes) and 15 in Mthatha (Ariefdien, 2011a; Furntech Annual Report, 2010; Furntech Annual Report, 2011).

All the centres, except Mthatha, were established after their viability was verified. The Mthatha centre was formed due to political intervention, despite the uncertain feasibility of locating in this relatively remote area (Ariefdien, 2011a). The business incubator manager pointed out that 9 out of the 20 new small businesses created in that centre have since closed down. He also notes that the Umzimkhulu centre is struggling as one big challenge of locating in the rural areas is access to raw materials. But, even where raw materials are readily available and accessible, other problems of the rural centres include poor access to intermediate inputs, like nails and bolts, higher costs of transporting inputs and outputs, low education and skills levels of local staff, limited local demand for the products, and a lack of support from local municipalities.

4.2.3 Incubation processes

Since Furntech is in the furniture industry, it has a particular target market. The Furntech business technology incubation (BTI) process caters for entrepreneurs or job seekers with an interest in woodworking and furniture manufacturing and with some experience in running and managing a business. They include both start-ups and existing SMEs in the woodworking and furniture manufacturing industry and allow individuals already working in the furniture manufacturing and woodworking industry as employees, who want to start their own business. The incubation process is a structured five-step procedure.

The first step involves a meeting between the aspiring or existing business owner and the Furntech centre manager. At this meeting, the two parties discuss the business idea and what the incubation process entails. In this initial stage, the business owner is required to submit a completed generic application form, a curriculum vitae, a business and marketing plan, and a certified copy of the identity document. In the second phase, the applicants go through a three-month screening process where their commitment and skills are assessed. During this

period their applications are evaluated by the Furntech National Incubation Committee. The committee makes recommendations about the successful applications. The approved applicants then go through to the *third* stage, where goals are set and agreed upon and firms are then admitted into the incubation programme in one of the Furntech centres (www.furntech.org.za).

The firms then enter into a contract (step four) to be in incubation for two years (with extension to 3 years considered). Within this period their performance is monitored and they receive business support services as well as technical support. The contract also binds the incubatee to pay over 10 percent of its monthly turnover to the incubator. There is a minimum amount to be paid if the small enterprise has a turnover below that threshold. Each enterprise is expected to adhere to the conditions in its contract, with failure to do so leading to contract termination.

The two-year incubation period used by Furntech is not based on a scientifically determined time required for a small or medium enterprise to stabilise and be able to circumvent the obstacles affecting a new business. Ariefdien (2011b) makes it clear that the incubation timeframe is linked to the funding provided by the DTI through SEDA. The DTI will only fund the incubator to support incubatees for a two-year period. If the firms exceed two years, then the incubator must find other sources of funding to continue supporting them, even though it takes five to seven years for small businesses to properly stabilise.

Finally, after the incubation period the enterprise graduates (or must graduate). The fifth phase is a post-graduation period where the graduating firms may still make use of the incubator equipment and services, but from outside the physical incubator premises. Yet, Ariefdien (2011b) concedes that capacity and financial constraints have made it difficult for Furntech to have a formal follow-up system to monitor firms after they graduate. This can be seen by the fact that it does not have clear records of how many firms have continued operating or closed down after graduating. Therefore post-incubation support is hard to measure.

4.2.4 Incubator performance

Ramluckan (2010) conducted a useful study on twenty STP incubators in South Africa, including Furntech. In this study, he assessed incubator performance using an incubator performance assessment framework compiled from other studies on small enterprise incubators. He adapted four key criteria used in a CSES report which he broke down into smaller measurable performance indicators.

The four CSES approaches for incubator best practice are efficiency, effectiveness, utility, and sustainability. The CSES Benchmarking Framework defines efficiency in terms of how cost effective the provision of incubator services is, when matched against incubator outputs. Effectiveness is the extent to which an incubator achieves key operational targets. Utility refers to the degree to which firms use the incubator and sustainability is the extent to which the operating costs of an incubator are covered by its income, i.e. sustainability of operations and durability of attained outcomes (CSES, 2002a:26).

The preceding definitions allow for the identification of commonly used performance evaluation metrics. This research employs incubator-level analysis by comparing measures on an annual basis. Thus, only incubator-specific measures will be used to evaluate incubator performance. To measure incubator effectiveness, the recognised metrics are the number of new SMEs created, the number of new projects initiated, the number of new direct and indirect jobs created, and the number of graduating SMEs. Incubator utility will be assessed by using the occupancy rate of the incubator. For sustainability, the units of measurement are the ratio of income generated from operations to cost incurred during operations, the incubator's reliance on external funding captured by means of its financial leverage, and the graduation rates.

A job is direct when it is created within the incubatee firm itself and indirect when it is a result of the firm's involvement in the local supply chain. An occupancy rate is calculated as the ratio between the number of tenants and the number of available units in the incubator. Financial leverage, in this case, is the ratio of

public to private sector funding for the incubator while the graduation rate is calculated as a percentage of tenants leaving the incubator each year.

Furntech aggregates impact survey results for all the centres as shown in Table 4.1 below.

Table 4.1: Effectiveness indicators of Furntech BTI

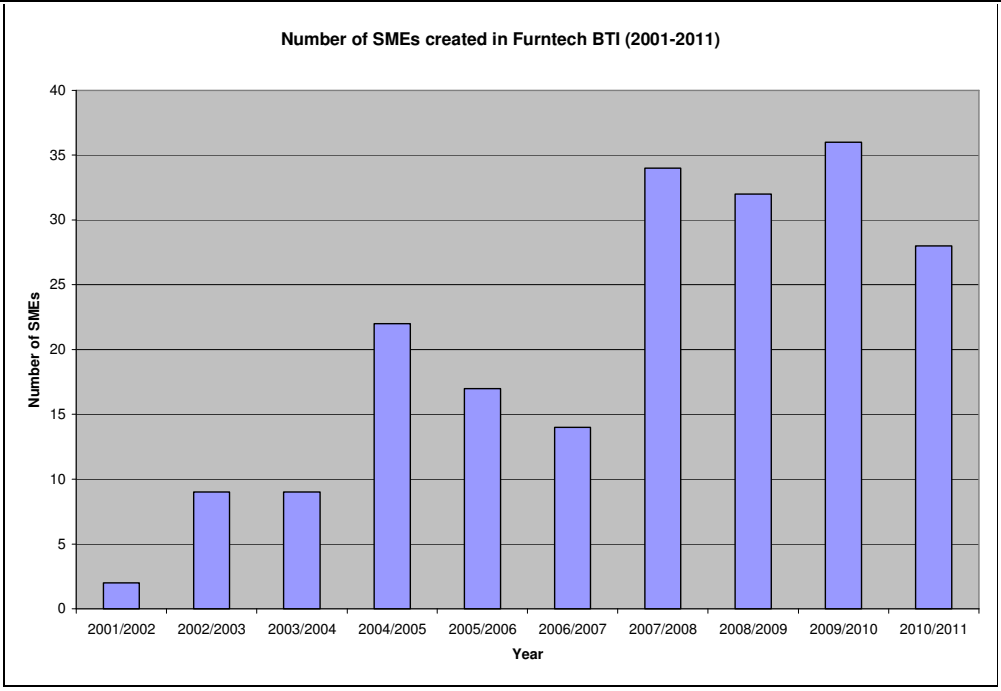
Year	Measurement				
	No. of new SMEs created	**No. of new projects initiated**	**No. of jobs (direct) created**	**No. of jobs (indirect) created**	**No. of SMEs graduating**
2001/2002	2				
2002/2003	9				
2003/2004	9				
2004/2005	22				
2005/2006	17				
2006/2007	14	12	42	89	0
2007/2008	34	22	64	148	17
2008/2009	32	29	76	160	9
2009/2010	36	32	133	285	8
2010/2011	28	80	42	113	7
Total 2006-2011	**203 144**	**175**	**357**	**795**	**41**
Average 2006-2011	**20 29**	**35**	**71**	**159**	**8**

Source: Furntech Annual Reports 2006-2011; www.furntech.org.za

The period under analysis is 2006 to 2011, given the availability of information. We can briefly comment on these results.

Firstly, in terms of jobs from the BTI, both those created directly and indirectly, rose over four of the five periods reviewed. The 2010/2011 phase shows a decline in the number of jobs created. There is a spike in the 2009/2010 period where direct job creation rises by 75 percent and indirect jobs established rise by about 44 percent from 2008/2009. But in the 2010/2011 period, the creation of direct jobs falls by 68%, almost offsetting the previous rise while the fall of 60 percent for indirect jobs created totally offsets the rise in the preceding period. The rise can in part be attributed to the launching of the Mthatha centre in 2009 although its magnitude seems to defy the presence of a recession at the time. In fact, the fall in job creation observed in 2010 could be due to the lagged effect of the crisis.

Figure 4.1: Number of SMEs created in Furntech BTI (2001-2011)



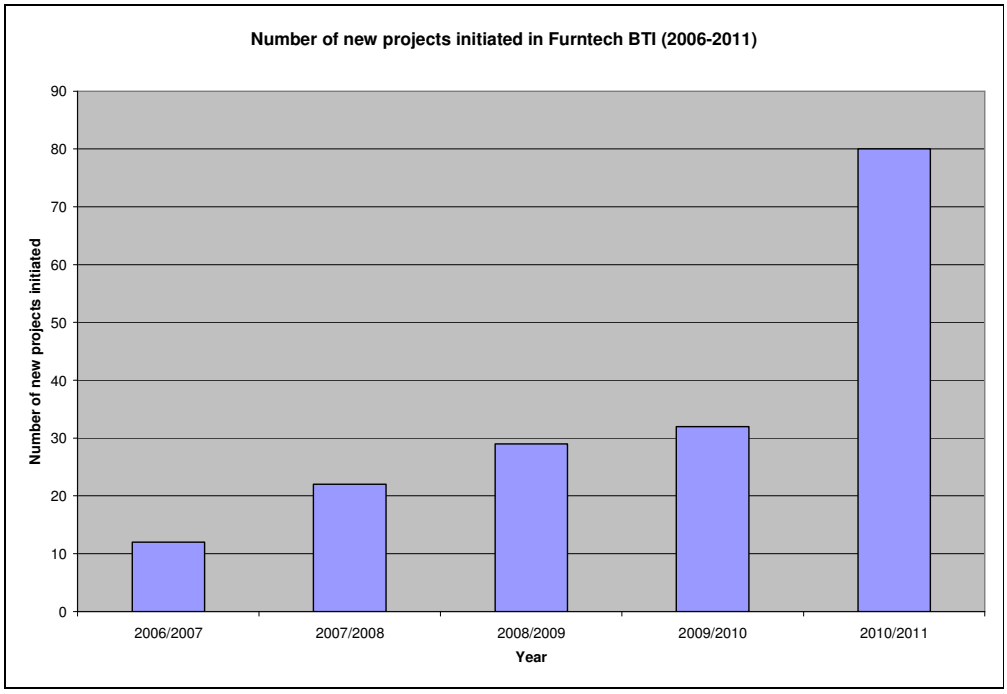
Source: Furntech Annual Report 2011

Figure 4.1 shows that through its Business Technology Incubation, Furntech has been creating an increasing number of SMEs since its inception in 2001. This is expected because the incubator has expanded from one to seven centres in the ten years. For the five years under review, though, there have been fluctuations, albeit

consistently at a relatively higher level on average than in the earlier five periods of the incubator's existence.

There is an increasing trend in the number of new projects initiated in the Furntech BTI as can be seen in Figure 4.2 below. As explained earlier, the sharp rise between the 2009/2010 and 2010/2011 can be linked to the launch of the Mthatha centre in 2009.

Figure 4.2: Number of new projects initiated in Furntech BTI (2006-2011)

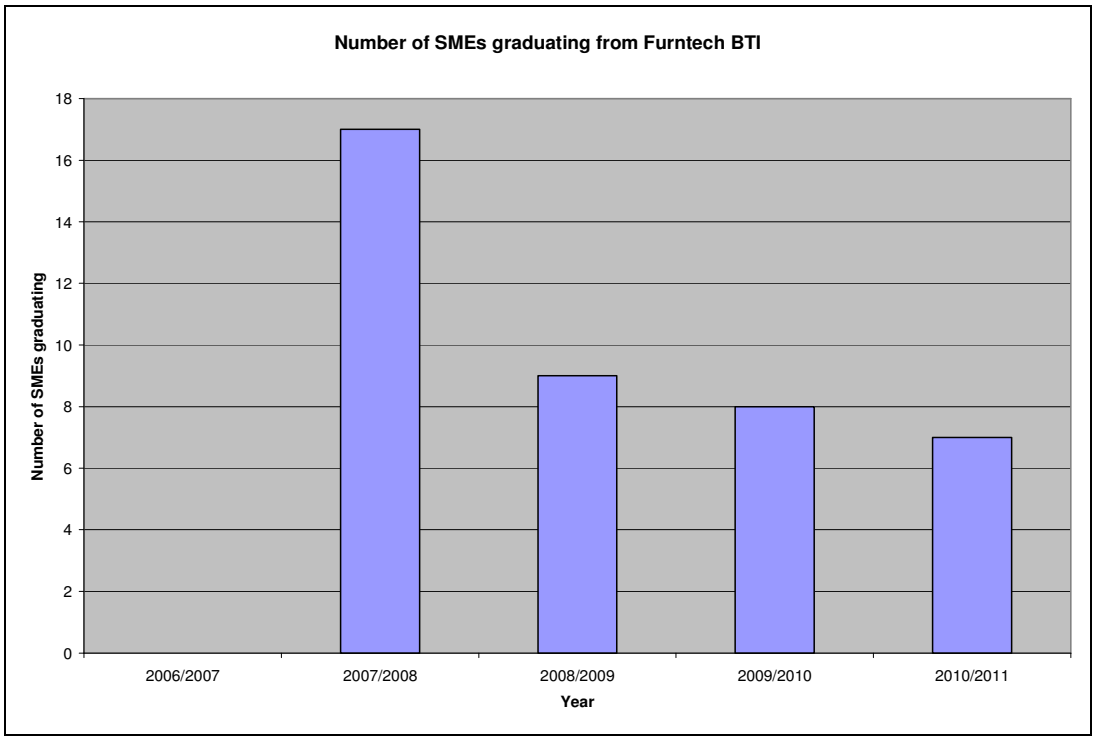


Source: Furntech Annual Report 2011

Figure 4.3 depicts the number of SMEs graduating from the Furntech BTI. In the short term while the incubatees are still under incubation, it is expected that an incubator will effectively assist these fledgling firms by ensuring a favourable environment. However, this may not be a good measure of an incubator's effectiveness. One measure that represents the long term effectiveness of an incubator is the number of SMEs that are "graduating" from its immediate care. Figure 4.3 shows falling numbers of graduates from the BTI. Yet, using the graduation rate, i.e. the rate of graduates from the incubator relative to the number

of tenants, shows more stability (16% for 2008). Notwithstanding the latter, long term effectiveness of the Furntech BTI still comes into question.

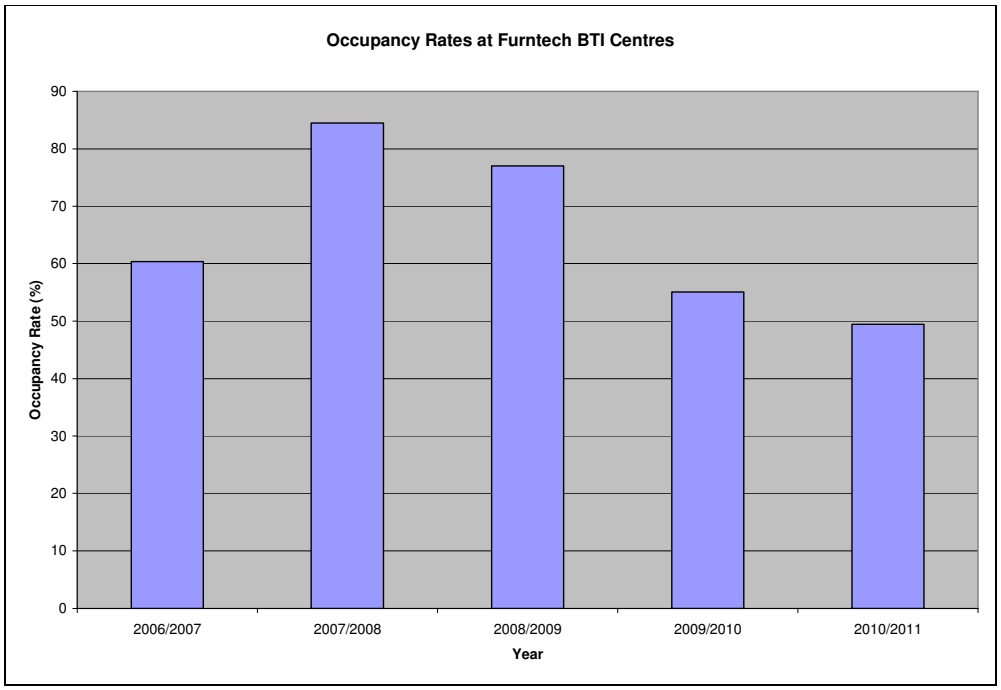
Figure 4.3: Number of SMEs graduating from Furntech BTI (2006-2011)



Source: Furntech Annual Report 2011

On average, the occupancy rate of the Furntech BTI stands at around 65 percent for the period 2006/2007 and 2010/2011. At such a rate, the facility is certainly under-utilised. What is more, the rate has been falling for the last three periods, given the increases in the available incubation units. This sharply falling rate means that there are fewer firms utilising the BTI facility recently.

Figure 4.4: Occupancy Rates at Furntech BTI Centres (2006-2011)



Source: Furntech Annual Report 2011

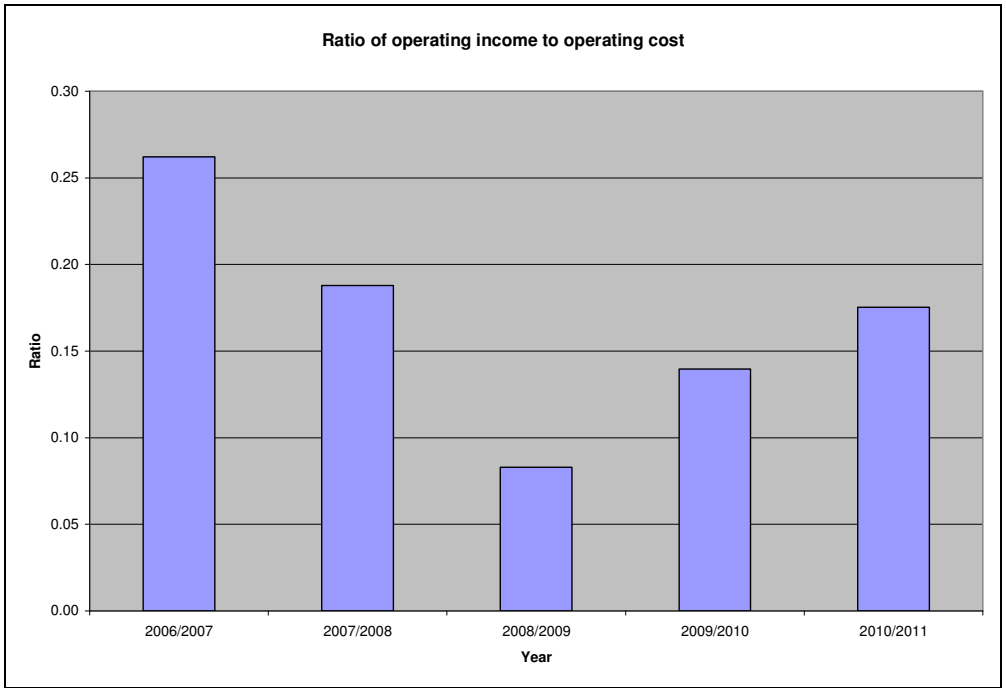
Looking at the financial side, income from the operating activities of Furntech (including tenant rental fees) have, on average, only been able to cover approximately 17 percent of the cost of these operations. For the first three years (2006-2009), the continuous fall from 26 percent to 8 percent (see Figure 4.5) of the ratio of operating income to operating cost indicates that the incubator's ability to finance its own operations became much weaker. In this context, Ariefdien (2011b) boldly stated that no incubator programme has the ability to be self-sustaining.

Invariably this implies that external funding must be found in order to sustain the operations of the incubator, which is, indeed, the case for Furntech. In fact, according to Ariefdien (2011b), Furntech is the only STP incubator that is not entirely funded by the government. His statement is consistent with the annual reports, as summarised in Figure 4.6. It shows that the bulk of, but not the total funding, comes from the state. There does, however, appear to be a steady rise in

the government share of the funding, from a 3.49 factor in 2006/7 to a 5.19 factor in 2009/10 and 4.16 in 2010/2011.

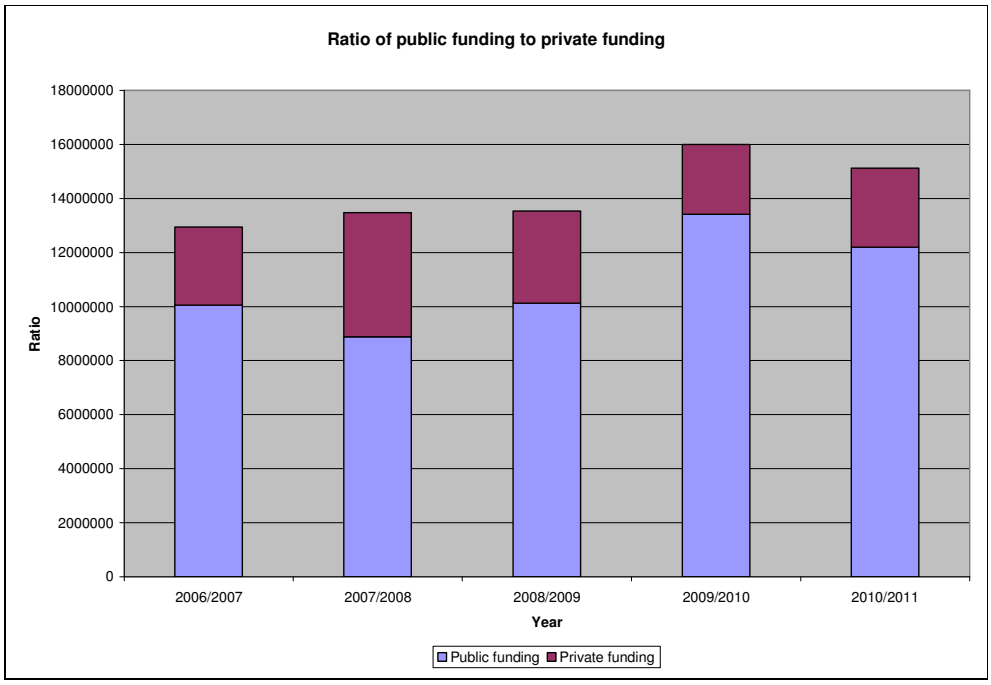
As indicated earlier, another measure of sustainability, the graduation rate, has been low but stable, particularly over the last three years. However, this stability should be interpreted with caution because as the number of graduating firms was falling so too was the number of tenants in the BTI.

Figure 4.5: Ratio of operating income to operating cost (2006-2011)



Source: Furntech Annual Reoirt, 2011

Figure 4.6: Ratio of public funding to private funding (2006-2011)



Source: Furntech Annual Report 2011

The above critical findings are based on quantifiable measures of incubator performance. Yet, some unquantifiable features may be useful to holistically capture incubator performance. For example, it is clear from the interviewed incubator manager at the head office in Cape Town and from recorded accounts of some incubatee experiences in the annual reports, that the Furntech BTI programme provides several useful incubation services to the enterprises. However, the quality of the services offered during and after incubation is not stated and thus remains unclear. On the other hand, since the Furntech vocational skills training programme is registered with the South African Department of Higher Education and Training and is also accredited by the South African Forest Industries Education and Training Authority and the Tibro Training Centre in Sweden, it is reasonable to conclude that the standard of training meets the minimum requirements at the very least.

Another intangible characteristic of incubator performance is how it is managed and the quality of the incubator management. Furntech has an organisational

structure which means that it follows a particular hierarchy of governance and management and has different business units. It has a board of trustees, a chief executive officer, and incubator centre managers. Thus, Furntech is well organised, which makes it possible for responsibility and accountability to be traced and maintained. This study did, however, not attempt to measure the quality of the management.

4.2.5 Overall evaluation of Furntech

For reasons primarily related to the availability of data, we selected the furniture-industry related Furntech incubator group as example of a rigid system of clusters in South Africa. The data revealed a number of these sector-focused incubators spread across both urban and rural areas in the country. The individual incubators were of modest size, with a relatively disappointingly low occupancy level.

Over the five years, for which detailed information was available, the graduation rate – generally put at two years of occupancy with comprehensive support – was also relatively low. Due to the relatively small size of the enterprises the overall rate of job creation was also rather modest.

Compared to these performance ratios, the cost of the programme was substantial and increased annually. In sharp contrast, the rate of dependency on public funding increased over the years, viz. the contribution from incubates was very modest.

Thus, viewed in macro-context, the Furntech incubator group cannot be regarded as macro-economically significant or financially sustainable. Yet, it is widely regarded as one of the better managed, rigid incubator sets in South Africa. It is also one which incorporates relatively modern and sophisticated units and more basic, rural sector-related units. As such, it is in sharp contrast to the modern technology-focused incubators, which receive much attention in the US/Western European literature.

4.3 WITWATERSRAND CLOTHING CLUSTER

The Witwatersrand is one of three areas in South Africa with a highly active clothing sector. The others are the Western Cape and the Durban urban area. As at the middle of 2004, the Gauteng region made up a quarter of the clothing firms in South Africa, with 239 out of the total of 827 found around that locality. The Western Cape and KwaZulu Natal accounted for 327 and 219, respectively (Barnes, 2005:5). Since then, South Africa's clothing suffered intensively under increased global competition, but the regional pattern remained the same.

During the apartheid era, South Africa's clothing industry was heavily protected through import substitution. Hence, the clothing sector was mainly driven by domestic demand. Predictably, upon opening up to international markets the industry struggled to compete with countries that can produce clothing at lower cost. Consequently, clothing imports have risen sharply in the country over the years. For example, Barnes (2005:7) indicates that imports rose by 58 percent between 2003 and 2004. Because of this precarious position, clustering was identified as one possible way of mitigating the effects of global competition. The Cape Clothing Cluster and the KZN Clothing and Textiles Cluster are examples of efforts instituted at the provincial level (Barnes, 2005:10).

This section draws extensively on the work of Rogerson (2000) who conducted a thorough study of a particular clustering example in South Africa, viz. the Witwatersrand clothing cluster in the Gauteng province. His main aim was to identify the determinants of successful development of clothing and textile SMEs in that region. As he points out, research on enterprise clustering in South Africa was still very limited when he carried out his research (Rogerson, 2000:691). Much of this is still true today, since few detailed studies have to date been done on African enterprise clustering, despite its growing importance to African economic development.

Even though the period under investigation by Rogerson is different, the Witwatersrand clothing cluster case is relevant to our present study as an example of a relatively flexible cluster. Firstly, the clothing industry, like the furniture

industry, is part of the greater manufacturing sector in South Africa. It is also a relatively low-tech industry and employs labour-intensive methods of production. In 2004, the sector contributed 1.8 percent to total employment in South Africa and up to 13.4 percent of total manufacturing employment. Firms in the clothing sector range from large factories to home-based operators. Hence, the clothing industry is also crucial for South Africa because it can help to deal with, *inter alia*, the high unemployment and poverty in the country.

Parallel to the sharp rise in the imports of low cost clothing and textile products (primarily from China and other Asean countries), South Africa's own clothing exports were dampened when the United States ended the quota system on China's exports to the USA. This had been part of the protective action under the African Growth and Opportunities Act (AGOA) instituted to strengthen African economic development around the turn of the century.

Thus, the background to the study by Rogerson is a South African textile and apparel sector which faces tough international competition, both in the local markets and with respect to exports. It is in that context that sector-focused incubators could play a significant role.

Rogerson's (2000) study does not explain the exact origin of the Witwatersrand cluster, but the author mentions the origins of selected firms in the cluster and briefly refers to the history of racial discrimination through legislation like the Environmental Planning Act in which black workers were prohibited from working in the Witwatersrand area. Although those policies dampened the formal clothing industry in the area, its core remained resilient. This included a dynamic and resurgent informal clothing industry, upon which the study concentrates. The emerging entrepreneurship in the cluster was largely a result of factors related to the size and growth of market demand for clothing in the region and beyond. After all, the presence of market opportunities is usually a precondition for successful enterprise development.

Rogerson (2000) focused on a sample of 27 enterprises from the cluster. Each of the selected enterprises had to have been operating for more than two years and had to be classified as SMEs. Twelve firms from the sample were established between 1990 and 1998, 11 firms had started between 1970 and 1989 with one of the remaining four having started before 1959 (Rogerson, 2000:701). Twenty five of the 27 were small enterprises and only two were medium-sized firms. Thirty one enterprise owners, most of whom were renting premises in inner-city Johannesburg, were interviewed. The interviews covered education and training of the entrepreneur, their work experience, the history of enterprise formation, the growth of the enterprise, and inter-firm linkages with other enterprises. This was done in order to profile the development of the Witwatersrand clothing cluster. With such information the researcher would be in a position to identify the drivers of successful SMEs in the cluster.

The study revealed that 21 of the enterprises were new start-ups compared to 6 that were intergenerational family businesses. The majority of the enterprises were initiated as a consequence of perceived market opportunities while a few were cases of "forced or necessity entrepreneurship", i.e. the entrepreneur starts a business not because of an existing business opportunity but due to lack of a source of sustenance, for example a job or because of retrenchment. This is an important observation, because the entrepreneurial pool in South Africa has been estimated to contain 42 percent "necessity entrepreneurs" (Foxcroft *et al*., 2002:14), which partly explains why so many start-ups fail within the first two to five years.

The enterprises in the cluster were involved in very diverse clothing manufacturing activities, ranging from high utility clothing products (commonly including school uniforms and corporate clothing wear) to jerseys, golf shirts, trousers, skirts, and many other types. The interviewees indicated that they had started out with very basic clothing designs and diversified into more complex styles over time. For Rogerson (2000:699), such changes suggested that firms were gradually pursuing more profitable niches. Moreover, it also showed the influence of technology diffusion as firms used better equipment and learned from

each other. They became more accustomed to existing and new machinery and were consequently able to produce better goods.

Regarding job creation, the research showed that the Witwatersrand cluster was indeed quite effective. It was found that since their start, a total of 800 direct jobs had been created in the 27 firms sampled from the clothing cluster. Each of the 25 small firms employed between 5 and 50 workers compared to between 70 and 200 workers employed in the two medium-sized firms. The cluster aided the growth of enterprises through the expanding asset base of the firms. The more "successful" enterprises had managed to significantly grow their asset base relative to the initial asset holding. The study revealed that three of the biggest entrepreneurs each held assets to the value of over R1million. There is clear evidence that the firms in the cluster grew and expanded, given that 18 of them had reported start-up assets valued at less than R10 000.

With respect to education and training levels, most of the firm owners were found to have at least some elementary education. Yet, few of them had trained to acquire the technical skills needed in clothing production. Those who had any business-related training were even fewer; only four of them had studied anything associated with small business management. Most had learnt by "doing" and through work experience. In this context, a study by Foxcroft et al. on entrepreneurship in South Africa adds impetus to the preceding point, as it was found that although an adult with tertiary education was more likely to own a long term business, education, in general, had an insignificant effect on the probability of an individual being involved in a start-up (Foxcroft *et al*., 2002:24).

The study also revealed that, where an enterprise locates its operating premises has an important bearing on its survival. The Witwatersrand study found that all the interviewees had relocated from their initial premises. Although half of them had started operating from formally rented spaces, 19 of the 27 participants stressed the importance of having their own premises in properly located areas. Moreover, one entrepreneur who had an experience with a SBDC hive expressed displeasure with the infrastructure provided by the hive, citing that it was more of

a hindrance to business than a benefit. This can be linked to Thomas (2009:10) who explained that the SBDC hives were usually located in old buildings, with the particular location not necessarily close to markets.

Besides factors and action related to the individual entrepreneurs, the study also showed that the influence of joint action in a cluster scenario cannot be ignored. Thus, the entrepreneurs in the sample acknowledged the significance of being in close proximity with other clothing-related firms. Indeed, firms were engaging in joint action by using each other's basic equipment and sharing raw materials in times of shortage. Other examples of joint action included businesses who were subcontracting amongst each other, jointly marketing products and linking up with street traders. Market information sharing was commonly done via ethnic or racial networks, which was understandable since the cluster was located in a region that had been a target for racially motivated policies in the past.

We can end this brief review of the example of a flexible, sector-focused cluster in the Witwatersrand by a few conclusions, which also contrast this case with the rigid Furntech incubator as well as the flexible clustering through hives, which was covered in an earlier chapter.

- The textile and apparel industry is a good example of the potential for SME-clustering in the economic development process, given the breadth and diversity of activities, the large and growing market for such goods and the vast scope for informal and micro-enterprise activities.

- The Witwatersrand cluster was even more flexible than the hives, since the enterprises each had their own accommodation and there was no overall organisational structure. Thus, basically the extent of cooperation was left to the firms to decide and act upon.

- The evolution of the Witwatersrand cluster revealed that locational proximity of the firms was an important factor, even though there was no

attempt to locate at one physical location. In fact, the flexibility increased the scope for individual firms to arrange the best deal.

- Over the years the cluster partners developed various linkages and helped each other in different ways. This may not have been as intensive as envisaged in incubators or hives, but it could adapt to individual needs and capabilities.

- The study didn't reveal in any detail support provided by public sector bodies, NGOs or other institutions to address the problems of entrepreneurs. Here the gap between (well-functioning) incubators and such loose clusters is the greatest. Yet, at the same time the loose clusters constituted no specific financial burden on the public sector.

The Witwatersrand cluster could, in current terminology, also be viewed as a "virtual hive", i.e. a voluntary clustering of sector-specific firms who benefit from different types of cooperative action. Such action could be complemented by different types of targeted public sector support and other types of joint action. This could include the negotiation of specific financing packages, the arrangement (with a training body) of special training programmes and other supportive action adapted to the industry. Many of these activities might not need public funds.

4.4 CONCLUSION

Out of the wide range of flexible as well as rigid clusters existing in South Africa, this chapter selected one formal incubator set (in the furniture industry) and one flexible clustering group (in the textile and apparel sector). In addition we referred earlier to the South African experience with (ex-SBDC) hives.

More detailed surveys of these examples show the complexity of each project and the many problems or challenges experienced or likely to arise. The financial and managerial challenges are greatest in the formal incubators, but so are the opportunities to provide systematic and consistent support. In the virtual clusters

the financial risk is lowest, but the scope for systematic support is limited, since it largely depends on the initiatives of the members.

It is clear from the above that in the developed, industrialised countries the emphasis falls on formal, tightly managed and designed incubators where the spread of new technologies or the close interaction of firms is vital and where the public sector is able to fund the cost. In sharp contrast, developing countries may lack the funds for such sophisticated incubators and their emerging enterprise clusters may be best served with much looser arrangements. These issues will be covered in the next two chapters.

CHAPTER 5:
CLUSTERING EXPERIENCES FROM OTHER AFRICAN COUNTRIES

5.1 INTRODUCTION

Some other African countries, besides South Africa, are also familiar with informal and formal clustering efforts. This section considers a few documented accounts of incubation and other clustering experiences specifically focusing on Ghana, Kenya, Nigeria, and Zambia. It briefly highlights the history of clustering in these countries and how government policy, if any, has sought to influence the process.

5.2 GHANA

Ghana has one of the more developed emerging economies in Africa with favourable conditions to harness entrepreneurship. Its economic structure resembles those of many other countries on the continent with some large companies, large numbers of small and medium enterprises and a vast array of micro- and informal enterprises (Robson, Haugh & Obeng, 2009). The country has a relatively more stable economic and political climate and an established rule of law. Yet, although the state has shown commitment to promoting entrepreneurship and small enterprise development in Ghana, SMEs especially in the industrial sector, are still at pains to survive because the sector is generally structurally weak and unbalanced (UNCTAD, 2005:57). The industrial sector has limited linkages to other sectors in the economy and the few large firms in the sector have negligible linkages to SMEs.

Notwithstanding this general lack of industrial sector clustering, one of the largest flexible clusters in Ghana and the whole West African region in terms of the number of enterprises is the Suame cluster, which appears to be providing its more than 10 000 small enterprises with the needed environment to survive and thrive. The cluster, located in the large city of Kumasi, consists of firms related to metalworking and vehicle repairing. It has been widely and thoroughly

researched. For example, McCormick (1999) investigates its contribution to the level of industrialisation in the area; Oyelaran-Oyeyinka and Lal (2006) use data from the cluster to analyse how institutional infrastructure and collective learning influence the adoption of new technology; and Iddrisu, Mano and Sonobe (2011) attempted to establish if entrepreneurial skills are a major determinant of enterprise performance and development in the cluster.

As shown by these three studies, the Suame cluster has existed for some time and is effectively aiding enterprise development in that sector. The cluster grew from about 8 000 firms in 2000 to almost 12 000 in 2003 (Idrissu *et al*., 2011:4), with a 50 percent growth in turnover within three years. This growth and other trends suggest that the cluster is fostering the entrepreneurial spirit in that part of Ghana.

Other examples of successful flexible clusters could be cited, but the overall conclusion is clear: flexible clusters exist in several places and with the focus on different sectors. These are, however, not the tightly organised incubators nor the flexible hives, but the loose clustering of related enterprises in specific geographic areas. The same applies to public sector support, which is generally of an *ad hoc* nature and not closely integrated as in incubator programmes.

5.3 KENYA

According to Moyi and Njiraini (2005:29), business incubation in Kenya has its roots in the late 1960s when the Industrial and Commercial Development Corporation (ICDC) introduced the Kenya Industrial Estates (KIE). The objective was to provide indigenous Kenyan enterprises with infrastructure and financial support to enter the manufacturing sector and to grow. The KIE had established 28 industrial estates with a total of 414 industrial workspaces by 1999 (Moyi & Njiraini, 2005:40). The small firms were allowed to utilise the facilities for five years after which they had to leave. The results show that the KIE also encountered some of the typical problems. In particular, the allocation of workspaces to tenants has been subject to political interference which negatively affected the initial mission of incubation. Moreover, the structure of the estates

became bureaucratic “with highly centralised functions and costly service centres, rendering its services less effective” (Moyi & Njiraini, 2005:41).

In their research on incubation in Kenya, Meru and Struwig (2011) assessed the perceptions of 124 entrepreneurs about the importance of business incubation and how those entrepreneurs who received the services rendered by the incubator viewed such services. They also looked at 12 incubators of which 10 were not state-owned. They found that the entrepreneurs saw business incubation services as highly significant, yet in the end they actually received fewer services from incubation than what they had expected to receive (Meru & Struwig, 2011:118). The authors attribute this gap between perception and reality to the nature of private incubators, whose pursuit of profit reduced the quality of service delivery. This seems a plausible conclusion, although a counterfactual study in which more of the government owned incubators are investigated could help to distinguish the effects of the profit motive on incubator service delivery.

On flexible enterprise clusters in Kenya, McCormick (1999) provides insights into four Kenyan clusters: Eastlands garments in the clothing industry, Kimukunji in metal products, Ziwani in vehicle repairs, and Lake Victoria in fish processing. Improved market access was seen to be the major benefit derived by firms in these clusters. She also noticed some intermediate input effects amongst the enterprises, especially in the Ziwani cluster (McCormick, 1999:1544). On the other hand, she found very weak pooling of specialised skills in the clusters. Such pooling is likely to occur when the cluster attracts entrepreneurs with the best skills for the particular industry into a specific location, thus achieving benefits from technological spillovers. On the other hand, the diffusion of technological expertise and information is very limited in clusters where the firms engage in trade, which requires only basic technology (McCormick, 1999:1544).

Except for the Ziwani cluster, all the flexible clusters did not have any institutionalised joint action, either horizontally, vertically, bilaterally, or multilaterally (McCormick, 1999:1544). Thus, firms informally worked together without any association or cooperative to handle their affairs. This means, for

example, that should a conflict arise between firms, there was no formal intervention to help resolve it.

Mitullah (1998) acknowledges the importance of sector-focused business associations when she uses some Kenyan fishing clusters to explore the proposition that the key to clustering success lies in the collective efficiency derived from the interactions amongst resident firms. Her analysis, however, offers a useful caveat on collective efficiency: it can be achieved if individual interests of all relevant parties in a cluster succumb to group interests and if the influence of unequal power relations in a cluster is curbed.

5.4 NIGERIA

Sriram and Mersha (2010) estimate that as much as 95 percent of manufacturing in Nigeria in 2005 was attributable to SMEs. Without doubt, they are major players in the Nigerian economy, where the unstructured, locational clustering of small enterprises has played a significant role in the business development process.

Adegbite (2001) presents one of the few studies conducted on incubation in Nigeria. He reviews the implementation of incubator programmes in the country indicating outstanding strengths and weaknesses. His study included the country's seven existing incubators which he categorised into two broad groups, namely industrial business incubators and technology business incubators. The intention of developing the incubators was mainly to stimulate the growth of SMEs.

The study found that the four industrial incubators were all relatively ineffective as far as creating a steady flow of thriving enterprises was concerned (Adegbite, 2001:160). Some tenants were more or less permanently in "incubation", in some cases for up to over 20 years. This makes the "hive tenants" in the South African terminology, rather than incubatees. None of the incubators was self-sustaining, relying quite heavily on government aid. On the whole, they were poorly managed under bureaucratic government supervision. The three technology incubators also

encountered the problem of tenants who were unwilling to move out after the prescribed incubation period. The technology incubators were also unable to generate adequate operational income to cover running costs, which increased their dependence on the state.

Agboli and Ukaegbu (2006) examined the business environment in southeast Nigeria, focusing on four informal clusters located in Aba, Nnewi, Onitsha and Umuahia. These flexible clusters consisted of a range of enterprises from micro to large ones. Most of the firms in the clusters were involved in manufacturing activities of different types. Overall, it was found that the business environment for both nascent and existing SMEs is very daunting. The researchers hypothesised that entrepreneurs in Nigeria face greater infrastructure difficulties than administrative and regulatory problems (Agboli & Ukaegbu, 2006:25). In general, the government was not fulfilling its role to provide an enabling environment for the clusters, especially with respect to the necessary infrastructure. However, there were also instances where the firms did not take advantage of existing facilities and services within the cluster environment to ease some of the challenges they meet.

Over the past few years interest in cluster development strategies and incubator development in Nigeria has increased rapidly, given the challenges of rapid urbanisation, rising income levels and consumer spending and the need to create employment opportunities. This study has not been able to look closer at that complex process and what it means for the development of clusters and incubators. Yet, it seems relevant to mention that a Nigerian banker, Anderson Nwosu, is currently doing PhD-research on clustering and public-private partnerships in Nigeria at the University of Stellenbosch Business School.

5.5 ZAMBIA

Until the early 1990s, private enterprise in Zambia had been marginalised due to the socialist approach to economic development. Thus, there was little scope for

pro-active entrepreneurship promotion in the Zambian economy. According to Hyman, Strauss, and Crayne (1993:103), parastatals were a characteristic feature of the country's economy and the subsidised competition they offered, coupled with hostile government policy, choked the little private enterprise existing at the time. Furthermore, the economy was fairly closed to external competition and it was heavily reliant on copper exports.

Despite small enterprises being sidelined in the past, an entrepreneurial spirit was still evident in Zambia (Beveridge & Oberschall, 1979, as cited by Hyman *et al*., 1993). The government eventually recognised the importance of SMEs to economic growth and prosperity. Its initial attempt to harness the SME sector was the institution of the Small Industries Development Organisation (SIDO) through the Small Industries Development (SID) Act of 1981 (Ministry of Commerce, Trade and Industry (MCTI), 2008). SIDO was mandated to, among other things, formulate, coordinate, and implement national policies and programmes relating to small enterprises. It was to provide extension and management services to small enterprises and to assist them in developing industrial estates and common-facility centres (business incubators) (Hyman *et al*., 1993:105).

The advent of a democratic political regime after 1991 brought about a further liberalisation of the economy. Opening up the markets ensured that the private sector was allowed room to manoeuvre and SMEs could now compete with the big state-run companies. Notably though, while this presented enormous opportunities for entrepreneurship in Zambia, it came with challenges too. For example, aside from domestic competition SMEs now also faced international competition. In recognising that small firms still encountered hurdles, the government replaced the SID Act with the Small Enterprise Development (SED) Act of 1996. This revised Act included many tax incentives for SMEs. Unfortunately, both the SID Act and SED Act only had a 'negligible' influence on small enterprise development in the country, mostly because the political will to actually implement policies and programmes was weak, if not totally lacking (Chisala, 2008:7).

Following the relative failure of this legislation to aid enterprise development, the Zambia Development Agency (ZDA) Act of 2006 became the latest statutory attempt to promote the SME sector in Zambia. Through this Act, an MSME Development Policy was developed. As the past documents, it also pointed out the significance of clustering as an instrument for small business development in Zambia. One of its explicit objectives was to enhance LED by establishing five business incubators and five industrial parks in identified locations, to be completed by 2018 (MCTI, 2008:12). As the first step, the government commissioned a study in conjunction with the United Nations Industrial Development Organisation (UNIDO) and the World Trade Centre to determine the cost of creating industrial clusters in the different Zambian districts (Chitala, 2012:4). The preliminaries indicated that 150 such clusters are to be created (Lumpa, 2012).

The concept and practice of business incubation is not a new one in Zambia. Hyman *et al*. (1993) noted that a few incubators had been established earlier in Zambia, to provide both infrastructural and other support to small firms. Like the SBDC hives in South Africa, these common-site facilities provided essential infrastructure like water and power as well as support services such as marketing and bookkeeping assistance while charging their tenants below market rentals. There was, however, no study that determined the effectiveness of existing incubators in terms of stimulating business activities that would not have otherwise developed. Moreover, it was unknown whether the provision of extra services by business incubators over and above physical workspace had improved firm performance (Hyman *et al*., 1993:108). Overall, it is clear that artificially created clusters in the country have not been very effective for small enterprise development in Zambia. Thus, currently, the natural form of business clustering remains the most visible type in the country, being dominated by informal traders and vendors in streets and markets and around major activities like mining and agriculture. These clusters are unsystematic and firms usually stay static and those that survive do so through sheer determination.

5.6 CONCLUSION

Incubation and cluster practices in Ghana, Kenya, Nigeria, and Zambia have been briefly considered in this chapter. The practice in these few countries in Africa have more or less confirmed the findings from the cases in South Africa, *viz.* that all three categories of clustering do exist – natural, flexible and tightly controlled (incubators) – but that the impact has on the whole been very limited so far. In the case of the more formal incubators, the numbers are very small and the capacity to manage them effectively has been limited. In the case of the more flexible and informal or natural clusters, the support via public sector bodies has been very limited, leaving most of the supportive activities to voluntary action amongst cluster participant SMEs.

Given these lessons and the experience from South Africa, we can now look into the future, identifying the key elements of a comprehensive SME-clustering strategy.

It is very reasonable to conclude that the incubation and cluster issues are general to Africa. Most existing and seemingly more useful clusters are natural ones and attempts to create clusters have seldom succeeded in the longer term. This has important implications for cluster policy as it may help establish a sequence for cluster development programmes in an African context.

CHAPTER 6:
LESSONS FOR CLUSTER POLICY AND STRATEGY IN AFRICA

6.1 INTRODUCTION

This study has been underpinned by the realisation that the small business sector is critically important for Africa's efforts to accelerate economic growth, job creation and income generation. Economic history all over the world reveals that the clustering of business activities can play a very important role in the process of small enterprise development. Here we have distinguished three types of clustering, viz. natural or incremental clustering, pro-active flexible clustering of small businesses and the rigid clustering through incubators. All three types can have a positive impact on small business development, but the processes differ and the strategies for their acceleration have to be appropriate.

Having looked somewhat closer at these clustering processes in South Africa as well as a few African countries, we now want to draw some conclusions about feasible approaches towards effective small business clustering in African developing countries. It would be naïve to try to present a comprehensive strategy for such efforts, given the vast differences between countries, their business structures and legacies and the dynamics of their economic development process. All that we can try is to highlight a few insights gained from the more specific examples studied and the wider literature surveyed, which might help to guide clustering efforts planned in different countries.

In applying these insights to different countries, it will be important that full account is taken of the following differentiating factors:

- the level and rate of urbanisation in the country, i.e. the existence of larger urban centres;
- the resource structure of the country, which is shaping potential clusters (e.g. mineral or agro-processing clusters);

- the spatial structure of the country (revealing harbours and transport hubs);
- the nature and management of local economic development processes (revealing scope for pro-active local government action);
- the existence (or absence) of comprehensive SME-support policies and programmes (which can help incubator processes) and
- the presence of development-orientated larger (foreign or locally controlled) corporations in the country.

As discussed in earlier sections, all of these are factors which shape the environment of countries or regions within which clustering takes place and within which efforts to strengthen the clustering process are influenced.

6.2 GENERATING AND SHARING INFORMATION

As we have shown in various chapters, the process of business clustering is complex, slow and in many ways difficult to measure objectively.

In its most simple variant, it is the growth (over a few years usually) of a trade cluster at a particular transport interchange, near a town centre or at some other high-contact point. It may also be the concentration of processing mini-factories near an agricultural area with steady output. The same could apply to food processing establishments in the vicinity of significant numbers of factory or office workers. All of these would be examples of natural clusters.

What is needed here is the careful observation of these processes and the widest possible spreading of such information by local authorities, business organisations, business consultants and the media in order to make business people more aware of the existence, structure and dynamics of these “emerging clusters”. In larger towns, local authorities should be well aware of those dynamic processes, since they help small enterprises even without explicit public support. More important, awareness of such emerging clusters should prevent public

authorities applying policies which might hamper the process (e.g. restricting informal enterprises settling around the cluster).

As a further step in this process, local authorities and business associations might try to anticipate areas suitable for the evolution of other clusters (e.g. near new industrial areas, transport interchanges or office blocks). With only very limited action and expenses they might encourage such clustering or help to give new processes greater media attention.

As far as the flexible "hive-type" clusters are concerned, i.e. the (re-)use of vacant buildings for the clustering of small enterprises, the spreading of relevant information is also crucial. This applies to practical details about the centres and their surrounding (to increase awareness about them and attract more tenants to the area), but also information about existing incentives (e.g. low rentals) and the dynamics of the local clustering processes. Here the focus shouldn't just fall on the particular building (the "hive" in the narrow sense of the word) but the whole neighbourhood, where further SMEs could spread in order to be near the emerging cluster (i.e. the virtual hive).

Finally, the more rigid incubator process also needs a lot of attention to the information dimension. First of all, the process of inviting start-up entrepreneurs (to be sifted for the admission process) needs wider publicity and a spread of the critical information. Secondly, the applicants need sufficient information about the incubation process, what is expected from them, what support they can expect and how the incubation period ends. Thirdly, there is reliable information necessary about the operation of existing incubators, to help public sector planners and supporters and to encourage private firms who might be motivated to engage in such ventures.

In the Africa-development context, publicity about effectively managed incubators could have the further advantage of possibly alerting potential development partners, NGOs or aid agencies about projects to get involved in or projects to be complemented.

The pro-active generation and sharing of information about the clustering process is not a very expensive task nor does it need new organisations. It only needs a commitment of local business leaders and the public sector to better profile this important process. Where the process becomes more technical, partnerships with local universities or other research bodies might help.

6.3 GOVERNMENT SUPPORT AND PUBLIC-PRIVATE PARTNERSHIPS

In much of the discussion about small business incubators, it is assumed or postulated that such projects have to be "run" by the public sector. This usually applies not only to the fact that the bulk of the funding for incubators has to come from the public sector, but also that the project is state-owned and managed.

At the same time, much of the feedback from existing incubators suggests that state ownership, control and management is often a major cause of problems and a reason for the failure of such centres. This may relate to different factors, like excessive expectations of tenants about the support from government, the bureaucratic nature of state-managed enterprises or the lack of a business approach to such projects.

Thus, we are looking for an approach where the national government provides significant financial support for clustering programmes, but does not insist on directly owning or managing individual projects. That task may rather involve local municipalities, development agencies (like the SBDC or SEDA in South Africa), local cooperatives or private bodies. In these cases the owners/managers may also be responsible for some of the funding and carry some of the risks.

What we are talking about here is the use of public-private partnerships to fund, organise and manage the clustering process, with the financial partnership role of government particularly important in the case of tightly structured incubators. In the case of flexible hives and natural clusters, the main role of government would be the facilitation of a favourable operating environment for SMEs.

In the African development context, critical responsibilities would be to help with or finance the expansion of infrastructure facilities (electricity, roads/rail, water, sewage, etc.) to keep up with the increasing demand. Government may also be able to play a useful, facilitator role in the bringing together of the other relevant P-P partners.

6.4 RIGID INCUBATORS

Much of the literature on clustering focuses on this type of incubators, i.e. projects which are sector-focused, fairly sophisticated in the technology utilised, relatively small in the number of participants and with a clear time limit to the period spent by "incubates" in the incubator. Their strength is the expected supply of all the relevant support services while the start-up firms are inside the incubator. This results in relatively high costs for comprehensive incubators, which increases the financial dependence on public sector support (and the difficulty to continue after that support terminates).

Given the many shortcomings in the business environment of SMEs in African economies, one might argue that these comprehensive incubators are exactly what African countries need. Yet, financial and management constraints make them risky and most of the time not feasible. If the size of the incubator is kept small, economies of scale cannot be achieved and unit costs are too high. As far as the management is concerned, we already referred to problems with public sector management. Private sector managers may not be affordable for the centres, whilst the other approach – co-operative management – also has high risks attached.

In a few subsectors, conventional, modern incubators may be feasible in Africa, like ICT-focused projects, agri-processing centres in the case of high-value products, office parks for professionals and science parks linked to universities. Yet, even here questions arise around the maximum period for which incubatees are allowed to remain in the centres.

Thus, it seems likely that successive comprehensive incubators will in the near future remain exceptions and rare cases across Africa, although there are likely to be cases where an appropriate partnership between the public sector and core (long-term) external funders results in successful cases. Spreading greater knowledge about these examples of successful incubators should be one of the key challenges ahead.

6.5 FLEXIBLE INCUBATORS

Whilst much of the serious literature about clustering tends to focus on structured incubators, flexible types of incubators constitute the majority of practical cases and should probably be viewed as the clustering path likely to dominate in developing Africa.

From our discussions in earlier chapters, the following developments can be seen as part of flexible incubation processes:

- Incubators which do not enforce rigid entry and/or exit policies.
- Incubators where some of the units in the core centre are occupied by non-incubatees (to fill the centre or allow dynamic enterprises to stay on).
- Centres operating like the South African hives, which accommodate SMEs, but without necessarily offering a full package of incubator support programmes. These centres might still be sector-focused or they could have an evolving structure.
- Virtual incubators, where the incubatees are operating at diverse locations (close to a formal incubator or hive or at a distance), but with some link to support services and joint efforts coordinated at a central place.
- Incubators where the physical accommodation is privately supplied, but some of the public or privately funded support programmes are tightly structured, with clear entrance and exit conditions.

These flexible types of cluster support models would fit in well with the complex type of natural clustering processes, which we currently find across Africa. Thus, the approach would be different in small rural villages, which try to create and accelerate an initial phase of local small business clustering. Here the municipality, some local larger enterprise (e.g. a mining venture) or a cooperative initiative might trigger the process. It would also be much different in the centre or the industrial area of medium-sized towns where physical accommodation facilities are less important than the clustering of support services (training, banking facilities, mentorship facilities and depots with leasable machinery).

A dynamic approach to such flexible clustering would put equal emphasis on the expansion of private sector facilities or programmes and on public sector support. The latter would have to focus on infrastructure facilities and bottlenecks while the private sector could supply financial, marketing and some of the training facilities. In fact, some of the services could be supplied by both public sector schemes and private sector services, with the public support focusing on specific target groups.

Seen over time, one can also strategise that the initial phase of cluster support may have to be public sector (or foreign development aid) “driven”, with subsequent phases and the broadening of the process more and more private sector driven. In such a process, the effective spread of information – about clustering processes and the potential for expansion – may be one of the tasks needing strong public sector support.

6.6 MANAGEMENT CHALLENGES

Accepting the need for both flexible and more rigid clustering and incubator processes in African development, the real challenge now lies with the leadership and management side of the process. Here again there are different dimensions at issue, including the following:

- the ability of public sector officials to understand the need and scope for pro-active small business clustering efforts and for the public sector to play a critical role in those processes;

- the ability of the public sector to provide competent staff to manage its involvement in those processes, including its ability and willingness to partner with private, NGO, donor agency and other partners;

- the awareness of private sector business leaders (in corporates, business associations and cooperative ventures, for example) about the need and potential of clustering efforts and the pro-active role that they can and should play in it;

- the competence of public or private sector managers of such processes (e.g. to manage a hive or an incubator or to administer some SME-support programme (like a mentorship scheme or an equipment letting scheme) and

- the ability for public or private sector leaders to critically, yet constructively analyse progress with existing clustering programmes and to plan adjustments in the process to improve overall performance.

If we look at the (slow) progress of pro-active clustering efforts in South Africa and other African countries, it is most often a lack of effective management in these spheres which delays progress. As it is in so many other areas of the development process, the lack of competent staff is the critical issue. It is here, where the role of foreign development agencies, foreign government assistance and foreign private sector partnerships may come in as a significant development catalyst. If properly handled, they might supply such expertise for a transitional period and/or they may play a significant role in the generation of local management capacity.

Apart from such external support, the public-private partnership approach recommended for the clustering strategy could also help overcome this dilemma. Yet, this assumes a willingness of both sides to accept such partnership inputs

(e.g. to second an experienced corporate manager to manage a publicly funded incubator).

Another dimension of this management dilemma is the fact that progress with pro-active clustering strategies and programmes will inevitably be slow. There will be much "learning by doing" and lots of obstacles to overcome. This constitutes a further challenge, viz. for the media and critical observers to view progress in the broader context rather than merely on the basis of incubator "graduation rates" or occupancy levels.

6.7 FINANCIAL CHALLENGES

It is conventional in the small business scene that entrepreneurs put "lack of access to finance" forward as their greatest problem and the reason for their failure. Yet, closer scrutiny of the complex SME-scene shows that all too often the real or underlying reason of the unwillingness of banks to fund, are other problems. These could include poor management, incorrect costing and pricing, unrealistic market expectations or lack of operational skills. Due to those shortcomings, the firms get into a loss-situation, which makes them look for overdraft or loan facilities. Naturally, banks realise the risk of funding an enterprise which works at a loss, yet wants to increase its (uncovered) loans.

The same dilemma may apply to formal clustering programmes, which are often presented as lacking the necessary finance. Frequently, plans for incubators or hive-support programmes are too ambitious, yet hope to catch public funding with impressive plans. Once the results turn out disappointing (as it should have been expected, given so many natural obstacles) vaguely promised follow-up finance may not be available. It is also possible that initially the full scope for public-private partnerships had not been explored, so that private funding opportunities were not realised. The same may apply to the search for and utilisation of NGO-inputs and (foreign) donor funding for aspects of the programme (e.g. a mentorship scheme).

Thus, the financial challenges around pro-active clustering efforts are real and should certainly not be underestimated. However, a pragmatic, incremental approach, utilising different partnerships and subsidiary support programmes, together with proper management of the whole initiative may help a lot to overcome financial challenges.

6.8 CONCLUSION: MOVING TOWARDS A STRATEGY

As stated at the outset of this chapter, it was not the intention to detail all the relevant elements of an "incubator strategy" for African countries. Yet, after we covered several critical aspects of the strategizing process, we can conclude this chapter with a few critical aspects that need to be included in pro-active cluster strategies adapted to the respective countries or areas.

The first basic step is to get clarity about the economic development structure and dynamics of the country (or region) and the existence of clustering processes, be they formal or informal. That dynamic has to be widely publicised and it should be well understood by business leaders, business associations, public officials and all the parties involved in clustering efforts.

This sensitising process should include open debates about the longer run trend of sector developments, the competitive position of the country compared to its neighbours, ongoing clustering plans and the success of past efforts. Against this background potential projects and how they could be tackled should be scrutinised to see what types of partnerships might be established.

This second phase should lead to clear priorities in the planned clustering process, with the emphasis on the most appropriate sector(s) to push the appropriate partnership basis for specific projects and the source of initial and follow-up funding.

Against that background, it should become clear what (if any) formal incubators are planned and how they should be partnered, and what the scope and focus for

more flexible clustering efforts should be, with much of those initiatives left to the private sector. In this third phase, the potential role of foreign donors, and agencies or multi-national corporations in the more formal projects should also become clear.

The strategy has to make it clear that the management of the different strategy phases and the project will be crucial for its success and that the funding will have to be tackled in a flexible, pragmatic way.

Finally, the strategy has to provide for the regular review of progress and the pragmatic adjustment of plans in the light of progress and challenges.

CHAPTER 7:
SUMMARY AND CONCLUSION

Clustering of enterprises offers a channel through which SMEs can overcome market obstacles and grow. It can also foster the entrepreneurial spirit and lead to the proliferation of new SME establishments. The clustering process can be natural as well as deliberately instituted. Increasingly, African countries are seeking to use clustering to render support to small and medium firms. This study has endeavoured to examine how clustering can in fact effectively aid small enterprise development in Africa. The paper distinguishes between clusters that have a rigid structure and those that operate flexibly.

The challenges that continue to ravage small enterprises and their development on the African continent include inadequate access to sources of finance, poor infrastructure and insufficient access to markets. These hurdles often confine small businesses to survivalist activities with little prospect for growth. Current interventions to support small enterprise development in Africa seem to fail in their mission. Theoretically, cluster development programmes appear to offer solutions to many of the constraints to small business development. Clusters have certainly shown the potential to enhance business development in practice. They bear the ability to, among others, improve the competitiveness of a region through enhanced industrial capacity, encourage more small business formation, raise the export potential of firms and steer regional development.

In its examination, the project mainly employs two case studies on incubation and cluster experiences in South Africa. One is an example of rigid clustering, i.e. business incubation with a clear structure of operation and the other case represents a flexible form of clustering with no conscious structure. Moreover, references to cases of clustering in Ghana, Kenya, Nigeria and Zambia supplement the discussion on the appropriateness of clustering in the African situation. The research results show that incubators usually support the creation of new SMEs in the short run as long as they remain under incubation. Even so, these rigid clusters tend to limit enterprise development due to strict admission

criteria and limited physical spaces. Their long-term financial sustainability is questionable, because they cannot cover operating costs and are too reliant on state funding. Flexible clusters, on the other hand, are more effective for enterprise development in Africa because they are not constrained by the factors affecting incubators.

For clustering in general to be a helpful tool in Africa, there is need to improve the collection and distribution of data and information on business incubation and clustering experiences on the continent. In addition, local government involvement in the creation and implementation of cluster policy should be prioritised, leaving central government to expand the infrastructure and facilitate an enabling environment for clusters to thrive. Additionally, issues of financial sustainability should be carefully considered for business incubators to reduce their dependence on government aid. Shortages of qualified cluster management staff and expansion capacity constraints also have to be dealt with. And lastly, clustering in Africa should be sector-focused, since too broad-based an approach will defeat the purpose.

Presently, most of Africa does not have an environment which favours the use of small business incubators to drive enterprise development, given the issues highlighted in the study. The nature of most business activities is still low-tech and labour-intensive. Thus, governments in the developing countries should not try to create incubators in arbitrarily selected places, but rather target areas that show natural cluster formation and step in to catalyse the process. It is from these sorts of clusters that technology diffusion and other industrial progress may facilitate the development of incubators. In addition, incubators should not be too rigid because considerable flexibility is needed in the African development context. But, whilst the research suggests that a hybrid version of clustering is a better option for Africa at the moment, instituting such clusters without identifying their viability around a particular location and sector will likely be a waste of resources.

The recommendations made in this project are not unique and are in no way exhaustible. They are merely an attempt to contribute the rising calls for the relevant authorities to be serious about cluster development policy formulation and implementation in Africa. Whether these powers will heed those calls ultimately determines the direction and shape of small enterprise development in Africa.

REFERENCES

Aerts, K., Matthyssens, P., & Vandenbempt, K. 2007. Critical role and screening practices of European business incubators. *Technovation*, **27**: 254-267.

Adegbite, O. 1997. SME development under the structural adjustment programme in Nigeria. *Small Enterprise Development*, **8**(4): 4-17.

Adegbite, O. 2001. Business Incubators and Small Enterprise Development: The Nigerian Experience. *Small Business Economics*, **17**: 157-166.

Agboli, M. & Ukaegbu, C.C. 2006. Business Environment and Entrepreneurial Activity in Nigeria: Implications for Industrial Development. *Journal of Modern African Studies*, **44**(1): 1-30. doi:10.1017/S0022278X05001394.

Allen, D.N. & McCluskey, R. 1990. Structure, policy, services, and performance in the business incubator industry. *Entrepreneurship: Theory and Practice*, **15**(2): 61-77.

Al-Mubaraki, H.M. & Busler, M. 2010. Business Incubators: Findings from a Worldwide Survey, and Guidance for the GCC States. *Global Business Review*, **11**(1): 1-20.

Ariefdien, I. 2011a. *Overview of Furntech centres*. Interviewed telephonically by D. Chisenga. Cape Town, South Africa. 24 November.

Ariefdien, I. 2011b. *Overview of Furntech incubator in South Africa*. Interviewed in person by D. Chisenga. Cape Town, South Africa. 11 August.

Barnes, J. 2005. A Strategic Assessment of the South African Clothing Sector. *Report for the National Economic Development and Labour Council (NEDLAC)*. Benchmark and Manufacturing Analysts SA. 29 July.

Bergek, A. & Norrman, C. 2008. Incubator best practice: A framework. *Technovation*, 28: 20-28.

Bhabra-Remedios, R.K. & Cornelius, B. 2003. *Cracks in the Egg: improving performance measures in business incubator research*. Paper for the Small Enterprise Association of Australia and New Zealand 16th Annual Conference. University of Ballarat. 28 September – 1 October.

Brautigam, D. 2003. Close Encounters: Chinese Business Networks as industrial Catalysts in Sub-Saharan Africa. *African Affairs*, **102**(408): 447-467.

Brown, P. & McNaughton, R. 2003. Cluster development programmes: panacea or placebo for promoting SME growth and internationalisation? In Etemad, H. & Wright, R. (Eds.). *Globalisation and Entrepreneurship: Policy and Strategy Perspectives* (pp. 106-124). Cheltenham: Edward Edgar Publishing.

Caniëls, M. & Romijn, H. 2001. *Small industry clusters, accumulation of technological capabilities, and development: A conceptual framework. Eindhoven Centre for Innovation Studies Working Paper No. 01.05*. Eindhoven University of Technology.

Centre for Strategy and Evaluation Studies. 2002a. *Benchmarking of Business Incubators*. Final Report for the European Commission Enterprise Directorate-General [Online] Available: http://www.cses.co.uk/upl/File/Benchmarking-Business-Incubators-main-report-Part-1.pdf.

Centre for Strategy and Evaluation Studies. 2002b. *Benchmarking of Business Incubators*. Final Report for the European Commission Enterprise Directorate-General. [Online] Available: http://www.cses.co.uk/upl/File/Benchmarking-Business-Incubators-main-report-Part-2.pdf.

Chiesa, V. & Piccaluga, A. 2000. Exploitation and diffusion of public research: the case of academic spin-off companies in Italy. *Research and Development Management*, **30**(4): 329-340.

Chisala, C. 2008. *Unlocking the Potential of Zambian Micro, Small and Medium Enterprises, "Learning from the international best practices – the Southeast Asian Experience". IDE Discussion paper no. 134.* Institute of Developing Economies, Japan External Trade Organisation.

Chitala, N. 2012. State, UNIDO commission clusters study. *Zambia Daily Mail*, 20 March, 4.

Department of Trade and Industry. 2008. *Draft Strategy for the Development of the Furniture Industry*. Pretoria: Government Printer.

Enright, M.J. & Roberts, B.H. 2001. Regional Clustering in Australia. *Australian Journal of Management*, **26**: 65-85.

Feldman, M.P. & Francis, J.L. 2005. Homegrown Solutions: Fostering Cluster Formation. *Economic Development Quarterly*, **18**(2): 127-137.

Foxcroft, M., Wood, E., Kew, J., Herrington, M. & Segal, N. 2002. *Global Enterprise Monitor, South African Executive Report*. Cape Town: The Graduate School of Business, University of Cape Town.

Frimpong, A.A. 2011. *The African Growth and Opportunity Act and the Textiles and Apparel Industry in Kenya and South Africa*. Unpublished Masters Dissertation. Saskatoon: University of Saskatchewan.

Furntech. 2011 a. *Business Technology Incubation*. [Online] Available: http://www.furntech.org.za/ bti.htm [Accessed on 25 November 2011].

Furntech. 2011 b. *Achievements.* [Online] Available: http://www.furntech.org.za/achievements.htm [Accessed on 20 October 2011].

Furntech Annual Report 2011. Business and Design Technology Incubation [Online] Available: http://www.furntech.org.za/reports.htm [Accessed on 22 November 2011].

Furntech Annual Report 2010. *Business Technology Incubation*. Supported by SEDA Technology Programme, DTI.

Furntech Annual Report 2008/2009. *Business Technology Incubation*. Supported by SEDA Technology Programme, DTI.

Furntech Annual Report 2007/2008. *Business Technology Incubation*. Supported by SEDA Technology Programme, DTI.

Furntech Annual Report 2006/2007. 2007. *Business Technology Incubation*. Supported by SEDA Technology Programme, DTI.

Government of the Republic of Zambia. 2008. *The Micro, Small and Medium Enterprise Development Policy*. Lusaka: MCTI.

Grimandi, R. & Grandi, A. 2005. Business incubators and new venture creation: an assessment of incubating models. *Technovation*, **25**(2): 111-121.

Hackett, S.M. & Dilts, D.M. 2004. A Systematic Review of Business Incubation Research. *Journal of Technology Transfer*, **29**(1): 55-82.

Helmsing, A.H.J. 2003. Local Economic Development: New Generations of Actors, Policies and Instruments for Africa. *Public Administration and Development*, **23**: 67-76.

Hyman, E.L., Strauss, R. & Crayne, R. 1993. An Enterprise-Development Strategy for Zambia. *Development in Practice*, **3**(2): 103-115.

Idrissu, A., Mano, Y. & Sonobe, T. 2011. Entrepreneurial Skills and Industrial Development: The Case of a Car Repair and Metalworking Cluster in Ghana. *Journal of the Knowledge Economy.* [Online] Available: http://www.springerlink.com/ content/w71834l05218p244. doi: 10.1007/s13132-011-0047-6.

Liedholm, C. & Mead, D.C. 1999. *Small enterprises and economic development: The dynamics of micro and small enterprises*. London: Routledge.

Lumpa, M. 2012. *Zambia: Youth Unemployment Remedies,* 3 April. [Online] Available: http://allafrica.com/stories/201204040134.html [Accessed on 4 April 2012].

Mbewana, P.N. 2006. *The Key Success Factors for Business Incubation in South Africa: The Godisa Case Study*. Unpublished Masters Dissertation. Pretoria: University of Pretoria.

McCormick, D. 1998. *Enterprise Clusters in Africa: On the Way to Industrialisation?* Discussion paper no. 366. Institute of Development Studies, University of Nairobi.

McCormick, D. 1999. African Enterprise Clusters and Industrialization: Theory and Reality. *World Development*, **27**(9): 1531-1551.

Meagher, K. 2007. Manufacturing Disorder: Liberalization, Informal Enterprise and Economic 'Ungovernance' in African Small Firm Clusters. *Development and Change*, **38**(3): 473-503.

Meru, A.K. & Struwig, M. 2011. An Evaluation of the Entrepreneurs' Perception of Business-Incubation in Kenya. *International Journal of Business Administration*, **2**(4): 112-121. doi:10.5430/ijba.v2n4p112.

Mitullah, W.V. 1998. *Lake Victoria's Nile Perch Fish Industry: The Politics of Joint Action*. Working Paper No. 519. Institute for Development Studies, University of Nairobi.

Moyi, E. & Njiraini, P. 2005. *Misallocation of Workspaces for MSEs in Kenya: Some Lessons and Models*. KIPPRA Discussion Paper No. 53. Kenya Institute for Public Policy Research and Analysis.

OECD-UNIDO. 2004. *Effective Policies for Small Business: A Guide for the Policy Review Process and Strategic Plans for Micro, Small and Medium Enterprise Development*. Paris: OECD.

Ostrom, E. 2000. Social Capital: A Fad or a Fundamental Concept? In Dasgupta, P. & Serageldin, I. (Eds.). *Social Capital: A Multifaceted Perspective* (pp. 172-214). Washington, DC: World Bank.

Oyelaran-Oyeyinka, B. & Lal, K. 2006. Institutional Support for Collective Learning: Cluster development in Kenya and Ghana. *African Development Review*, **18**(2): 258-278.

Petersen, W. 2011. *Developing an Incubator Strategy for Oudtshoorn*. Unpublished Masters Dissertation. Port Elizabeth: Nelson Mandela Metropolitan University Business School.

Petree, R., Petkov, R. & Spiro, E. 1997. *Technology Parks – Concept and Organisation.* Summary Report prepared for the Centre for Economic Development. Sofia. [Online] Available: http://www.ced.bg/.

Phillips, C. & Bhatia-Panthaki, S. 2007. Enterprise Development in Zambia: Reflections on the Missing Middle. *Journal of International Development*, **19**(6): 793-804.

Porter, M. 2000. Location, Competition, and Economic Development: Local Clusters in a Global Economy. *Economic Development Quarterly*, **14**(1): 15-34.

Qian, H., Haynes, K.E. & Riggle, J.D. 2011. Incubation Push or Business Pull? Investigating the Geography of U.S. Business Incubators. *Economic Development Quarterly*, **25**(1): 79-90.

Raines, P. 2001. *Local or National Competitive Advantage? The Tensions in Cluster Development Policy*. Regional and Industrial Policy Research Paper No. 43. European Policies Research Centre, University of Strathclyde.

Raines, P. 2002. *The Challenge of Evaluating Cluster Behaviour in Economic Development Policy.* Paper Presented to the International RSA Conference: Evaluation and EU regional policy: New questions and challenges. May.

Ramluckan, S. 2010. *An Exploratory Case Study on the Performance of the SEDA Business Incubators in South Africa*. Unpublished Masters Dissertation. Bellville: University of Stellenbosch Business School.

Ravjee, J. 2010. Foreword. In M. Reddy (Ed.). *Celebrating Incubation in Africa 2010*. Publication prepared for the African Incubator Network in conjunction with infoDev, SEDA, Furntech, and SABTIA.

Richter, L. 2003. *Small, Medium and Micro Enterprises in South Africa: State of Affairs, Evaluation of Support and Best Practices (An Introductory Text*). Report commissioned by Konrad Adenauer Stiftung (KAS) for the South African Institute for International Affairs (SAIIA). Johannesburg. June, 2003.

Rogerson, C.M. 2000. Successful SMEs in South Africa: the case of clothing producers in Witwatersrand. *Development Southern Africa*, **17**(5): 687-716.

Rogerson, C.M. 2001. In search of the African miracle: debates on successful small enterprise development in Africa. *Habitat International*, **25**: 115-142.

Rogerson, C.M. 2008.Consolidating Local Economic Development in Post-Apartheid South Africa. *Urban Forum*, **19**: 307-328.

Rosenfeld, S.A. 2002. *Creating Smart Systems: A Guide to Cluster Strategies in Less Favoured Regions*. Prepared for the Regional Policy and Cohesion of the European Union. April, 2002.

Scaramuzzi, E. 2002. *Incubators in Developing Countries: Status and Development Perspectives*. Washington DC: World Bank.

Schutte, F. 1999. The university-industry relations of an entrepreneurial university: the case of the University of Twente. *Higher Education in Europe*, **1**: 47-65.

Schmitz, H. & Nadvi, K. 1999. Clustering and Industrialisation: Introduction. *World Development*, **27**(9): 1503-1514.

Sriram, V. & Mersha, T. 2010. Stimulating Entrepreneurship in Africa. *World Journal of Entrepreneurship, Management and Sustainable Development*, 6(4):257-272.

Sturgeon, T.J. 2000. How Silicon Valley Came to Be. In M. Kenney (Ed.). *Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region* (pp. 15-47). Stanford, CA: Stanford University Press.

Thomas, W.H. 2003. *Access to Finance and other Obstacles in Africa's Small-Business Development: Rediscovering old truths*. Paper prepared for Stellenbosch University Graduate School of Business and presented at the 5th Annual Development Finance Conference, Johannesburg. October.

Thomas, W.H. 2009. *Developing Business Incubators in Eden District: Lessons from Experience.* Report prepared for the Elanga Consulting/Nuworx project for the Eden District Municipality. June.

UNCTAD. 2005. *Improving the Competitiveness of SMEs Through Enhancing Productive Capacity*. UNCTAD/ITE/TEB/2005/1.

UNECA. 2001. *Enhancing the Competitiveness of Small and Medium Enterprises in Africa: A strategic framework for institutional support*. ECA/DMD/PSD/TP/00/04. February.

UNECA & AUC. 2010. *Economic Report on Africa: Promoting high-level sustainable growth to reduce unemployment in Africa*. Addis Ababa: United Nations Economic Commission for Africa.

World Bank. 2011. *Urban Development*. [Online] Available: http://data.worldbank.org/topic/urban-development [Accessed on 24 November 2011].

APPENDIX I:

FURNTECH DATA[2] (2006-2011)

Table A1.1: Occupancy Rates

Year	Available Space	Occupied Space	Occupancy Rate (%)
2001/2002			
2002/2003			
2003/2004			
2004/2005			
2005/2006			
2006/2007	58	35	**60**
2007/2008	58	49	**84**
2008/2009	74	57	**77**
2009/2010	89	49	**55**
2010/2011	89	44	**49**

Table A1.2: Ratio of operating income to operating cost

Year	Operating Income (OI)[3]	Operating Cost (OC)	OI:OC Ratio
2001/2002			
2002/2003			
2003/2004			
2004/2005			
2005/2006			
2006/2007	3530956	13472405	**0.26**
2007/2008	2532337	13482193	**0.19**
2008/2009	1308804	15782074	**0.08**
2009/2010	2095409	15005178	**0.14**
2010/2011	3854195	21973003	**0.18**

Table A1.3: Ratio of public funding to private funding

Year	Public	Private	Ratio
2001/2002			
2002/2003			
2003/2004			
2004/2005			
2005/2006			
2006/2007	10060400	2882371	**3.49**
2007/2008	8881872	4590533	**1.93**
2008/2009	10122496	3422153	**2.96**
2009/2010	13418033	2585901	**5.19**
2010/2011	12200265	2929256	**4.16**

[2] Aggregates for all established Furntech centres according to the Furntech annual reports
[3] Excludes income from grants

Table A1.4: Graduation Rates

Year	Graduates	Tenants	Graduation rate (%)
2001/2002			
2002/2003			
2003/2004			
2004/2005			
2005/2006			
2006/2007	0	35	**0**
2007/2008	17	49	**35**
2008/2009	9	57	**16**
2009/2010	8	49	**16**
2010/2011	7	44	**16**