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2018
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Mahlangu,Innocentia Nqobile (2018) The effectiveness of a contractor development programme in the development of small contractors :an evaluation of a road construction project in the Eastern Cape, University of the Witwatersrand, Johannesburg, <http://hdl.handle.net/10539/25032>

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THE EFFECTIVENESS OF A CONTRACTOR DEVELOPMENT PROGRAMME IN THE DEVELOPMENT OF SMALL CONTRACTORS – AN EVALUATION OF A ROAD CONSTRUCTION PROJECT IN THE EASTERN CAPE

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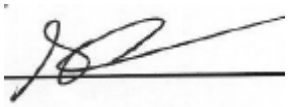
A research report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science in Engineering

Johannesburg 2018

DECLARATION

I, **Innocentia Nqobile Mahlangu**, declare that this research report is my own unaided work. It is being submitted to the Degree of Master of Science to the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination to any other University.



Innocentia Nqobile Mahlangu

13th day of February 2018

ABSTRACT

This research seeks to ascertain whether a Contractor Development Programme (CDP) has been beneficial to the development of fourteen (14) contractors enrolled within the programme. The investigation is conducted through an evaluation of a road construction project implemented by a State-Owned Enterprise (SOE) in the Eastern Cape Province in South Africa. This research considers the following factors in determining the effectiveness of the CDP: technical, financial and managerial training that the contractors received through the programme, the provision of relevant work experience for the duration of the programme as well as an increase in the contractor's CIDB grading after exiting the programme. The study was motivated by the apparent lack of research reporting on the growth and sustainability of contractors having taken part in development programmes implemented by SOEs.

The study found that the contractors received some training in technical, financial and managerial aspects. The contactors further received work experience and on-the-job training linked to the training programme. The study further found that even though all fourteen (14) enterprises have remained operational; after 4 years of having enrolled in the CDP, 71% of the contractors have remained at CIDB Grade 1 level. The study observes that the stagnation of the contractors' CIDB grading, despite the contractors having been developed within a CDP, requires further investigation. Although the study focuses on one project where contractor development was implemented, the lessons and observations from the programme have broader relevance. The study further analyses the overall approach followed in implementing CDPs and emphasises some key considerations relating to the implementation approach. More importantly, the study highlights that the lack of emphasis on technical competence in terms of qualification and experience is one of the underlying shortcomings of CDPs. In conclusion, the research found that there is a need to review policies and procedures relating to CDPs.

Key words: *SMME, CIDB, training and mentorship, small contractor development, contractor development programme (CDP)*

ACKNOWLEDGMENT

I would like to firstly thank the almighty God for allowing me to conduct this research.

This research report is the result of continuous encouragement and support from the following people:

- My greatest appreciation goes to my parents and three siblings for their support and motivation.
- I would like to express my sincerest gratitude to my supervisor, Professor Robert McCutcheon. Thank you for the support, patience and guidance.
- To the fellow post graduate students in the various seminars that we attended under the guidance of Professor Robert McCutcheon, thank you all for the invaluable contribution.
- A special vote of thanks goes to Mr. Peter Henderson for assisting with providing the information I needed for this research as well as Ms. Alison Fletcher who assisted with editing and reviewing the research.
- Last but not least, I appreciate the support and encouragement I received from my colleagues and managers throughout the duration of my research.

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LIST OF ACRONYMS

B-BBEE	Broad-Based Economic Empowerment
CIP	Contractor Incubator Programme
CDP	Contractor Development Programme
CDM	Contractor Development Models
CETA	Construction Education and Training Authority
CIDB	Construction Industry Development Board
DPE	Department of Public Enterprises
DPW	Department of Public Works
DTI	Department of Trade and Industry
EPWP	Expanded Public Works Programme
GDP	Gross Domestic Product
HDI	Historically Disadvantaged Individuals
NCR	National Credit Regulator
NCDP	National Contractor Development Programme
NDPW	National Department of Public Works
NQF	National Qualifications Framework
PDI/E	Previously Disadvantages Individual or Enterprise
PMBOK	Project Management Book of Knowledge
PPPFA	Preferential Procurement Policy Framework Act
OECD	Organisation for Economic Co-operation and Development
(R) SA	(Republic of) South Africa
SAQA	South African Qualifications Authority
SME	Small and Medium Enterprise
SMME	Small, Micro and Medium Enterprises
SOE	State-Owned Enterprise
UNIDO	United Nations Industrial Development Organisation
USAID	United States Agency for International Development
VAT	Value-Added Tax

1. INTRODUCTION

The important role that small contractors play in the social and economic development of a country is argued by various researchers and institutions (NCR 2011; DTI 2008; Khalique et al 2011; Abhor and Quartey 2010; Grant 2010). Small contractors contribute to the economy by creating employment opportunities, increasing capacity and empowerment and enabling the transfer of skills (Kobole 2009). It is therefore important that initiatives which support the development of small contractors are prioritised in a developing country (Khalique et al 2011 and Grant 2010), such as South Africa.

There are a variety of challenges which impact on the development and sustainability of small contractors in South Africa, as observed by Dlungwana et al (2002). Various researchers, such as Kulemeka, Kululanga and Morton (2015), Thwala and Phaladi (2009) and Malongane (2014), have reported on the poor performance of small contractors and the factors contributing to their poor performance. Small contractors are cited by these authors as lacking technical and managerial skills and resources, which significantly impacts on their ability to deliver projects. This realisation has led to the South African government to embark on developmental initiatives which facilitate the development of contractors and, in turn, build their capacity and competence within the construction industry (Dapaah and Musonda 2014).

In terms of these initiatives, the Construction Industry Development Board (CIDB) was established by an Act of Parliament in 2000 to improve the performance of the construction industry (CIDB 2000). The CIDB has proposed development programmes, driven by government institutions for selected construction contracts. Contractor development can occur in various forms; including, the provision of financial assistance, mentorship and training, as well as access to work opportunities (Jacquet 2002). The concept of contractor development programmes (CDPs) is not unique to South Africa. Jacquet (2002) and Dapaah and Musonda (2014) wrote that CDPs are some of the tools used to empower local contractors in various countries. Dapaah and Musonda (2014) cited research from Tanzania, Palestine and Lesotho to illustrate the extent of implementation of CDPs. In the case of South Africa, Thwala (2009)

studied several pre-1994 and post-1994 large-scale development programmes implemented in the country. CDPs can also be traced back to 1995 when the National Department of Public Works (NDPW) introduced programmes aimed at assisting contracting organisations owned by Historically Disadvantaged Individuals (HDIs) to develop their technical and managerial skills (NDPW 2007).

In spite of the intended benefits of CDPs, there appear to be insufficient reports on their effectiveness and whether they are beneficial to the end users and contractors (as observed by Dapaah and Musonda 2014). Two studies were conducted by the CIDB in 2009 and 2011 to assess the performance of existing programmes, focusing primarily on programmes located within public works departments (CIDB 2009, 2011a). The studies identified key success factors of the CDPs, challenges faced and lessons learned from these programmes. The studies noted that although certain successes were achieved by the CDPs, there were apparent failures. The noted failures are further detailed in Section 1.1 and Section 2.7.

This research seeks to investigate the effectiveness of a contractor development programme on a road construction project which was implemented by a state-owned enterprise (SOE) in the Eastern Cape. The investigation seeks to ascertain whether the CDP has been beneficial to the development of fourteen (14) contractors enrolled within the programme. The research studies the effectiveness of the CDP through collecting evidence on the training and work experience provided to the contractors as well as further analysing the contractor's CIDB grading and the improvement thereof after exiting the programme.

Research in this area is important since in 2013; the CIDB published a standard for indirect targeting which makes it mandatory for all public contracts to include "contractor participation goals" (CIDB 2013). This standard promotes enterprise development by allocating at least 5% of the project value on selected contracts to be undertaken by joint-venture partners or to be subcontracted to developing contractors that are further required to be beneficiaries of enterprise development support from the main contractor. This standard therefore encourages the incorporation of contractor development targets for public infrastructure construction projects.

The development of small contractors is especially significant in South Africa. In addition to the socio-economic backlogs which impact the country (such as poverty, unemployment and a declining skills base), the South African construction sector faces developmental challenges. The South African government has a mandate to improve the nature of the construction sector and to create an enabling environment, which encourages the development of small and emerging contractors.

1.1 Background

South Africa's post-apartheid democratic government has faced a variety of developmental challenges such as high levels of poverty, inequality in wealth and income, and skewed access to social services, education and employment opportunities (DTI 2008). Pre-democratic policies have also resulted in the marginalisation of HDIs which has prevented their participation in the economy. The post-apartheid government has recognised the need to redress the injustices which have prevented HDIs from playing a significant role in the economy. Several programmes and policies have been adopted by the South African government as instruments to empower and to enable HDIs to gain access to the various economic sectors (Olabode 2010).

The South African construction industry is one such sector where HDIs are being encouraged to participate in the main stream economy. In 2000, it was observed that although the South African construction industry had experienced significant growth due to increased investment in infrastructure, the growth had not been complemented by an increase in HDI enterprises (CIDB 2000). The South African government has placed emphasis on transforming the construction sector to enable the participation of emerging and small contractors, as observed by Ntuli and Dhiren (2013).

Although various interventions have been implemented to redress disparities in the construction sector, the industry is reported to be facing challenges of growing inequality, poor performance and lack of institutional capacity for small and emerging contractors. As early as 2002, Jacquet (2002) observed that the adoption of targeted procurement policies and preference of HDIs for execution of construction works contracts had inevitably resulted in an influx of HDI owned

companies which often lacked the technical and managerial skills required to implement projects. This realisation further necessitated the need for initiatives which create an enabling environment to redress disparities in the construction sector, and in-turn promote the improvement of performance of contractors.

In terms of these initiatives, the CIDB has proposed development programmes, driven by government institutions for selected construction contracts. In 2011, the CIDB, alongside the Department of Public Works, developed a new framework, the National Contractor Development Programme (NCDP), to alleviate the problems and lack of experience, capacity and business knowledge in order to assist and develop HDIs and emerging contractors in South Africa (CIDB 2011c). Subsequently, various provincial governments and other stakeholders established CDPs with objectives which were aligned with those of the NCDP (CIDB 2011a).

In spite of the intended benefits of CDPs, the CIDB commissioned two reports that noted some failures (CIDB 2009, 2011a). The CIDB reported the following:

> *However, while there have been some very notable successes in the growth of contracting enterprises, the overall success of CDPs is somewhat questionable* (CIDB 2009:39).
>
> *Despite their good intentions, Contractor Development Programmes have experienced several impediments towards their success. Typically, these include the selection of inappropriate entrants such as those with insufficient basic skills or those with motives not necessarily prioritising their development; inadequate or inappropriate training/skills development; lack of work opportunities to sustain the contractors; contractors being hampered by lack of access to finance; and the difficult industry environment even for established contractors. Most programmes also lack the proper monitoring and evaluation processes that would identify and address constraints such as the ones above (CIDB 2011a:iv).*

1.2 Problem statement

The South African government and other professional bodies in the construction industry have developed policies and programmes to develop contractors through structured developmental programmes. The rationale of CDPs is to provide a facilitated approach to the development of contractors through various programmes, often implemented by government departments such as the Department of Public Works in the development of infrastructure. Various research exercises have reported on the notable failures of CDPs (CIDB 2009, 2011a; Dapaah and Musonda 2014; Dlungwana and Rwelamila 2004). Previous studies report on the failures of CDPs from a programme/institutional perspective, but do not necessarily divulge information on the performance and development of contractors enrolled in the programme. This research acknowledges that there is existing research which evaluates the successes and failures of these development programmes. However, there is limited research which studies whether the programme has contributed sustainably to the development of the small contractors. Furthermore, limited research exists on contractor development initiatives implemented by SOEs.

The CIDB has reported on some of the causes of failure of CDPs (CIDB 2011a, also refer to the citation on page 4 of this document). The CIDB further stated that, as a result of the shortcomings of CDPs, the initiatives can easily result in being piecemeal only; i.e. job creation attempts which do not contribute sustainably to the development of the contractors (CIDB 2011a).

This study investigates whether a CDP has been effective in developing small contractors. This is done through an analysis of a case study of a road construction project, which was implemented by a SOE in the Eastern Cape, where small contractor development was incorporated in the project. In the case study under evaluation, a SOE required the main contractor to engage targeted enterprises and/or targeted labour in the performance of the contract. A total of fourteen (14) contractors were enrolled in the project's CDP. This research

investigates the development support provided to the contractors during implementation of the project.

1.3 Research questions

This research investigates the case study in order to determine whether the CDP has been effective in developing small contractors. The research answers the following questions:

- How was small contractor development implemented on the project implemented by a state-owned enterprise?
- Have the contractor's managed to progress and increase their CIDB grading since exiting the project?
- Have the contractors that were enrolled in the project's CDP sustained their enterprises after exiting the programme?

1.4 Research objectives

The main objectives of this research are:

1) To study the process through which small contractor development was implemented in a project, implemented by a state-owned enterprise.
2) To determine whether the contractors have increased their CIDB grading and remained sustainable since exiting the programme.
3) To identify shortcomings (if any) on the CDP process.

1.5 Assumptions

This research assumes that the small contractor development model, as applied in the case study, is similar to that outlined in the NCDP guideline document (CIDB 2011c). This assumption is reasonable since the case study under evaluation entailed various stages which are attributable to

CDPs, such as: pre-selection of contractors, tendering assistance, training, awarding of contracts and supervision of contractors (including on the job training) to undertake construction work.

1.6 Scope and limitations

This research considers fourteen (14) small contractors only, on one road construction project implemented by a state-owned enterprise in the Eastern Cape. The case study is selected on the following basis:

1) The overall project has a substantial capital budget of approximately R 1.2 billion. The scope of works in the case study was approximately R135 million, with the small contractor development component comprising approximately R 35 million of the capital budget. This capital budget enabled the implementation of a CDP for multiple contractors. This amount was further divided into smaller work packages to be completed by the small contractors. The cost that was paid directly to the small contractors for provision of labour could not be established from the information provided.

   Note: All amounts quoted are exclusive of Value-Added Tax.

2) The project incorporated a structured programme to develop small contractors which comprised of various stages that can be attributed to CDPs.

3) The project was implemented in an area with socio-economic challenges, i.e. Eastern Cape, South Africa, where the local economy is poorly developed and lacks local skills and capacity.

4) The project was implemented on a conventional public-private implementation method, where the SOE (public enterprise) engages a private entity to implement the construction project on behalf of the SOE. This is typical of the manner in which public infrastructure projects are implemented in South Africa.

5) This research also acknowledges that the success and sustainability of the small contractors may be influenced by other factors which are not necessarily linked to the CDP.

1.7 Importance of research

This research seeks to contribute to the efforts made by various institutions to integrate small contractor development into the implementation structure of infrastructure projects. It seeks to assist infrastructure project implementers, such as SOEs, to maximise social and economic development targets in infrastructure projects.

1.8 Organisation of the study

Chapter 1: Introduction

This chapter provides the introduction and background to the research. The problem statement is also defined as well as the research questions. The research objectives are also presented along with the research assumptions, scope and limitations. The importance of the research is also emphasised.

Chapter 2: Literature review

The chapter reviews relevant literature pertaining to small contractor development which includes an investigation into the role of small contractors in economic development, the nature of South Africa's construction industry and the basic premise of contractor development. A review of relevant legislation pertaining to CDPs is also presented. This chapter also conducts a review on the structure and implementation methods of some CDPs.

Chapter 3: Research method and case study

This chapter details the research method that was adopted in completing the research, including the tools and instruments used for data collection. The background to the case study is also provided in Chapter 3.

Chapter 4: Evaluation of small contractor development in the case study

The approach followed in developing the small contractors in the case study is investigated in Chapter 4. This chapter includes investigation of the targeting method and targeting criteria, contractor assessment, training and mentorship provided to the contractors and the monitoring

and evaluation process adopted. The status of the CIDB grading of the small contractors is also investigated. This chapter also provides answers to some of the research questions posed in the first chapter.

Chapter 5: Analysis and discussion of research findings

Based on the findings in Chapter 4, this chapter provides a further discussion and analysis on policies of CDP and on the overall approach to contractor development.

Chapter 6: Summary, Conclusions and Recommendations

Lastly, Chapter 6 summarises the study, draws the conclusion and provides recommendations. Areas for future research on the topic are also discussed in this final chapter.

2. LITERATURE REVIEW

2.1 Introduction

The literature review is important to this research as it offers historical insight into small contractor development and provides an overview of South African small contractor development initiatives to date. It analyses the content which other authors have covered the topic, therefore offering a basis for the evaluation of the current project.

This chapter provides the definitions of small and medium enterprises, contractor development, state-owned enterprises, potential emerging enterprises and historically disadvantaged enterprises in the context of this research. It reviews relevant literature pertaining to small contractor development which includes an investigation into the role of small contractors in economic development, the nature of South Africa's construction industry and the necessity for contractor development. A review of relevant legislation pertaining to the research is also highlighted. A review of literature on contractor development models is also conducted as a basis for comparison with the case study.

2.2 Definitions

2.2.1 Small and Medium Enterprises (SMEs)

According to Mofokeng (2010), small business in South Africa has been grouped as Small and Medium Enterprises (SMEs) and also as Small, Medium and Micro Enterprises (SMMEs). There is consensus amongst researchers that there is no universal definition for small and medium enterprises and that the definition varies across countries, banks and institutions (DTI 2008; Khalique et al 2011). Different definitions often refer to the number of employees as their distinctive criterion ; whilst others use annual turnover, ownership and management structure, or a combination of these stated definitions (USAID 2007; NCR 2011). In South Africa, the

National Small Businesses Act of 1996 (and subsequent amendments 2003, 2004) defines small enterprises as follows (Government Gazette 377 1996):

> *Small enterprise means a separate and distinct business entity, together with its branches or subsidiaries, if any, including co-operative enterprises, managed by one owner or more predominantly carried on in any sector or subsector of the economy mentioned in column 1 of the Schedule and classified as a micro-, a very small, a small or a medium enterprise by satisfying the criteria mentioned in columns 3, 4 and 5 of the Schedule.*

Schedule 1 in the stated Act defines various thresholds of classification across various sectors such as agriculture, mining and quarrying, manufacturing, wholesale trade, construction, etc. The definition for micro, very small, small and medium enterprises applicable in the construction sector has been extracted and is included in the Table 2-1:

Table 2-1: Threshold for the classification for Micro, Very Small, Small and Medium Enterprises

Sectors or sub-sectors in accordance with the Standard Industrial Classification (SIC)	Site or Class	Total full-time equivalent of paid employees (Less than)	Total annual turnover (Rm) (Less than)	Total gross asset value (fixed property excluded) (Rm) (Less than)
Agriculture	Medium	100	5.00	5.00
	Small	50	3.00	3.00
	Very small	10	0.50	0.50
	Micro	5	0.20	0.10
Mining and Quarrying	Medium	200	39.00	23.00
	Small	50	10.00	6.00
	Very small	20	4.00	2.00
	Micro	5	0.20	0.10
Manufacturing	Medium	200	51.00	19.00
	Small	50	13.00	5.00
	Very small	20	52.00	2.00
	Micro	5	0.20	0.10
Electricity, Gas and Water	Medium	200	51.00	19.00
	Small	50	13.00	5.00
	Very small	20	5.10	1.90
	Micro	5	0.20	0.10
Construction	Medium	200	26.00	5.00
	Small	50	6.00	1.00
	Very small	20	3.00	0.50
	Micro	5	0.20	0.10

Source: National Small Business Act of 1996 (and subsequent amendments 2003, 2004)

2.2.2 Potential emerging enterprise and Historically Disadvantaged Individual/Enterprises

The apartheid (pre-1994) government's system prohibited the majority of the country's citizens from participating constructively in South African companies (KZN Health n.d.). This legacy has resulted in the marginalisation and disempowerment of black people, such that there is a need to accelerate empowerment of the previously disadvantaged.

There are various references to "potential emerging enterprise" and "Historically Disadvantaged Individuals/Enterprises" throughout this research. Accordingly, it is beneficial to understand the definition in the context of this research. The Construction Industry Development Board Act (Act 38 of 2000) defines an "emerging enterprise" as an enterprise which is owned, managed and controlled by previously disadvantaged persons and which is overcoming business impediments arising from the legacy of apartheid (CIDB 2000). An "emerging sector" is defined as that sector of the construction industry which comprises emerging enterprises (CIDB 2000). The research considers an emerging contractor as an emerging enterprise in the construction sector.

According to Makhura (2011:28), an "emerging contractor" is a person or company operating as a contractor but with constraints in the way of development or those operating in the informal sector as contractors, with a desire to enter the mainstream of the economy. Makhura (2011), citing the Department of Public Works, added that an emerging contractor is defined as an enterprise owned, managed and controlled by a previously disadvantaged individual.

A historically disadvantaged individual (HDI) (also referred to as Previously Disadvantaged Individual (PDI)) appears in several pieces of legislation, including the regulations for the Preferential Procurement Policy Framework Act (Act 5 of 2000). An HDI is defined as follows:

> *Historically Disadvantaged Individuals (HDI)" means a South African citizen –*
> *(1) who, due to the apartheid policy that had been in place, had no franchise in national elections prior to the introduction of the Constitution of the Republic of South Africa,*

1983 (Act No 110 of 1983) or the Constitution of the Republic of South Africa, 1993 (Act No 200 of 1993) ("the Interim Constitution"); and/or

(2) who is a female; and/or

(3) who has a disability:

Provided that a person who obtained South African citizenship on or after the coming to effect of the Interim Constitution, is deemed not to be an HDI.

2.2.3 Contractor development

Contractor development occurs through the provision of infrastructure projects and consists of various facets; such as the provision of work experience to contractors, providing education, training and mentorship through joint venture partnerships and/or subcontracting (Jacquet 2002). Watermeyer, Jacquet and Noyana (2001) advocate that contractor development initiatives may range from those with an objective to incorporate the "emerging" contractors into the mainstream of the construction industry to those which lean towards job creation and poverty alleviation. The CIDB defines contractor development as "a deliberate and managed process to achieve targeted developmental outcomes that improves contractor grading status, performance and quality and equity and targeted ownership" (CIDB 2011c:3). Mohlala (2015) observed that this definition does not emphasise the development of contractor competence specifically in relation to factors such as technical qualifications, knowledge and experience. The definitions reviewed from available research contain a central theme for the definition of contractor development, which is the provision of assistance, financial, technical or other, with the intent to empower the targeted contractor. Kulemeka, Kululanga and Morton (2015) reported that the enabling process for the development of contractors includes: facilitating their access to the necessary resources to start and sustain their businesses and the removal of barriers to their entry into the market and to their growth. Malongane (2014) cited research by Ofori (research conducted in 1996) which observed that contractor development had more commonly been initiated and administered by government. Malongane (2014) added that in countries where executive capacity and resources exist, professional and trade institutions also played a role in implementing contractor development.

2.2.4 State-Owned Enterprises (SOEs)

It is important to emphasise the multi-faceted role of SOEs in the economy. An understanding of the concept of SOEs is relevant to this research since an SOE was the implementing body of the project in the case study under evaluation.

SOEs are referred to as being independent bodies, partially or wholly owned by government (Western Cape Government 2014). The European Organisation for Economic Co-operation and Development (OECD) refers to SOEs as frequently being prevalent in utilities and infrastructure industries whose performance is vital to broad segments of the population, such as in the energy, transport and telecommunication sectors (OECD 2005). A further report published by OECD states that SOEs play a vital role in a country in terms of the direct services they provide (Sultan Balbuena 2014).

Some of South Africa's SOE's are: Eskom, which generates and distributes approximately 95% of South Africa's electricity, making up 60% of the total electricity consumed on the African continent; Transnet which is the largest and most crucial part of the freight logistics chain in South Africa; SANRAL which finances, improves, manages and maintains South Africa's national road network; and PetroSA, a national oil company, which owns, operates and manages the government's assets in the petroleum industry, amongst others (Western Cape Government 2014).

In addition to delivering on their mandated services, SOE's have a duty to implement government policies which promote the improvement of socio-economic conditions of the country. The South African Department of Public Enterprises (a government body which governs SOEs), published the Protocol on Corporate Governance in the Public Sector, which states that SOE's corporate plans should ensure that the SOE contributes to job creation, rural development, urban renewal, poverty alleviation, empowerment of women, skills and management development and education (Sultan Balbuena 2014). A report published by OECD

(Sultan Balbuena 2014) adds that SOEs are among the main sources of urban employment in developing countries and they can thus play an important role in upgrading labour skills and raising social standards through appropriate policies of corporate responsibility.

2.3 Small enterprises and economic development

The important role of small enterprises in the development of the economy is widely acknowledged by various researchers and institutions (NCR 2011; DTI 2008; Khalique et al 2011; Abhor and Quartey 2010; Grant 2010). USAID (2007) reported that a healthy SME sector contributes to the economy through creating employment opportunities, generating higher production volumes, introducing innovation and entrepreneurship skills. Croswell and McCutcheon (2001) observed that small businesses generate more employment per unit of expenditure than large companies. There is a general consensus, as observed by Abhor and Quartey (2010), that the performance of SMEs is important for both economic and social development of developing countries. Hove and Banjo (2015) wrote that small enterprises are perceived to be important as instruments of job creation, income generation, economic growth and encouragement of entrepreneurship, due to their ability to work at lower prices and in more remote locations. Small enterprises also contribute to a number of additional benefits, such as increased spending in the local economy through participation of local enterprises, a growing entrepreneurship pool among the country's citizens and improved delivery of infrastructure through the use of competent contractors, according to Dlungwana et al (2000).

The important role of small and medium enterprises is also emphasized in research conducted by McCutcheon in 2001 (also cited by Makhura in 2011). McCutcheon (2001) stated the following:

> *Small- medium- enterprises can be powerful generators of income and employment opportunities since they generally use less capital investment per unit of output than larger enterprises.*

Small- medium- enterprises can be more competitive than larger companies on certain types of small, disparate and geographically dispersed projects because they generally have relatively low overheads.

The relatively low entry constraints in terms of skills (technical and managerial) and capital requirements make small- medium- enterprise contracting an important entry point for historically disadvantaged persons into the construction industry.

Abhor and Quartey (2010) referenced research conducted by UNIDO in 1999 which found that SMEs represent over 90% of private business and contributed to more than 50% of employment and Gross Domestic Product (GDP) in most African countries. Abhor and Quartey (2010) cited various researchers who found that 91% of the formal business entities are SMMEs and that they contribute between 52% and 57% of GDP and provide approximately 61% of employment.

Table 2-2 is extracted from research conducted by NCR (2011) which investigated the contribution of SMEs to the GDP in South Africa. It is based on an earlier study conducted in 2004, which estimated that 99.3% of South African businesses were SMEs and that these SMEs accounted for 53.9% of total employment and contributed 34.8% of GDP (NCR 2011). This includes survivalist enterprises.

Table 2-2: Contribution of SA SMEs to the economy

%	Survivorlist	Micro(0)	Micro (1-4)	Very Small	Small Enterprises	Medium Enterprises	Large
Numbers of Firms	19.6	31.3	19.8	20.5	6.8	1.3	0.7
Employment	2.2	3.5	6.5	13	15.7	13	46.1
GDP	5.8			13.9		15	65.2

Source: NCR 2011:14 (data from Falkena et al 2004)

The study conducted by NCR provides the statistics in Table 2-3 which gives an indication of the percentage of employment contributed by SMEs (NCR 2011). It emphasises the important role of SMEs in improving employment conditions in a country.

Table 2-3: SME participation and contribution to the economy (selected countries)

Country Name	Structure of the MSME Sector (% of all MSMEs)			SME Participation in the Economy		
	Micro	Small	Medium	SMEs	SMEs per 1,000 people	SME employment (% total)
Brazil	93.9	5.6	0.5	4 903 268	27.4	67.0
China	n/a	n/a	n/a	8 000 000	6.3	78.0
Egypt	92.7	6.1	0.9	1 649 794	26.8	73.5
United Kingdom	95.4	3.9	0.7	4 415 260	73.8	39.6
Ghana	55.3	42.0	2.7	25 679	1.2	66.0
India	94.0	3.3		295 098	0.3	66.9
Mexico				2 891 300	27.9	71.9
Malawi	91.3	8.5	0.2	747 396	72.5	38.0
Russian Federation				6 891 300	48.8	50.5
United States	78.8	19.7	1.5	5 868 737	20.0	50.9
South Africa	92.0	7.0	1.0	900 683	22.0	39.0

Source: NCR 2011:14 (data from World Bank (2007))

The research cited in this section provides an understanding of the significant contribution of small enterprises towards the development of the economy, thus this justifies the need to create an enabling environment to strengthen growth and performance of small enterprises.

As early as 1995, the democratically elected government in South Africa realised the importance of SMEs to the economy. This is evident in the White Paper on National Strategy for the Development and Promotion of Small Business in South Africa (1995), which was succeeded by the National Small Business Act 1996 (Government Gazette 377, 1996). The South African government has, at various levels, undertaken initiatives to promote the growth of SMEs (Abhor and Quartey 2010; DTI 2008). This includes the national SMME development programme articulated in the Integrated Small Enterprise Development Strategy, provincial SMME policies, skills development policy, sector development strategies, local economic development policies and black economic empowerment (DTI 2008). All these initiatives have significant SMME development components.

This research focuses on small enterprise development in the construction sector; namely, contractor development.

2.4 South Africa's construction industry and the CIDB

Infrastructure development is considered as a vehicle for social change (Kobole 2009). Accordingly, in developing nations such as South Africa, it is important that infrastructure projects are implemented in a manner such that they contribute to improving social and economic conditions. There is a general consensus that the construction industry is an important player in a country's economy, as observed by various researchers (also cited by Dlungwana et al 2000; CIDB 2011b, CIDB 2012).

Despite the identified benefits of a thriving construction industry, South Africa's construction industry is reported as facing a variety of challenges in its endeavour to deliver infrastructure projects (Dlungwana et al 2000). Dlungwana et al (citing a document by the Department of Public Works which was published in 1999) reported that the industry has been impacted by a sharp decline in employment over the past 20 years, slow delivery of public sector projects due to poor capacity in both the public sector institutions and the contractors, low productivity and poor quality workmanship and low profit margins for contractors (Dlungwana et al 2000). Hauptfleisch, Verster and Lazarus (2008) wrote that, despite the economic growth of the sector over the past decades which stimulated development, there has been a lack of capacity of contractors which is reflected in general skills shortages and lack of support structures for entrepreneurial development. Hauptfleisch, Verster and Lazarus (2008) added that the industry suffered from a lack of capacity of HDIs and that these individuals are in need of support to improve their entrepreneurial development, managerial and technical skills, in order to become self-reliant. The growing disparities in the sector substantiate the need to improve skills and performance and to generate institutional capacity of small contractors participating in various sectors of the economy.

South Africa's government has adopted various regulatory frameworks aimed at addressing the disparities in the construction sector, in order to build capacity of construction enterprises (CIDB

2011a). These legal frameworks are complemented by sector specific programmes aimed at encouraging transformation in the sector. Several key legislative imperatives are relevant in the South African context in relation to contractor development, as listed below (CIDB 2011a:15 and also summarised by Hauptfleisch, Verster and Lazarus 2008:3):

- National Small Business Act, No. 102 of 1996
- Skills Development Act, No. 97 of 199
- Public Finance Management Act, No. 1 of 1999 as amended.
- Preferential Procurement Policy Framework Act, No. 5 of 2000
- CIDB Act, No. 38 of 2000, in particular Chapter 3 of the Act (38 of 2000)
- Black Economic Empowerment Policy and the Construction Sector Broad-Based Black Economic Empowerment Charter, 2003
- Procurement Risk Management Policy, 2003
- South Africa's Economic Strategy for Broad Based Black Economic Empowerment, March 2003
- Breaking New Ground on Housing Delivery: A Comprehensive Plan for Creation of Sustainable Human Settlements, 2004.

These are some interventions that the government has proposed to create an enabling environment and to improve performance of small contractors in the industry.

The CIDB is an important intervention to the transformation of the construction sector. The CIDB was mandated to provide leadership to stakeholders and to stimulate sustainable growth, reform and improve the construction sector and to play an enhanced role in the country's economy (Ntuli and Dhiren 2013). In accordance with the Act of 2000, the CIDB has established a register of contractors which grades and categorizes contractors according to their works and financial capability (CIDB 2011b). The register considers contractors in nine (9) grading levels, against which the contractors can be registered. Mofokeng (2010) wrote that a grade determines the maximum Rand value of a project, as well as the type of construction works a contractor is able to perform. Contractors are required to register with the CIDB in order to be assessed for award of contracts within the public sector. According to the CIDB Act of 2000, no public sector

client may award construction contracts to a contractor who is not registered (Mofokeng 2010). Table 2-4 shows the CIDB grading levels, as well as the contract value that each contractor is able to undertake, per grade. The CIDB further categorises the registered contractors according to classes of works i.e. CE – Civil Engineering, GB – General Building, as indicated in Table 2-5. With reference to Table 2-5, the CIDB recorded (as at December 2010) that 88% of contractors were graded as 1 and only 12% were graded as 2-9 (CIDB 2011b).

Table 2-4: CIDB grading levels

GRADE	MAXIMUM VALUE OF CONTRACT THAT A CONTRACTOR IS CONSIDERED CAPABLE OF PERFORMING
1	R 200 000
2	R 650 000
3	R 2 000 000
4	R 4 000 000
5	R 6 500 000
6	R 13 000 000
7	R 40 000 000
8	R 130 000 000
9	> R 130 000 000

Source: Mofokeng 2010:88 (citing CIDB Annual Report, 2010/11)

Table 2-5: CIDB register of contractors

Grade	CE	EB	EP	GB	ME	SW	Total Grades
1	21,243	1,093	2,449	57,119	2,743	11,779	96,426
% of total	83%	65%	80%	92%	79%	92%	88%
2	1,497	138	107	1,988	184	473	4,387
3	511	88	50	552	83	99	1,383
4	759	151	147	809	121	128	2,115
5	594	143	172	544	185	193	1,831
6	624	40	65	542	76	53	1,400
7	218	21	33	207	35	27	541
8	79	2	13	72	17	6	189
9	40	4	16	28	21	12	121
Total (2 -9)	4,322	587	603	4,742	722	991	11,967
% of total	17%	35%	20%	8%	21%	8%	12%
Total	25,575	1,680	3,052	61,861	3,465	12,770	108,393

Source: CIDB 2011b:11

There has been an increase in the number of registered contractor annually (Mofokeng 2010). This growth trend in the number of contractors can also be traced back from the year 2004, as observed by Mofokeng (2010). Mofokeng found that (citing the CIDB register of contractors) as at 2011, there was a total of approximately 99,000 Grade 1 and approximately 13,000 Grade 2 to 9, contractors registered. The increase is also evident when compared with the figures from Table 2-5.

A challenge facing the construction industry is the inability of smaller contractors to move up the grades to handle bigger complex projects. Ntuli and Dhiren (2013) stated that the challenge with smaller graded contractors is that they remain in the same grading, as they are not positioned to win projects beyond their permissible contract value. This restricts their flow upwards (to higher grades). The CIDB reports that an estimated 80% of government infrastructure spend is concentrated at CIDB Grades 7 to 9 level contractors, where projects are accessed by approximately 11% of CIDB registered contractors (CIDB 2012). The CIDB (CIDB 2012) adds that the industry is characterised by a few large (Grade 7 to 9) companies with substantive financial and technical resources, and due to low barriers to entry, a host of smaller enterprises (Grades 1 to 6), many of which face financial, managerial and technical constraints. The CIDB has recognised this barrier and has concluded that if no further interventions are implemented, there will be limited improvement in the sector. For this reason, the CIDB has proposed development programmes which are driven by clients and established contractors, for selected contractors (Ntuli and Dhiren 2013; Hove and Banjo 2015). Development programmes are required to boost the delivery capacity and capability, as well as sustainability of emerging contractors, who constitute an estimated 80% of CIDB registered contractors (CIDB 2012).

One such development programme is the National Contractor Development Programme (NCDP) which was developed by the CIDB, alongside the National Department of Public Works (NDPW) (CIDB 2009). The objectives of this framework is to alleviate the problems of lack of experience, capacity and lack of business knowledge, in order to assist and develop historically disadvantaged individuals and small (and potentially emerging) contractors in South Africa (Ntuli and Dhiren 2013).

Apart from the development of the NCDP, there have also been other contractor development initiatives, pre- and post-1994. Thwala (2009) observed that large-scale projects and programmes related to infrastructure development for employment creation have been carried out since the early 1980s. The NDPW has been championing contractor development post 1994 (CIDB 2011c). Malongane (2014) reported that, initially, the NDPW established the Emerging Contractor Development Programme to improve participation of black contractors in the construction industry through direct government contracting. Malongane (2014) further stated that the Expanded Public Works Programme (EPWP) was later conceptualised by the Cabinet in order to enhance job creation in the public sector, but at the same time afforded government the opportunity to improve its contractor development initiatives. Malongane (2014) wrote that simultaneously, the Contractor Incubator Programme (CIP) was conceptualised by the NDPW. According to Malongane, the CIP is based on the principles of advanced enterprise development with the aim of shifting the focus of contractor development from small contracts to more substantial contracts, as well as to higher levels of contracting. Consequently, various departments within government and construction role stakeholders have established their own CDPs, as highlighted by the CIDB in the Status Quo Report (CIDB 2009).

2.5 Targeting for public infrastructure projects in South Africa

As mentioned earlier, construction is widely accepted as a vehicle for economic development and social change. The CIDB posits that investment in infrastructure underpins the economic growth of the country (CIDB 2012). The CIDB (2012) reported that the public sector, which comprises of general government and SOEs, is a major contributor to infrastructure development. It is reported that as of 2012, the public sector accounted for around R150-billion in civil engineering projects and R25-billion in residential and non-residential building works annually (CIDB 2011). Given the magnitude of government's infrastructure budget, targeted procurement (also referred to as preferential procurement) through engineering and construction works contracts, provides an opportunity to promote growth and transformation of the construction industry and to achieve certain socio-economic objectives (Watermeyer et al 1998).

The Implementation Manual on the Use of Targeted Procurement to Implement an Affirmative Procurement Policy (reported by ILO 2002:1) defines targeted procurement as "a system of procurement which provides employment and business opportunities for marginalized individuals and communities, enables procurement to be used as an instrument of social policy in a fair, equitable, competitive, transparent and cost-effective manner and permits social objectives to be quantified, measured, verified and audited".

Malongane (2014), citing Nkado (2000), described targeted procurement as a system aimed at providing employment and business opportunities for marginalised individuals and companies, at the same time allowing social objectives to be linked to procurement. Malongane (2014) added that the process afforded opportunities for targeted enterprises lacking capacity, resources, or expertise to perform contracts in their own right, to participate in the process.

The ILO reported that, in both developed and developing countries, targeted procurement is commonly employed as an instrument to effect socio-economic change through the promotion of employment and business opportunities to marginalized sectors of society (ILO 2002). The ILO (2002) further stated that in South Africa specifically, certain organs of the state, particularly those involved in infrastructure delivery, integrate preferential procurement into their procurement of goods, services and works, through targeted procurement.

In the context of South Africa's construction industry, in addition to the financial and technical threshold, the targeted procurement system employed takes into account the inclusion of socio-economic aspects in the bidding process for procurement of public sector infrastructure (ILO 1999). The ILO (1999) stated that the contracting agency provides resource specifications requiring the contractor to meet socio-economic objectives, such as: the inclusion of local labour; targeted groups of workers; local resources (including local artisans, local materials); certain categories of small, micro and medium-sized enterprises to be engaged specified in the tender.

The ILO reported that this targeted procurement system is such that the contracts are awarded to the "best technical and financial offer" to meet development objectives (ILO 1999). However, some research studies have found that this is not the case. For instance, in a research study

conducted by Mohlala (2015), it was found that the financial offer always takes precedence over technical abilities. Mohlala (2015), citing Tao and Kumaraswmay (2012) and Marzouk et al (2013), found that most clients regarded the financial offer as the most important criteria for appointment of contractors and are thus interested in the lowest bidder. Mohlala (2015) further stated that that the evaluation process did not consider the contractor‘s technical competence in relation to their qualifications. Mohlala (2015) however acknowledged that the contractor’s experience, which is another measure of competence, is included in the evaluation process.

Targeted procurement can occur in various forms in the construction industry. In South Africa, for instance, larger scale contractors can be used to manage and grow smaller emerging firms through sub-contracting or joint venture relationships. The appointed main contractor supplies training, materials and mentoring to smaller emerging firms. Watermeyer et al (1998) wrote that targeted procurement strategies compelled medium and large enterprises to either embrace employment-intensive technologies or to outsource to smaller companies, specialising in such technologies, in order to secure a competitive advantage. It is not clear whether this philosophy has been successful.

Despite the intended benefits of the targeted procurement system, there are various research exercises that highlight the number of problems associated with the manner in which targeted procurement is being implemented in South Africa. This is also further discussed and investigated in a study which was jointly commissioned by the Department of Public Works, the International Labour Organisation and the Development Bank of Southern Africa (ILO 2002). The study, conducted in 2002, assessed the effectiveness of targeted procurement and whether the socio-economic benefits that targeted procurement was designed to deliver were being realised (ILO 2002). The study found that the problems associated with the implementation of targeted procurement ranged from poor targeting and inadequate planning, through to the large number of specifications and conditions associated with infrastructure tenders as well as a lack of monitoring and evaluation (ILO 2002). The researchers also suggested that a large number of officials in the public sector seemed to not understand targeted procurement and the necessary monitoring requirements.

In a study conducted by Ambe and Badenhorst-Weiss (2012), it was found that targeted procurement in the public sector South Africa faces various impediments. The study listed the following impediments:

- *Lack of proper knowledge, skills and capacity to implement the procurement processes*
- *Non-compliance with policy and regulations*
- *Inadequate planning and the linking of demand to the budget*
- *Accountability, fraud and corruption*
- *Inadequate monitoring and evaluation of supply chain management*
- *Unethical behaviour*
- *Ineffectiveness of the B-BBEE policy*

Public sector procurement in the construction industry is governed by the Constitution of the Republic of South Africa, Preferential Procurement Policy Framework Act (PPPFA), the Broad-Based Black Economic Empowerment Act and the Construction Industry Development Board Act. The regulatory frameworks which underpin public sector procurement are discussed in the sections that follow.

2.5.1 Constitution of the Republic of South Africa Act (No. 108 of 1996)

Section 217 in the Constitution of the Republic of South Africa Act No. 108 defines the approach to procurement (the Constitution of RSA, No. 108 of 1996). It further provides for the advancement and protection of HDIs. According to section 217, when organs of the state enter into a contract for the provision of goods and services, this must be done in accordance with the system that is fair, equitable, transparent, competitive and cost effective (the Constitution of RSA, No. 108 of 1996). The Constitution further states that an organ of the state can implement a procurement policy providing for the protection and advancement of persons or categories of persons disadvantaged by unfair discrimination. Malongane (2014) wrote added that this legislation has led to the development of targeted procurement policies such as the Preferential Procurement Policy Framework Act of 2000 (PPPFA).

2.5.2 Preferential Procurement Policy Framework Act of 2000 (PPPFA)

The Preferential Procurement Policy Framework Act (PPPFA) of 2000 is a legal framework for public sector procurement developed in terms of Section 217 of the Constitution of the Republic of South Africa (PPPFFA No.5 of 2000). The Act provides a framework within which procurement policies must be implemented. It requires organs of the state (i.e. those responsible for procurement) to establish their preferential procurement policy and to implement it within a framework (PPPFFA No.5 of 2000). The Act provides for the advancement of black people, women, youth and people living with disabilities through the awarding of preference points to those tenderers which display advancement of these groups within their firms (PPPFA No.5 of 2000). The B-BBEE codes are therefore also aimed at complementing the PPPFA to ensure that scorecard targets of B-BBEE are met.

Since the establishment of the Act, there have been some noted challenges facing the implementation of the policy. For instance, Magoro and Brynard (2010) studied the difficulties associated with the implementation of the preferential procurement policy with particular focus to the low-cost housing sector. Magoro and Byrnard (2010) found ten (10) key factors affecting the implementation of the PPPFA. This includes: the absence of effective implementation strategies, absence of security vetting when selecting contractors, corruption within the procurement process, inefficient monitoring and evaluation mechanisms, inadequate involvement by government, unmonitored project managers working for the government departments, a shortage of staff to oversee the implementation at project level, lack of resources, limited capacity to monitor the works and political interference.

Hlakudi (2012) found key themes when investigating the benefits of the preferential procurement policy specifically focusing on SMMEs. Hlakudi (2012) found that the factors affecting the implementation of the PPPFA include lack of transformation in strategic sectors, limited resources available to assist SMMEs, insufficient support to facilitate access to procurement

markets, abnormalities in preferential procurement procedures, inadequate support environment for SMMEs, inconsistent preferential procurement legislation and procurement fraud and corruption (Hlakudi 2012).

It is noteworthy that when considering the literature reviewed relating to the PPPFA, there appears to be an absence or lack of emphasis on the technical competencies of the targeted groups. Policies on procurement reforms are largely focused on ownerships and establishing profit making businesses.

2.5.3 Broad-Based Black Economic Empowerment Act (No. 53 of 2003)

The Broad-Based Black Economic Empowerment Act No. 53 of 2003 provides a legal framework for the promotion of economic empowerment to marginalised black South Africans (B-BEEE Act 53 of 2013). The Act defines, 'broad based economic empowerment' of all people who were previously marginalised, particularly black people (Africans, Indians, and Coloureds) including women, youth, people living in rural areas, as well as people with disabilities. The socio-economic strategies of the Act are to increase black ownership including management of businesses; address equal representation in the workplace; preferential procurement; facilitate community and worker ownership of 'enterprises and productive assets'; develop skills; and foster investment in black owned businesses. The Act aims to reverse the historical marginalisation of black South Africans which prevented their free contribution to the mainstream economy, due to apartheid policies. The B-BBEE Act provides for the gazetting of transformation charters and the issuing of generic and sector Codes of Good Practice which are a vehicle for the advancement of black economic empowerment. According to the Eastern Cape Province Department of Roads and Transport (2008), the B-BBEE Act seeks to strengthen a shared economy in order to meet the needs of all South Africans and significantly minimise the inequality between citizens, irrespective of the race, in terms of skills and opportunities within the shortest possible time frame.

The construction sector finalised its Transformation Charter in January 2006 which aims to advance B-BBEE in the construction industry (Public works 2006).

Since the introduction of the B-BBEE Act, there have been various challenges encountered in implementation. One of the challenges identified by the DTI (n.d.) with the implementation of B-BBEE is “fronting”. The DTI defines fronting as a deliberate circumvention or attempted circumvention of the B-BBEE Act and the Codes (DTI n.d.). The DTI further identifies some common fronting practices as follows (DTI n.d.):

- *Window-dressing: This refers to cases in which black people are appointed or introduced to an enterprise as tokens to meet the B-BBEE scorecard and where the individuals are:*
    - *Discouraged or prevented from participating substantially in the core activities of an enterprise; and*
    - *Discouraged or prevented from participating substantially in the stated areas and/or levels of their participation;*
- *Benefit Diversion: This includes initiatives implemented where the economic benefits received as a result of the B-BBEE Status of an enterprise do not flow to black people in the ratio as specified in the relevant legal documentation.*
- *Opportunistic Intermediaries: This includes enterprises that have concluded agreements with other enterprises with a view to unduly leverage the opportunistic intermediary's favourable B-BBEE status.*

Janssens et al (2006), also cited by Orton (2008), observed that B-BBEE had resulted in some pitfalls. The study found that there is a risk that the policy will result in the white elite being replaced by the black elite, which does not necessarily result in "broad-based" empowerment. Janssens et al (2006) further observed that “assigning previously disadvantaged individuals to positions or tasks without possession of relevant qualifications and skills had led to frustration and a negative effect on economic efficiency of businesses, and has led to bankruptcy in others”. It is also a well-known fact that although ownership can be changed fairly quickly technical competence, experience and capacity are developed over time. Thus, the process of empowering black owned business is undermined when development is accelerated.

2.5.4 Construction Industry Development Board Act (No. 38 of 2000)

The CIDB Act 38 of 2000 legislates the establishment of construction registers of contractors and projects which facilitate public sector procurement and promote the assessment and evaluation of best practice on construction contracts. The Act also legislates the establishment of best practice contractor recognition schemes which promote contractor development and monitor contractor performance. The CIDB plays a role in issuing practice notes which ensure that client departments, such as the Department of Public Works and public entities, adopt best practices which ensure the standardization of public sector procurement across the country (Eastern Cape Province Department of Roads and Transport 2008:2).

2.5.4.1 CIDB regulations indirect targeting for SOEs

The CIDB published a standard for indirect targeting which makes it mandatory for all public contracts to include "contractor participation goals" (CIDB 2013). This standard promotes enterprise development by allocating at least 5% of the project value on selected contracts to be undertaken by joint-venture partners or to be subcontracted to developing contractors, such that they are also beneficiaries of enterprise development support from the main contractor. This standard calls for the incorporation of contractor development targets for state infrastructure construction projects.

2.6 Review of contractor development

2.6.1 Contractor development models

Dlungwana and Rwelamila (2004) define a contractor development model as a structured methodology comprising of measures designed to assist managers of contractors to develop their technical and managerial skills and thus grow their business enterprises. The development of contractors through structured models (and/or programmes) is an international phenomenon.

There is a wide range of contractor development frameworks with varying development philosophies implemented to strengthen and enhance the performance and competitiveness of contractors. This is also evident in research conducted by McCutcheon in 1979 as well as in research by Croswell and McCutcheon in 2001.

Malongane (2014) cited research conducted by Ofori which found that initiatives for developing construction companies in poorer countries began as early as the 1970s. According to Ofori (cited by Malongane 2014), this occurred when it became apparent that the performance of companies was a major impediment in the national socio-economic development efforts of these countries. Research conducted by Watermeyer, Jacquet and Noyana (2001), Jacquet (2002), Dlungwana et al (2000), Musonda (2014), Croswell and McCutcheon (2001) and Kobole (2009) has explored CDPs implemented in countries such as Tanzania, Botswana, Malaysia, South Africa, Kenya, Ghana, Zambia, Botswana and Malawi.

Various researchers acknowledge that CDPs differ between countries, due to varying objectives and expectations. In 2001, Watermeyer, Jacquet and Noyana (2001) observed certain contractor development philosophies which have evolved over the years. According to Watermeyer, Jacquet and Noyana (2001), there have been contractor development philosophies which:

- *expose building contractors to a formally structured entrepreneurial development programme coupled with continuous on-site practical guidance*
- *provide support systems to contractors who had previous contractual experience; allow them to make mistakes and then react to these mistakes by showing them where they went wrong*
- *select trainees, train them for several weeks, allow them to tender on simple contracts and allow them to progress to more demanding contracts once they had established their credibility*
- *provide technical and managerial counselling and training to labour only trade contractors and encourage growth from a micro-enterprise to a large contractor*
- *provide pro-active continuous management support and "on-the-job" training while contractors develop commercial, managerial and administrative skills, credibility in*

commercial circles, and experience in pricing complete contracts, while accepting increasingly greater risk and contractual responsibility.

There is no indication in literature as to which philosophy yields better result or is the most preferred. Furthermore, there is no indication of how successful contractors have evolved throughout the years based on the different philosophies. The literature is also not prescriptive on the level of basic education, technical qualification and experience of the trainee contractor prior to admission into a development programme.

The CIDB's NCDP distinguishes between two development models, namely; development of contractors through a CDP or development through a procurement driven developmental model (CIDB 2011c).

The first model is defined in the NCDP summary framework document as follows (CIDB 2011c:11):

- *Contractor Development Programmes (CDPs): A CDP is defined within the NCDP as an entity established for the purpose of providing developmental support to contractors. Contractors who participate within CDPs receive structured developmental support which is targeted to achieve predetermined developmental objectives.*

In the aforementioned model, the developing contractor within the CDP is provided with work opportunities, typically through direct contracts. The CIDB asserts that the structured developmental support could be provided by the government institution that is providing the work opportunities, or could be outsourced to a developmental institution. This model is referred to as "direct targeting" (CIDB 2011c:11). This model has been adopted by public works departments such as the National Department of Public Works Contractor Incubation Programmes, Department of Public Works in various provinces such as the Eastern Cape, Kwazulu Natal and Western Cape as observed in the baseline study of CDPs conducted by the CIDB (CIDB 2011a).

The second model referred to in the NCDP summary framework document is defined below (CIDB 2011c:11):

- *Procurement driven developmental outcomes: This is defined within the NCDP as a procurement model that targets developmental support and developmental outcomes to developing contractors.*

In this type of model, the developing contractor receives developmental support either as a main contractor, as a joint-venture partner or as a sub-contractor. The CIDB states that this model could either be legislated or adopted through a department's internal policy formulation processes. The NCDP refers to such a model as "indirect targeting" (CIDB 2011c:11). This investigation report considers a CDP which is implemented based on an indirect targeting model.

The CIDB has noted some challenges facing the implementation of the NCDP, as evident in the progress report published in 2015 (CIDB 2015c). Some of the challenges that the CIDB has encountered are as follows (CIDB 2015c):

- *There has been a slow pace of the uptake of the NCDP into supply chain management policies*
- *There was inadequate institutional capacity in the public sector to allocate, target and spend budgets*
- *There was a lack of proper monitoring and evaluation systems, despite policies put in place*
- *Delayed payment to contractors was a major challenge which had a crippling effect on growth in the emerging sector*
- *Collusion among cartels and corruption*
- *As well as the fact that the Contractor Development Programme was not mandatory but at the 'will' of the clients.*

The CIDB status quo report (CIDB 2009) states that no single contractor development model applies to development across all grades of contractors and all levels of business maturity.

Rather, different models are more appropriate to different levels of development. The CIDB further classifies the structure of CDPs into four broad groups which are dependent on the grading as follows (CIDB 2009):

- *EPWP Learnership type models for, typically, Grade 1 and 2 construction workforce development;*
- *Emerging Contractor Development Programmes (ECDPs) for, typically, Grade 2 to 3 emerging contractors, incorporating predominately mentorship models supported by formal business and technical training;*
- *Enterprise Development Programmes (EDPs) for, typically, contractors in Grades 3 to 6 who exhibit potential to develop; and*
- *Programmes focusing on performance improvement of established contractors in, typically, Grades 4 to 7.*

Hove and Banjo (2015) also provided the classification in tabular format as shown on Table 2-6:

Table 2-6: Contractor development models

Model	Description
EPWP	Learnership type models meant for the development of the Grade 1 and 2 construction workforce
ECDPs	Emerging Contractor Development Programs meant for Grade 2 to 3 ECs
EDPs	Enterprise Development Programs for, typically, contractors in Grades 3 to 6 who exhibit potential to develop.
IECDM	Realised in the improvement of business management skills, tendering skills, business growth, CIDB grading and increased employment chances
SACEM	Programs focusing on improving the performance of established contractors in, typically, Grades 4 to 7, such as the Contractor Incubator Programmed in line with the SA Construction Excellence Model

Source: Hove and Banjo (2015:178)

The research by Hove and Banjo (2015) provides only a recommendation on contractor development models based on the CIDB grading of the contractor as well as the intended outcomes of the programme. The literature does not refer to practical cases which indicate the success of the stated models.

2.6.2 Structure of contractor development programme

As demonstrated in previous sections, there appears to be a general consensus by various researchers that there is no uniform approach to contractor development. Watermeyer, Jacquet and Noyana (2001) further stated that CDPs should be linked to the prioritised needs of the country's construction industry, or the implementing organisation. Despite the unique nature of CDPs, certain common fundamental principles exist on which CDPs are based (as observed by Kobole 2009). Kobole (2009) postulated that typical models of CDPs are centred around the need to focus development efforts on small and medium-sized contractors. Kobole summarised key facets which relate to the functioning of CDPs as follows:

- *CDPs comprise of contractor selection and registration. This ensures that the right type of contractors participate in delivering construction products;*
- *CDPs comprise of some form of training and mentoring. This ensures that the developing contractor gains a basic ability to manage their enterprises on a sustainable basis;*
- *CDPs comprise of continuous contractor performance assessment, improvement and grading. This ensures that contractors become competitive in providing construction goods. Continuous grading validates the changing status levels of contractors as performance improves or deteriorates.*

The development support initiatives provided or arranged by clients (also referred to as capacity building initiatives) to contractors is an important component of a CDP. Part A of the Eastern Cape CDP protocol document (Eastern Cape Province Department of Roads & Transport 2008) recognises capacity building as the provision of development of technical skills and soft skills, mentorship/contract management support, financial and business training and organisational development.

The CIDB NCDP framework document provides a guideline for implementing CDPs (CIDB 2011c) which aligns with the findings by Kobole (2009). Figure 2-1 depicts a typical structure of CDP as extracted for the NCDP framework document. Figure 2-1 shows a CDP as comprising of six facets. This is further elaborated below:

1) Programme strategy and targeting: The NCDP summary framework document identifies targeting of specific contractors as forming an integral part of the design of a CDP (CIDB 2011c). This framework document suggests that failure to define the strategy and target of the CDP will not result in realisation of the goals of the CDP. Defining the strategy includes establishment of targets for contractor development, developing the criteria for inclusion and exit strategy (Kobole 2009). The strategy and target should align with the envisaged developmental outcomes.

2) Contractor assessment: This relates to the selection of contractors who meet the entry level requirements in line with the focus of the CDP in order to determine their developmental needs (CIDB 2011a). The entry requirements should be in line with the needs of the project/programme.

3) Work opportunities: Central to a CDP is the provision of sustained work opportunities (also observed by Kobole 2009). It is important to note that any form of development programme which is not linked to work opportunities is less likely to result in the realisation of the objectives of the CDP. Various researchers have also observed that a successful CDP is linked to a provision of work opportunities to the developing contractor. For example, in South Africa, CDPs are implemented within the Department of Public Works, as observed on the CIDB status quo report (CIDB 2009) and developing contractors are allowed to bid on various infrastructure public works projects within the programme. The provision of sustained work opportunities has proven to be challenging due to the large number of contractors registered.

4) Mentorship and Training:

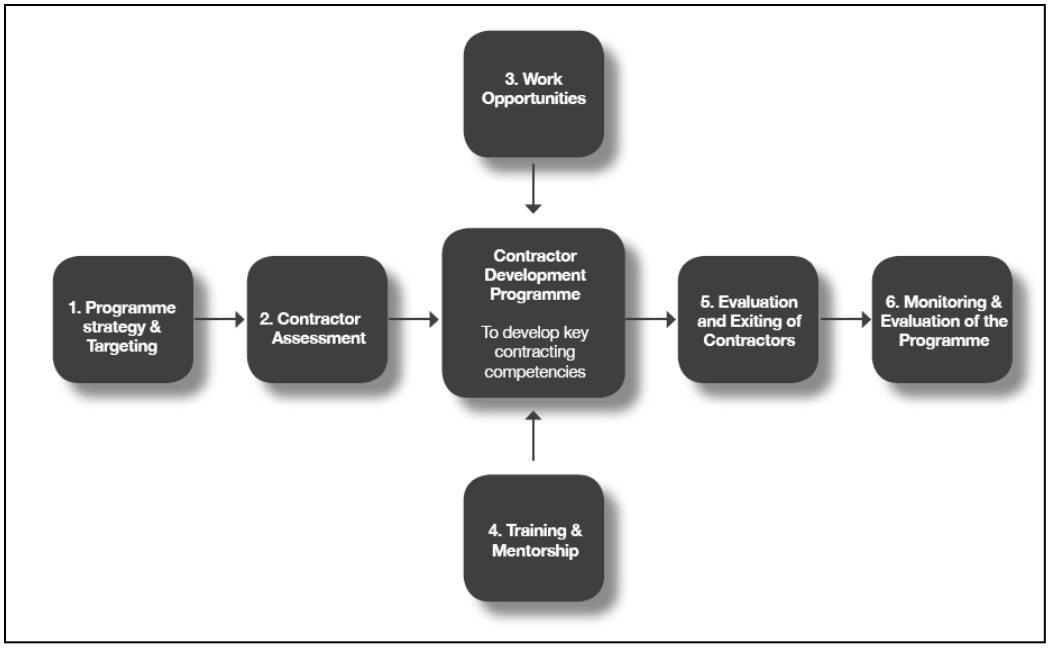
   Provision of theoretical and practical training enables capacity building. Training is commonly outsourced to either an accredited training provider (CETA in South Africa) (CIDB 2011a), a mentor and/or a consultant. The training provided to the developing contractor should be in line with the needs and level of the contractor.

The NCDP summary framework document states that mentorship should centre primarily on the contractor's business management skills and knowledge, such as tendering and marketing (CIDB, 2011c). Watermeyer, Jacquet and Noyana (2001) refers to a mentor as being a trusted and respected advisor, who, based on their knowledge gained through practical experience, is able to guide and advise prioritised contractors in the areas in which they need to improve their competencies to develop their technical, managerial, administrative, commercial and business skills.

5) Evaluation and exiting of contractors: The minimum competencies required for managing a contracting enterprise and for supervising construction works that the developing contractor will have acquired when exiting the CDP (CIDB 2009) should be pre-defined. The achievements of the CDP should be continuously evaluated against pre-defined performance standards.

6) Monitoring and evaluating the programme: The success of the CDP relies on continuous monitoring and evaluation. Firstly, to ensure that the programme meets its intended objectives and, secondly, to ensure that the developing contractor is receiving the developmental support. The CIDB status quo report (CIDB 2009) states that monitoring and evaluation tools include contractors' monthly reports, internal audits, mentors' monthly reports and internal reviews.

The above summarises a typical structure of a CDP, however, this report acknowledges that CDP structures vary between implementing institutions.



Source: CIDB 2011c– NCDP Guidelines for implementing contractor development programmes 2011

Figure 2-1: Overall process for implementing contractor development

2.6.3 Review of some aspects of contractor development programmes

2.6.3.1 Minimum qualification of contractors admitted into CDPs

A review of literature of the CIDB shows that there has been minimal focus placed on technical qualification/competency of the owners/managers of construction enterprises. This is supported by research conducted by Mohlala (2015), where it was observed that in the area of emerging contractor performance, focus is placed on financial and project management competencies, while minimal emphasis is placed on technical qualification. Mohlala (2015) also made the same observation with regard to the CIDB registration process and progression criteria. Mohlala (2015) deduced that the current criterion for registration and progression from one grade to the next does not include a minimum technical qualification as a requirement. Therefore, concluding that the process does not attach importance to technical qualifications. This statement is further supported by the CIDB (2009) in the Status Quo Report which states the following:

> *The CIDB Register of Contractors grades contractors according to their* ***financial capability*** *and* ***track record*** *in terms of the* ***largest contract successfully*** *undertaken over the past five years. The Register of Contractors* ***does not recognise minimum competencies*** *required to run a contracting organisation (other than minimum requirements for professionally registered persons in Grades 7 and above in GB and CE, and other statutory license requirements), the business and construction process maturity of the organisation, nor the quality of the work delivered (CIDB 2009:11).*

The same applies to CDPs. To date, CDPs do not specify a minimum technical qualification for owners/supervisors of contracting enterprises as a pre-requisite to be admitted into the programmes (refer to the bold emphasis in the extract above).

There are some research exercises which emphasise the need for technical qualification in order to be able to manage a successful and sustainable construction company. For instance, Thwala and Mvubu (2008) found that one of the factors which contribute to lack of success amongst small and medium size contractors in Swaziland was a lack of "technical and managerial skills" (2008:97). The same findings were apparent in a study conducted by Thwala and Phaladi (2009), which investigated the challenges facing small contactors in the North West Province of South Africa. Further, Mohlala (2015) found that the technical competency of the owner/manager of a construction enterprise impacts on the performance of the enterprise when implementing a project.

The CIDB has begun to recognise that there are certain competencies required to run a successful contracting business. This is evident in the Skills Survey document published in 2011, as well as the Best Practice Contractor's Recognition Scheme (CIDB 2011e). The skills survey identified the key competencies as business management, building and construction works management (supervision and operational) and legislative issues (CIDB skills survey 2011d). Subsequent to the skills survey, the CIDB Competence Standard for Contractors was gazetted in August 2015 (Gazette Notice 39074 of 7 August 2015). According to the CIDB, this standard establishes the

competencies which should exist within a contracting enterprise, within a CIDB class of construction works (CIDB 2015). The standard focuses more on managerial competencies and makes no reference to technical competencies that should exist in the contracting business. Since this standard has only recently been gazetted, the recognition of technical qualification/competency has not yet appeared in CDP guideline documents.

2.6.3.2 Level of relevant experience of the contractors prior to entering the programme

The selection criteria for entrance into CDPs vary from one CDP to the next (CIDB 2009, 2011). In the Baseline study conducted by the CIDB in 2011, there are some CDPs that stipulate that experience in contracting and experience in construction-related activities as a criteria for entry into a CPD. The CIDB Baseline study (2011) showed that of the ten (10) CDPs that were studied, two (2) had prior experience stated as a criteria for entry into the CDP. The drawback to this for instance as seen in one CDP, there were approximately thirty-thousand (30 000) contracting entities registered in the database. Of the thirty-thousand (30 000) contractors, approximately three-thousand (3 000) contracting entities were registered with the CIDB, with the bulk of entities in Grade 1 (about 2 000). These entities were described as being "job seekers" (CIDB 2011:26). In addition to this, another CDP database had approximately five-thousand (5 000) contracting entities, of which more than 85% were in Grades 1 and 2 and the rest were spread in the other grading designations. This is as expected as Grade 1 level is full of new entrants and opportunistic entrepreneurs due to the low barriers to entry. This is a highly competitive grade with some contractors who do not have the potential to develop into higher grade contractors.

2.6.3.3 Performance of contractors within the CDP

The performance of contractors enrolled in CDPs is often not well reported. One of the objectives of CDPs is to "improve the performance" of contractors (as observed in the literature review in Section 2.6.1 and 2.6.2). However, there is no evidence in literature which shows how

performance improvement is monitored and evaluated in CDPs. CDPs report performance and contractor progress in terms of an increase in contractor grading only. This measure is only one indicator of development. The CIDB (2009) asserted that additional indicators of development are technical skills and experience.

Mohlala (2015) reviewed the various indicators that are used for measuring and/or reporting performance. Mohlala (2015) found, citing a study by Cheung et al., that there are several key performance indicators. The main indicators identified were time, cost, quality, client satisfaction, client changes, business performance, and health and safety. Mohlala (2015) further found, referencing the CIDB, that project performance can be measured against the following: time management, cost management, quality management, health and safety management, site management and sub-contractor management. As mentioned previously, Mohlala (2015) also found that many authors attribute project performance to the contractor's technical competence. The stated measures can be used as indicators to assess the performance of contractors and the contractor's improvement.

2.6.3.4 Improvement in contractor grading

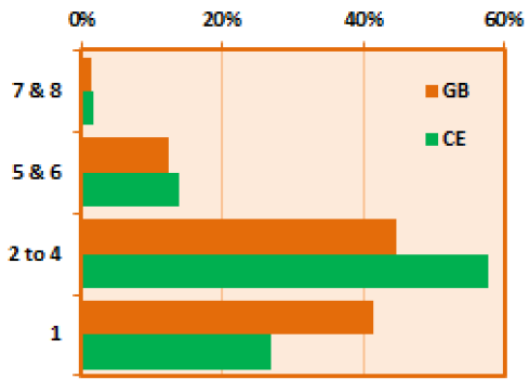
The CIDB published a Construction Monitor report in the second quarter of 2015 (Q2), specially focusing on contractor development (CIDB 2015d). The report reviews the status of contractor development by drawing information available from 21 CDPs that are currently being monitored by the NCDP in all nine South African provinces. The report found that approximately 530 contractors in the CDPs were registered in the General Building (GB) category and approximately 560 contractors held a Civil Engineering (CE) registration.

Note: This literature review only focuses on the Civil Engineering category since this is more relevant to the case study to be evaluated.

The report found that 27% of CE registrations are in Grade 1 and 58% of CE registrations are contractors in Grades 2 to 4. The distribution of contactors registered in the CDPs is further depicted in Figure 2-2.

CDP Contractor Registrations; 2015Q2

Grade	Number	%
	GB	
7 & 8	8	2%
5 & 6	65	12%
2 to 4	234	45%
1	218	42%
Total	525	100%
	CE	
7 & 8	9	2%
5 & 6	77	14%
2 to 4	322	58%
1	151	27%
Total	559	100%



Source: Construction Monitor – Contractor Development Q2 (CIDB 2015d:10)

Figure 2-2: CDP Contractor Registrations; 2015Q2

The report further assesses the number of contractors within the CDPs that have upgraded one or more grades over the previous three years (i.e. 2012 Quarter 3 – 2015 Quarter 2). It was found that 48% of CE contractors enrolled in the CDPs managed to upgrade one or more grades. Furthermore, 46% of Grade 1 CE contractors had upgraded one or more grades in three years and 50% of Grade 2 to 4 contractors managed to upgrade one or more grades. The most upgrades occurred with Grade 2 to 4 contractors. This is further depicted in Figure 2-3.

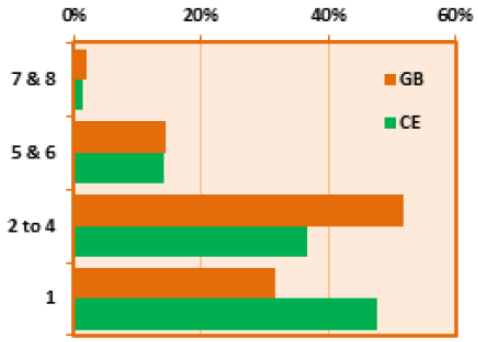
One or more Contractor Upgrades; 2012Q3 to 2015Q2		
Initial Grade	Number	%
GB		
7 & 8	0	0%
5 & 6	10	27%
2 to 4	125	48%
1	124	28%
Total	**259**	**35%**
CE		
7 & 8	0	0%
5 & 6	16	46%
2 to 4	194	50%
1	178	46%
Total	**388**	**48%**

Source: Construction Monitor – Contractor Development Q2 (CIDB 2015d:10)

Figure 2-3: CDP One or More Contractor Upgrades; 2012Q3 to 2015Q2

This research investigation considers a case study implemented in the Eastern Cape Province. It is thus relevant to look at CDP data for this province. Appendix 2 of the Construction Monitor report contains provincial data collected for the 21 CDPs (CIDB 2015d). It was found that in the Eastern Cape, approximately 128 contractors in CDPs were registered in the Civil Engineering (CE) category. The report found that approximately 48% of contractors in the CE category were registered in Grades 1 and 37% were registered in Grade 2 to 4.

CDP Contractor Registrations; 2015Q2		
Grade	Number	%
	GB	
7 & 8	3	2%
5 & 6	21	14%
2 to 4	75	52%
1	46	32%
Total	**145**	**100%**
	CE	
7 & 8	2	2%
5 & 6	18	14%
2 to 4	47	37%
1	61	48%
Total	**128**	**100%**



Source: Construction Monitor – Contractor Development Q2 (CIDB 2015d:16)

Figure 2-4: CDP Contractor Registrations in the Eastern Cape Province; 2015Q2

Figure 2-5shows the number of contractor upgrades in the CDPs in the Eastern Cape. It can be seen that 37% CE Grade 1 contractors and 55% CE Grade 2 to 4 contractors upgraded one or more grades. Similarly, the most upgrades occurred with Grade 2 to 4 contractors.

One or more Contractor Upgrades; 2012Q3 to 2015Q2		
Grade from	Number	%
	GB	
7 & 8		
5 & 6	4	33%
2 to 4	44	49%
1	28	33%
Total	**76**	**41%**
	CE	
7 & 8		
5 & 6	3	50%
2 to 4	24	55%
1	43	37%
Total	**70**	**42%**

Eastern Cape

Source: Construction Monitor – Contractor Development Q2 (CIDB 2015d:16)

Figure 2-5: CDP in Eastern Cape for One or More Contractor Upgrades; 2012Q3 to 2015Q2

2.7 Effectiveness of contractor development programmes

Small and emerging contractors are broadly reported as facing various challenges which impact on their ability to deliver construction projects within the defined project requirements (Hove and Banjo 2015), Sweis et al (2014) and Thwala and Mvubu (2008). Dapaah and Musonda (2014, citing the CIDB) reported that the various challenges faced by small and emerging contractors may lead to low productivity, poor quality workmanship and slow delivery of construction projects. Dapaah and Musonda (2014) reported on certain challenges faced by small and emerging contractors, including:

- *Lack of business and financial skills*
- *Financial constraints and limited access to funding, trade credit and performance bonds*
- *Late payment by clients which impacts contractors' cash-flows, causing delays in the completion of projects and eroding their profit margins. This also constrains working capital, and encourages corruption*
- *High turnover amongst skilled workers owing to uncertainties in job opportunities*
- *Short term nature of the work which makes it difficult to develop and implement long-term strategies and growth plans*
- *Overly complicated contract award and contract administration procedures*
- *Intense competition, especially in lower scales of construction enterprise, and difficulty in competing with larger construction firms*
- *Insufficient resources to provide a safe and decent working environment such as protection, equipment and attire*
- *Lack of professional advisors and consultants, and where available, the reluctance to use them based on the perception of expensive fees, a lack of finance or awareness*
- *Lack of capital equipment such as vehicles, heavy machinery or scaffolding*
- *Uncertainties in supplies and prices of materials, allied with non-existent or poor relationships with suppliers.*

In addition to the challenges listed above, Mohlala (2015) found that many emerging contractors do not have the necessary technical and management skills, qualifications, knowledge and experience necessary and that this has resulted in project delays and budget overruns.

It is apparent that CDPs have not been effective in eliminating the multitude of challenges facing small and emerging contractors. As evident in Section 1.1, Hove and Banjo (2015) as well as the CIDB (2009, 2011a) observed that there are gaps and shortcomings that still impact on the performance of emerging contractors in South Africa. Thwala (2009) researched large-scale development programmes in South Africa and found that there had been minimal sustainable employment created and observed that the lessons that could have been learnt from pre-1994 had not been applied in the post-1994 period. Thwala (2009) further found that there were apparent shortcomings in programme planning and implementation of the large-scale development programmes and that there was no long-term programme approach to the development programmes.

Croswell and McCutcheon (2001) as well as Dapaah and Musonda (2014) found that, there was evidence of certain successes of CDPs in Ghana, Kenya, Lesotho, Botswana and Malawi. Croswell and McCutcheon (2001) attributed the success of the CDPs in Kenya, Lesotho and Botswana to the adoption of a long-term programme approach as opposed to an ad hoc project approach, amongst other factors. The authors observed that these successful large-scale programmes required at least three (3) to five (5) years and that the development programmes were linked to extensive training programmes (Croswell and McCutcheon 2001).

Dapaah and Musonda (2014) further identified the need for CDPs to be evaluated to understand the direct effects of the programme on the beneficiaries. This current research found that there is limited detail on the performance of the contractors within development programmes. The lack of reports on the effectiveness of CDPs is a challenge to determining whether the CDPs have been beneficial to the end users.

2.8 Summary

The literature review has shown that, historically and more recently, there have been various development programmes established to develop small and emerging contractors. These programmes have arisen due to the variety of challenges which impact the development and performance of contractors.

The South African government has adopted various legislation, frameworks and programmes to support the development of small and emerging contractors. In terms of legislation, the B-BBEE and PPPFA, which underpin contractor development in the public sector, have faced several difficulties associated with implementation. Part of the challenge results from the assignment of individuals or businesses that lack the relevant qualifications and skills into positions or tasks that they are not competent to perform. It was noted that the PPPFA does not emphasise the need for a technical qualification of the targeted groups (i.e. historically disadvantaged individuals and businesses) and that the Act focuses largely on ownership and equity. This occurrence, along with other factors, has inevitably impacted negatively on businesses. The author argued that these procurement reforms do not take cognisance of the fact that, although ownership can be changed fairly quickly; technical competence, experience and capacity are developed over time.

The research also studied the CIDB registration criteria for contractors. It is evident that the CIDB does not consider technical capability in determining the contractor grading and that the CIDB register grades contractors according to their works and financial capability only. This low barrier to entry has resulted in a remarkable increase in the number of registered contractors, especially in the lower grading categories; for example, in the year 2010, 88% of contractors were falling in the Grade 1 category. The Grade 1 contractors were also reported as facing various financial, managerial and technical constraints.

With reference to contractor development, the literature review found that CDPs have different implementation models. There is no evidence as to which model yields the best result and no

further indication of how successful contractors have evolved throughout the years based on the different models. It was also noted that the CDPs do not prescribe a basic level of education, technical qualification and experience of the trainee contractor prior to admission into a development programme. Various researchers have asserted that CDPs are not meeting their intended benefits, in spite of certain successes having been achieved. The few research exercises that have reported on successful CDPs have emphasised the need for a long-term programme approach and the need for an extensive training programme.

The literature study further reviewed some aspects of CDPs implemented under the NCDP. The research found that the CIDB has placed minimal focus on technical qualification/competency of the owners/managers of construction enterprises. The research further found that some of the CDPs do not stipulate relevant experience in contracting and/or construction-related activities as a criterion for entry into the CPD. In addition, the research found that the performance improvement of contractors enrolled in CDPs is often not well reported.

The historical insight studied in this chapter provides the necessary background to this research investigation. This research study further reviews the process followed to implement the CDP in the case study in line with the CDP models presented in Chapter 2.6.1 and 2.6.2. The research provides an analysis of the findings to determine whether the shortcomings identified in Chapter 2.6.3 are also encountered in the case study.

3. RESEARCH METHOD AND CASE STUDY

3.1 Introduction

The aim and purpose of this chapter is to outline the method employed to conduct the research. This chapter distinguishes between two research methods namely; qualitative and quantitative research. The chapter further provides a justification for selection of the appropriate method.

The chapter also provides the approach used to perform the research in order to achieve the aim and objectives of the research. A background of the case study under evaluation is also provided in the latter part of this chapter.

3.2 Research method

It is important to identify the type of research method that the researcher is intending to follow. Literature distinguishes between two distinct methods, namely; quantitative and qualitative research. Malongane (2014), citing Mancosa (2002), stated that there are also combined research studies, where the research method contains both qualitative and quantitative elements. The difference between the two research approaches has been covered by various authors, some definitions are discussed below.

- Monks (2010:65) cited the definition of qualitative research as "research that seeks to provide understanding of human experience, perceptions, motivations, intentions, and behaviours based on description and observation and utilising a naturalistic interpretative approach to a subject and its contextual setting".
- Myers and Avison (1997:27) described qualitative research as "research that derives information from qualitative data sources which include observations, interviews, documents and texts, and the researcher's impressions and reactions".

- Malongane (2014), citing Leedy and Ormrod (2010), further identified five common qualitative research designs, namely: case study, ethnography, phenomenological paradigm, grounded theory study and content analysis.
- In terms of quantitative research, Monks (2010:65) stated that "quantitative research is based on traditional scientific methods, which generates numerical data and usually seeks to establish causal relationships between two or more variables, using statistical methods to test the strength and significance of the relationships".
- Malongane (2014:41), citing Myers (2009), stated that "quantitative research investigates general trends across populations and focuses on numbers, whereas qualitative research constitutes an in-depth study of social and cultural phenomena which focuses on text".

In the context of the stated definitions, this research study predominantly adopts the qualitative approach with some quantitative elements. Qualitative research (specifically case study design) was found to be more applicable in this research due to the fact that the research derives information from the data sources as described by Myers and Avison's (1997) in the second bullet above. Further, the case study design was found to be suitable as this research investigation evaluates a case study. Malongane (2014:43), citing Leedy and Ormrod (2010), defined the case study design as research whereby "the researcher collects extensive data on the individual(s), programme(s) or event(s) on which an investigation is focused. The data often includes observations, interviews, documents (e.g., newspaper articles), past records and audio-visual materials". This research study gathers information from project documents as well as the CIDB contractor register. Project participants are not interviewed because the research does not investigate the 'perceived' success of the CDP. The quantitative research approach is also justifiable as the research translates some of the findings into numerical data.

The selected research approach is further justifiable primarily for the following reasons:

- Project documentation outlining the process for implementing the CDP and the nature of development support provided to the small contractors was obtained as part of the research.

- The CIDB register of contractors is also studied to determine whether the registered contractors have increased in grading during and after exiting the programme.
- An investigation is conducted on whether the small contractors have remained sustainable after completing the project; this was conducted through evaluating the company profiles obtained from the contractors.

Figure 3-1 shows the method followed for the research from literature survey to the finalisation of the research report.

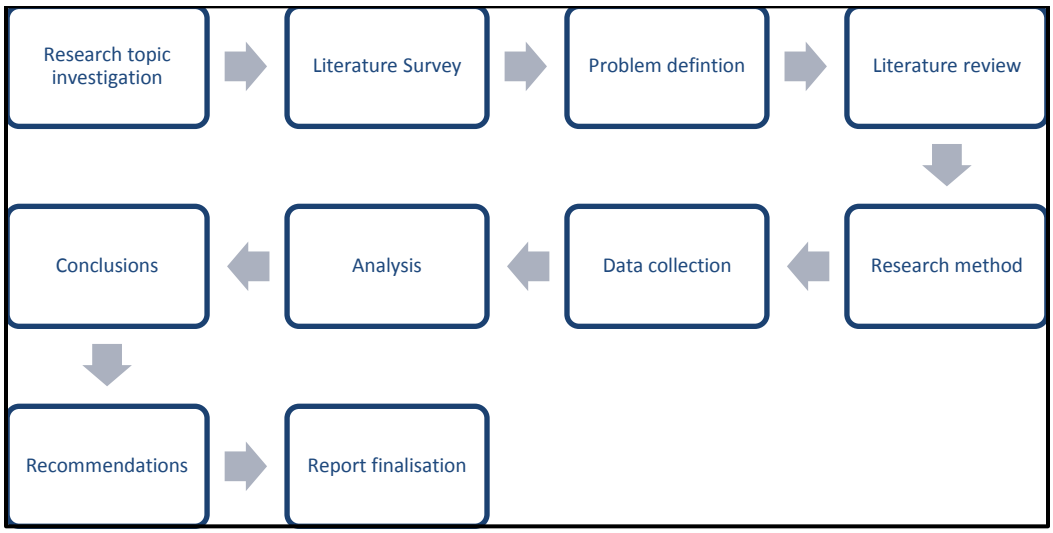


Figure 3-1: Research programme

This research considers the following factors to determine the effectiveness of the CDP:

- Technical, financial and managerial training that the contractors received on the programme
- Provision of relevant work experience for the duration of the programme
- An increase in the contractor's CIDB grading after exiting the programme

The CDP is further evaluated against the CIDB's standard definition of a contractor development programme as stated in Section 2.2.3. This definition is repeated below for ease of reference.

The CIDB defines contractor development as "a deliberate and managed process to achieve targeted developmental outcomes that improves contractor grading status, performance and quality and equity and targeted ownership" (CIDB 2011c:3).

3.3 Methods of data collection

In order to prevent any bias to the research; project stakeholders were not interviewed formally for the purpose of formulating the research findings but rather, the research relies on documented evidence. The method followed in conducting the research is as follows:

- A literature review was conducted to investigate research on contractor development in the construction sector. The literature review provided a basis for evaluating the project, bearing in mind the extensive body of knowledge available on small contractor development initiatives.
- The literature review was followed by a data collection phase. The procedure that was followed is outlined below:
    - Project documentation was requested. The information requested included project documentation such as tender documents, contract data, works information, project organogram and minutes of meetings. This documentation forms part of the official project records and is distributed to all project stakeholders. It can thus be reasoned that the documentation contains a true reflection of the project.
    - A project database was requested which was managed by the training provider. The database detailed the initial list of contractors, entrance and exit status, training and skills development initiatives and contractor progress tracking. This record was validated against information obtained from the engineering consultants who were responsible for monitor and managing the project.

- The CIDB register of contractors was also studied to determine the grading of the contractors and to verify that the contractors have improved their grading since exiting the programme.
- Compilation of data was then followed by an evaluation of the project outcomes which was, in turn, followed by documentation and conclusions.

Further to the above, the data collected comprises of the following:

- Tender documents
- Contractor contact details
- Contract data
- Details of the training and mentorship programme
- Contractor CIDB grading
- Contractors' company profile reflecting projects undertaken (i.e. experience or track-record).

3.4 Road construction case study

3.4.1 Background and scope

The case study under evaluation is based on a road construction project which was implemented in the Eastern Cape Province of South Africa, between Umthatha and Lusikisiki. Figure 3-2 shows the locality plan as well as the various work areas of the project. The Eastern Cape region is impacted by social and economic backlogs. The socio-economic conditions in the locality of the project are no exception. The region is impacted by high unemployment, a high poverty rate, 50 – 60 % on the population relying on government grants, low skills base, female headed households and underperforming local municipalities.

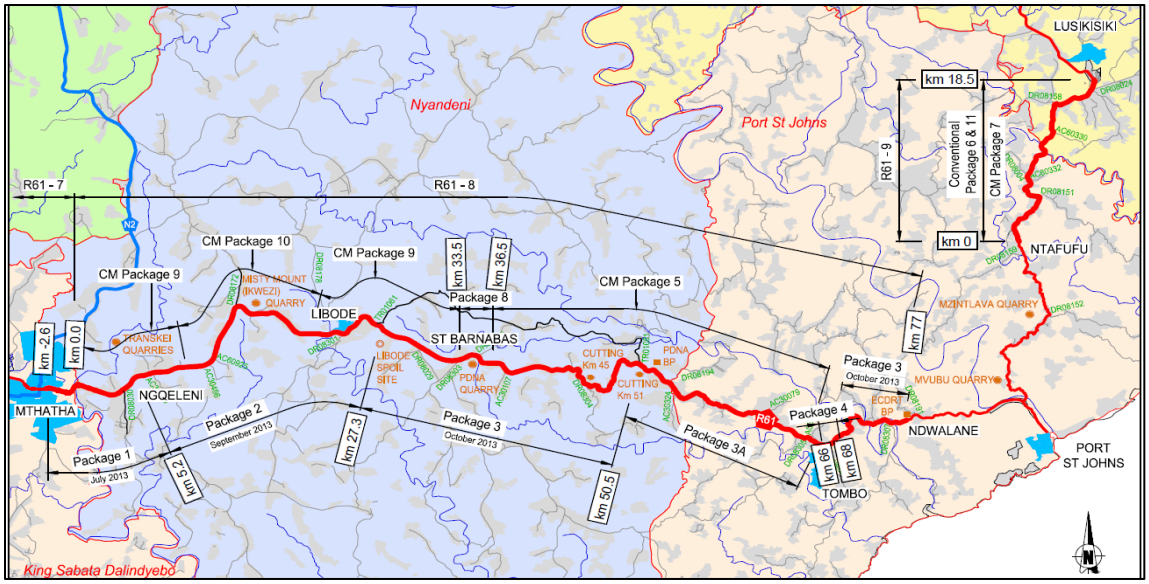


Figure 3-2: Project locality plan

The main project scope of works consisted of upgrading the existing road to a dual carriageway, upgrading various local accesses, constructing new access roads, kerb inlets, catch pits, concrete storm-water pipes as well as pedestrian, overpass and underpass bridges. The works also included construction of a public transport interchange and connecting the district roads with the public transport interchange.

The works undertaken by small contractors included Maccaferri mechanical stabilised earth fills, continuously reinforced concrete pavements, jointed concrete pavements, laying kerbs, concrete block paving, face brick median wall, gabions, laying of storm-water pipes, concrete sidewalks and walkways, Macadam base as well as alien vegetation removal.

3.4.2 Development targets

Owing to the project owner being a SOE, there is a legislated mandate that the project implements Government's policies on B-BBEE and small contractor development in the community local to the project. The project terms of reference were thus amended to include

development targets. The bidding entities were mandated to implement B-BBEE, community participation, employment and/or creation of SMMEs, training and mentoring of SMME, and engagement and training of labour recruited from local communities. The following targets were detailed as a requirement in the contract between the SOE and the main contractor:

- Contract participation targets

In the context of the project, a contract participation target is defined as a process by which the SOE implements Government's policies on B-BBEE and small contractor development. The targets are specified in terms of the rand value for which is based on the goods, services and work undertaken by the specified entities and measured as a percentage of the contractor's tender value. The contractor is therefore obliged to commit to the targets set by the SOE in order to be awarded the job. The targets that were set for the contract required labour maximisation of at least 6 % and SMME utilisation of 12 %.

- Contract Participation Goals (CPG's)

The contractor was encouraged to participate in the SOE's commitment to achieving empowerment objectives through committing to perform beyond the set targets. Tenderers who committed to goals less than the targets set were at risk at being declared unresponsive in terms of condition to tender.

- Community development work

Provision was made in the contract for the contractor to manage work specifically to be undertaken within the local community area. The contractor was required to procure the services needed for the construction of the works from subcontractors. The main contractor was required to undertake the following duties:

(i) Provide mentorship and tutorship to the selected subcontractor(s).

(ii) Provide administrative support if needed.

(iii) Supply any resources to complete the contract that the selected subcontractor(s) cannot provide cost-effectively.

(iv) Secure the required Performance Security in the name of the selected subcontractor(s).

(v) Secure adequate insurance cover for the cost of the works and public liability.

In addition, the main contractor was required to comply with the following obligations:

(i) institute a quality assurance system;

(ii) provide adequate training, mentoring, guidance and assistance to SMME;

(iii) provide financial support and other assistance to ensure that the SMME are able to meet their obligations and commitments with respect to their subcontracts, including acquisition of labour, equipment and materials; and

(iv) ensure that the B-BBEE goals and objectives are achieved.

3.4.3 Management structure of the project

The main stakeholders of the project included: the project client - a SOE, the SOE's representative - provided engineering, procurement and project management support, and the main contractor - procured through an open tender process. The project contractual structure is illustrated in Figure 3-3.

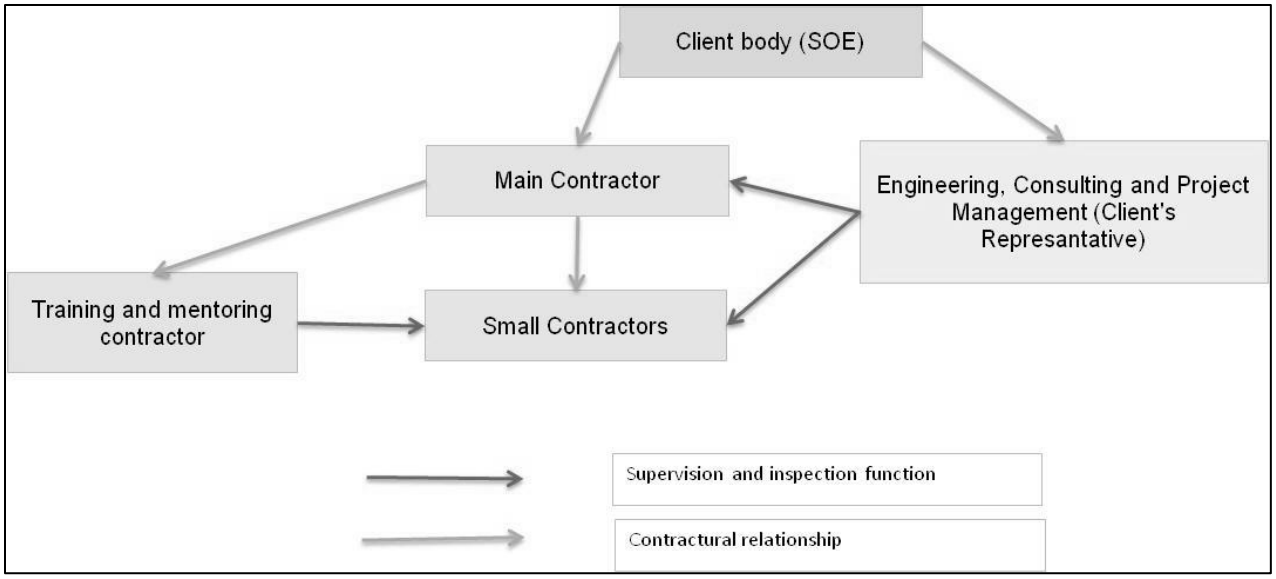


Figure 3-3: Project contractual structure

The procurement process for works included public advertisement, pre-qualification, adjudication and award. The project specifications were amended to include targeting of local labour, use of local enterprises and empowerment of women.

The main contractor executed the project, while a percentage of the work was executed by small contractors, belonging to Historically Disadvantaged Enterprises (HDEs) and SMMEs. The main contractor was tasked with the responsibility of training and mentoring the small contractors and a CETA accredited training and mentoring service provider was used. Contractor development was implemented under the main construction contract and a development programme was set up (in collaboration with the SOE and SOE's representatives) under the contract managed by the main contractor.

Small contractors for the programme were selected from applicants who responded to an advertising campaign in the project locality. Responses to the tender were obtained and an assessment was conducted to identify the most suitable candidates.

A Project Management Team (PMT) was set up comprising a representative from each of the SOE, SOE's representatives and the main contractor. The duties and functions of the PMT were as follows:

(i) monitor the management of the subcontracts involving SMME;

(ii) determine the scope and extent of the works to be included in any particular subcontract;

(iii) determine the target tender price, according to the scope of work and adjusting the target rates where relevant;

(iv) monitor the training, mentoring and development of SMME;

(v) adjudicate and approve subcontract tenders.

3.5 Summary

This chapter defined the research method employed in this study and also outlined key considerations and criteria that informed the research method. The criteria for evaluating the effectiveness of the development programme was summarised as follows: technical, financial and managerial training received by the contractors, the provision of relevant work experience for the duration of the programme as well as an increase in the contractor's CIDB grading after exiting the programme. The CDP is further evaluated against the CIDB's standard definition of a contractor development programme as stated in Section 2.2.3.

The background to the case study was also discussed, which provides the context of the study. The management structure of the project was presented to distinguish between the roles of the various stakeholders. The development targets stipulated in project were also discussed to set the context of the subsequent chapters.

4. EVALUATION OF SMALL CONTRACTOR DEVELOPMENT IN THE CASE STUDY

4.1 Introduction

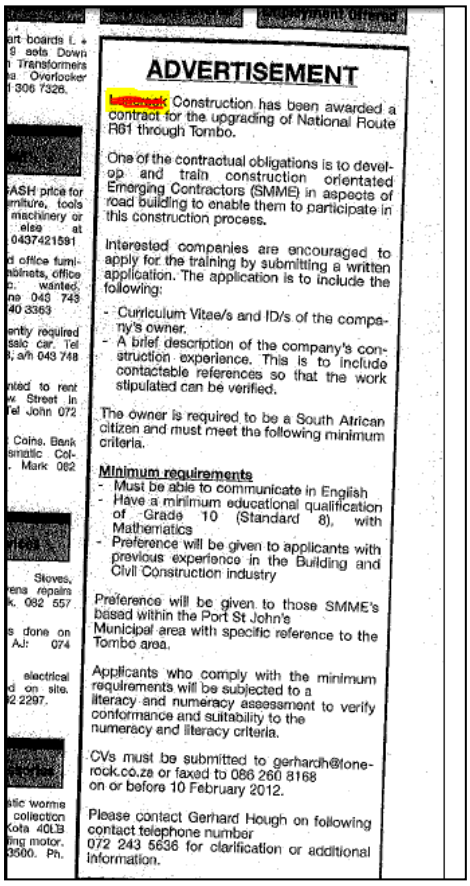
The basic concept of contractor development was discussed in Chapter 2 while a background to the case study was provided in Chapter 3. This chapter investigates the implementation method for developing small contractor in the case study. This chapter investigates the targeting strategy of the programme, the entrance requirements for contractors, the training and mentorship provided and monitoring and evaluation of the programme. This chapter is concluded with a summary of main findings pertaining to the implementation method.

4.2 Targeting

The project is located within Port St Johns Municipality, in Tombo. According to StatsSA, in 2011, the Port St Johns Municipality had an unemployment rate above 50% (StatsSA 2011). Approximately 12% of the population that was older than 20 years had attained a matric certificate. StatsSA (2011) also reported that over 60% of the households were female headed. Based on the statistic published by StatsSA, it can be reasoned that the municipality is impacted by high rate of poverty owing to the low income base, high unemployment and a low skills base. Furthermore, the economy is reported to be predominantly reliant on agricultural activity (StatsSA 2011). With the demographics observed; the project targeted candidates in the area local to the project i.e. Port St Johns Municipality. The candidates were required to be able to communicate in English and have a minimum education qualification of Grade 10 with Mathematics. Preference was given to applicants with previous experience in the building and civil construction industry; however this was not a pre-requisite. Furthermore, contrary to the legislation on procurement for civil and construction works, a CIDB grading was not a specified requirement. At first glance, this is unusual in the context of construction regulations that requires for that all contractors operating in South Africa to register with the CIDB in order to be

eligible for government work. However, the candidates that were admitted into the programme were assisted to register with the CIDB.

There was no ownership requirement stipulated nor minimum CIDB grading specified on the advertisement (as evident from the tender advertisement in Figure 4-1). The candidates that passed the initial screening test were selected subject to passing a numeracy and literacy test.



ADVERTISEMENT

[redacted] Construction has been awarded a contract for the upgrading of National Route R61 through Tombo.

One of the contractual obligations is to develop and train construction orientated Emerging Contractors (SMME) in aspects of road building to enable them to participate in this construction process.

Interested companies are encouraged to apply for the training by submitting a written application. The application is to include the following:

- Curriculum Vitae/s and ID/s of the company's owner.
- A brief description of the company's construction experience. This is to include contactable references so that the work stipulated can be verified.

The owner is required to be a South African citizen and must meet the following minimum criteria.

Minimum requirements

- Must be able to communicate in English
- Have a minimum educational qualification of Grade 10 (Standard 8), with Mathematics
- Preference will be given to applicants with previous experience in the Building and Civil Construction industry

Preference will be given to those SMME's based within the Port St John's Municipal area with specific reference to the Tombo area.

Applicants who comply with the minimum requirements will be subjected to a literacy and numeracy assessment to verify conformance and suitability to the numeracy and literacy criteria.

CVs must be submitted to gerhardh@lone-rock.co.za or faxed to 086 260 8168 on or before 10 February 2012.

Please contact Gerhard Hough on following contact telephone number 072 243 5636 for clarification or additional information.

Figure 4-1: Advertisement published on local newspaper

The tender process for the small contractors was conducted in phases. The first phase was a pre-qualification phase and the second phase was the tender phase. The purpose of pre-qualification was to identify and shortlist suitable candidates to participate in the project. An advertisement was published in the local newspaper in English and Xhosa (Figure 4-1).

A total of 78 applicants were received in response to the newspaper advertisement. The applicants were first screened based on their locality to the project. Port St John's was taken as a node and a 100km radius was drawn to determine the towns within the area. Based upon this, the applicants were further categorised as per the criteria on Table 4-1.

Table 4-1: Applicant screening criteria

Category	Locality Criteria
Category 1	Applicants who reside outside the 100km radius of the project area
Category 2	Applicants with no relevance to the criteria
Category 3	Applicants with incorrectly stated criteria
Category 4	Applicants who live within the immediate project area just outside the 100km radius
Category 5	Applicants within the project area but with no experience
Category 6	Applicants within the project area that meet the criteria

Based on the defined screening criteria, a total of thirteen (13) were found to be eligible to be admitted (category 6). A summary of applications received is presented Table 4-2:

Table 4-2: Summary of applications

Category	No of Applicants
1	36
2	2
3	4
4	12
5	11

6	13
Total	**78**

Initially, thirteen (13) applicants were accepted from the pre-qualification process. Three (3) applicants dropped out of the programme and six (6) additional candidates were included in the list. This resulted in a total of sixteen (16) applicants progressing to the next stage which was the numeracy and literacy assessment.

4.3 Contractor assessment

The remaining sixteen (16) candidates underwent a numeracy and literacy assessment. The candidates that failed the assessment were given the opportunity to re-write and re-test. The candidates were also requested to nominate a supervisor who would be responsible to supervise the construction works. The numeracy and literacy assessment was also extended to these supervisors. A summary of the results from the numeracy and literacy assessment is provided below, with Table 4-3 and Table 4-4 indicating the results of the candidates and the candidates' supervisors, respectively.

Table 4-3: Numeracy and Literacy assessment of the candidates

Name	Sex	Numeracy	Literacy
Candidate 1	F	95.7%	74,7%
Candidate 2	F	87%	98,5%
Candidate 3	M	87%	78,9%
Candidate 4	M	87%	75,7%
Candidate 5	M	86,3%	77%
Candidate 6	M	84,25	91,4%

Candidate 7	F	84,2%	94%
Candidate 8	M	82%	95,7%
Candidate 9 *withdrew	F	78,9%	88,5%
Candidate 10	M	76,8%	75,5%
Candidate 11	M	75,6%	72,6%
Candidate 12	F	73,6%	70%
Candidate 13 *withdrew	M	70%	65,2%
Candidate 14	F	68,4%	80%
Candidate 15	M	66,3%	51%
Candidate 16	M	64,2%	65,2%

*Note: Of the sixteen (16) candidates, two (2) dropped out of the programme after having undergone the literacy and numeracy assessments. This then resulted in fourteen (14) contractors taking part in the CDP.

Table 4-4: Numeracy and Literacy assessment of the candidates' supervisors

Name	Sex	Numeracy	Literacy
Candidates' Supervisor 1	F	78,5%	87,7%
Candidates' Supervisor 2	F	75,5%	84,4%
Candidates' Supervisor 3	F	75,5%	88,8%
Candidates' Supervisor 4	F	76%	72%
Candidates' Supervisor 5	M	72,8%	86,6%

Candidates' Supervisor 6	M	74,2%	86%
Candidates' Supervisor 7	F	70%	86,6%
Candidates' Supervisor 8	M	70%	86,6%
Candidates' Supervisor 10	M	70%	75,5%
Candidates' Supervisor 11	M	70%	73,3%
Candidates' Supervisor 12	M	68,5%	92,2%
Candidates' Supervisor 14	M	68,5%	84,4%
Candidates' Supervisor 15	M	68,5%	83,3%
Candidates' Supervisor 16	M	80%	90%

*Note: Fourteen (14) supervisors underwent the numeracy and literacy assessment. Supervisor 13 and 9 were not tested as the company they were employed by withdrew from the programme.

The candidates whose business was not registered were assisted to register, with the SOE covering the registration cost. Seven (7) of the small contractors did not have a registered entity; the remaining nine (9) candidates were already registered. The small contractors were also assisted with registration with the CIDB. All the contractors were registered under the grading level 1 with the CIDB.

4.4 Project budget

The overall project consisted of nine (9) construction work packages, with the construction value of all the packages amounting to R1.2 billion. This research investigation only considers one work package, with a budget of R135 million. The value of the small contractor development component in this work package amounted to 27% of the budget (i.e. R135 million x 27% = approximately R35 million). This amount includes the direct cost of labour, material and equipment to complete the works. This amount was further divided into smaller work packages

to be completed by the small contractors. The cost that was directly paid to the small contractors for provision of labour could not be established at the time of completing this study.

The cost for the training and mentorship, conducted by the CETA accredited training service provider, was R 910 000. This cost includes the training in theoretical unit standards, practical training which was administered by training service provider as well as the mentorship. This total cost for training accounted for approximately 3% of the budget of the work package (i.e. R910 000/R35 million x 100% = approximately 3%).

Note: All amounts are quoted exclusive of Value-Added Tax.

4.5 Training and mentorship

According to the project training programme, the contractors were trained to NQF level 2: Construction Contracting and the contractor's supervisors were trained to NQF level 4: Supervision of Construction Processes. The small contractors exit the programme with an official qualification registered with SAQA (South African Qualifications Authority). The training was conducted in three phases: the first phase comprised of theoretical training, the second phase comprised of practical training where the contractors and their supervisors were employed as labourers by the main contractor and in the last phase, the contractors were required to manage their own contracts as subcontractors.

The overall duration of the training was 18 months. Theoretical training was conducted over a three (3) month period, initial practical training was conducted prior to tendering, over a duration of one (1) month and the contractors were awarded their own individual contracts to implement over a fourteen (14) month period. During this implementation period, the contractors underwent further on-the-job training which was facilitated by the main contractor and the training service provider. The training programme is further expanded on below.

The theoretical training provided to the contractors during the first phase of the programme included the following unit standards:

- Start and Run a Business (Unit standard: 10009)
- Apply Business Concepts (Unit standard: 9976)
- Apply Quality Principles (Unit standard: 9986)
- Comply with Legal Requirements (Unit standard: 9982)
- Apply Construction Documentation (Unit standard: 9980)
- Role players in the Construction Industry (Unit standard: 9978)
- Implement Construction Site Procedures (Unit standard: 9985)
- Implement Site Admin Procedures (Unit standard: 9987)
- Manage Construction Resources (Unit standard: 9984)
- Tender for Construction Contracts (Unit standard: 9981)

The contractor's supervisors also underwent theoretical training, which included the following unit standards:

- Supervise Health & Safety (Unit standard: 14429)
- Calculate Construction Quantities (Unit standard: 14414)
- Implement a Quality Management System (Unit standard: 14416)
- Monitor & Control Cost (Unit standard: 14418)
- Perform Site Administration Functions (Unit standard: 14425)
- Read & Interpret Drawings (Unit standard: 14426)
- Lead & Supervise Construction Teams (Unit standard: 14417)
- Environmental Initiatives (Unit standard: 14218)
- Apply Contract Documentation (Unit standard: 15137)

The trainee contractors that passed all the unit standards were invited to submit a mock tender of the work to be done.

Practical training formed the second phase of the training programme. The contractors were then trained, with their supervisors and selected labour, in technical skills required to carry out the work. The contractors also worked under the main contractor as general workers to enable them to understand achievable production rates for various construction activities. This second phase enabled the contractors to gain practical exposure prior to tendering for the works. The practical training encompassed the following technical skills:

- Setting out of work
- Procuring material
- Productivity
- Quality – conformance to specifications
- Housekeeping on site
- Site safety – risk assessments
- Innovations – to improve / simplify work
- SMME interactions with the main contractor
- Certificate payments to small contractors by main contractor
- Site establishments – offices, storage, yards

In the third phase of the programme, the small contractors remaining were given the opportunity to tender for the scope of work. The main contractor was tasked with conducting pre-tender educational information training sessions for all the pre-qualified tenderers. The tenderers were mentored through the process by the main contractor with assistance from the training providers. The adjudication and award of the tender was approved by the Project Management Team (PMT). The main contractor appointed the successful candidates based on defined criteria and availability of work.

The process followed is also further depicted in Figure 4-2.

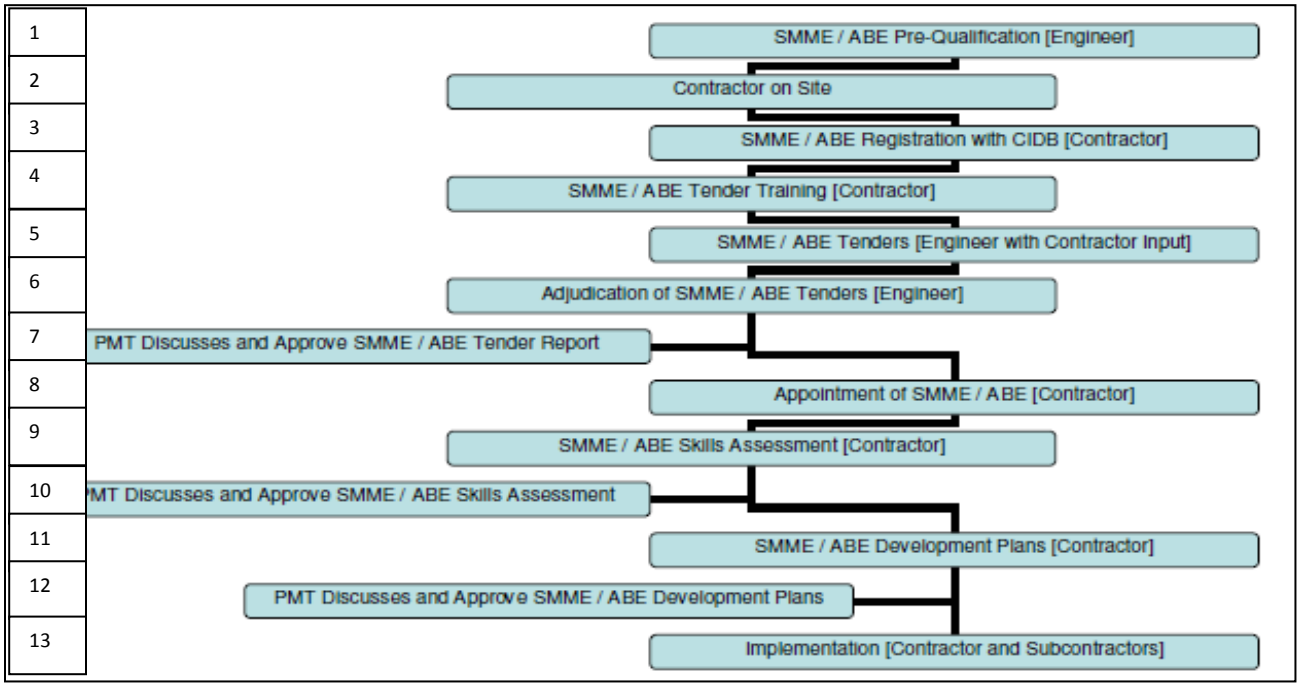


Figure 4-2: Approach to development programme

The process as well as the time lines is further tabulated below. Table 4-5 and Table 4-6 show the training programmes as well as the timelines that were followed to develop the small contractors and their supervisors respectively.

Table 4-5: Small contractor training programme and timeline

	Description	Dates	Unit standards/ Activity
Programme Dates	**Theoretical Training (3 months)**	05/03/2012 - 09/03/2012	Start and Run a Business 10009
		12/03/2012 - 14/03/2012	Apply Business Concepts 9976
		15/03/2012 - 19/03/2012	Apply Quality Principles 9986
		20/03/2012 - 22/03/2012	Comply with Legal Requirements 9982
		23/03/2012 - 30/03/2012	Apply Construction Documentation 9980
		10/04/2012 - 11/04/2012	Role-players in the Construction Industry 9978
		12/04/2012 - 18/04/2012	Implement Construction Site Procedures 9985
		19/04/2012 - 25/04/2012	Implement Site Admin Procedures 9987
		26/04/2012 - 03/05/2012	Manage Construction Resources 9984

	Theoretical training and completion of mock tender (1 week)	04/05/2012 - 11/05/2012	Tender for Construction Contracts 9981
	Practical Training: Commence work as general labour to the main contractor (1 month)	04/06/2012 - 27/06/2012	Start of Technical training with SME's and his workers
	Completion of paperwork. SME's to interview and employ limited duration workers (1 day)	28/06/2012 - 29/06/2012	Employment of learners
	Start work based on tender	02/07 /2012	SME's submit final tender

Table 4-6: Supervisor training programme and timeline

	Description	Dates	Unit standards/ Activity
Programme Dates	**Theoretical Training (3 months)**	19/03/2012 - 21/03/2012	Supervise Health & Safety 14429
		22/03/2012 - 27/03/2012	Calculate Construction Quantities 14414
		28/03/2012 - 30/03/2012	Implement a Quality Management System 14416
		10/04/2012 - 13/04/2012	Monitor & Control Cost 14418
		16/04/2012 - 19/04/2012	Perform Site Administration Functions 14425
		20/04/2012 - 25/04/2012	Read & Interpret Drawings 14426
		26/04/2012 - 03/05/2012	Lead & Supervise Construction Teams 14417
		04/05/2012 - 07/05/2012	Environmental Initiatives 14218
		29/05/2012 - 31/05/2012	Apply Contract Documentation 15137
		01/06/2012 - 02/06/2012	All learners who failed unit standards will do the rewrite during this period
	Practical training: Commence work as general labour to the main contractor (1 month)	04/06/2012 - 29/06/2012	Supervisors and SME's to start practical work on site
	Start work based on tender	02/07/2012 - onwards	Start of Technical training with SME's and his workers

The quality of work and performance of the small contractors was monitored and supervised by the main contractor. The main contractor was responsible for on-the-job training, mentorship and for providing guidance and assistance to each small contractor in all aspects of management, execution and completion of their subcontracts. This included assistance with planning of the works, sourcing and ordering of materials, labour relations, monthly measurements and invoicing procedures. The small contractors were responsible for providing labour and managing their scope of works.

The training services provider also conducted mentorship sessions with the small contractors every second month and also developed progress reports for each session.

4.6 Monitoring and evaluation

The main contractor was responsible for the day to day monitoring of the small contractors. Contractually, the contractor's commitment to developing small contractors was measured monthly in order to monitor the extent to which he is striving to reach the contract participation goals specified in his tender. Regular returns were required from the contractor and were submitted with each payment certificate. The contractor's monthly performance towards achieving the contract participation goals was calculated as the value of work done by labour and utilisation of small contractors. The SOE validated the payment of certified completed work.

As an incentive to encourage the contractor to achieve, or exceed, his tendered contract participation goal penalties were imposed by the SOE for failure to achieve the tendered goal and a bonus was offered for exceeding the tendered contract participation goal.

The main contractor was responsible for the compilation and maintenance of comprehensive records detailing each small contractor's progress during the construction period, starting from the award of a subcontract until the successful completion of the subcontract work or termination

of the subcontract. The contractor also kept a record of the training given to each trainee and, at the successful completion of each course; each trainee was issued with a certificate indicating the course contents as proof of attendance and completion.

4.7 Exit strategy

The project did not guarantee the contractors any further work opportunities upon exiting the programmes. Owing to the CDP being implemented within a capital works project, the contractors exit the programme upon completion of their scope of works. The small contractors are however enlisted as service providers with the SOE and are also encouraged to tender for future construction work and maintenance work. As stated previously, the small contractors and their supervisors exit the programme with an official qualification registered with SAQA. This provides the small contractors with a better competitive advantage.

4.8 Status of CIDB grading of small contractors

The CIDB database was accessed to investigate the status of the contractors enrolled in the contractor development programme (as at April 2016). Table 4-7 shows the status of the small contractors that participated in the programme. The table shows the grading prior to the contractors joining the programme and 4 years having joined the programme.

Table 4-7: Progress and status of CIDB grading of small contractors

Contractor	Grading level in 2012	Grading level in 2016
Small contractor 1	Grade 1	Grade 1
Small contractor 2	Grade n/a	Grade 1
Small contractor 3	Grade n/a	Grade 1
Small contractor 4	Grade 1	Grade 1

Small contractor 5	Grade 1	Grade 1
Small contractor 6	Grade 1	Grade 1
Small contractor 7	Grade 1	Grade 3
Small contractor 8	Grade 1	Grade 2
Small contractor 9	Grade n/a	Grade 3
Small contractor 10	Grade n/a	Grade 1
Small contractor 11	Grade 1	Grade 1
Small contractor 12	Grade 1	Grade 2
Small contractor 13	Grade n/a	Grade 1
Small contractor 14	Grade 1	Grade 1

The data presented in Table 4-7 is interpreted into a chart. The data shows that after 4 years of participating in the CDP, ten (10) contractors remained at CIDB Grade 1, two (2) of the contractors progressed to Grade 2 and two (2) managed to register as Grade 3 contractors. The findings are expressed in percentages as per Figure 4-3. From Figure 4-3, 71% of the contractors remained at Grade 1, 14% of the contractors increased to Grade 2 and 14% of the contractors increased to Grade 3.

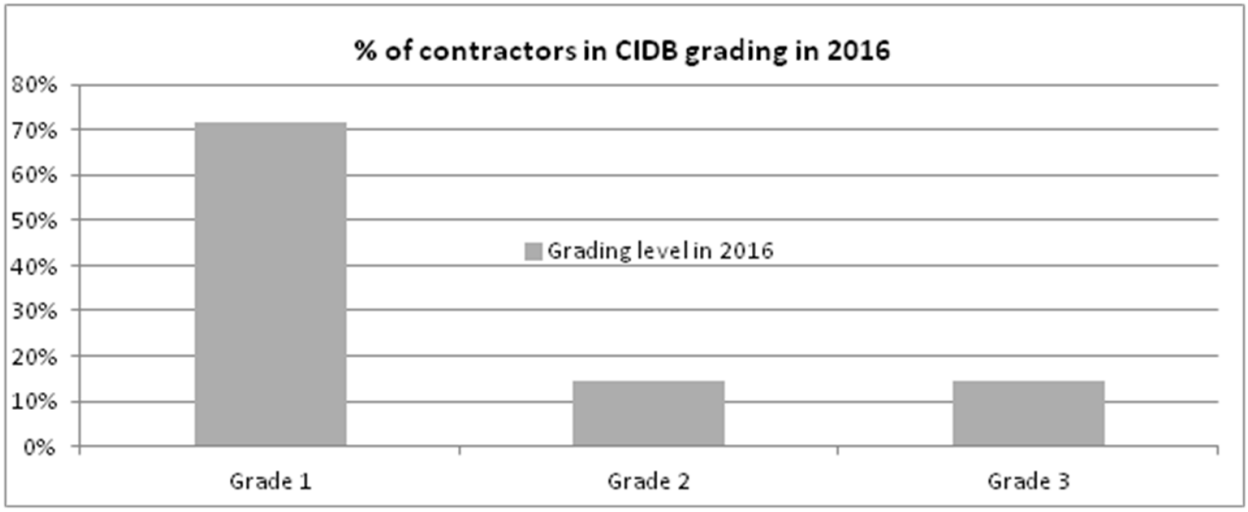


Figure 4-3: Percentage of contractors in CIDB grade level

4.9 Summary

This chapter investigated the approach to contractor development in the case study. The chapter explored the targeting strategy, the entrance requirement, training and mentorship provided to the small contractors as well as the instrument used to monitoring and evaluation the programme. The overall approach of the programme entailed targeting individuals and contractors within the project locality. The minimum requirement stipulated for the applicants was Grade 10 and a basic understanding in Mathematics. The applicants were also required to be able to communicate in English. Prior experience in the building and construction sector was not a pre-requisite. This is evident from the finding that seven (7) of the selected candidates did not have a registered entity prior to participating in the programme. This research found that the candidates received theoretical training, to NQF Level 2 and 4 and practical on-the-job training. The small contractors, working under a main contractor, were mentored by the main contractor.

This approach to implementing the contractor development programme was found to share some similarities with the structure of some of CDPs contained in the literature review in section 2.6.2. The difference was found to be in the exiting strategy; since this is a project based contractor

development programme linked to a capital works project, the contractors exit the programme upon completion of their scope of works.

The improvement in CIDB grading of the small contractors was also investigated. This research found that 71% of the small contractors have remained in Grade 1, 14% of the contractors increased to Grade 2 and 14% of the contractors increased to Grade 3.

5. ANALYSIS AND DISCUSSION OF RESEARCH FINDINGS

5.1 Introduction

The findings presented in Chapter 4 further reveal interesting observations with regard to the overall policies and procedures adopted in implementing contractor development programmes. This chapter conducts a further analysis on some key findings of the research and provides a discussion on current policies and procedures adopted in implementing CDPs. The discussion is also conducted in the context of the information from the literature survey presented in Section 2. This research focuses the discussion on Grade 1 contractors owing to the fact the small contractors in the CDP were registered in this category.

5.2 Targeting and contractor assessment

5.2.1 Minimum qualification of small contractors admitted into CDPs

Based on the tender advertisement presented in Figure 4-1, a minimum qualification of Grade 10 was specified for the applicants in the case study. The research found no further pre-requirement for a technical qualification. This is not peculiar in comparison to other CDPs as highlighted in Section 2.6.3.1. The small contractors and their supervisors underwent literacy and numeracy assessment to ascertain their ability to interpret and understand the scope and requirements of the project. The literacy and numeracy assessment is also a pre-requirement for the NQF courses.

The importance of technical qualification is emphasised in the literature survey presented in Section 2.6.3.1. As noted in the literature survey, the CIDB has begun to recognise that there are certain competencies required to run a successful contracting business. However, these

competencies are management related and not technical in nature. The Competence Standard for Contractors, gazetted in August 2015 (Gazette Notice 39074 of 7 August 2015), establishes the competencies which should exist within a contracting enterprise, within a CIDB class of construction works (CIDB 2015). Since this standard has only recently been gazetted, the recognition of technical qualification/competency has not yet materialized in CDP guideline documents.

There are cases both in favour of and in opposition to technical qualifications being a pre-requisite for entry into CDPs (as well as a pre-requisite for registration with the CIDB). Specifying a technical qualification as a criterion may result in CDPs being exclusive, further compounded by the skills gap. This is true in the context of South Africa, where a large percentage of historically disadvantaged individuals may not possess the necessary technical qualifications. In the case study, it was found that the local community was impacted by lack of skills and education. This, to some extent, poses a challenge should one seek to source technically skilled and qualified individuals/organisations within such a community. Conversely, the advantage in specifying a technical qualification as a pre-requisite to entering a CDP increases the chances of a contracting enterprise's survival and improves contractor performance. This was also well demonstrated in the literature survey conducted.

5.2.2 Level of relevant experience of the small contractors prior to entering the programme

The literature survey presented in Section 2.6.3.2 showed that most CDPs do not specify prior experience in contracting and experience in construction-related activities as a criterion for entry into the CPD. This is especially true for CDPs that focus on Grade 1 contractors. The requirements to register as a Grade 1 contractor with the CIDB are low, which makes it easy for anyone to register as a contractor. As observed in the literature review, the CIDB Grade 1 is often considered a stagnant grade which is full of opportunistic entrepreneurs due to the low barriers to entrance. The number of registered contractors in the grade also makes this a competitive grade.

In the case study under evaluation, the tender advertisement stipulated that: “Preference will be given to applicants with previous experienced in the Building and Civil Construction Industry”. Upon further investigation, the researcher found that seven of the small contractors who were admitted into the programme did not have a registered entity prior to being admitted into the programme. As a result, the experience levels of the small contractor varied; some entities were not registered with the CIDB before they were admitted into the programme and were thus assisted to register.

Screening of applicants in terms of level of experience should be a basic criterion for entry into a CDP. Firstly, it eliminates the opportunistic entrepreneurs who only register because of the low entrance requirements; and secondly, training and mentorship initiatives will be more effective on individuals/businesses that have prior relevant experience in the industry. This study further cautions that CDPs focusing on Grade 1 contractors may result in being job creation initiatives that do not result in sustainable businesses.

5.3 Monitoring and evaluation

5.3.1 Performance of the contractors within the CDP

As found in Section 4.5 and Section 4.6, the main contractor as well as the training services provider was responsible for performance monitoring. The main contractor was responsible for the day to day monitoring of the small contractors whilst the training services provider conducted mentorship sessions with the small contractors every second month and also developed progress reports for each session. There were no records found of a structured performance monitoring tool with defined indicators.

This research considers performance measurement and reporting as a fundamental aspect of CDPs and should thus be a key output of CDPs. Firstly, it assists programme managers to

determine whether development of contractors is indeed taking place and secondly, to determine where further interventions are required to develop a particular contractor.

This research finds that there is further scope to investigate the performance of contractors on other CDPs and a need for the development of more systematic measurement of performance. This may be in a form of a performance measurement scorecard and standardized for CDPs.

The CIDB gazetted a Standard for Contractor Performance Report for use on Construction Works Contracts for Grade 2 to 9 contractors (CIDB 2013a) and then for Grade 1 contractors (CIDB 2015b). The standard assesses the performance of contractors against their management of time, cost, quality, health and safety and site conditions. The standard includes a reporting template to be completed by the employer's representative or a delegated representative at the end of each contract. This standard will enable the performance improvement of contractors to be monitored, in this way further development interventions can be determined for the contractors where required.

5.4 Training and mentorship

As indicated in Section 4.5, the training of small contractors was conducted in three phases. The first phase comprised of theoretical training, the second phase comprised of practical training where the contractors and their supervisors were employed as labourers by the main contractor and in the last phase, the contractors were required to manage their own contracts as sub-contractors. The mentorship was provided by both the main contractor and the training services provider.

According to the project training programme, the contractors were trained to NQF level 2: Construction Contracting and the contractor's supervisors were trained to NQF level 4: Supervision of Construction Processes. The training programme was completed over a period of

18 months, from the first phase to implementation. The training comprised of theoretical training, which was conducted over a three (3) month period, initial practical training was conducted prior to tendering, over a duration of one (1) month and the contractors were awarded their own individual contracts to implement over a fourteen (14) month period. During this implementation period, the contractors underwent further on-the-job training which was facilitated by the main contractor and the training service provider. In comparison to other programmes, the Vuk'uphile EPWP Contractor Learnership Programme stipulated a duration of 24 months for completing the NQF Level 2 course and 36 months to complete the NQF Level 4 course (NDPW 2006). Upon further investigation, this research found that the duration and structure of training programmes vary and that CETA and SAQA are not prescriptive, but rather training programmes are structured to suit the requirements of the project and/or development programme. The timeframe for training will also depend on the experience level of the contractors, with entry level or newly established contractors requiring longer durations. For instance, with regards to inexperienced contractors, a duration of one month of prior practical training is insufficient for the inexperienced contractor to fully grasp the practical aspects of the job. As stated in the literature review, Croswell and McCutcheon (2011) observed the same and further emphasised that successful CDPs tend to adopt a long-term approach, especially when there is an extremely poor educational base and lack of individual skills of the trainees. The successful CDPs in Kenya, Lesotho and Botswana were implemented over three (3) to five (5) years.

There is a trade-off between balancing the duration of the training against the requirements of the project. CDPs are required to be incubator type programmes to enable the contractor sufficient time to develop under mentorship. Short-term work opportunities result in being merely job creation opportunities. This is thus an important consideration when implementing development programmes.

In the case study, the contractors exited the training programme with a SAQA accredited qualification, which provides the contractor with an added advantage when seeking for further work opportunities. Furthermore, the qualification offered to the contractor and the supervisors is

accepted as minimum competencies necessary for managing a contracting enterprise and for supervising building and construction works (CIDB 2009).

5.5 Improvement in CIDB grading

The growth in a contractor's CIDB grading is one indicator of development of a contractor. With reference to the case study and as reported in Section 4.8, there has been limited improvement in grading of the small contractors. The research found that 4 years after starting with the training the programme, 71% of the contractors have remained at Grade 1 level, 14% of the contractors increased to Grade 2 and 14% of the contractors increased to Grade 3.

When the findings from this study are compared to the data found in the Construction Monitor, contained in the literature survey in Section 2.6.3.4, it is evident that the percentage increase in grading of the contractors in the case study is significantly lower. The literature survey, which investigated contractors registered in 21 CDPs, found that 37% of CE contractors in Grade 1 and 55% of CE contractors in Grade 2 to 4 upgraded one or more grades in a period of 3 years. Furthermore, the data collected for the CDPs in the Eastern Cape Province showed that 46% of Grade 1 CE contractors had upgraded one or more grades in three years and 50% of Grade 2 to 4 contractors managed to upgrade one or more grades.

The number of contractor grading increases for Grade 2 to 4 contractors is consistently higher than those achieved by Grade 1 contractors. This reinforces the notion that Grade 1 contractors have the most challenge to improve in their grading. Ntuli and Dhiren (2013) made the same observation and reported that the challenge with smaller graded contractors is that they remain in the same grading, as they are not positioned to win projects beyond their permissible contract value.

5.6 Access to further work opportunities

One of the causes that hamper the growth and development of contractors is the lack of access to work opportunities after exiting the programme. Croswell and McCutcheon (2001:4) observed that the lack of continuity in CDPs results in the following: “1) the small contractor goes out of business, 2) the small contractor becomes unavailable for the type of work required and; 3) the small contractor loses competence through lack of practice”. The challenge of the lack of continuity in CDPs is inevitable; partly because 1) opportunities need to be spread so more contractors benefit from the CDP and; 2) it is an unsustainable practise to always guarantee work opportunities to the same small contractors. There can be however some way to further assist contractors exiting the. For instance, in the case study, there has been some effort from the SOE to further aid the small contractor in gaining access to work opportunities after exiting the programme. Although, the contractors were not guaranteed any further work opportunities, the small contractors were however enlisted as service providers with the SOE and are also encouraged to tender for future construction work and maintenance work. The SOE also includes the details of the small contractors in tender document of construction works that are within the same locality. The small contractors are listed as known service providers that the bidders can choose to partner with (if they wish so). As a result of this approach, it was found that at least one (1) of the small contractors has managed to secure further work from the SOE.

5.7 Summary

This chapter presented discussions and some considerations on the approach to contractor development. The chapter considered some shortcomings of the CDP in the case study and compared and contrasted these to other CDPs. In this chapter, it was found that there are some key considerations to improve the nature of CDPs. These interventions include: requirements on minimum qualification upon entering with a CDP, level of prior experience for contractors entering the CDP, the requirement for a systematic measure of performance, some considerations on training, lack of improvement in CIDB grading as well as enabling access to further work opportunities.

6. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The two main objectives of this study are to: (a) understand the process of implementing the CDP in the case study and (b) assess whether the contractors have managed to increase their CIDB grading and sustained their enterprises after exiting the programme. The previous chapters satisfied the stated research objectives. This final chapter presents the summary of the research, the conclusions and recommendations arising from the review of relevant literature as well as the research findings. This chapter further consolidates the results and analysis chapters.

6.2 Summary

This research investigated the effectiveness of a CDP in developing small contractors. The study was limited to fourteen (14) contractors that were enrolled in a programme implemented by a SOE in the execution of a road construction project. This research considers the following factors as an indicator of development: technical, financial and managerial training received by the contractors, the provision of relevant work experience for the duration of the programme as well as an increase in the contractor's CIDB grading after exiting the programme. The CDP is further evaluated against the CIDB's standard definition of a contractor development programme as presented in Section 2.2.3.

The programme's implementation structure was such that the small contractors were employed as subcontractors (labour only) under a Grade 9 main contractor. The main contractor was responsible for providing development support of the small contractors with assistance from a CETA accredited training services provider. The small contractors were assisted to register entities as well as registration with the CIDB as Grade 1 contractors.

The overall project consisted of nine (9) construction work packages, with the construction value of all the packages amounting to R1.2 billion. This research investigation considers the only work package which contained a small contractor development component, with a budget of R135 million. The value of this small contractor development component amounted to 27% of the budget (i.e. R135 million x 27% = approximately R35 million). It is noteworthy that in a project of this size, only approximately 3% was specifically set aside for small contractor development (i.e. R35 million / R 1.2 billion x 100 = approximately 3%).

The cost for the training and mentorship, conducted by an independent training service provider, was R 910 000. The cost for training includes the classroom training in theoretical unit standards, practical training and mentorship which was administered by training service provider as well as the main contractor. This cost accounted for approximately 3% of the R35 million work package (and approximately 0.08% of the total project budget of R 1.2 billion).

The research investigated the implementation method of the CDP. The research found that the programme comprised of pre-selection, awarding of contracts, training and mentorship as well as supervision of small contractors to undertake construction works. This approach was found to share some similarities with the structure of some of CDPs investigated in section 2.6.2. The main difference was found to be in the exiting strategy; since this is a project based contractor development programme linked to a capital works project, the contractors exit the programme upon completion of their scope of works.

According to the project training programme, the contractors were trained to NQF level 2 for Construction Contracting and the contractor's supervisors were trained to NQF level 4 for Supervision of Construction Processes. The training programme was completed over a period of 18 months, from the first phase to implementation. The contractors exited the programme with an official qualification registered with SAQA. This study found that the contractors received

some training in financial, managerial and technical aspects. The contractors further benefited from working under a Grade 9 main contractor and received on-the-job training and mentorship.

Although the study focuses on one project where contractor development was implemented; the lessons and observations from the programme have broader relevance. The study further analyses the overall approach followed in implementing CDPs and emphasises some key considerations relating to the implementation approach. This is expanded on below:

- Firstly, the research observed that when applying to enter into a CDP, there is no minimum relevant technical qualification requirement. The research suggests that, for inexperienced contractors, this result in attraction of opportunistic entrepreneurs that do not have the capability or competence to grow a sustainable enterprise. The study also argues that the advantage in specifying a technical qualification as a pre-requisite to entering a CDP increases the chances of a contracting enterprise's survival and improves contractor performance (as observed by Mohlala 2015 and Sweis et al 2014).

- Secondly, similar to the case study, it was observed that some CDPs do not specify prior experience in the relevant industry as a pre-requisite for entrance into the programme. This also has the same consequence as that stated above. This is especially relevant to CDPs that focus on Grade 1 contractors. Recognition of prior experience should also be a criterion to filter through CDP applicants.

- Thirdly, it was found that there is a lack of monitoring and recording of the performance of the contractors within the CDP against pre-defined indicators. Owing to the lack of reported performance indicators, it is difficult to ascertain whether there has been an improvement in the performance of contractors during execution of the project. There is a need to develop a systematic measurement of performance. This may be in a form of a performance measurement scorecard that is standardized for CDPs.

- Fourthly, with reference to training, the research argues that there is a trade-off between balancing the duration of the training against the requirements of the project. CDPs are required to be incubator type programmes to enable the contractor sufficient time to develop under mentorship. As mentioned earlier, short-term work opportunities are not conducive to developing sustainable contracting enterprises. This is thus an important consideration when implementing development programmes.

- Fifth, the fact that there is a lack of improvement in the CIDB grading of the contractors in the case study is concerning. The CIDB database was analysed to determine whether the contractors are still registered and whether they have increased their grading. The research found that, after 4 years of participating in the CDP, 10 contractors remained at CIDB Grade 1 (71%), 2 of the contractors progressed to Grade 2 (14%) and 2 managed to register as Grade 3 contractors (14%). The CDP in the case study has not performed well in comparison to other CDPs.

- Sixth, there are some lessons that can be learnt from the manner in which the SOE has endeavoured to assist the contractors to gain access to further work opportunities after exiting the programme. In the case study, there has been some effort from the SOE to further aid the small contractor in gaining access to work opportunities after exiting the programme. The contractors were not guaranteed any further work opportunities; they were however enlisted as service providers with the SOE and are also encouraged to tender for future construction work and maintenance work. The SOE also includes the details of the small contractors in tender document of construction works that are within the same locality. The small contractors are listed as known service providers that the bidders can choose to partner with (if they wish so).

6.3 Conclusion

This study found that the contractors received some training in financial, managerial and technical aspects. The contractors were also provided with a certificate as confirmation of their attendance of the training programme and qualification; this enables the contractors to look for further work. The contractors further benefited from working under a Grade 9 main contractor and received on-the-job training and mentorship. Prioritising selection of the contractors situated within the project area also assisted with local economic development. The skills developed within the community ensures that some of the money spent in the project is retained in the community. The contractors also have the potential to create earning opportunities for others in the community.

With some of the benefits of the programme noted, the CDP is further evaluated against the CIDB's definition of a contractor development programme as cited in Section 2.2.3. The CIDB defines contractor development as "a deliberate and managed process to achieve targeted developmental outcomes that improves contractor grading status, performance and quality and equity and targeted ownership" (CIDB 2011c:3). The following observations are made in the context of this statement:

- The CDP under evaluation has achieved 'equity and ownership' targets as observed in the CDP's entrance criteria.
- The CDP has however not addressed 'performance and quality' as there was no monitoring system in place that specifically measured the performance improvement of the small contractors throughout the programme.
- The study also found that there has been limited increase in grading of the small contractors developed. The research notes that 71% of the contractors have remained at Grade 1 level.

This research thus concludes that the CDP in the case study has not been effective as envisaged.

The research further found that there are areas that require improvement relating to the overall approach to CDPs. This includes:

- Recognition of technical qualification especially for lower graded contractors
- Recognition of prior experience for contractors entering the CDPs
- Systematic performance measurement of contractors when executing projects

6.4 Recommendations

This research proposes broader recommendations relating to policies, procedures and performance of CDPs as follows:

Recognition of technical qualification:

With reference to the admission criteria for CDPs, this research found that with construction being a technical sector, it is important that some technical competence be recognised when admitting contractors into a CDP. The lack of technical competence is researched as one of the factors that results in failure of small and emerging enterprises, however there is still a lack of emphasis on development of technical qualification/competence in the field of small and emerging contractor development. It was evident from a number of CDPs implemented by the CIDB that, there is no requirement for a prior technical qualification. The literature review argued that this as one of the aspects that needs to be incorporated in CDPs. It is also noted that the entrance requirements put more emphasis on transformation through ownership and equity targets (in line with the PPPFA and B-BBEE) and do not ensure that suitable applicants are selected; this result in attraction of opportunistic entrepreneurs that do not have the capability to grow a sustainable enterprise. A thorough assessment of technical assessment is required to ensure that the opportunities are provided to capable entrepreneurs. The CIDB has considered the recognition of qualification for lower graded contractors as a criterion for registration since 2011. However, this has not yet materialised on the CIDB policies and in turn to the CDP guideline documents.

Recognition of prior involvement in the sector for contractors entering CDPs:

The research observed that some CDPs do not specify prior experience in the relevant industry as a pre-requisite for entrance into the programme. Recognition of prior experience should also be a criterion to filter through CDP applicants.

Systematic performance measurement throughout the programme:

This research finds that there is further scope to investigate the performance of contractors on other CDPs and a need for the development of more systematic measurement of performance. This may be in a form of a performance measurement scorecard and standardized for CDPs.

Improvement in contracting capacity:

This research found that there are challenges of growth encountered with Grade 1 contractors. The reasons behind this stagnation needs to be researched and explored. This study recommends that SOE contractor development programmes, be focused on at least Grade 2 contractors who may already have some proven track record in the construction industry and have demonstrated to have some construction capacity.

6.5 Areas of future research

This study revealed several opportunities for future research:

- There is further scope to research individual feedback from contractors that have taken part in CDPs to understand the reasons for the lack of improvement in grading especially in Grade 1 level.
- The study analysed the development of small contractor developed on one CDP which was implemented by a SOE in the Eastern Cape. There is scope to investigate the approach that other SOEs follow to develop SMMEs.

- There is also further scope to determine the performance improvement of contractors partaking in other CDPs to determine whether the development support is effective in improving their performance when executing projects.
- Practical case studies need to be undertaken which evaluate the effectiveness of on-the-job training and mentorship on various CDPs.
- Review of policies and procedures that relate to CDPs.

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