UNIVERSITY OF CAPE TOWN

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ORCHESTRATING BACKWARD LINKAGES FROM THE EXTRACTIVE SECTOR TO OTHER PRODUCTIVE VALUE ADDING SECTORS:

A Case Study of the Mining and the Manufacturing Industries in Zambia

By

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by

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ACRONYMS

CSR	Corporate Social Responsibility
CSSDP	Copperbelt SME Suppliers Development Programme
DFID	Department for International Development of the United Kingdom
FNDP	Fifth National Development Plan
ICMM	International Council on Mining and Metals
IFC	International Finance Corporation
OECD	Organisation for Economic Cooperation and Development
OEM	Original Equipment Manufacturer
PEP-Z	Private Enterprise Programme Zambia
PPE	Personal Protection Equipment
SNDP	Sixth National Development Plan
UNCTAD	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission for Africa
UNIDO	United Nations Industrial Development Organisation
ZAM	Zambia Association of Manufacturers
ZCCM-IH	Zambia Consolidated Copper Mines Investment Holdings
ZCM	Zambia Chamber of Mines
ZDA	Zambia Development Agency

ABSTRACT

The quest for natural resource-based industrialisation has continued in many countries, particularly in Sub Sahara Africa. Zambia, a resource rich country, mainly dependent on copper for its exports, has been trying to industrialise with limited success. Recently, there has been renewed emphasis on leveraging the growth recorded in the mining industry to develop other economic sectors. However, the focus of the discourse has mainly been on building effective fiscal linkages.

In this thesis, I argue that beyond fiscal linkages, Zambia can develop the local manufacturing industry through backward linkages from mining to manufacturing given the huge manufactured input demand in the mining sector. I investigate factors driving linkage development and establish that government, lead mining companies, local manufacturing firms, private sector associations and donors all have roles to play in the process.

While government has the responsibility of putting in place the appropriate policy and regulatory framework to encourage local procurement, as well as create a conducive environment for attracting investment and fostering development of manufacturing firms, lead mining firms could contribute by ensuring that they made easy and provided adequate procurement opportunities to local manufacturing firms. They could also contribute by using part of their profits to implement development activities and corporate social responsibility programmes geared towards building capacities of suppliers to meet their drivers of procurement decisions.

Further, local manufacturing firms can play a role by adopting strategies that help them upgrade capabilities to meet the key supply requirements for the mining industry. Associations too can play a significant role. Among other things, the Zambia Chamber of Mines can contribute to this effort by ensuring that a common approach with regard to local procurement is adopted by the mining firms thus making easy for local manufacturers to do business with the mines. The Zambia Association of Manufacturers can play the role of policy advocacy, coordinate the response and engagement from the manufacturers as well as stage activities that facilitate the building of business relations with mining firms. Donors can work with government in improving the policy environment, support local companies' capacity upgrading efforts as well

as work with associations in their advocacy and other activities geared towards increasing valued-added local procurement.

For success to come by, I argue that all these stakeholders have to align their policies, strategies and actions, a task that requires leadership and commitment and can be challenging given the diversity of the stakeholders and their interests.

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CHAPTER ONE

1. INTRODUCTION

1.1 Background and Research Problem

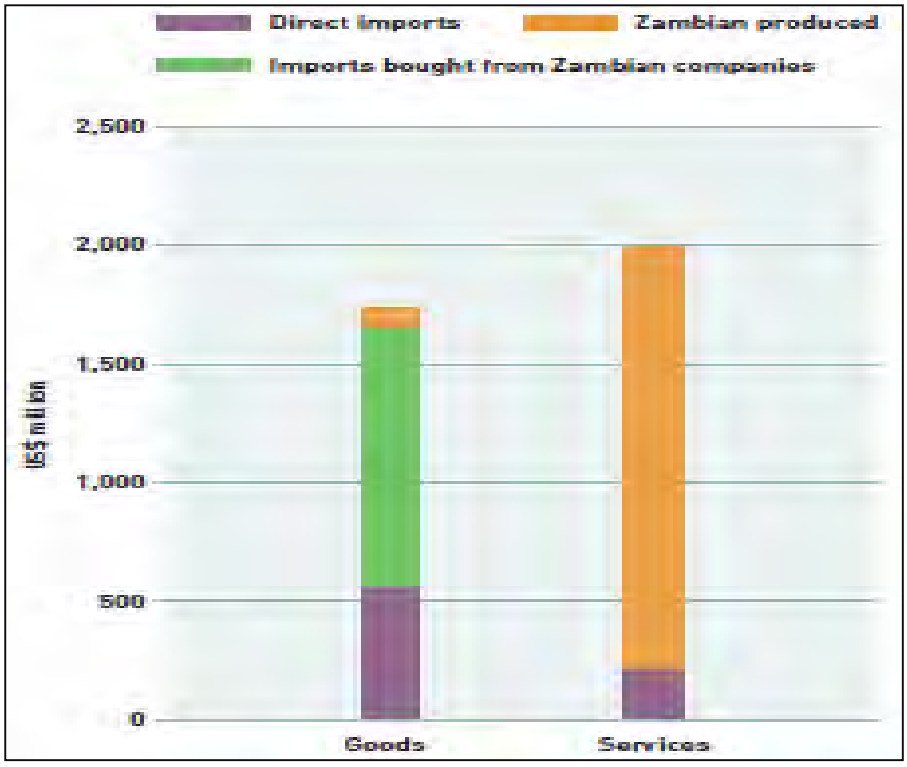
The copper mining industry in Zambia has recorded unprecedented growth both in terms of investment inflows and output. Copper production increased from 572,793 tons in 2008 to over 800,000 tons in 2012 while investment inflows into the sector are estimated to have exceeded USD 8 billion between 2000 and 2012 (Zambia Development Agency, 2013). Between 2009 and 2010, FDI stocks into Zambia amounted to over US$ 10 billion, with mining and quarrying accounting for over 66% of the total (Sutton and Langmead, 2013). It is projected that investments in the mining sector will reach approximately US$ 15 billion on account of new projects under implementation and exploration by the year 2017. Sector output is projected to hit a record high of 1,500,000 tons by 2016 due the on-going projects and expected additional investments in the sector (Zambia Development Agency, 2013).

Despite posting this unprecedented growth in output and investment, the copper mining industry in Zambia still continues to operate as an enclave, with limited linkages to other sectors, such as the local manufacturing sector. A survey of Six mining firms reviews that of the US$ 1.7 billion being spent by mines annually on manufactured inputs, only US$100 million, representing less than 6 per cent of the expenditure, is directed towards local manufactures (Zambia Chamber of Mines and the International Council on Mining and Metals, 2014; Genesis Analytics, 2014; Kasanga, 2012). The rest of the expenditures is split between direct imports by mining firms which account for US$ 600 million or 37.5 per cent and Original Equipment Manufacturers (OEMS) and traders who jointly account for over US$ 1billion, representing over 62.5 per cent of imports. The goods section in figure 1 below is a graphical representation of the current situation.

A close look at the imported core inputs reveals that even unsophisticated inputs that are either currently being produced in Zambia or can easily be produced in Zambia. These include bulk explosives, packaged explosives, explosive accessories, mill balls, rod mills, timber and steel for underground support, quick lime, rock lime, agricultural lime and non-core inputs such as personal protective equipment, wire mesh, surface plant spares, bolts and nuts are being imported.

It is clear from this product range that there are opportunities for enhancing linkages between the local manufacturing industry and the mining industry.

Figure 1: Annual demand and segmentation of inputs into the Zambian Mining supply chain



Source: International Council on Mining and Metals, www.icmm.com

Further, despite the numerous potential economy-wide benefits of backward linkages from mining to manufacturing, the development discourse in Zambia with regard to the contribution of mining to Zambia's socio-economic development has largely remained focused on the need to strengthen fiscal linkages. The focus of the development discourse therefore, exacerbates the perceived limited benefits that Zambia is currently getting from mining activities.

The benefits of successful backward linkages have been well documented. They are diverse and can spread across several stakeholders including local businesses, local communities, as well as government and mining firms. They include increased access to business growth opportunities for local businesses, entrepreneurs, and communities, increased stability and diversity of local products and markets, market-led capability upgrading in local businesses, increased access to capital, productivity, technology, and health, safety and environmental practices as well as more competitive access to inputs (UNECA, 2013; Ramdoo and Bilal,

2014; Ramdoo, 2013; Rieländer and Lecomte, 2013 and 2014; and Nelson 2007). Successful linkages can also enable mining companies lower their logistical and stock holding costs, reduce their lead times, increase security of supply, gain access to local knowledge and skills, as well as enhance their reputation and assist them obtain the "social license" to operate from the host governments and their citizens, while providing governments with increased revenue, employment and diversified economy (World Bank, 2012; Ramdoo and Bilal, 2014; Ramdoo, 2013; Ramdoo, 2012; Hansen, 2014;Morris et al, 2012).

1.2 Research Focus and Hypothesis

1.2.1 Research Focus

Much of mainstream thinking regarding foreign direct investment in developing countries has, since the days of structural adjustment, been dominated by the simplistic view that increased investment inspired by deregulation and incentives would on its own lead to development (Geipel, 2014). The data shown above clearly shows that more has to be in place for development to take place. While increased mining investment and mineral production is a necessary condition, it is not sufficient to enable mining contribute to meaningful development. Fessehaie (2012) highlights how manufacturing firms on the Copperbelt Province of Zambia have generally been collapsing in the face of a booming mining industry. Morris and Fessehaie (2014) observe that the mineral sector […such as copper mining…] is capital intensive and thus has lower employment linkages […and other developmental impact…] than sectors such as manufacturing.

While recognising that several sectors of the economy, including services, can be linked to mining, through fiscal, production (backward and forward) and consumption linkages (Hirschman, 1981), this research only focuses on backward production linkages from mining to manufacturing. On the one hand, the focus on manufacturing is informed by the fact that the sector has potential to stimulate increased production and value addition to raw materials thus fostering product diversification as well as fostering the development of auxiliary service industries and boosting employment opportunities. The sector can be, and has been evidenced in other countries, including the United States, Japan, and the Asian tiger economies, a source of rapid productivity growth in Zambia. It can further shield Zambia from commodity shocks, reduce vulnerability and foster accelerated socio-economic transformation.

On the other hand, the focus on backward production linkages has been informed by their potential to support natural resource-based industrialisation. Within production linkages, Hansen (2014) argues that backward linkages may have higher potential to foster local development than forward linkages. This is so because as opposed to backward linkages which require relatively lower technological capabilities, forward linkages mostly require increased technological capabilities and skills, which most extractive countries' economies, particularly in Africa, do not have. Zambia is no exception from this fact.

In addition, Morris and Fissehaie (2014), in reference to fiscal linkages, observe that potential benefits accruing from higher revenues from mining have not been realised due to several factors including unfavourable tax regimes, tax evasion and financial mismanagement and underscore that only a massive industrialisation effort will enable Africa to eradicate poverty and achieve sustainable development. They stress the need to focus on creating backward linkages and promoting industrialisation to enhance the mining sector's contribution to sustainable development. Details of the various benefits are articulated in greater depth in the literature review.

The focus on Zambia as a case study is guided by the fact that Zambia is one of the largest global producers of copper standing at 8th position globally and 2nd in Africa with estimated production of 730,000 Mt in 2014 after the Democratic Republic of Congo whose production in 2014 was estimated at 1,100,000 Mt (Copper Investing News, 2015).

Further, many have argued that Zambia has not derived sufficient benefits from its mineral resources. The choice of Zambia as a case is thus underpinned by the fact that Zambia has recently developed a Mineral Resources Development Policy (2013) which seeks to increase the contribution of mining activities to the socio-economic development of the country through, among other things, linkage development. The country is currently in the process of developing programmes that will assist government realise the policy objectives, hence the timeliness of this study.

1.2.2 Hypothesis

Emanating from this research focus, the researcher's working hypothesis is that the mining industry offers an opportunity for the development of local manufacturing industry and foster Zambia's structural transformation if the polices, strategies and actions of key stakeholders are aligned, effectively focused and implemented in a coordinated manner.

1.3 Overall Objective

The overall objective of the research is to identify factors promoting and constraining successful backward linkage formation and provide an analysis that can not only contribute to shaping the reforms that are aimed at increasing the volume and value of local manufactures entering the Zambian mining supply chain but also contribute to refocusing the development efforts and discourse on mining contribution to Zambia's socio-economic development.

1.3.1 Specific Research Objectives

Specific objectives of the research are to:

i. Identify factors driving succesful backward linkage development and explore how the identifed factors impact linkage formation;
ii. Assess the status quo of the various drivers of backward linkage formation in Zambia with the view to identifying areas requiring attention;
iii. Provide actionable recommendations that stakeholders can draw from in their efforts to develop and strengthen backward linkages from mining to manufacturing in Zambia;
iv. Provide a body of literature that can be used to refocus the development discourse with regard to linkage development, in general, and enhanced mining contribution to Zambia's socio-economic development, in particular; and
v. Identify areas for future research in the light of upscaled efforts for linkage development.

1.4 Purpose and Significance of the Research

There has been renewed focus on natural resource-based industrialisation at global and and country level. In 2013 the United Nations Economic Commisssion for Africa published report on entitled "Making the Most of Africa's Commodities: Industrializing for Growth, Jobs and Economic Transformation", which brought linkages from commodity sectors to sectors such as manufacturng at the centre of the global discourse on Africa's development. The UNECA publication was further augmented by the Africa Panel's Africa Progress Report of 2013 which, inter alia, identified stronger linkages as an avenue for ensuring that natural resources contribute to expanding Africa's development opportunity. Other important publications have included the World Bank's 2012 report on "Increasing Local Procurement by the Mining Industry in West Africa"; UNIDO's report on "Promoting Industrial Diversification in Resource Intensive Economies: the Experiences of Sub-Saharan Africa and Central Asia

Regions" published in 2013, among others. These publications provide both country specific insights into issues surrounding linkage development in general and specific to certain countries though not in systematic and holistic manner that can help an identified country put the pieces of the puzzle together and guide the work towards linkage development.

The interest in and push for natural resources-based indusrilaisation has also been visible in the research work of the academia and research institutes. Some of the most visible work coming out the academia include the work of Morris and others published in "One thing Leads to Another: Commodities, Linkages and Industrial Development" of 2012; Nelson's "Building Linkages for Competitive and Responsible Entrepreneurship: Innovative partnerships to foster small enterprise, promote economic growth and reduce poverty in developing countries" published in 2007 and Ramdoo's series of articles on Natural resources-based industrialisation published by the European Centre for Development Policy and Management. These works, though insightful and useful, have been wide in coverage of countries, with most focusing not only on copper mining but other mineral resources' backward and forward linkages to several sectors beyond manufacturing.

At country level, while there has been several isolated studies done on linkages, to my knowledge, none has exclusively focused on manufacturing. Recent notable work is Fessehaie's 2012 thesis where she conducts an assessment of the dynamics of Zambia's copper value chain. She covers supply from a broader perspective covering both services and manufactures. While her work is useful and can contribute to shaping the discourse surrounding scaling up of mining contribution to development and efforts regarding linkage development in Zambia, it falls short of providing comprehensive and systematic recommendnations on what needs to be done as regards the various drivers of linkage development to help Zambian stakeholders succesfully build backward linkages from mining to manufacturing.

This study is specific to the development and strengthening of backward linkages from mining to manufactruring. It therefore, represents a more country and sector focussed approach geared towards identifying factors driving backward linkage development and exploring how identified factors impact linkage formation in general and specifically in Zambia, between mining and manufacturing. It thus provides actionable recommendations in this regard. The study is therefore, significant in several ways including providing a body of literature that can not only contribute to shaping the reforms that are aimed at increasing

the volume and value of local manufaturers entering the Zambian mining supply chain but also contribute to refocusing the development discourse on the need for linkage formation.

1.5 Methodology

This study extensively uses both secondary and primary data. These data soruces are discussed in greater detail below.

1.5.1 Secondary Data Sources

Data relating to linkage development in general was collected from secondary sources accessed from physically and online sources. These included empirical and theoretical work published in books, working and discussion papers, reports, conference papers, policy documents and pieces of legislation. The carefully selected resources included leading research work on linkage development and natural resource-based industrialisation from several leading scholars as well as literature on firm-level capabilities.

Some of the core literature sources include Hirschman (1981), "From enclave to linkage economies? A review of the literature on linkages between extractive multinational corporations and local industry in Africa", Hansen (2014); "Global Value Chains in a Post-Washington Consensus World: Shifting Governance Structures, Trade Patterns and Development" by Gereffi (2013); Handbook for Value Chain Research, by Kaplinsky and Morris (2001); "One thing lead to another: Commodities, Linkages and Industrial Development" by Morris et al (2012), "Extractive Resources for Development: Trade, fiscal and industrial considerations" by Ramdoo and Bilal (2014) "Fixing Broken Links: Linking extractive sectors to productive value chains" by Ramdoo (2013); discussion paper on the "The drive to increase local procurement in the Mining Sector in Africa by Hanlin (2011) and research work and literature published by various international organisations including "Making the Most of Africa's Commodities by UNECA (2013), Equity in Extractives: Stewarding Africa's natural resources for all", Africa Progress Panel (2013); Increasing Local Procurement by the Mining Industry in West Africa" by World Bank (2012)"; and "Promoting Industrial Diversification in Resource Intensive Economies: the Experiences of Sub-Saharan Africa and Central Asia Regions" by UNIDO (2013). These sources, along with others, were consulted due to the fact that they have widely been recognised and referenced.

Secondary data specific to Zambia on the various aspects of linkage development was collected from various reports prepared for the Local Content Initiative Focal Working Group[1]. These included Kasanga's report of 2012 on the Leveraging Zambia's Industrialisation with growth of copper mining investments; the International Council on Mining and Metals and the Zambia Chamber of Mines report on "Enhancing mining's contribution to the Zambian economy and society" (2014); and the Genesis Analytics Report on the "Design of a Zambia mining Local content programme" (2014). Other reports and publications used included Dinh, (2013) report on *"Light Manufacturing in Zambia: Job Creation and Prosperity in a Resource-Based Economy"*; "An Enterprise Map of Zambia", by Sutton and Langmead (2013), *"the Dynamics of Zambia's Copper Value Chain"* by Fessehaie (2012) and "*An Independent Evaluation Report of the CSSDP"* by Chitembo (2010). The choice of these sources was informed by the fact that they represent some comprehensive materials covering some of the issues relevant to linkage development with respect to Zambia.

1.5.2 Primary Data Sources

Primary data was collected from the stakeholders involved in the promotion and impelmentation of the Local Content Initiative and their respective constituences. These included the Zambia Chamber of Mines and three (3) major mining companies, ten (10) manufacturing companies, the Ministry of Mines, and Ministry of Commerce, Trade and Industry and the Ministry of Mines.

1.5.3 Sample Selection

Respondents, both organisations and individuals were selected using quota sampling. This sampling technique was employed due to its strength of allowing the researcher to only focus on respondents that were most likely to have insights into the research topic, thus facilitating optimal use of the limited available time and resources for conducting the study.

Engaging the buyers is crucial to any effort aimed at inserting a particular group of suppliers in an identified value chain and thus important in this research. The inclusion of mining firms in the sample was thus important in that the mines represented the buyers, and have criteria

[1] The Local Content Initiative Focal Group is a group championing work regarding the integration of the local manufacturing industry into the mining supply chain. The membership to the group includes the Zambia Chamber of Mines, the Zambia Association of Manufacturers, the Ministry of Commerce, Trade and Industry as well as the Ministry of Mines. The group is supported by the World Bank and the Department for International Development of the United Kingdom who have played the roles of convening and resourcing part of the work.

they apply when selecting their would be suppliers. Further, the mines were presumed to have had experience in dealing with manufacturers and knowledge of some of the challenges faced by their different suppliers, including manufacturers, in doing business with them.

The inclusion of manufacturing firms was necessary for they are the targetted sector for integration in the mining supply chain. They were also presumed to have had some experience in dealing with mining firms and were cognisant of the challenges surrounding their firm level operations and issues regarding their doing business with the mining firms. Further, given that the research partly sought to highlight the firm level issues within the manufacturing sector that were hampering or facilitating increased business with the mining firms, it was crucial that manufacturers were involved in the study.

Within the manufacturing sector, this study focused on core mining inputs – iron and steel, and non-core inputs represented by the uniforms and protective clothing, including safety shoes. The choice of the iron and steel sub-sectors was informed by the fact that the sub-sector is a low technology sector that can provide cost effective and quality materials for general construction, and in particular, the construction of mining complexes, anchoring of underground operations, as well as provide inputs for manufacturing other products within the metal engineering sector. The choice of sub-sector was further driven by the fact that Zambia has potential to develop metal resource-based manufacturing sub-sectors given its iron ore and other metal deposits (JICA, 2014). In addition, the sub-sector has recorded increased investments and product diversification over the last five years and the Zambian Government has designated it as one of the priority sectors to underpin job creation in the manufacturing as inscribed in the Strategy Paper on Industrialisation and Job Creation of 2014.

The choice of uniforms and protective clothing including safety shoes is driven by the fact that the Zambia manufacturing industry already produces and supplies these products to mining firms operating in Zambia, but in smaller quantities and usually through middle men, and, exports to mining firms in the Democratic Republic of Congo. The choice is supported by the fact that protective garments industry is a relatively easy sector to develop given the minimal levels of technology and skills requirement as well as the abundant opportunities for competitively sourcing imported apparel from the Far East.

As regards the public agencies, the inclusion of Minsitry of Commerce, Trade and Industry as well as the Ministry of Mines was out of the recognition that policy and legislation around

indstrial development and trade, as well as mining, among many other policies, had implications on the extent to which effort to insert the manufacturing into the mining value chain could succeed.

Further, donors spoken to included the World Bank, the Intenrational Finance Corporation, the Department for International Development of the United Kingdom and the DFID-funded Private Enterprise Programme Zambia (PEP-Z). These were selected on the basis that they had previously been involved or were currently working on initiatives and activities surrounding linakge development or were developing programmes geared towards building linkages especially between the mining industry and the productive sectors including manufacturing.

As regard the associations, the relevance of the work the associations were involved in with regard to doing business with the mining industry, formed the core criteria of the selection. The Zambia Chamber of Mines represents the interests of the mining industry and has been working with the Zambia Association of Manufacturers, the organisation I work for, in building linkages between mining and manufacturing. They were thus a natural candidate for my work. The Mining Suppliers and Contractors Associations Association, represents contractors that normally undertake civil and other works requiring manufcatured inputs, for mining firms. They were therefore, an important possible entry point to the mining supply chain hence their consideration and involvement in the research. The Small Scale Mine Suppliers Association were considered due to the fact that they were sourcing some of the supplies they were directing into mines from local manufacturers and somehow had strong support from the political machinery.

1.5.4 Data Collection and Analysis

The data was collected through interviews, conducted using an interview guide prepared by the researcher. The interview guide drew from the literature explored by the researcher regarding determinants of linkage development. Different guides were prepared for a particular group of respondents. All the guides however, were developed based on the work of Hansen (2014)'s analytical framework for factors affecting linkage development which have also been highlighted by several other scholars including Gereffi (2013); Kaplinsky and Morris (2001). The analytical framework also drew from the work of the World Bank which expressly highlighted and included private sector associations. These include government strategies and capabilities; multinational Corporations' strategies and capabilities; local industry strategies

and capabilities; activities and strategies of private sectors associations as well as donor strategies and influence.

Accordingly, the guide for the public sector respondents was developed to ascertain government's strategies and capabilities. It focussed on issues surrounding existence of strategy development and vision articulation; policy development and alignment; leadership and stakeholder alignment; policy incentives and sanctions; policy capabilities; policy will; and driving, prioritization and sequencing.

The mining companies' guide focussed on procurement policies including publicity of procurement opportunities, evaluation criteria, the relationship with suppliers, the key qualifications for their suppliers and general issues and experience in their doing business with local manufacturers. The guide was also informed by the literature on critical success factors for succesfully penetrating the mining suply chain as propounded by the various scholars.

The guide for manufacturers sought to bring out issues that had either facilitated or constrained their doing business with the mining firms and well as some firm level issues, and macro-economic issues affecting their operations in general and in particular doing business with the mining firms. The design of the guide was also informed by the literature on firm-level capabilities as detailed in the literature review.

The guide for donors probbed issues around their past and present involvement in linkage development and their level of engagement with government on related matters as well as embedment of supporting programmes in their development cooperation. The researcher also reviewed the donors' country assistance strategies to ascertain existence of programmes and strategies envisioned to support linkage development.

Where possible, the researcher collected data on similar aspects from different sources, or used both interviews and literature review, herein referred to as triangulation, to improve the validity of the findings of the research and applicability, replicability and use of the study findings.

Data analysis methods employed included documentary review and textual analysis for secondary data and constant comparison (grounded theory) for primary data. My application of these methods in combination was informed by the fact that they can assist in effectively analysing, understanding and explaining the findings of this qualitative study.

1.6 Limitations of the Study

The main limitation of this study was the small number of respondents from particularly government, the mining sector and the manufacturing industry involved in the study. This had the potential to narrow the perspectives on some of the issues driving or hampering linkage development and as such affect the quality and range of recommendations for action going forward. To counter this weakness, the researcher complemented and supplemented the primary data with robust secondary data from several recent studies that covered more respondents within and beyond the stakeholder organisations covered in this research. This enabled the researcher to have much wider views and opinions from the various stakeholders and increased the reliability of the research findings.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 What are Linkages?

Hirschman (1981) describes production linkages as those involving processing of commodities and producing inputs for use in the commodities sectors. He describes the earlier as forward linkages, and the later as backward linkages. He identifies two other types of linkages namely: fiscal linkages and consumption linkages. On the one hand, he describes fiscal linkages as resource rents that governments are able to derive from the commodities sectors through corporate taxes, royalties as well as employees' income tax which can be applied in the development of sectors outside the commodities sectors. On the other hand, he explains that consumption linkages represent the demand for the output of other sectors emanating from the incomes earned by those working in the commodities sector.

2.2 Why the Focus Backward Linkages?

While all the three types of linkages are important, this research only focuses on production linkages because of their direct relevance to fostering production in the manufacturing sector. Within production linkages, the paper further focuses on backward linkages as they represent the most relevant strand in the integration of local manufacturing into the mining supply chain. Hansen (2014) argues that backward linkages may have higher potential to foster local development than forward linkages.

As Hirschman (1981) elaborates, backward linkages are created when the establishment of a new industry into an economy creates possibilities for local industries to expand production through the supply of inputs to the new entrant. The increased investment and growth of the mining sector and the eventual increase in demand for manufactured inputs by the industry has created opportunities for the manufacturing industry. Zambia can therefore, benefit from the establishment of backward linkages as they would enable domestic enterprises [in manufacturing and other sectors] to supply inputs in the operations of investing [mining] companies.

Successful backward linkages have potential to immensely benefit the mining firms, local businesses, entrepreneurs and communities, and the overall economy (World Bank, 2012; Ramdoo and Bilal, 2014; Ramdoo, 2013; Africa Development Report, 2013; Ramdoo, 2012; Hansen, 2014). One the one hand, linkages can lead to local businesses, entrepreneurs, and communities having increased access to business growth opportunities, increased stability and diversity of markets and markets, and market-led improvement in business capabilities, including access to capital, productivity, technology, and health, safety and environmental practices as well as more competitive access to inputs.

One the other hand, backward linkages can enable mining companies lower their logistical and stock holding costs, reduce their lead times, increase security of supply, gain access to local knowledge and skills, as well as enhance their reputation and assist them obtain the "social license" to operate from the host governments and their citizens and more favourable negotiations to access resources. Morris et al (2012) notes:

"Finding an efficient local supplier is particularly attractive in Africa because transport and logistics are poorly developed, often resulting in goods brought in from outside being subjected to long and unpredictable delays and because government policies have been instructive of the need to deepen local value addition."

This explains why lead firms are and should be interested in local procurement and extension of their supply chains rather than operating as simple enclaves even in this era of globalisation and the dominance of global value chains.

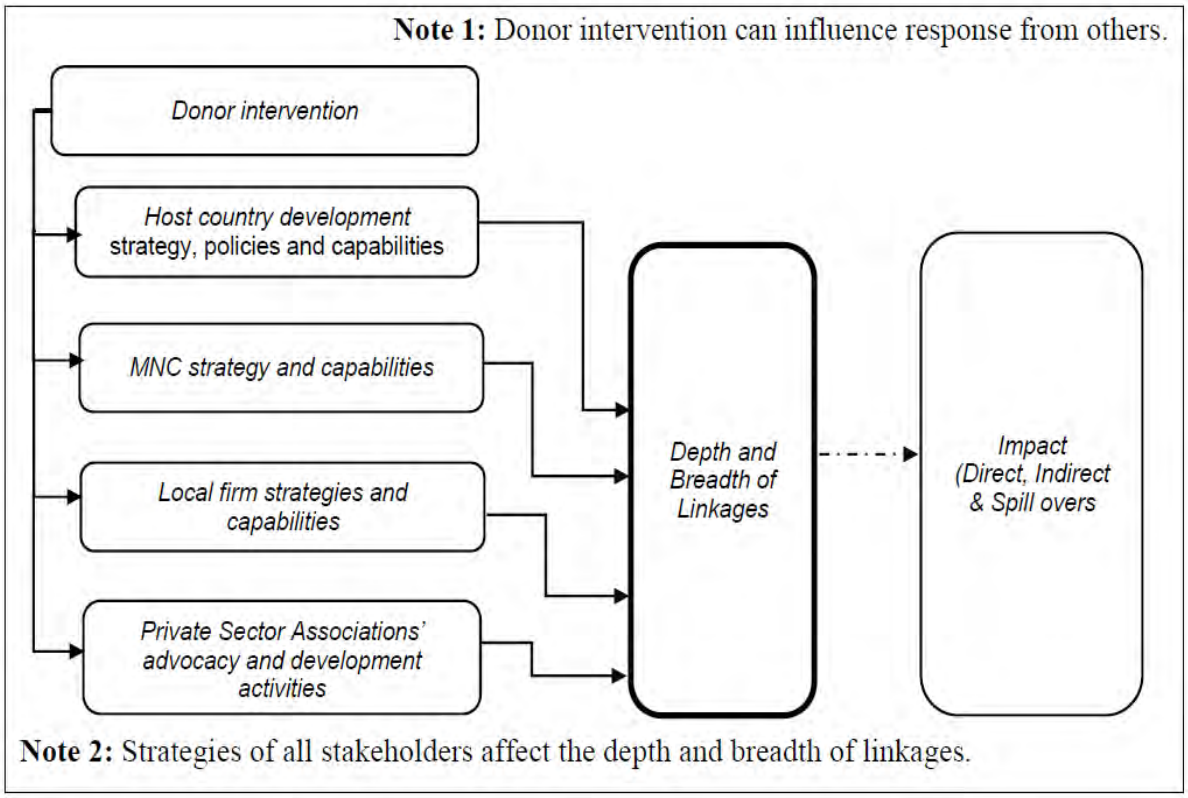
In addition to the benefits articulated above, well nurtured backward linkages can have wider socio-economic benefits which include upgrading of skills and increased employment, increased domestic and foreign investment, technology and knowledge transfer from international companies, exports and foreign exchange, government tax revenues as well as development of strategic industries and reduced vulnerability to commodity shocks and economic downturns. Properly nurtured backward linkages would thus ultimately increase prospects for poverty reduction and foster accelerated sustainable socio-economic development.

Given the importance of linkages in promoting accelerated socio-economic development, and the fact that these linkages do not come automatically, what then are the factors that can adversely affect or support their establishment?

2.3 Drivers of Backward Linkage Development

Hansen (2014) presents an analytical framework for factors affecting linkage development. He cites government strategies and capabilities; multinational Corporations' strategies and capabilities; local industry strategies and capabilities; as well as donor strategies and influence as being among the factors that can promote or hinder formation of linkages. For the most part, his views are echoed by several other scholars including Gereffi (2013); Kaplinsky and Morris (2001); and Kaplinsky et al (2014) who have applied varying classifications and terminology but covering similar issues. The World Bank (2012) further adds that private sector associations can also play an important role in linkage development. This study adopts Hansen's framework and adds the private sector associations' dimension. The resulting analytical framework is thus shown in figure 2 below.

Figure 2: Linkage Development Analytical Framework



Source: **Adapted from Hansen (2014) and modified by author**

The section below, explores how each of the identified drivers impacts linkage development with the view to providing understanding that should aid investigation into how these factor have actually impacted linkage development in Zambia, and getting insights into how they can be attuned to linkage development.

2.3.1 Backward linkages and development: What role for government policy and capabilities?

Government policy has an important role to play in the establishment and nurturing of backward linkages. Governments should therefore, take steps to formulate and implement strategic policies that foster linkages and enable local producers integrate and favourably compete in regional and global value chains, such as mining (UNECA, 2013; Morris et al, 2012; Africa Progress Report, 2013; World Bank, 2012). What then are the dimensions of government policy that are necessary for the development of successful linkages?

Several dimensions of policy need to be in place including strategy development and vision articulation; policy development and alignment; leadership and stakeholder alignment; policy incentives and sanctions; policy capabilities; policy will; and driving, prioritization and sequencing (UNECA, 2013; Morris et al, 2012; the Africa Progress Panel, 2013; UNECA, 2015; UNIDO 2013). The section below explores each of these areas and highlights how they impact linkage development.

2.3.1.1 Vision Articulation and Strategy Development

A strategy is needed on how best a host government intends to leverage backward linkages of the extractive sectors such as mining to support sectors like manufacturing (UNECA, 2013; Morris et al, 2012; Africa Progress Report, 2013; World Bank, 2012; UNIDO, 2013). Given that there are various stakeholders with varied interests, capacities and capabilities in the development of backward linkages, strategy development should be anchored by a multi-stakeholder structure which should ensure that the views of various stakeholders are taken on board if strategy is to be successful therefore, (UNECA, 2013).

UNECA (2013) and UNIDO (2013) further stress that the strategy development process should be supported by the best available in-depth evidence which should highlight the various issues surrounding the mining and manufacturing sectors and related linkage development needs, challenges and opportunities (UNIDO, 2013; UNECA, 2013; World Bank, 2012).

UNECA (2013) underscores that the strategy should clearly outline support mechanisms including responsibilities, activities, outputs and milestones. The vision embedded in the strategy should thus inform and become the basis on which effective and mutually reinforcing policies are developed to support linkage development (UNIDO, 2013).

While top level government leadership and support is a crucial ingredient for the process, widespread ownership and buy-in from other stakeholders including the mining sector players, manufacturers, civil society and the general citizenry is also paramount for continuity and sustainability of linkage development efforts (UNECA, 2013; Morris et al, 2012; Africa Progress Report, 2013; World Bank, 2012; UNIDO, 2013).

2.3.1.2 Legislation, Policy Development and Alignment

Morris et al. (2012) observe that beyond strategies, countries need to develop policies. The World Bank (2012) underscores that to ensure success in building backward linkages, national governments need to set appropriate policy and regulations that recognise context to encourage local procurement. UNECA (2013) hints that local content policies have been one of the single most important policy drivers of linkage development from the commodity sector. Such policies should focus on building local value addition, removing burdensome administrative procedures and streamlining regulations, as well as securing technical and financial assistance for developing linkages (Ibid).

Four ingredients are crucial to a successful local content policy (UNECA, 2013) namely: government-private sector collaboration in developing the policy; the policy development process should engage the major commodity firms to voluntarily facilitate local sourcing; the need to use regulations to compel major commodity firms to increase local content, where they cannot do it voluntarily; the need to ensure that industrial policy has detailed and incremental implementation measures, including monitoring and evaluation as well as sanctions.

Given the variety of issues to be addressed in the operationalisation of the strategy, linkage development will require development of and re-orientation of the focus of several policies (UNIDO, 2013). Such policies may include, but not limited to, skills development, infrastructure development, trade policy, tax policy and national quality infrastructure development, among others (UNECA, 2013).

The African Progress Panel (2013) notes that political instability and economic uncertainty adversely affect the flow of long-term investment in mining but encourage and attract companies geared towards speculative exploration, short-term profit maximization and poor standards of governance, all of which are not supportive of linkage building. They underscore that neither poor infrastructure nor inadequate skills favour the establishment of linkages and development of a dynamic resource-based industrialisation strategy. They further stress the need to put in place policies that ensure mining and minerals industries are globally competitive, including upgrading of capabilities of the local input producers to produce and supply competitively.

Nelson (2007) points to policies geared towards creating an enabling environment for private sector development in general (including sound investment climate; macro and micro-economic stability as well as addressing regulatory impediments to mobilising domestic capital, attracting and retention of foreign capital; investment in trade facilitation infrastructure) and those aimed at supporting small enterprise development (such as those aimed at ensuring that framework conditions, consultation structures and delivery mechanisms for finance and business development services support SME development; assisting SMEs upgrade into broader value chains) among other policies.

The development and implementation of these policies should therefore, be coordinated to ensure they are coherent, consistent and mutually reinforcing (Morris et al, 2012; UNIDO, 2013). Broad stakeholder engagement is therefore, crucial at all stages of policy development and implementation to ensure widespread ownership and sustainability (UNECA, 2013; Ramdoo and Bilal, 2014; Africa Progress Panel, 2013).

2.3.1.3 Leadership and Stakeholder Alignment

Andrews (2013) hints that successful reform happens when led by a group of agents who perform various functions required to make reform work. The development of linkages is a multi-actor collaboration process as it involves players in the extractive sector such as mining, players in the sectors that are seeking to be linked to the extractive sector, such as manufacturers, government, donors and civil society. In any such reform, there will be winners and losers. Policy reform to promote local content will obviously not be supported by those that stand to lose. Therefore, effort should be directed at ensuring buy-in from the various stakeholders and building a shared vision if linkage building is to be successful. This certainly requires leadership and real dialogue.

Strong process leadership is critical for successful multi-actor collaboration (Dewulf, 2007). Creating conditions that bring out diversity of perspectives, competencies and resources, while ensuring that each stakeholder meets his own objectives or at least get aligned to the outcome, constitutes one of the key aspects of process leadership (ibid).

2.3.1.4 Policy Incentives, Sanctions and Monitoring and Evaluation

Policy processes do not always lead to public officials to search out better ways of improving institutional arrangements and delivering development (Ostrom et al., 2002). Without incentives and sanctions, implementation of policies would remain optional rendering the policies as good as being non-existent. Levy (2014) further underscores the importance of strong incentives in making multi-stakeholder engagements effective. He explains that the presence of stakeholders with strong incentives is crucial to a fruitful collective effort.

Therefore, a successful approach to delivering development must focus on how to generate appropriate incentives [and sanctions] to ensure that the time, skill, knowledge, and genuine effort of multiple individuals are channeled in ways that produce jointly valued outcomes (Barder, 2009; Ostrom, 2002). Rewards and punishment have potential to re-orient individuals [and organizations] involved in a reform to take actions that are beneficial to all.

In some cases, however, even where resources are committed, implementation of policies can be adversely affected by principal-agent problems (Ostrom et al, 2002). This stresses the need for putting in place an effective monitoring and evaluation mechanism to help track progress and inform future policy reforms, as well as an incentive and sanctioning mechanism for underperformance.

However, incentives and sanctions need to be clear and fit for purpose (UNIDO, 2013). Lack of sanctions and existence of pervasive incentives can encourage both individuals and organizations to avoid engagement in mutually productive outcomes or take actions that are generally harmful to others.

2.3.1.5 Policy Capabilities

Policies and legislation are only effective, if they are implemented. Policies without implementation capabilities or that are not technically feasible to implement are as good as being non-existent. All local content policies developed should therefore, be technically feasible and backed by corresponding capabilities to implement.

UNIDO (2013) provides a case of Angola which has three lists "mandating" local content in the supply of inputs, but most of the mandated items are beyond the feasible competences of local suppliers. The lists have thus been ignored by the commodity companies. They further highlight that while specific incentives to promote linkages are in place, inadequate monitoring resulting from low implementation capacity of the responsible agencies, has rendered the incentives ineffective and undermined the overall credibility of local content policy.

In Ghana, however, the collaboration between government and the mining companies has resulted in the compilation of a list of inputs which many believe can effectively be supplied by the local producers (Ibid). The Ghana case indicates that policy capability extends to being able to engage and foster effective multi-stakeholder dialogue that results agreed outcomes that are implementable. UNECA (2013) views coordination structures as inputs into policy implementation and stress that effective implementation requires coordination across ministries and departments in the context of broader national development plans and frameworks that ensure participation of the private sector and other stakeholders.

2.3.1.6 Policy Will

Policy entails going beyond rhetoric and acting (UNIDO, 2012). Therefore, the willingness by the stakeholders to commit resources to the creation of linkages and promoting local content will signify policy will. Morris et al. (2012) cite Botswana as one of the country cases where there has been recognition of the gap in domestic capacities with regard to building linkages and government has shown commitment by buying in and implementing the idea of sourcing external expertise which the country requires to develop evidence based policy.

Morris et al. (2012) observe that in some cases, the capacity gap is reinforced by a 'will gap'. They cite undermining of legitimacy and morale in government, and the pervasiveness of corruption, as some of the issues adversely explaining absence of government will. They focus on Tanzania and exemplify how implementation of linkage policies has been undermined by a combination of lack of will and corruption as well as Gabon where linkage development legislation has been routinely flouted.

2.3.1.7 Driving, Prioritisation and Sequencing

The linkage development process requires a driver. Evidence suggests that the driver need not be an individual but a group of people from the public and private sector who share the same vision (UNIDO, 2013). Commitment at the highest level of government and the mining and

manufacturing firms backed by legitimacy within the stakeholder groups is also crucial to successful driving of the linkage development process. Further, developing prioritised and sequenced interventions that should address the various areas of concern for the various stakeholders facilitate the building of successful linkages.

Morris et al. (2012) point to the need to develop a roadmap as a strategic response to linkage development. In this regard, they identify three families of linkages namely low-hanging fruits, embryonic-capability linkages, and finally, ambitious, high profile linkages.

On the one hand, they explain that 'low hanging fruit' linkages provide short term returns to both lead commodity firms and producers with capability to produce quality products reliably at prices that are near the global price frontier. They further hint that linkage development policies under these circumstances should focus on seizing win-win low hanging fruits.

On the other hand, they highlight that embryonic linkages are can exist where capabilities are present but local producers require reasonable, time-bound support to effectively compete with foreign producers. Under these circumstances, they stress, host governments need to develop targeted interventions that enable local producers to become more competitive in the face of foreign competition over time.

In addition, they delineate that ambitious-high profile linkages are beyond feasible reach in the short to medium term. They counsel host governments to focus policy in this regard on resisting the political pressures often exerted by local stakeholders (such as segments of industry, local scientists and engineers and politicians) to promote these overly ambitious linkages. Where there is significant demand, efforts can also focus on attracting new investment to commence the long journey of capability building.

2.3.2 Backward linkages and development: What role for Multinational Corporations (MNC) strategies and capabilities?

This section is divided in two section. The first section explores literature on Multinational Corporations (MNC) strategies and capabilities with the view to gaining insight into possible variables for consideration in the research. The second part identifies and justifies selection of the variables to be focused on in the study.

2.3.2.1 What does the literature tell us?

Hansen (2014) reviews literature on the state of and driving forces of linkage formation in South Sahel Africa extractives and identified three drivers of linkage formation in African extractives – increasing competition among multinational corporations (MNCs) in the extractive sector; growing disintegration of lead MNCs' value chains; and growing engagement of MNCs in development and CSR-related activities; and the role of donors.

2.3.2.1.1 Growing competition

The extractive industry is capital-intensive whose viability requires economies-of-scale (Hansen, 2014). Accordingly therefore, there is an increasing trend of strong consolidation of this sector through mergers and acquisitions (Jereffi, 2013; Hansen, 2014). He observes that while the consolidation process had potential to increase the bargaining power of lead extractive MNCs and result in lead MNCs dictating their terms to supplier firms and governments, he hints that growing competition and rivalry within extractives underpinned by the arrival of new players from emerging markets such as China, South Africa, India and Brazil as well as increasingly competent national champions from Africa would leverage this development. He therefore, concludes that growing competition for extractive concessions had potential to strengthen the bargaining power of host governments and creating opportunity for governments to exert pressure on players in the extractives to build local linkages and spillovers.

2.3.2.1.2 Growing value chain disintegration or outsourcing

There is an increasing trend of outsourcing in services, manufacturing and extractives (Fessehaie and Morris, 2013; Hansen, 2014; Kaplinsky, 2013; Morris et al., 2012). Arising from this development, is a growing trend for non-core activities to be outsourced to low cost suppliers and for firms and economies to specialise in capabilities rather than wholly manufactured products (Morris et al., 2012). Hansen (2014) describes outsourcing as a carefully planned and strategic process where significant resources are invested in identifying, negotiating with, upgrading and monitoring prospective suppliers and service providers with the view to reducing costs, spreading risks, obtaining benefits of specialisation, and tapping into the resources and capabilities of other firms. While increased outsourcing provides new opportunities for local firms to get inserted into the value chains of large extractive MNCs and

general linkage development, risks and costs of outsourcing may work against outsourcing (Hansen, 2014; Fessehaie and Morris, 2013; Morris et al, 2012; Hanlin, 2011).

On the one hand, outsourcing as a business strategy is only attractive if the costs of maintaining the activity in-house is higher than the transaction costs of outsourcing. The prospects for linkage development are therefore non-existent if the cost are the same or more. Morris et al. (2012) highlights that once a decision to outsource has been made, the first step taken by firms is to find the lowest cost supplier [……].

On the other hand, given that transaction costs are, to a large extent, determined by the quality and reliability of potential linkage partners and the quality of market support institutions including contract enforcement and information provision, the prospects for linkage development are higher in countries with strong institutional environments and strong industrial capacity (Hansen, 2014; Morris et al., 2012). Weak institutional environments for extractives and weak industrial capacity therefore, only serve to deter linkage development by encouraging firms in the extractive sector to resort to internalisation, or continue relying on traditional suppliers with known capabilities and proven track records (Hanlin, 2011; Hansen, 2014; Morris et al, 2012).

Further, the adoption of any outsourcing strategy is depended on the extent to which operators in the extractives fear leakage of core competencies (Fessehaie and Morris, 2014). While sharing non-core technology and skills with local firms may be something that players in extractive firms can readily do, they are reluctant to risk contributing to the development of future competitors (Hansen, 2014). This fear shapes the type of linkage development activities that they can engage into. MNCs are more willing to engage in inter-industry linkages than intra-industry linkages (Hansen, 2014; Morris et al., 2011). The weak legal protection of propriety technology and skills in some African developing countries further exacerbates this problem (Hansen, 2014). Fessehaie and Morris (2013) review value chain dynamics of Chinese copper mining in Zambia and establish that traditional mining companies tended to outsource activities outside their core business and, whenever possible, preferred a localised supply chain.

Further, MNCs are increasingly configuring their value chains at a global scale. This configuration has given rise to a number of developments that have limited the activities that may be outsourced to local producers thereby adversely affecting linkage development. The first is that global configuration has placed value chain functions according to comparative

advantage of the various locations (Hansen, 2014). Accordingly therefore, higher value added activities such as those related to sales and marketing and research and development are centralized in countries offering the necessary optimal conditions, lower value added functions are located in countries with less conducive conditions (Hansen, 2014; Morris et al., 2012). Morris et al. (2012) observe the reluctance, for extractive operators in Botswana to allow customers to participate in the cutting and polishing of diamonds, and in the logistics, branding and marketing which guarantee their control over the profitable segments of the diamond value chain.

The second is that global configuration of value chains has increased demand for specialised inputs. Morris et al. (2012) hint that once firms decide to outsource, they are particularly interested in suppliers who are able to offer unique technological competences of their own, especially in the first tier of suppliers. They further, observe that the logic is wherever possible to have these suppliers locate production and service delivery close to the doorstep, rather than located abroad, or some distance from the lead firm's activity. While the preference to localise supply points to existence of opportunities for linkage development, the inability of most African firms to specialise and increase efficiency erects entry barriers for them to participate in the value chain via linkages.

The third aspect is that, with increased globalisation and outsourcing, MNCs need to coordinate the increasingly complex global value chain configurations in order to obtain scale advantages and synergies (Hansen, 2014). This calls for the firms to centralise certain procurement functions in line with their drive for strategic, technical and operational alignment as well as scale. However, global integration is increasingly conflicting local procurement and linkage development (Hanlin, 2011; Hansen, 2014).

The last aspect of linkage development determinant in this area is focused on ownership. Morris et al. (2012) observe that the origin of ownership and place of incorporation of the lead commodity exploiting firm and particular nationality of foreign ownership may have implications for linkage development. On the one hand, they argue that firms which are affected by shareholder value structures or which raise their funds on short term markets may have little patience with long term local supplier or customer development. On the other hand, they observe that firms with greater access to patient capital, with higher internal savings rates and which are supported and ‘‘guided’’ by their governments, are more likely to be involved

in long term and risky resource extraction than their competitors, and may also have more patience with local linkage development.

2.3.2.1.3 Developmental activities and CSR programmes

Linkage development has increasingly become a key part of the business strategy for most firms in the extractives. Morris et al. (2012) observe that northern based firms are often subject to intense pressure from civil society organisations to implement Corporate Social Responsibility (CSR) programmes to spread the benefits of commodity extraction to communities living close to resource extraction. Linkage development programmes have also become an institutionalised corporate practice (Hansen, 2014). Linkage formation as part of CSR programmes has taken several forms including adoption of local procurement policies, training and education activities related to local service providers and suppliers, or programmes to involve locals in building infrastructures. Developmental activities and CSR programmes are therefore, having increasing effects on linkage development.

2.3.2.2 MNC's Strategy Variables to be investigated

Although all the four strands – increasing competition among multinational corporations (MNCs) in the extractive sector; growing disintegration of lead MNCs' value chains; and growing engagement of MNCs in development and CSR-related activities; and the role of donors – are important, this study will limit itself to the last three strands. Competition among MNCs has been excluded due to the fact that it has little relevance and application to practical engagement and effective design of a programme geared towards integrating local manufacturers in the mining supply chain.

2.3.3 Backward linkages and development: What role for local industry strategies and capabilities?

This section is divided into two parts. The first part explores literature on firm/industry level strategies and capabilities with the view to gaining insight into possible variables for consideration in the research. The second part identifies and justifies selection of the variables employed in the study.

2.3.3.1 Role of Local Industries Strategies and Capabilities – What does the literature say?

Several scholars have for long recognised and stressed the role that internal firm capabilities play in ensuring success of firms (Nelson and Winter, 1988; McDougall et al., 1994). Knight and Cavusgil (2004) recognise the superior ability of certain firms to sustain innovation, create new knowledge and attain organisational capabilities, consisting of critical competences and embedded routines which enable them to remain superior performers even in challenging environments. Hansen (2014) observes that capabilities and strategies of local firms will, to a reasonable extent, determine the nature extent of linkage formation.

Notwithstanding the continued improvement with regard to financial, strategic and technological capabilities, the ability of most African firms to establish and benefit from linkages remains limited (Ibid). The limitations are explained by several issues including existence of capacity barriers attributed to technological limitations, limited ability of local firms to learn and develop new competencies based on the linkage collaboration, as well as weak financial positions and transactional risks of linkages (Hansen, 2014; Fessehaie and Morris, 2013; Morris et al.,2012).

Morris et al (2012) stress that the availability of low cost and flexible local supply is not only dependent on the intrinsic technological complexity of the resource sector in question, but also the extent of capabilities in the local economy, which they refer to as the technological gap. The challenge of technological complexity is further compounded by the lack of skills in local industry and the two work against linkage development. Effective commodity extraction especially the supply of inputs, requires a range of skills (Morris et al, 2012). Accordingly, growing the skills and enhancing technological capacities of commodity producers and especially of firms supplying inputs represents a critical determinant of the breadth and depth of linkage[2].

Hansen (2014) argues that linkages may entail substantial risks for local firms as they impose transactional risks for local firms. On the one hand, he observes that lack of contract enforcement, instability of institutions, and general regulatory uncertainty in many African countries may discourage MNCs and local firms from engaging in contractual relations. On the

[2] Morris et al. (2012) describe the breadth of linkages as the number of products that are supplied by local producers to the lead firms and depth of linkages as the amount of local content in the products that are supplied locally.

other hand, he notes that extractive investments are large-scale, one-off investments, and that the asset specificity of the MNC transaction may become too high for the local firm. He concludes that only when assets dedicated to the extractive sector linkage can be used in linkages with other MNCs in the country or region, or if the assets can be put in use in other industries, will the linkage make sense.

Further, Hansen (2014) observes diversity of 'local firms' with regard to interest in linkage development. He notes that local firms are diverse and widely differing interests and capabilities. Some firms will see foreign investors as a threat and adopt 'shelter strategies', while others will embrace the arrival of foreign investors as an opportunity to acquire skills and gain market access. The extent to which linkages can be established is therefore, partly dependent on the interest of the firms.

Dinh et al. (2012) undertake a literature review of various studies on firm productivity under the World Bank's Enterprise Surveys and four other studies[3]. They identify six binding constraints to the growth of light manufacturing in Africa namely: the availability, cost, and quality of inputs; access to industrial land; trade logistics; access to finance; technical and managerial entrepreneurial capabilities; and the skills of workers.

Sutton and Langmead (2013) present an enterprise map of Zambia. They identify and present detailed profiles of fifty (50) firms in agribusiness, manufacturing and construction with extensive focus on leading firms in each of these industries, with the view to highlighting Zambia's industrial capabilities. They establish that success for the leading firms particularly in manufacturing and agribusiness is explained by a wide range of factors. Some of the factors include market and product diversification, increased access to and penetration of export markets, identification and satisfaction of niche markets, provision of faster lead times than importers and ability to accommodate variations in sizes (particularly for garment manufacturers). They also establish that engagement of professional managers and skilled technical staff, internal firm coordination, access to cheaper long term capital (through, for example, listing on the stock exchange), vertical integration, good supply relations with big

[3]The studies include the following: (i) Study conducted by the Centre for the Study of African Economies at Oxford University involving quantitative interviews with about 1,400 enterprises in Zambia Tanzania, Vietnam, China and Ethiopia (ii) Comparative value chain and feasibility analysis involving about 300 formal medium enterprises in the same five countries conducted by the Global Development Solutions (iii) Impact of Kaizen Managerial Training study for owners of small and medium enterprises in Ethiopia, Tanzania, and Vietnam conducted by the Foundation for Advanced Studies on International Development and the National Graduate Institute for Policy Studies, and (iv) Qualitative interviews with about 300 enterprises in the five countries based on a questionnaire designed by Professor John Sutton of the London School of Economics

firms including mining firms and chain stores that have provided them with markets to foster their growth further explain part of the success.

In addition, they identify product pricing (price of product compared with the competing or substitute products), improvements in product quality including attainment of quality certification such as ISO 9001 2008, partnerships with other manufacturers from within and outside the region that bring together expertise, product diversification through distribution arrangements, alongside manufacturing as well as technical know-how, social capital with shared norms and networks, improved product packaging, access to wide distribution channels, investment in advertising as other factors responsible for the success of some firms.

Sutton and Langmead (2013) further establish that production technology, competition that triggers investment in mechanisation and production efficiency, ownership of own transport to support product distribution and delivery, firm location (proximity to the main markets), networks with reliable raw material suppliers from within Zambia and especially countries such as South Africa, India and the continent of Europe, among other places, has been a factor in the success of some of the firms.

2.3.3.2 Industry Capability Variables to be investigated in the study

Notwithstanding the importance of all the factors that have been identified above, this study will be limited to investigating the following factors: management and skills of personnel; product distribution channels; product design; access to cheaper long term capital; product and market diversification; ability to identify and exploit (niche) markets; location – proximity to the market; flexibility and responsiveness – ability to rapidly adapt and customise products to the market; quality certification; diversification of distribution and supply networks; supplier relations and access of raw materials; and nature of nature of the firm and business model. The choice of these variables has been based on relevance and importance of the variables as submitted by the firms and as delineated from the literature.

These factors have been chosen due to the fact that they predominantly appear in the various literature reviewed and represent some core success factors for firm survival and competitiveness. Notwithstanding this list of variables, any other variables raised by the firms interviewed would still be considered and captured in the analysis.

2.3.4 Backward linkages and development: What role for donor strategies and influence?

Martens (2005) observes that donors may provide aid for purposes of building alliances with the host government including having a stake and influencing policy and focus of the local development interventions. In this regard, donors may have a role to play in building linkages. Hansen (2014) highlights four roles of donors in linkage development covering provision of technical assistance and dissemination of experiences with best practices across developing countries; providing assistance for building infrastructural, institutional and absorptive capacity; facilitating specific extractive investment projects; and mediating between extractive MNCs and local governments.

While these roles are important, the extent to which donors play these role is depended on the level of engagement and orientation of the host government (World Bank, 2012). While some governments have allowed donors to play an active role in such matters, others have not. The World Bank (2012) further recognizes the increasing focus by regional, international organizations and host governments on enhancing the benefits from mining sector investment to national development. They undertake work which they detail in the report on *Increasing Local Procurement by the Mining Industry in West Africa* and highlight the different roles that donors have played in realising this aspiration. The roles range from focus on broad policy, institutional, advocacy, and strategic support to more practical involvement in mining regimes and regulations, including support for local procurement.

The African Development Bank have been involved in coordinating, advocating, or setting standards for mining policy, with the overarching goal of using the exploitation and management of natural resources as a catalyst for development (World Bank, 2012). Some donors such as the World Bank and the Africa Development Bank have been involved in infrastructure development programmes targeted at upgrading telecommunications, transport and energy infrastructure with the aim of contributing to building a supportive and enabling environment for local business development and investment [and thus linkage development] in by addressing the cost and delivery time competitiveness (World Bank, 2012).

Some donors such as the European Union, the United Nations Industrial Development Organisation and the United Nations Conference and Trade and Development have supported the design and implementation of SME and private sector development programmes focussed on restructuring and upgrading of local firms to effectively integrate in local supply chains.

Others have supported quality programmes aimed at building the capacity of local service providers to provide improved services and effectively aid firms to improve the quality of products and compliance with worldwide standards[4] and ultimately foster integration of local producers in selected value chains. The donor support has encompassed technical and financial support. Box 1 below details IFC's approach to supporting linkages in partnership with extractive industry companies such as those in mining.

Box 1: IFC's approach to supporting linkages in partnership with extractive industry companies

The IFC supports linkages through compiling supplier information, including contact details, goods and services provided, assessing suppliers in areas such as safety, quality control, equipment, and personnel management, and facilitating access to finance and technical assistance (as in Chad, for example). The IFC also builds SME skills and capacity through standardized training modules—primarily through the SME Toolkit (developed in conjunction with IBM) and the Business Edge training modules. The IFC's SME Toolkit contains self-guided training modules, how-to articles, sample business forms, and free software to support SME capacity building. These generic training modules can be shared across competitors to reduce costs and without jeopardizing competitive advantage. The IFC also provided bespoke eProcurement training in Chad, as ExxonMobil required online bidding.

In some cases, the IFC also supports the establishment of Enterprise Centres—such as BP's Enterprise Centre in Azerbaijan and ExxonMobil's Enterprise Centre in Chad. These are run in conjunction with local chambers of commerce and provide training for SMEs. When possible, the IFC approach also involves a joint financing mechanism, such as the Supplier Finance Facility of US$15m where BP and the IFC each hold 40% and a local bank holds 20%.

Source: World Bank (2012) (www.worldbank.org)

While effective donor involvement in linkage formation can take many forms, it is clear from the foregoing that donors have an important role to play in linkage formation. However, the host government's policy and orientation as well as the donor's should be aligned if donors are to play their roles effectively. Further, like in any other case of donor involvement in a development intervention, it is unquestionable that the donors need to have the requisite capacity to effectively play their role.

2.3.5 Backward linkages and development: What role for sector associations?

The World Bank (2012) highlights that sector associations can play an important role in the building successful backward linkages. They highlight the different roles that association of

[4] Failure to comply with International Standards has been cited as one of the main issues hindering integration of local producers in the mining and other supply chains.

suppliers, chambers of mines and chambers of commerce have played in several countries in West Africa and beyond. They outline several roles including policy advocacy focused on developing local content policies and creating a favourable environment for investment and linkage development, coordinating efforts to identify and come up with lists of products that can competitively be sourced locally, setting up and managing platforms that can be used to promote local procurement as well as channeling procurement opportunities from mining firms to targeted suppliers, among others.

The extent to which associations can effectively play their role is however, dependent on capacity within the associations and the drive of the association members to push the linkage development agenda. The effectiveness and drive is further influenced by the purpose of the association. For instance, it can reasonably be argued that an association representing suppliers who predominantly import their supplies may be opposed to efforts geared towards developing local procurement policies geared towards local value addition, while one representing manufacturers would be in favour.

CHAPTER THREE

3. RESEACRH FINDINGS

3.1 Government Policy and Backward Linkage Development

This section adopts the different policy elements discussed above and analyses Zambia's government policy with regard to the promotion and development of linkages. The aim is to identify strengths, weaknesses as well as opportunities that can be leveraged to support the establishment of linkages and enhance the contribution of mining to Zambia socio-economic development by supporting the development of competitive manufacturing industries.

3.1.1 Vision Articulation and Strategy Development

Zambia's development vision is anchored in the Vision 2013. In realizing this vision, five year plans are formulated and implemented. Government's vision for mining as articulated in the vision 2030 is to attain a "well organized private sector-led mineral resource exploration and exploitation that contribute to sustainable social economic development by 2030" (GRZ, 2006). The vision document acknowledges the weak backward linkages from mining to manufacturing but sets no goals for reversing this situation and building backward linkages. It instead speaks to the establishment forward linkages with the target of "increasing the share of mineral output used in industrial production to 30 percent by 2030" (Ibid). The vision document also speaks to "strengthening tracking of potential investors and improving the efficiency of the system of logging, dissemination of information on available plots for mining and recording of commercial mining activities". It is evident that the vision document has no specific focus on the development of backward linkages.

Since the crafting of the vision 2030 in 2006, Zambia has implemented one full five-year plan, the Fifth National Development Plan (2006 – 2010) and is currently implementing the Sixth National Development Plan (SNDP 2011 – 2013). On the one hand, the FNDP (2006 – 2010) recognized the role that mining can play with regard to enhancing national development through backward and forward linkages with other sectors. It highlights the significance of the sector in, particularly, supporting industrial growth through the demand and consumption of services and manufactured inputs.

Accordingly, it sets an objective to increase long term benefits of the mining sector by integrating the mining sector with the rest of the economy through backward and forward linkages. It thus speaks to the facilitating the development of the service input sector, downstream processing and beneficiation industries, among other things. While the development of linkages appears to have been an area of importance in the development plan, there were no clear strategies, programmes and activities outlined to realize the objective.

On the other hand, the SNDP 2011 – 2014, which is currently under implementation, does not have focus on building backward linkages. There is no mention of linkages in the vision nor the objectives, programmes and activities outlined in the SNDP. While the document has an objective of promoting value addition, it remains vague with no clarity in the programmes and activities to foster the same.

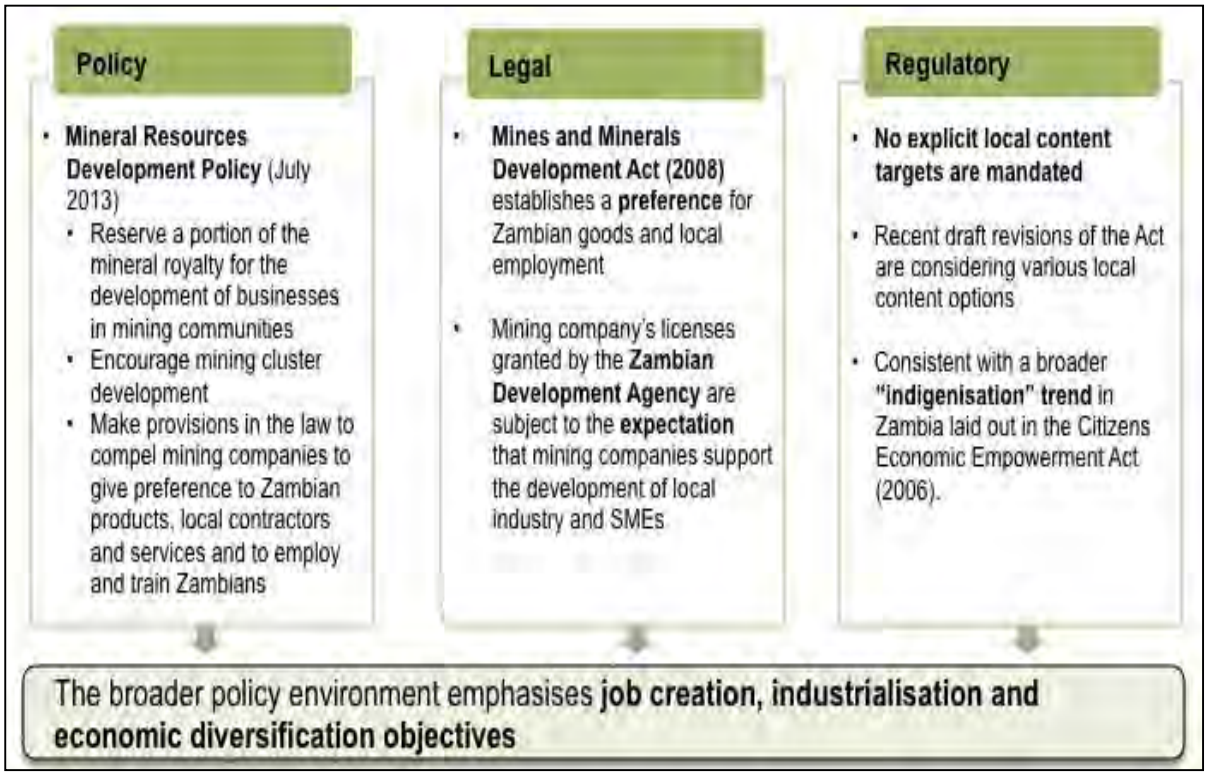
These findings are consistent with and reinforce those by Morris and Kaplinsky (2012) who placed Zambia in the category of countries that had a general vision with regard to the development of linkages but were unsuccessful in articulating and breaking down the vision into implementable policies, programmes and activities.

3.1.2 Legislation, Policy Development and Alignment

Until recently, Zambia's mining policy has not had any real focus on the development of linkages. In fact the Fifth National cited outdated policies and legislation as one of the greatest challenges facing the mining sector (GRZ, 2006:63). The 1995 mining policy as articulated in the Mining and Minerals Act was focused on the privatisation of the various mining firms that were owned by the state. The legislation was geared towards creating a favourable investment climate for the mining sector, without any focus on how mining could be leveraged to foster broad-based economic development through, among other things, the development of backward linkages.

Under the legislation, Government, through the Minister of Mines, was agreeing mining regimes with individual mining firms through development agreements. These agreements have widely been criticized for having granted mining operators various incentives that not only shielded mining firms from paying taxes, in general, but also undermined the development of backward linkages. Figure 3 below presents a summary of policy and legislation relating to mining.

Figure 3: Summary of policy and legislation related to mining and linkage development



Source: Brian Mtonya, World Bank

On one hand the agreements allowed mining operators to bring in imported manufactured inputs duty and quota free while on the other hand the tax policy compelled manufacturers bringing in intermediary products and some raw materials used in producing similar or competing products (manufactured inputs) to pay duty. The result was inability of local manufacturers to have access to production inputs at competitive prices, produce competitively and compete on the basis of price. In the face of souring production costs for mining, and with mining firms look for avenues for reducing operation costs, this was a major disincentive to promoting sourcing of locally produced manufactured inputs. Morris et al. (2012) observe that the measures implemented by several governments including the Zambian government were not supportive of and worked in contradiction with the ideal of promoting linkages.

In 2008, government revised the Mines and Minerals Development Act with the view to harmonizing legislation and addressing some of the perceived gaps in the old legislation. The 2008 Act nullifies the Development Agreements which were in force on the date of its enactment and, among other things, mandates preferential procurement for Zambian goods and local employment.

On the one hand, it has given preference to materials and products made in Zambia and service agencies located in Zambia and owned by Zambian citizens or citizen-owned companies. On the other hand, it required all holders of mining rights or mineral processing licenses to give preference in employment to citizens of Zambia to the maximum extent possible in all phases of the operations. The provisions in this Act are, at least in theory, further reinforced by the licenses granted by the Zambian Development Agency. The licenses are subject to the expectation that mining companies support the development of local industry and SMEs (Genesis Analytics, 2014).

Despite these provisions and requirements in the legislation, no explicit local content targets are mandated in either the 2008 Mines and Minerals Development Act or the Zambia Development Agency licenses. The realization of linkages under these pieces of legislation is further hampered by the lack of systems to monitor the activities of mining firms with regard to these provisions to ascertain conformity.

Seeking to address the increasing perception that government has failed to leverage mining in fostering sustained and broad-based economic development, the government has recently passed a new Mineral Resources Development Policy. The 2013 policy aims to, inter alia, promote the development of a mining sector that is integrated in the broader economy, creates opportunities and demand for local products and services, contributes to employment creation for Zambian citizens and fosters value addition (GRZ, 2013:6). It further outlines strategies that will be used to realise the objectives of the policy.

With regard to integrating the mining sector into the local economy, the policy articulates a number of strategies including encouraging cluster development to link the mining sector to the broader economy; promoting linkages between the mining sector and other sectors including manufacturing; spearheading promotional campaigns about opportunities for involvement in mining sector business activities; and making provisions in the law to compel mining companies to give preference to Zambian products, local contractors and to employ and train Zambians (GRZ, 2013: 9 – 10).

To realise these objectives government will have to develop a new legal and institutional framework to support the implementation of the policy. Even if the policy provides pointers to some of the aspects to be covered in the revised Act, it should be underscored that the eventual legal and institutional framework will have potential to constrain or facilitate the development of linkages or indeed undermine the policy depending on how it is developed and its contents.

Due to lack of engagement with the private sector by the government, high technology products were mandated for local content in Angola. The results have been failure to implement and compromise of the legitimacy of the policy (UNIDO, 2013). To effectively seize the opportunities in the growing mining industry, government will need to consult widely in the development of the envisaged new law as well as institutional framework and the implementation of the various aspects of the policy.

Further, government will need to re-engineer or develop several other policies to ensure they support the development of linkages. A number of policies have remained weak or are no-existent. Beyond rhetoric, there has been no deliberate policy and programmes geared towards upgrading the capabilities of local industries to competitively produce manufactured inputs required by the mining industry. The investment promotion function has remained weak with no clear focus and strategies for attracting investments to focus on mining input production. The Fifth National Development Plan also points to limited investment promotion approaches as one of the weaknesses in realizing the objectives of the policy (GRZ, 2006:63).

Further, the tax policy has been penalising the local manufacturing industry, by taxing inputs needed for the manufacture of mining inputs while allowing mines to import finished manufactured inputs duty free. Morris et al. (2012) and UNIDO (2012) observe that such policies are not only unsupportive but work against linkage development.

The mining fiscal regime has remained volatile especially in recent years. This has generally been perceived not to be in-sink with supporting investment in the mining sector which are generally long-term with gestation period of sometimes over 15 years, and therefore unsupportive of linkage development. In 2015, government changed the mining fiscal regime twice, raising concerns over policy predictability by not only players in the mining sector but also other stakeholders. The Zambia Chamber of Mines clearly opposed the regime stating that a two-tiered rate, differentiated by mining method, was not conducive for the long term development of the mining industry and government revenues, while selected donors pointed to the fact that such a system was difficult to administer. Figure 4 below captures a summary of the movements in the mining fiscal regime since 1997 as captured by the World Bank Economic Brief (2015).

Figure 4: Evolving features of Zambia's mining fiscal regime since 1997

Mining fiscal regime	Key features
Development agreements negotiated with individual mines during privatization (1997 to March 2008)	Agreements were made between the Zambian government and each company that bought the assets of the former national company ZCCM. Each development agreement contained a fiscal stability clause.
The "2008 regime" (April 2008–March 2009)	The 2008 reforms passed as part of the 2008 Mines and Minerals Act ruled that the government should not enter into any special agreements for the development of large-scale mining licenses; the reforms also annulled the development agreements. The Act introduced a new tax regime with a higher tax burden: it set the company income tax rate at 30 percent; it introduced a variable income tax and raised the mineral royalty rate to 3 percent from 0.6 percent; and it set the withholding tax on services at 15 percent and introduced a windfall tax.
The "2009 regime" (April 2009–March 2012)	In response to the mining companies' concerns about the revocation of the development agreements, the government reversed the lower capital depreciation allowance and some other 2008 tax measures such as the windfall tax in its 2009 budget.
The "2014 regime" (April 2012–December 2014)	The government made further reforms to the mining tax regime in its 2012 budget. The two main changes for the mining industry were the increase of the mineral royalty rates for copper and cobalt to 6 percent, and separate treatment of hedging and operating income for income tax purposes.
The "January 2015 regime" (January 2015–June 2015)	Corporate income and profits tax rates descended to zero. The government also set the mineral royalty rate at 20 percent for output from open-pit mines and at 8 percent for output from underground mines.
The "July 2015 regime" (announced in April 2015)	The government set the corporate income and profits tax rates at 30 percent and the mineral royalty rate at 9 percent for output from all mines.

Source: World Bank (www.worldbank.org)

Further, government had enacted other legislation including VAT Rule 18[5] and Statutory Instrument (SI) no 33 of 2012[6], all of which have been perceived not to be supportive of attracting increased mining investments and building linkages.

On the one hand, all respondents from the mining companies indicated that, by prohibiting quoting in dollar or even referencing, it discouraged them from entering into long-term contracts with local producers and encouraged them to import their inputs, including those they could possibly source locally. This was so because volatility of the Kwacha made it difficult

[5] VAT Rule 18 in its initial form required exporters claiming VAT to provide a) Copies of export documents for the goods, bearing a certificate of shipment provided by the Authority; b) Copies of import documents for the goods, bearing a certificate of importation into the country of destination provided by the customs authority for the country; c) Tax invoices for the goods exported; d) Proof of payment by the Customer for the goods; e) Documentary evidence proving that payment for the goods has been made by the customer into the exporter's bank account in Zambia; and f) Such other documentary evidence as the authorized officer may reasonably require"

[6] SI 33 of 2012 prohibited making payment, demanding to be paid as well as receipt of foreign currency as legal tender for goods, services or other domestic transactions.

for them to project sourcing costs as the prices for inputs would always fluctuate. Further, they argued that since mining firms received payments in US Dollar, sourcing from outside Zambia enabled them to avoid exchange loses while increasing their capability to project and control costs. Coupled with the fact that the tax policy charged duty on inputs going into manufacturing (which were mostly from outside the region), raising the cost of production and reducing competitiveness for local manufacturers, but allowed finished products from the SADC and COMESA free trade area regions to enter Zambia duty free, they were heavily inclined to source from outside Zambia.

On the other hand, the implementation of VAT Rule 18, following issuance of Gazette Notice No. 26 of 2013 was seen as counter-productive by the mining firms as it was impractical for most of them to meet or posed a serious administrative burden and increased the cost of business (Sikamo, 2014). A number of mining firms could not meet the requirement of providing copies of import documents for the goods, bearing a certificate of importation into the country of destination provided by the customs authority for the country. Consequently, unremitted VAT reached US$ 600 million by August 2014, with one firm being owed over US$200 million. The consequences the rule as tabulated by the Zambia Chamber of Mines included suspension, deferment and cancellation of capital projects, reduction of production levels, scaling down of CSR programmes and suspension or delay of payments to suppliers. The suspension of payment to manufacturers supplying to the mines was also confirmed with the Zambia Association of Manufacturers who had received complaints from the affected firms. Clearly all the tabulated effects have adversely affected linkage development.

In addition, there has been limited strategic focus on developing skills to boost local manufacturing capabilities and aid development of linkages. The OECD (2011) highlights that Zambia lacks skills necessary to accelerate development. The national quality infrastructure, though improving, has also had no specific and strategic focus on assisting firms producing inputs that are being consumed by mining firms. The standardization function has not focused on assisting local producers penetrate the mining supply chain (interviews).

Furthermore, the general lack of a policy defining and mandating local content, with prescribed targets, and the absence of an elaborate monitoring and sanction framework have not supported the development of linkages. The lack of engagement by the government with major mining

firms to voluntarily facilitate local sourcing has also not been supportive of linkage development has further exacerbated the problem.

3.1.3 Leadership and Stakeholder Alignment

Government leadership with regard to building backward linkages has remained weak. This is evidenced by a number of factors. Some of the most important factors delineating lack of leadership by government include: the inability by government to bring stakeholders in the sector together to craft a joint elaborate strategy on how Zambia can leverage mining to foster the development of the manufacturing industry; failure to establish a system for capturing national mining output resulting in the absence of agreed production statistics across stakeholders; generally perceived lack of willingness by government to engage mining firms and other stakeholder on several policies and legislation they develop with regard to mining.

The International Council on Mining and Metals (2014) observes that there was no single place one can obtain mining production data, noting that the Bank of Zambia, Ministry of Finance, mining houses and the Ministry of Mines all had different and disputed statistics. This is despite the fact that government has the mandate, convening power and holds shares in ranging from 10 per cent to 25 per cent in several mining houses.

3.1.4 Policy Incentives, Sanctions and Monitoring and Evaluation

Clearly, Zambia's mining policy framework does not have incentives and sanctions to foster linkage development. This is evident from a number of things. On the one hand, although the 2008 Mines and Minerals Development Act provided for preferential procurement for locally produced goods, government did not mandate any prescribed or jointly agreed targets of procurement and spell out what happens in the case of non-compliance. Neither was a system set up to track, report and evaluate whether or not there is progress on what has been mandated in the legislation and ascertain issues explaining the progress or the lack of it, as a means of informing future policy making and policy amendments.

In the same vein, although licenses issued by the Zambia Development Agency are subject to the expectation that mining companies support the development of the local industry and SMEs there is no system for tracking, reporting and evaluating what the mining companies are doing

in that regard. It also remains unclear whether the licenses issued contain any prescription of what happens in the case of non-compliance with the set conditions in the license.

3.1.5 Policy Capabilities

Policy capabilities for building effective backward linkages remain weak in Zambia. This is exemplified by the absence of targets for mandated local content under the Mines and Minerals Development Act of 2008 as well as mechanisms for monitoring implementation both under the Act and the licenses issued by the Zambia Development Agency.

The Fifth National Development Plan cites weak institutional capacity particularly within the Ministry of Energy, Mines and Water Development as being one of the major obstacles to better service delivery and the implementation of various policies, programmes and activities relating to leveraging mining for sustained economic development of the country (GRZ, 2006: 63). It lists several challenges including low staffing levels, inadequately trained technical staff, poor funding, and inadequate infrastructure. It stresses the need for Zambia to strengthen the institutional framework if it is to leverage the growing mining activities in for sustained and broad-based economic development. The new mining policy also recognises the weakness regarding the monitoring and evaluation function and therefore, sets the objective of establishing a monitoring and evaluation department as part of its core institutional framework strengthening (GRZ, 2013: 10).

Unlike the in Ghana, where the collaboration between government and the mining companies has resulted in the compilation of a list of inputs which many believe can effectively be supplied by the local producers, there is limited engagement between mining companies and government in the case of Zambia. Under such as framework, there are limited prospects of capturing the needs, capabilities and shortcomings of the supply and demand sides, and enable the formulation and implementation of a policy, strategy, programmes and activities that can succeed.

The limited policy capability is further evidenced by the focus of the 2008 Mines and Mineral Development Act. The Act is biased towards ownership of the firms doing business with the mines as opposed to the origin of what is being supplied, or indeed the amount of domestic value-added[7]. Morris and Kaplinsky (2012) observe that many governments have shown lack

[7] In 2006, the Zambian Government passed legislation, the Citizens Economic Empowerment Act, aimed at empowering citizens which sets three categories of companies as follows: a) citizens empowered companies- twenty-five to fifty percent of its equity is owned by citizens; (b) citizen influenced companies - where five to twenty-five percent of its equity is owned

of policy capability by confusing indigenization with the development of backward linkages. On the basis of the 2008 Mines and Minerals Development Act, one can conclude that Zambia is one of those countries.

Fissehaie (2012) observes that all Development Agreements (DAs)[8] between Government of the Republic of Zambia and mining companies including NFC Africa (1998), Chibuluma Mines Plc (1997), Konkola Copper Mines Plc. (2004), Mopani Copper Mines Plc. (2000), and Cyprus Amax Kansanshi Plc (1997) had provisions on supply chain development. She cites the lack of implementation of Mining Development Agreements[9] with regard to supply chain development and the highly personalised style of management, which built on individual rather than institutional capabilities, as reflections of poor institutional capacity within government agencies involved in their implementation.

Inter-ministerial coordination also remains weak particularly between three key ministries namely: Ministry of Energy, Mines and Water Development, Ministry of Commerce, Trade and Industry and the Ministry of Finance. On the one hand, while the Ministry of Energy, Mines and Water Development is responsible for coordinating the formulation and implementation of the overall Mineral Resources Development policy, linkage development is an aspects of domestic trade and thus a responsibility of the Ministry of Commerce, Trade and Industry. On the other hand, the Ministry of Finance is responsible for devising the tax policy, whose orientation can either encourage development of linkages or promote importation of manufactured inputs. The need for these three ministries to coordinate cannot therefore be over-emphasised.

Although there is a coordination structure in place, the sector advisory group on energy, mining and water development, it is ineffective to foster effective coordination. Due the broad nature of the issues under it, it is unlikely that this structure would have all the relevant organisations on it and those members would have the requisite expertise in all the areas (energy, water and mining) to effectively shape the policy. A review of the operations of sectoral advisory groups within the framework of the FNDP established that several sectoral advisory groups had

by citizens; and (c) citizen owned companies - where at least fifty point one percent of equity is owned by citizens. Ownership has been used as a criteria for preferential procurement instead of the amount of local value-added.

[8] The DAs were legal documents negotiated and signed between the government of the Republic of Zambia and individual mining companies to govern the operations of mines and their relationship with the host government, including tax and other obligations, as well as rights and freedoms to engage in identified transactions.

underperformed (Joint Assistance Strategy for Zambia II, 2011). For instance, while the Chamber of Mines of Zambia is a member of the advisory group, the Zambia Association of Manufacturers is not. Effective programmes for linkage development would require input from both the demand side, represented by the Chamber of Mines of Zambia and the supply side, represented by the Zambia Association of Manufacturers.

This notwithstanding, the Zambia Association of Manufacturers and the Chamber of Mines, working with the World Bank and DFID have initiated efforts under the Zambian Mining Local Content Initiative (ZMLCI) to foster the integration of the local manufacturing industry into the mining supply chain. While the Ministry of Commerce, Trade and Industry and the Ministry Mines are members of the Focal group championing this initiative, their participation is erratic, characterized by inconsistent representation from the two ministries.

3.1.6 Policy Will

Despite the increasing rhetoric on the need to build backward linkages between mining and manufacturing, there appears to be no policy will. This is evidenced by the lack of government-led programmes that are geared towards realizing this objective as well as inaction towards reforming institutions and several policies and building capabilities for institutions that should play specific roles in this process.

Further, the failure to establish a monitoring and evaluation system for tracking and evaluating what the mines are doing with regard to preferential procurement – as embedded in the Mines and Mineral Act of 2008, and supporting local businesses – as required under the Zambia Development Agency licenses, can be explained by the lack of policy will as it can be by lack of policy capacity.

In addition, the limited funding directed to programmes under the Ministry of Mines, Energy and Water Development as cited in the Fifth National Development Plan (2006) may also signify a lack of policy will. Other issues that may point to the absence of policy will include inadequate leadership by government with regard to developing a collective strategy to leverage mining for sustainable development and the absence of incentives and sanctions to foster adherence to legislative or policy requirements.

Further, lack of policy will may be seen from the rhetoric coming from senior political leaders within the government. Instead of speaking to broader local sourcing issues, senior government official have frequently been quoted issuing threats to mining firms that are purportedly not

buying goods from trading SMEs. Evidence from several newspaper articles attest to this fact. Small scale contractors and suppliers of mining inputs appear to have more support from the political infrastructure than the manufacturers.

In an apparent reference to the political economy of the mining sector, one of the respondents from a mining company jokingly stated that the Zambian Mining Local Content Initiative could not work because the small scale traders and suppliers had a louder voice and more support from the political leadership than the manufacturers. This highlights the need for the political structures to refocus their effort towards addressing real issues that will ensure mining contributes more to national development. The role of associations and other civil society organisations thus becomes critical to re-orienting the political machinery.

3.1.7 Driving, Prioritization and Sequencing

Although linkage development process requires drivers – a group of people from the public and private sector – who share the same vision, government has done little to establish such a team. The Ministry of Mines, Energy and Water Development has been working in isolation from other stakeholders including other ministries such as commerce and finance. Further, as indicated above, its participation in private sector-driven initiatives seeking to achieve the same objectives has, at the least, been erratic. There is clearly a gap with regard to driving in this regard, from the perspective of government.

Without engaging all stakeholders or at least coming on board and owning private sector-led initiatives, it is unlikely that government through the Ministry of Mines, Energy and Water Development or indeed Ministry of Commerce, Trade and Industry or Finance will lead to proper prioritization and sequencing of interventions. The lack of engagement with stakeholders casts some serious doubt on the possibility of having evidence-based programming and sequencing as it misses the opportunity to address the various areas of concern for the various stakeholders and facilitate the building of successful linkages.

3.2 Local Firm Strategies & Capabilities and Linkage Development

This section presents findings as informed by literature on firm capabilities in Zambia as well as interviews with selected firms from identified subsectors. The section seeks to bring to the fore capability issues of the local manufacturing firms so as to aid the crafting of recommendations that firms, government, donors and other stakeholders should act on to contribute to successful linkage development.

3.2.1 Management and skills of personnel

All the firms that were reported to be enjoying good business had skilled managers and personnel, while the opposite was true for those that were having challenges. For instance the successful firms in doing business with the mines had better educated and professional managers and other skilled staff who were reported to have been instrumental in the success of the firms. This is finding is line with Shleifer and La porta (2008), who noted that that better educated managers run formal and more successful firms compared to informal ones.

Part of the skills were reflected in the finding that their personnel had not only been able to effectively engage the mines, but had also navigated the supplier registration requirements of the mines and competently prepared tender documents. They thus possessed internal capacity to prepare tender documents and meet requirements of the mining firms. Those less successful reported challenges in not only navigating registration requirements but also preparing tender documents.

Specific to the personal protective equipment, it was further established that the less successful firms had in-house quality as well and other skills-related challenges, thus being unable to supply consistent quality as demanded by the market.

3.2.2 Product distribution channels and supply networks

In seeking market access and penetration to the mines, firms may seek to establish direct market access and indirect market access (i.e. access through agents, contractors and traders). The mining supply chain in Zambia is characterised by three tiers of supply: first tier suppliers – Original Equipment Manufacturers, second tier suppliers – mostly suppliers and contractors, and third tier suppliers – mostly manufacturers (Kasanga, 2012). A strategy that assures and ensures significant access to and penetration of particularly the last two tiers may be a source of greater success.

The most successful firms particularly in the PPE category were found to have such multifaceted strategies. They were directly supplying to the mining firms and indirectly through agents and contractors. This approach assured continued business irrespective of what happens the agent/contractor-mining firm relationship as well as higher volumes of supply. Further, it

was established that while direct sells were the most attractive, especially in terms of margins, establishing direct relations with mining firms was more difficult. Using agents and contractors that already had business with the mines provided an easier alternative for manufacturers.

However, the use of agents also presented other challenges. Two of the firms that were previously solely supplying through agents, reported that they at one time lost their supply opportunities following the termination of named agents' contracts by named mining firms despite the respective manufacturers having the capacity to supply quality products as dictated by their mining clients.

3.2.3 Product Design

Product design should match the client's wants and needs (Stevenson, 2015). The extent to which a firm is able to meet a customer's desired features of a product can be a major determinant of whether the customer buys a product or not. The mining industry requires products of very specific features for several reasons including safety requirements (Kasanga, 2012; World Bank 2012).

One of the keys drivers of the success scored by the firms enjoying business with the mines is anchored on their ability to engage, understand the needs and develop completely new products or modify the existing ones to meet the mining firm's specific needs. A senior manager for a protective shoes manufacturer narrated how the firm had managed to engage with a named mining company and managed to design and add a new product to their line which they were supplying to that mining company as well as others.

3.2.4 Access to cheaper short and long term finance

The importance of finance in the success of an enterprise cannot be overemphasised. It represents the blood stream of a firm. Access to low-cost short term and long-term finance continues to be one of the greatest challenges facing most enterprises in Zambia (Dinh et al., 2012). Companies that have easy access to relatively cheaper long term finance and operating capital therefore, have a big advantage over those without.

Most of the firms successful in doing business with the mines were found to be enjoying access to cheaper finance either for expansion or meeting operating capital. Although access has been anchored on different parameters. For some, access to finance has mostly been made possible by the Islamic practices of the owners. Others have benefited from being part of a group of firms and have been able to raise finances from within at no or minimal cost. A rare case was also found where a firm has benefitted from being part of a public limited company that has been able to borrow from the capital markets at lower rates.

It is clear from the findings that cheaper access to short and long-term finance is crucial to improving the capability of local enterprises and ensuring that they seize linkages opportunities and integrate in the various chains including mining.

3.2.5 Product and market diversification

Diversifying a firm's product range through modification of existing products or, better still, adding new products to the already existing ones can offer opportunities for expanding a firm's business by increasing sales in the existing markets or entering new markets. Further, as noted under product design, above, different markets require products that have specific features. Product diversification can be a major source of competitiveness (Penrose, 1959).

The successful firms were found to have, in many instances, diversified both the products and markets. Market diversification had helped these manufacturers sustain business even in cases where one of the markets had suffered some setback, resulting in loss of business on the part of the manufacturing firm. A case of the 2008 – 2009 financial crisis was continuously cited to show how they had survived the low business levels from mining firms both in Zambian and the Congo DR mainly as a result of market diversification beyond the mining supply chain.

Further, it was reported that product diversification had assisted them access other markets beyond mining. In particular, successful operators in the personal protective equipment sector such as garments were producing several products including industrial protective clothing (work suits, dust coats) domestic uniforms, as well as uniforms for security, hospitals, hotels and restaurants. Further, players in the protective footwear had a range of products for different markets including safety, security and military boots, school shoes, soccer boots as well wet blue leather that was being exported to Europe and Asia.

3.2.6 Ability to identify and exploit (niche) markets

Stevenson (2015) describes the identification of consumer wants and needs as a basic input in firm's decision making process and highlights the centrality of the same to competitiveness. Identifying the wants and needs, and achieving a perfect fit between potential customers' wants and needs and a firm's products can represent a major driver of competitiveness.

3.2.7 Flexibility and responsiveness – ability to rapidly adapt and customise products to the market

Stevenson (2015) observes that quick response and flexibility can be a competitive advantage. Being able to promptly bring in new or improved products to the market or indeed quickly delivering existing products to a customer when served with an order, or promptly handling customer complaints ahead of competitors is one major sources of competitiveness. In addition, the ability to respond to changes relating to alterations in design features of a product, or to the volume demanded, or the mix of products offered by a firm can put a firm ahead of competitors in a market. Flexibility and responsiveness are among the characteristics that mining firms look for in suppliers (World Bank, 2012; Kasanga 2011; Hanlin 2011). Flexibility and responsiveness are important variables for inclusion in my study.

The findings from one of the garment manufacturers reveal that part of the success scored is explained by its ability to rapidly accommodate variations in sizes and producing customised products. One of the respondents explains that importers involved in garments trading did not have the same edge to accommodate such requests at short notice. As such a local producer, able to provide a quality product, meeting all specifications, even at a slightly higher cost, had an advantage over traders.

3.2.8 Location – proximity to input suppliers and the market

Location is an important variable in that it has implications on the cost and convenience for customers (Stevenson, 2015). He explains that while location near inputs can result in lower input costs, proximity to the markets give rise to lower transportation costs and quicker delivery times. Further, close proximity in the location of the manufacturers and mining companies increases opportunities for dialogue, engagement, familiarisation and deep understanding of the specific needs of mines by the manufacturers (Hanlin, 2011). This deep understanding of

needs of clients is crucial to progressively moving towards the production of customised supplies.

Given the high cost of transportation in Zambia, there was a premium to locate business targeting the mining supply chain on the Copperbelt Province. It was established that all the successful garment producers doing business with the mines were based on the Copperbelt Province, which was closer to the location of mining operations. The aspect of location, stated one of the respondents, complements that ability to accommodate varying sizes at short notice.

3.2.9 Quality Certification

Quality refers to materials, workmanship, design, and service (Stevenson, 2015). Stevenson further explains that consumers judge quality in terms of how well they think a product or service will satisfy its intended purpose. It is therefore, perception based.

In engaging the mining firms, it came out clearly that most supply chain staff were sceptical about the quality of locally manufactured goods. Given this general perception, there is added value for third party quality certification. The International Organisation for Standardisation (2014) underscores the role that quality certification marks play in ascertaining the quality of any given product. They explain that certification adds credibility by demonstrating [through third party attestation] that a product or service meets the expectation of the customers. In this regard, mining firms insist on the use of quality certified products in their production processes and activities (Kasanga, 2012; Hanlin 2011 and Morris, et al., 2012; World Bank, 2012). The challenge therefore rests with the companies aspiring to doing business with the mining firms to ensure they acquire the certification.

The research reviewed that almost all the firms successfully doing business with the mining firms had third party certification from internationally recognised competent authorities such as the South African Bureau of Standards. Others, however, have managed, though with difficulty, to penetrate based on referrals from at least one mining company they penetrated. It also came out that one of the successful safety shoe producers had, despite having 'good products', had struggled to commence business and was struggling to expand supply into the mining chain partly due to the lack of certification for its products and production systems.

4.2.10 Supplier relations and access of quality raw materials

Supplier relationships, dependability of suppliers, quality, flexibility, and service can be an important source of competitiveness (Stevenson, 2015). Access to quality raw materials at reasonable prices continues to be one of the major challenges facing the light manufacturing in Zambia (Dinh et al., 2012). Accordingly, therefore, a firm that is able to establish relations with dependable and flexible suppliers that are able to provide quality raw materials at a reasonable price would be a step ahead of competitors.

It came out that successful players doing business with the mining firms in protective clothing were able to access and import bulk fabric from China and other sources such as Taiwan and Kenya (Sutton and Langmead, 2013). The imported fabrics are reasonably priced and are of good quality, enabling the firms to continue meeting the requirements of their quality management systems and sustaining their competitive edge and success in the market.

Further, the in-house availability of the main role material, leather, from one of the footwear producers presented the company with unique opportunities to control both the cost and quality of the raw material and increasing quality consistency in the finished product. Competitors in the business were sourcing their leather requirements from this firm and worse still importing them.

It is clear from these findings that the investigated strands of firm-level strategies and capabilities are central to firms' competitiveness and successful building of linkages between the manufacturing sector and the mining sector. This is more so that some aspects of the strands speak directly to the internal capabilities of the firm while others expand to cover drivers of procurement decisions the mining supply chain.

As such any effort to develop backward linkages from mining to manufacturing should besides addressing framework conditions, also establish component of business development services that should offer systematic and targeted business development services that should help local manufacturers build capabilities to meet the needs of mining firms especially the core criteria for procurement decisions.

3.3 Lead Mining Firm Strategies and Backward Linkage Development

The section seeks to bring to the fore issues determining procurement and integration of businesses into the mining supply chain from the lens of the mining firms. The section is informed by literature on lead mining firm strategies in Zambia as well as interviews with selected mining firms, and documents from the lead firms as well as the chamber of mines, including presentations, and other literature.

3.3.1 Mining Supply Chain Configuration and Linkage Development

Below, I present the composition and charecteristics of the Zambian mining supply chain. The objective is to understand how the supply chain is configured and functions so as to aid the crafting of a strategy that ensures effective integration of the local manufacturing industry into the mining supply chain.

3.3.1.1 Zambian Mining Supply Chain Composition and Characteristics

Kasanga (2012) highlights that the mining supply chain in Zambia can be categorised into two namely supplliers of core-inputs and suppliers of non-core inputs. Within the core input suppliers, three distinct tiers can be identified (Genesis Analytics, 2014; Kasanga, 2012).

3.3.1.1.1 Core input Suppliers

a) First Tier Suppliers – EPMs and OEMs

The first tier is composed of EPMs and original equipmnet manufacturers (OEMS) (international companies) that have hae set up base in Zambia, with focus on doing buisness with mining firms. These include companies such as Sandvik, Atlas Copco, SKF, Boart Longyear, Barloworld, Komatsu, Murray and Roberts and FLS Midth. These account for the biggest component of mining procumenet expenditure (Kasanga, 2012; GenesisAnalytics, 2014, and interviews). The firms in this tier do not normally source locally produced products but instead act as agents or distributors for their parent companies' products and services. Interviews and Kasanga (2012) reveal highlight a case where one such company was in fact a subsidiary company of one of the multinationals that had also invested in mining activities. These focus supplying and maintaining heavy equipment and service parts and in terms of

volume of business, account for about 80% of all mining procurement annually (Kasanga, 2012). To ensure they meet the delivery periods and reduce lead times, players in this tier tend to maintain warehousing facilities for some of the fast moving mining consumabels.

b) Second Tier Suppliers – Representative Agencies and Traders

The second Tier is characterised by locally registered representative agencies and local traders who deal in international mining supplies and services. These keep track of mining supply opportunities and prepare bids that specifically match what is available in their stock or from their suppliers. These source on demand, supply with a mark up on their bids or receive direct commissions from international suppliers (Kasanga, 2012). Players in this tier sometimes source after supply services, including product installation, maintenance parts and services on behalf of the supplier brands. This category also contains a number of small indigenous Zambian traders dealing in spare parts from international manufacturers and other consumables. Fissehaie (2014) refers to these as 'briefcase' traders. Notwithstanding the their presence, the bulk of the business in their tier is directed at agencies directly representing international suppliers. Kasanga (2012) estimates that these account for about 16 % of the spend by mining firms.

c) Third Tier Suppliers – Manufacturers and Traders

Local manufacturers operating manufacturing plants of various products consumed by the mining industry, including galvanized pipes, PVC products, engineering bolts and nuts, metal fabrication and rubber lining products, Personal Protection Equipment (PPE), among other things, fall in this tier of suppliers. Kasanga (2012) observes that players in this tier also compete with suppliers in the second tier, particularly on aspects of cost, quality supply, reliability and after sales support. He further highlights that this category accounts for about 0.7% of total mining procurement.

3.3.1.1.2 Non-core Service/Input suppliers

These are suppliers of basic "non-core" services to mining whose coverage include security, cleaning, catering and transportation (Kasanga, 2012:6). Dominated by locally established and registered companies, with a strong representation of indegenous companies, and accounting

for about 4% of expenditure, this segment of suppliers is still dominated foreign-owned companies. This category consumes a number of inputs from the local manufacturing industry including security and catering uniforms, safety shoes, and cleaning chemicals and reagents. It can therefore, play an important role in the integration of the local munufacturing industry into the supply chain.

3.3.1.2 Implications of the supply chain structure for efforts to integrate the local manufacturing industry into the mining supply chain

The nature of the Zambian mining supply chain entails that the first and second tier suppliers account for the bulk of business in the mining supply chain. Given that the source of the products going into the mining supply chain is depedent on procurement decisions made by both suppliers of core and non-core inputs, a succesful strategy to integrate the local manufacturing industry into the mining supply chain, should, in every way possible, include the different tiers of the supply chain. Influencing decision making at the tier-level and building strong business relations between the players in the local manufcaturing industry and the players in the tiers of supply presents greater opportunities for local sourcing given that the tiers account for the bulk of the business and directly decide what to source and where they source it from. The importance of the tiers in this regard, depend on the nature of the products the targetted beneficiaries are producing and their apirations.

3.3.2 Company Sourcing Strategies and Procurement policies

3.3.2.1 Procurement Decision making

Decision making with regard to procurement varied across the firms in the mining sector. While number of companies were found to have centralised procurement decision making structures within Zambia, others were found to have a combination of centralised structures at global level and at country level. It was further learnt that centralisation of decision making at global headquarters level allowed the headquarters to pusrchase parts and other inputs for all operations in a given region or globally thus, allowing the global corporate headquarters to benefit from bulk purchases discounts. This finding is consistent with Hanlin (2011) who notes that at global level, the contract values for procurement of mining inputs among the different divisions and mining operations of a mining conglomerate are considerable and highlights the practice of engaging in centralised procurement to enjoy discounts arising from huge

purchases. This finding is also consistent with findings by Fesehaie (2012), Genesis Analytics (2014), Kasanga (2012) and Morris et al (2012), among others.

In some companies, the local offices also retained some significant decision making powers, with the local procurement departments taking most decisions (Genesis Analytics, 2014). The departments were also responsible for the implementation of local supplier development programmes, working in isolation or with other departments. While the procurement department was responsible for identifying opportunities, including needs and technical support, the technical departments were responsible for implementing capacity building intervetions to ensure sustainablity in sourcing.

3.3.2.1.1 Implications of Procurement decision making for efforts to integrate the local manufacturing industry into the mining supply chain

The location of procurement decision making can have significant impact on the extent to which efforts to integrate local manufacturers can succeed. Opportunities for increased local sourcing were higher, at least in theory, where the local offices of a mining firm had decision making powers than when decisions were made at global headquarters level. This was so because most local producers were small, producing limited volumes and unknown in the business of supplying mining inputs. They could not therefore, even qualify to tender at that level.

With all other things held constant, domestic procurement decision making presents better opportunities for the integration of local manufacturing industry into the mining supply chain because local procurement staff are likely to be attuned to the policy and development discussions arround local sourcing within the country.

However, this this requires that incentives driving sourcing are aligned to local procurement. One senior official in one mining firm highlights how the company has had to dismiss several supply chain staff on account of corrupt practices in sourcing, while another notes the possibility of existence of vested interests in cases were supply chain staff had friends running trading companies or where trading companies had strong political connections. It was further observed that the key performance bench-marks for procurement staff (Quality, quantity, cost and reliability) all worked against local sourcing (interviews).

One suplier chain manager retorted, “when your job is dependent on quality of delivered inputs, reliability, cost and lead times, taking a chance with unproven local suppliers, was the same thing as preparing ground to be fired”. Clearly there is any element of risk avoidance in this statement. Hanlin (2011), Fessehaie (2012), Morris et al (2012), Kasanga (2012) and Genesis Analytics (2014) all find risk avoidance and reliance on proven suppliers as one of the issues negatively impacting backward linkage development.

3.3.2.2 Supplier Information/Data base

The majority of the firms were found to have databases of suppliers while one was found to have no database. For one firm, general traders accounted for 75 percent of the database while manufacturers were said to account for less than 3 percent (Genesis Analytics, 2014 and interviews). Another firm, had a database of about 1,817 vendors , 64 percent were locally registered vendors out of which only 1,037 were active (Genesis Analytics, 2014 and interviews). The proportion of local manufacturers in the database was low representing only 4 percent, the active ones falling far below that percentage. The databases were managed on a software contract where suppliers can login, check tender opportunities and view their payment status.

The databases were found to have major downsides. On the one hand, many suppliers were either inactive or had never won a tender due to unsuitable qualifications (Genesis Analytics, 2014). On the other hand, the registered suppliers were general traders lacking specialisation, with limited specilaised producers. The proliferation of general traders who also had strong political support was sited as one of the factors working against the integration of local manufacturers into the mining supply chain. It was further learnt that some manufacturers had attempted to join the supplier database but could not meet pre-qualification criteria. This position was further confirmed two manufacturers who had attempted to do business with the mines but gave up. They attributed their inability to supply to the mines to untrasnparent and stringent pre-qualification criteria.

3.3.2.2.1 Implications of Supplier Information for efforts to integrate the local manufacturing industry into the mining supply chain

Given that only registred suppliers could have access to procurement opportunities, simplification, publicising and assisting would be suppliers understand the pre-qualification criteria could see more local manufacturers registered in the databases and provide a strong base for the integration of local manufcaturers into the mining supply chain.

Genesis Analytics (2014) finds one mining firm without a supplier database. They report that the firm instead maintained a small procurement department [which could handle smaller purchases of inputs, especially none core ones]. They had adopted a strategy of negotiating deals directly with a large number of OEMs who they allow to operate within their premises, subject to forward purchase agreements. The mining firm has left most responsiblities of sourcing and paying for consumables, inputs and parts with the OEM, without any requirement for them to source locally. Although the company encourages its OEMs to source from local suppliers, including manufacturers, it has no formal system in place to ensure that local sourcing is promoted, [thus leaving efforts to best endeavour] (Genesis, Analytics, 2014). Implicitly therefore, the OEM holds the key to opening and closing out local manufcaturers from enjoying business with this mining firm.

For this kind of set up, succesful integration of manufacturers into the mining supply chain would require direct engagement with the contracted OEMs. Efforts aimed at integrating manufacturers into the mining supply chain should thus include OEMs.

3.3.2.3 Procurement Policy/Tender Processes and practices

The different mining firms had varying tender processes in terms of unbundling/bundling of contracts, circulation of procuremnt opportunities, and practices geared towards promoting preferntial access.

3.3.2.3.1 Bundling and Unbundling of tenders

In one firm, it was established that the tender process was unbundled into two with one relating to major and the other to normal contracts (Genesis Analytics and interviews). While tendering

for major contracts is done both manually and online, tendering for the normal contracts was found to be exclusively done online.

It appears the use of both online and manual tendering for major contracts enables the mine to reach out to a bigger population of suppliers. This obviously entails greater competition among those tendering and may have adverse implications on local sourcing especially the integration of local manufcaturers in the mining supply chain especially in the absence of prescribed local sourcing thresholds. Further, given that fact that ownership is used to confer preference, traders were more likely to win the contracts than manufacturers, given their proliferation and the diversity of sources (markets) from which they can competitively source products.

In another firm tenders were broken down and designated into two categories: high value tenders and ad hoc tenders for the supply of goods and services. Products such as HDPE, mill balls, steel, and cables, to mention afew, are tenderered out with winning suppliers being given forward procurement contracts, especially in the face of stable demand. For items of a once-off nature, the mine buys them on an ad hoc basis. There is a tendency within the mining firm to renew forward purchase agreements.

In yet another company, a subsidiary of a global mining and commodities group characterised by highly centralised contracts, backward integration across business units and aggressive sourcing policies aimed at cutting costs, it was establsihed that all contracts above a particular financial value were, as a matter of practice, negotiated at global level (Genesis Analytics, 2014). This was aimed at finding a supplier that could deliver value in multiple operations spread across countries, confirming findings of other scholars including Fsssehaie (2012) and Morris et al (2012). The firm was therefore, bundling different goods and services and entering into large forward purchase agreements, renewable from time to time.

3.3.2.3.1.1 Implications of Bundling and Unbundling of tenders for efforts to integrate the local manufacturing industry into the mining supply chain

It can be argued that unbundling of contracts offered greater opportunities for, whereas bundling and the signing as well as renewal of large forward purchase agreements, while offering secure opportunities to already existing suppliers, errected barriers to new entrants and thus worked against the integration of local manufacturers into the mining supply chain.

This is especially true given that currently, local manufcaturers generally enter the supply chain as third tier suppliers and cannot participate in the bundled contracts. The effort to integrated manufactruers in the mining supply chain should thus bring on board companies winning and executing these large bundled contracts.

3.3.2.3.2 Circulation of Procurement Opportunities

The mining firms had varying ways of ciculation of procurement opportunities, with some doing so online only (to registered suppliers as per the database), and others circulating to those in the database and those not in the database by use of local area chambers of commerce.

The mining firm that had no databse and maintained a small procurement department, was found to have an interesting procurement and tender circulating process. It identifies a limited number of suppliers on which it performs quality checks and due diligence, which are then encouraged to become members of area business associations. As and when supplies are needed, the mine then sends out its tenders directly to known suppliers and to the area business chamber for onward circulation to members, thus surpassing the need to pre-qualify or register with the company in order to respond to tender opportunities. However, the firm deliberately frames the quality and suitability of the needed supplies in a limiting way. This was confirmed by one manufacturer of saftey shoes who highlighted and provided evidence of a tender from this company which specified the brand name instead of detailing technical specifications of the needed shoes.

3.3.2.3.2.1 Implications of Circulation of Procurement Opportunities for efforts to integrate the local manufacturing industry into the mining supply chain

While the approcah of this mining firm appears to provide greater room for integrating local producers in its supply chain, the specificity with which it highlights the needed supplies has potential to work against the integration of local manufcaturers into its supply chain. The example above, where a brand was specified as opposed to technical specifications, clearly attests to this fact. Further the process runs the risk of capture by the officials in the business chambers. One respondent narrates how they had detected practices where chamber officials only circulated opportunities to afew friends running trading operations and how the few

colluded when tendering. He cites examples of cases of collusion that were under investigation by the mining company.

3.3.2.3.3 Local Content oriented tender evaluation criteria

In terms of tender evaluation criteria with regard to local sourcing, the mining operators had varying practices. One firm was found to have a 10% preference margin for local suppliers. As such, a local supplier would win the tender even if their price was 10 percent higher provided they met the other requirements around quality, delivery time and voulmes, among others.

Despite not having policies that favour local suppliers on the basis of price, another company was found to have an evaluation system which provides higher scores on the basis of ownership and geographic location. Supply firms located closer to the mine and were owned by a local[10] person would normally receive additional scores on location than those located far and whose ownership was not local. Another mine was found not to have any preferential treatemnt for local producers or suppliers but was purely interested in suppliers meeting critical success factors described in the subsequent section.

3.3.2.3.3.1 Implications of Local Content oriented tender evaluation criteria for efforts to integrate the local manufacturing industry into the mining supply chain

Although there are mining firms that already have some kind of preferential criteria for evaluating tenders, they do not focus on value addition. The 10 percent price margin offered by one firm is for local suppliers in general, regardless of whether they are manufacturers or traders. Given that Zambia is a high cost producer, local traders have the ability to source and supply at below production cost of the local producers. Further, the criteria for location and ownership too, does not descriminate between manufacturers and traders.

To effectively integrate local manufacturing into the mining supply chain, effort should be put in designing tender evaluation criteria that go beyond price margins, location and ownership to include local value addition or whether the product is locally manufactured or imported, with local manufacture receiving a bigger weighting than importation. For this to happen, however, government policy has to provide direction by mandating evidence-informed local

[10] Local in this case refers to being based in a given location.

procurement, with prescribed targets and indicators, and establishing a monitoring system and sanctioning framework to track progress and ensure adherence.

3.3.2.3.4 Local Procurement Plans

Athough the mining firms were procuring locally, none was found to have an elaborate local procurement plan. This may probably be linked to and explained by the lack of mandated local procurement, with prescribed targets and indicators that reflect current and future local procurment spend, as well as the absence of a monitroing system and sanctioning framework at national level. While, such as framework was indispenseable with regard to ensuring that mining companies developed procurement plans, the local procurement plans, oriented towards supporting local value addition were crucial to ensuring effective integration of the local manufacturing industry into the mining supply chain.

3.3.2.3.4.1 Implications of absence of Local Procurement Plans for the integration of the manufacturing industry into the mining supply chain

The inadequacies in government policy appeared to have provided incentives for mining companies not to develop local procurement plans. A combination of the two was futile for integration of the local manufacturing industry in the mining supply chain.

3.3.2.4 Key factors driving mining procurement

Understanding the the drivers of sourcing within the mining supply chain is crucial to effectively building backward linkages from the mining supply chain to manufacturing. Once there is understanding of the drivers, interventions can be designed towards building capabilities of the local producers to meet those drivers.

Feedback from the supply chain managers highlight six common and most prominent factors driving procurement in the mining industry. These include ability to meet the requisite quality requirements, ability to innovate and varying client demands, flexibility of supply, ability to supply the required volumes, on-time delivery, supplier reliability and price of the product. This classification, generally fits in the seven drivers which Fissehaie (2014) identifies as

critical success factors for doing busines with the mines. These are explored in greater detail below.

3.3.2.4.1 Ability to meet the requisite quality requirements

Quality has many dimensions, including performance, reliability, durability, conformity to agreed specifications (Fissehaie, 2012). "Mining is a long term business. Once we establish operations, we are constantly buying spare parts and other consumables", highlights one of the supply chain managers. "Quality spare parts will last longer and reduce our running costs in the medium to long term, while quality consumables will ensure undisrupted operations thus assuring the planned output", he added.

To get the confidence that a product meets the requisite quality, third party attestation was found to be extremely important. As such, products carrying quality marks such the South African Bureau of Standards, or products coming out of firms with established and certified quality management systems, were more likely to find their way into the mining supply chain than those without. This finding ties in with the findings from industry capabilities which showed that almost all successful local manufacturers doing business with the mining industry had quality certification while those without despite producing products that were durable and meeting performance requirements were struggling.

3.3.2.4.2 Flexibility and ability to innovate and met varying client demands

Feedback from the supply chain managers also pointed to the fact that innovation on the part of would be suppliers to the mines was crucial to their success. They stressed the need for firms to invest in research development if they were to continuously meet the needs of mining firms. An example was given of how one local manufacturing company lost the opportunity to expand business due to faluire to make their safety shoe acid-proof while another took up the opportunity, worked with an identified mining house and invested in research and development to produce the acid-proof version of their line of safety shoes. Another example was given of how one local manufacturer of steel mill balls was losing business due to the fact that their mill balls had a shorter life span than those imported from a named company. It was hinted that lack of research to explore how the mill balls could be made harder and significantly lengthen the lifespan, among other things, was holding back the growth of business for the company.

3.3.2.4.3 Ability to supply the requisite volumes as and when needed

All the interviewees stressed the need for would be mining suppliers to have the capacity to produce the volumes as required. One senior supply chain officer explained that a single transaction in which a mining firm would source all requirements for a given consumable was cheaper in terms of transaction costs. It was further revealed that one of the reasons the local producers of mill balls, for example, were only being used as suppliers of last resort or to fill supply gaps when there was an unforseen failure by the established suppliers, was because the total volume of mill balls produced in Zambia could only account for 11 percent of the total mill ball demand by the mining industry in Zambia (interviews).

Compared to traders who could source large volumes of a range of consumables from different sources, the local manufacturers were thus disadvantaged on this parameter given their low production capacity. Buying from local manufacturers therefore, meant higher transaction costs.

3.3.2.4.4 On-time delivery of requisite products

Delivery reliability, or on-time delivery, implies that products are supplied at the agreed delivery time (Fissehaie, 2012). Deliverying goods at the agreed time was crucial to undisrupted production. This is espcially true for mining houses that do not keep huge stocks of consumables. Cases were given of how some local suppliers (both producers and traders) had failed to meet agreed delivery schedules, thus endangering the continued undisrupted production and operations of mining firms, and losing their supply opportunities.

3.3.2.4.5 Supplier Reliability

The interviews revealed that supplier reliability was a function of delivery of quality, quantity and on-time delivery. It was further hinted that very few local suppliers, including manufacturers were able to meet the reliability criteria because where they had quality, the failed on eithrt volume or delivery time or where they were on-spot with regard to on-time delivery they were not consistent in quality and volume and where they had volume, they were deficient in other parameters.

Asked why this was the case, most supply chain staff hinted that most suppliers particularly local traders were not focussed on the long-term growth of their businesses. As such once they supplied and got paid they could afford not to deliver for as long as they still had money. On the part of manufacturers, it was felt that they did not have enough captital to expand their production plants and had not invested adequaltely in quality assurance systems including certification. Some further felt that the suppliers both traders and manufatuerers lacked thorough understanding and appreciation of how reliability is built. They hilighted the need to provide affordable finance, help them establish quality systems and obtain certification as well as upgrade their business accumen.

3.3.2.4.6 Cost of products

The feedback from the supply chain staff also highlighted that cost of products was increasingly becoming and important parameter in procurement decision making. This was due to the increasing cost of production in the face of falling global prices for copper.

"The only way you can manage your operations in a profitable manner in the face of what has happened is by reducing you cost of inputs", said one respondent in an apparent refrence to the fall in global copper prices. The copper prices have plunged by about 50 percent since 2011 (IMF, 2015). The desire by most mining companies to reduce production costs and remain competitive in the face of falling copper prices has increased the importance of cost in the procurement decision making. It was highlighted that most local producers offered products that were more expensive than imported as they paid duty on intermediary products used in the their manufacture and could not claim input value added tax. If similar products were imported directly by mining firms, they were duty-free and the firms could claim input value added tax. It was further highlighted that the local manufcaturers needed to invest in new technology and ensure they have skills to support competitive production.

3.3.2.4.7 Implications drivers of procurement decisions for efforts to integrate the local manufacturing industry into the mining supply chain

Given the importance of these drivers, the efforts to integrate the local manufacturing industry should design interventions that ensure that local manufcaturers are able to produce quality products, have the ability to innovate and meet varying client demands, upscale production to ensure they meet the requisite volumes and deliver when and as needed. These should help enhance the reliability of the local manufacturers as suppliers to the mining firms. To ensure

cost competitiveness of manufactured inputs going into the mining supply chain, the intervention should also focus on re-engineering the tax policy and addressing other framework issues that stiffle competitiveness including skills and technology upgrading.

3.3.3 Developmental Activities and Corporate Social Responsibility (CSR) Programmes

Findings in this section are informed by interviews with the respondents from mining firms as well as recent literature on mining and linkages in Zambia. It specifically draws on the Kasanga Report of 2012, the Genesis Analytics Report of 2014 on the Design of the Local Content Programme in Zambia and presentations delivered by the various mining firms focussed on CSR Programmes.

3.3.3.1 Developmental Activities

Almost all the companies spoken to and considered under the study were implementing development or corporate social responsibility programmes that had some supplier development activities. Genesis Analytics (2014) reports that one company was spending over US$250,000 annualy in building the capacity of its suppliers by providing various forms of training covering a range of issues including pricing and quotation prepration, succesful bidding for contracts, and upgrading of management capabilities to run successful businesses.

Another company was repported to be investing heavily in upgrading the capacities of its suppliers, particularly those whose contracts were valued at US$ 100,000 and above. It was reported that a team of officers from the mining company comprising the end-user department, procurement, safety, health and environment as well as finance pays on-site vists and undertakes a comprehensive diagnostic for the firm. Wheareas the technical managers from the enderuser department inspect the quality management system and products, and advise the supplier on steps needed to meet contract specifications, the Safety, Health and Environment department asseses the ability of the supplier to adhere to the prescribed safety, health and environmental standards and provide recommendations on the improvements needed in that regard. Further, the finance team undertakes an assesment of the financial status and systems of the supplier and equally provide advice on measures to improve financial management. The procurement department serves to establish supplier relationships and acts as the first point of contact for the supplier within the mining firm. In addition to these firm specific interventions,

the firm provides structured general workshops for smaller suppliers on various subjects including how they could successfully bid for tenders and seize supply chain opportunities.

Like the company above, another company was found to be providing technical assistance and capacity building to suppliers following a similar process. With this company, however, engineers from end-user departments were working closely with local companies to improve their products. They undertake site vists and obtain technical information on the products including drawings that are evaluated. They then provide feedback to help the producer and supplier improve. This back and forth engagement continues until the suppliers are able to fully meet specifications of the mining firm. This process was reported to take anything from between two to three years. It was further learnt that sometimes the technical requirements of the products were beyond the expertise of both the end user and the supplier, highlighting the need for specialised business development services.

Further, it was clear that most of the developmental interventions were planned and executed by the individual mining houses without collaboration with others even in areas where a number of them operated. Probed further as to why this was the case, most respondents hinted that their firms were afraid of free-riding and that their strategies were different from their 'competitor' companies. This finding corresponds with the findings of Genesis Analytics study of 2014.

3.3.3.1.1 Implications of mining firms' developmental programmes on the integration of the manufacturing industry into the mining supply chain

From the foregoing, it is clear that mining firms recognise the need and value for them to engage in developing the capacity of their suppliers. However, the nature of the interventions and the mode of engagement varied significantly with some being generic and one-off whereas others were more targeted and of medium to long-term in nature. It was also clear that the mining firms were skeptical about working together in the area of supplier development.

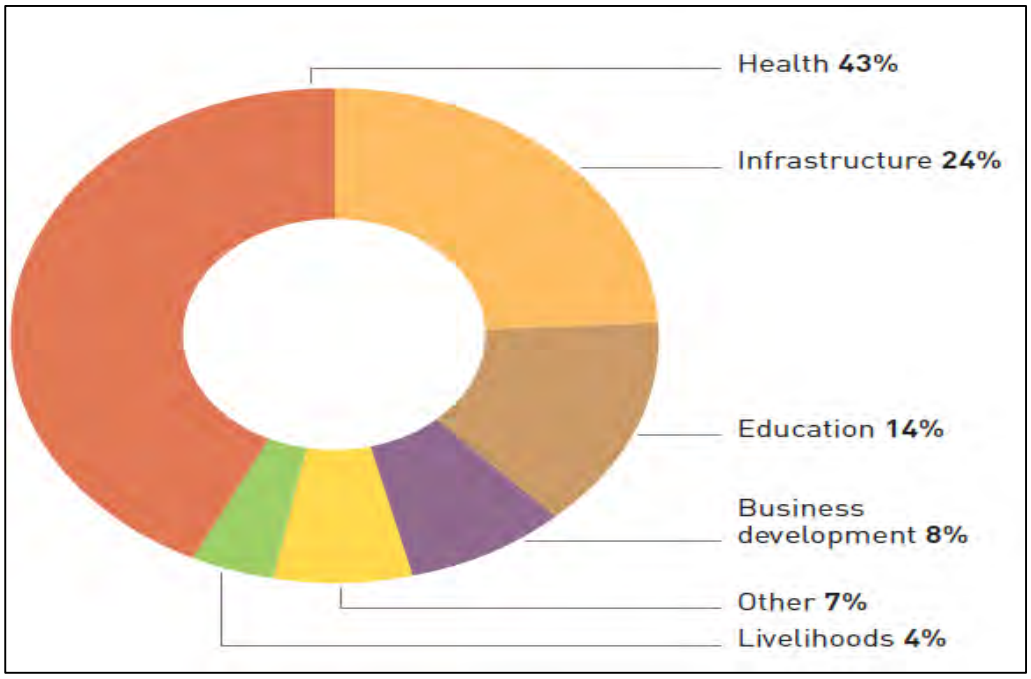
Recognising the developmental activities that the individual mining firms were already implementing, one can conclude that mining firms can play an instrumental role in the building of successful linkages between the mining sector and the local manufacturing industry in Zambia through the implementation of supplier development programmes. In designing such interventions, however, there is need to ensure that mining firms appreciate the value of working together and start trusting each other. Such activities could draw in on showcase

succesful supplier development programmes that have been implemented elsewhere and have involved multiple mining companies. Leadership on the part of government and possibly the donor community may be necessary in this regard.

3.3.3.2 Corporate Social Responsibility (CSR) Programmes

All mining firms were found to be implementing CSR programmes. The most prominent areas of focus for such programmes were health, education, training and skills development, sports, infrastructure development and local economic development. Local economic development activities were mostly focussed on capacity upgrading for farmers within the mining communities as well as training for local producers and would be suppliers of assorted non-critical items including food and other items. Figure 4 below highlights combined social investment in 2012 for four mining firms that constituted part of the sample for the study on mining contribution to Zambia's socio-economic development by the International Council on Mining and Metals and the Zambia Chamber of Mines.

Figure 4: Social investment made by 4 mining firms in 2012



Source: International Council on Mining and Metals (www.icmm.com)

As shown in the diagram, of the about US$ 70 million spent by mining firms as social investment, 43 percent was directed to health, 24 percent to infrastructure development, 14 percent to education, and 8 percent to business development. Livelihoods and other spending jointly accounting for 11 percent of the total expenditure. As can be noted business development which could complement supplier development programmes only came in fourth place, perhaps reflecting limited focus on this aspect within the scope of CSR.

Further interrogation revealed that even in places where more than one mining firm operated, planning and execution of most social investments programmes was done in isolation and with limited participation of the local communities and other stakeholders.

3.3.3.2.1 Implications of Corporate Social Responsibility (CSR) Programmes on the on the integration of the manufacturing industry into the mining supply chain

Given the amount of financing directed to CSR programmes, it is clear that properly planned, well-coordinated and local content-aligned and purposefully executed CSR activities can contribute to the integration of local manufacturers into the mining supply chain. To ensure this happens, mining firms can be encouraged to spend more of their CSR resources on supplier development to supplement their already existing activities. This could be done through introduction of awards that recognise mining firms that spend most CSR resources on supplier development activities.

3.4 Donors and Linkage Development: Roles Played by Donors in Zambia

There has been limited noticeable donor supported interventions geared towards promoting the integration of the local producers and suppliers to the mining sector. This may be explained by the fact that until early to mid-1990s, the mines were run by government and that government was at the time running several manufacturing operations that naturally supplied manufactured inputs into the mining supply chain. Further, the limited support related to linkages may be explained by the fact that after the mid-1990s, the mining policy developed in 1997 focused on creating a favourable investment climate for the mining sector providing facilitating privatisation of the mining companies that were, at the time, seen as a drain on the revenues of the country. Invariably, therefore, all donor efforts were rallied behind this aspiration.

Below, I discuss the role that some donors have played in linkage development. Details on the mining policies are articulated in the section dealing with policy.

3.4.1 What Roles have the Donors operating in Zambia played?

3.4.1.1 The International Finance Corporation (IFC)

The IFC supported one of the most notable initiatives, the Copperbelt Small and Medium Enterprise Suppliers Development Programme (CSSDP). This three-year supply chain development programme commenced in July 2007 and was jointly designed and developed by the International Finance Corporation Private Enterprise Partnership for Africa (IFC PEP Africa) and Zambia's leading multinational mining companies. The programme provided support to small and medium scale suppliers based on the Copperbelt province of Zambia. It was aimed at helping mining multinationals integrate local SME suppliers into their supply chains. The programme was a follow up to the pilot Konkola Copper Mines SME Suppliers Development Programme (KSSDP) and focused on building the business and technical capabilities of SME producers and suppliers, upgrading their competitiveness through enhancing their ability to produce and supply high quality products, improved pricing of goods and services, as well as reduced lead times for supply.

Beyond conducting business diagnostics, the programme provided technical assistance for developing business plans, financing proposals, human resource management systems, sales and marketing, management information systems, as well as quality management systems to beneficiary SMEs (IFC, 2008). The programme also sought to help SMEs to meet tender, financial and technical requirements through training and mentoring; facilitating access to finance for SMEs via dialogue with local banks and other development finance institutions, provide support for market diversification beyond the mining houses, as well as offering training using an innovative online business management training resource, the SME Toolkit.

Through this programme, notes IFC, the organisation was able to contribute to linkage development and ensuring that large scale mining investments in Zambia benefited local producers, service providers and contractors. At a more technical level, the IFC provided programme management expertise and methodology to the local sourcing platforms established under the programme, facilitated resource mobilisation and increased access to finance through funds mobilised from within and outside the donor community, including from financial institutions such as banks. IFC also provided assistance in setting up a monitoring and evaluation system.

IFC (2011) reports that over 300 SME participants were trained on how to use the SME Toolkit, Total Quality Management, Corporate Governance and Tendering processes; with over 36 SMEs receiving in-depth advisory services such as SME diagnostics, business plan preparation, installation of Management Information Systems and training in ACCPAC accounting software. The programme also facilitated over US$1.5million for 4 SMEs through local banks with a further US$20 million in supply contracts. Further, over 35 SME diagnostics were concluded and business plans developed for SME suppliers.

However, an independent evaluation noted that the key assumption implicit in the theory of the CSSDP was that the mining companies would continue to trade with the SMEs as long as the SMEs were able to meet the supply standards articulated by the companies, but this assumption did not always hold true. The programme lacked supporting policies and framework conditions that could encourage such trade from both government and the companies themselves, reiterating the need for government involvement in the programme and high-level buy-in from the mining companies. Further, the programmes was found to have been highly centralised, led and implemented by a donor, thus divorced from the realities of the mining sector, particularly the individual needs of the participating mining houses.

With regard to provision of BDS, the report concludes that there was more focus on providing generic BDS as opposed specialised BDS geared towards supporting suppliers improve product quality, increase production capacity and ability to move into new product lines, which were core to the success in doing business with mines.

In addition, the programme had weak baseline data and lacked joint monitoring arrangements, whose internalisation by the mining companies and participating firms was crucial for tracking progress and ensuring the success of the programme. The programme was also affected by the global financial crisis which saw a drop in the demand and price for copper, resulting in participating mining companies to scale down their operations, including reducing procurement volumes and number of suppliers, thus highlighting the need for such programmes to assist diversify markets for the intended beneficiaries and develop strategies to cushion against reduced demand.

3.4.1.2 The World Bank Group, the African Development Bank and the United Kingdom's Department for International Development (Support to the Jobs and Prosperity: Building Zambia's Competitiveness (JPC) Programme)

The World Bank Group, the African Development Bank and the Department for International Development working with the Zambian Government and the Zambian Private Sector commenced some work under the *Jobs and Prosperity: Building Zambia's Competitiveness (JPC) Programme in 2008.* The programme which took a multi-stakeholder approach in identifying sectors of focus and issues to be prioritised, identified the copper industry as one of the sectors that could create jobs and enhance the prosperity of the Zambians. The stakeholders identified three goals for the JPC Programme namely, undertaking of a skills audit, more effective communication about tax revenues from the mining industry, and a better understanding of backward linkages between the industry and local suppliers.

With regard to skills, the programme supported work related to the assessment of mining companies' demand for skilled labour, as well as the supply of skilled workers being provided by local training institutions. This work has since given rise to a number of initiatives[11] geared towards improving the quality of skills to improve the performance of the sector. These are being implemented by individual mining firms and as well as groups in partnership with selected training institutions.

As regards communication bout mining tax revenues, the programme collaborated with the Extractive Industries Transparency Initiative (EITI) and commenced a programme of publicising the tax revenues collected from mining firms using channels such as billboards and other media (World Bank, 2011). Action around this initiative has continued with several channels being used in communicating the tax revenues and issues around mining taxation, among other things.

[11]Resulting from the gap analysis conducted, the Zambia Chamber of Mines signed an MoU with the Ministry of Education paving way for the design and implementation of courses and curriculum which see students spending about half of the duration of the training programme working in mining firms and the other half in the classroom at the college, with the Northern Technical college leading the way. Recently, the Chamber has received support from the Australian government to implement a big comprehensive programme targeting skills upgrading for mining. The design of the programme is underway.

3.4.1.3 The World Bank Group and the United Kingdom's Department for International Development (Support to the Zambia Mining Local Content Initiative)

The World Bank and DFID took advantage of the push for increased integration of the local manufacturing industry into the mining supply chain and have been trying to advance work around understanding backward linkages between the mining industry and local producers and suppliers since 2012. Playing the role of convenor and facilitator, they supported the establishment of a focal group[12] to champion the formulation and implementation of the Zambian Mining Local Content Initiative[13] in July 2012. They have further funded two studies namely, the John Kasanga Discussion Report[14] of 2012 and a more detailed Genesis Analytics Report[15] of 2014. The two reports, among other things, sought to determine the constraints to local sourcing and manufacturing of supplies so as to facilitate the design and implementation of interventions geared towards addressing the identified challenges under a structured programme.

Under the Local Content Initiative, the donors alongside with other members of the focal group, have also been engaging the political infrastructure at the level of the Republican Vice President and public bureaucracy at various levels including Secretary to the Cabinet level and Permanent Secretary level, particularly in the Ministry of Commerce, Trade and the Ministry of Mines to re-engineer policy dialogue and related policy development to include linkage development, particularly with the manufacturing sector. These stakeholders have also been involved in the process of developing the Mineral Resources Development Policy[16] which was launched by the Zambian Government in 2014. In 2015, the World Bank in its series of economic briefs published a fifth series entitled *"Making Mining Work for Zambia"* which addressed a number of issues that need to be addressed to enhance the mining sector's contribution to development including issues surrounding linkage development, macro-

[12] The Local Content Focal Group includes the Zambia Chamber of Mines, the Zambia Association of Manufacturers, the Ministry of Commerce, Trade and Industry and the Ministry of Mines, with the World Bank and DFID providing facilitation and convening services

[13] An initiative aimed at increasing the productive sectors and increasing value-added content into the mining supply chain

[14] The John Kasanga Report captured baseline information on existing local supply linkages in the mining industry and identified specific types and volumes of the most-frequently purchased (or recurrent) mining inputs, consumables and services as well as identified issues constraining local sourcing

[15] The Genesis Analytics Report undertook a comparative analysis of successful mining related local content development programs in Africa and internationally, distilled lessons learned and made recommendations on the design of the Local Content Programme in Zambia.

[16] The Mineral Resources Development Policy of 2014 has recognises the need to enhance mining contribution to Zambia's development through, among other things, linking mining to other productive sectors such as manufacturing and sets forth policy objectives and strategies in that regard.

economic management and mining related taxation policy. To support and facilitate learning, the World Bank further supported a mission for a team of senior government officials to Chile in 2014 to learn how that country has advanced its linkage development efforts.

Further, the two donors, along with other focal group members have organised and participated in conferences and seminars[17] related to mining and development where they have jointly and individually delivered presentations on the case for local content and the steps the group and other stakeholders are taking in galvanising effort to build linkages and integrate sectors such as manufacturing in the mining supply chain.

Other support rendered by the two, directly and through specially designed programmes they are currently funding include supporting of the hosting of specialised exhibitions, buyer-seller meetings and business seminars for manufacturers of mining related inputs and senior executives and supply chain staff from mining companies, facilitating the signing of memorandums of understanding to cement relations geared towards promoting local sourcing between associations such as the Zambia Association of Manufacturers and the Zambia Chamber of Mines.

3.4.1.4 DFID-funded Private Enterprise Programme (PEP Z) - Support for Business Linkages between Manufacturing and Mining

In line with its country partnership strategy, DFID has recently articulated a five year the Private Enterprise Programme (PEP) focussed on supportive inclusive growth in Zambia. The £14 million programme has four components namely the business linkages, the business development services, impact investments, and business plan competition. The business linkages component aims to link local businesses to markets and partly envisions supporting linkages related to integrating local manufacturing into the mining supply chain.

The programme has signed MoUs with the Zambia Chamber of Mines and the Zambia Association of Manufacturers aimed at promoting local content. The programme has also signed separate MoUs with individual mining firms geared towards increasing local content, by among other things, providing assistance to help SME manufacturers that are growth

[17] The World Bank and the Zambia Association of Manufacturers participated in the Zambia International Mining and Energy Conference (ZIMEC) 2014, where they delivered presentations on the initiative they were championing and received overwhelming feedback from the participants on the need for such interventions and the anticipated opportunities and challenges. Further PEP Z and ZAM

oriented and were doing business or had interest in doing with the mines. Though in its early stages, the programme is supporting the implementation of several activities geared towards integrating local producers and suppliers into the various value chains including mining. These activities include undertaking business diagnostics and providing support towards addressing the identified capacity gaps, and supporting the holding of business seminars between the manufacturers and mining firms, among others. The programme is also in the process of developing an online platform, the b2b.com, to address challenges surrounding information on suppliers and supply opportunities in the mining and other sectors.

It is clear from the range of activities supported by the few donors discussed above that donors do have an important role to play in fostering linkages. These activities collectively work towards fostering business partnerships, raising awareness and knowledge of the need for linkage development, influencing policy to create an enabling environment and providing technical support for linkage development. All these are crucial ingredients for successful efforts to build linkages. It was clear from the discussions with the stakeholders, however, that donor capacity, level of engagement and quality of engagement as well as alignment of policy between the host government and the donors was important in ensuring that the donor effectively played their role.

3.4.1.5 Implications of Role of Donors the integration of Local manufactures in the Mining supply chain

It is clear that donors can play an important role in the development linkages between the mining supply chain and other sectors of the economy including manufacturing. The role can wide-ranging including undertaking needs assessment for areas of intervention, providing technical expertise in operationalising such programmes, providing financial resources to implement such programmes, assist in undertaking baseline surveys and setting up monitoring and evaluation systems, facilitating and supporting experience-sharing and learning, providing evidence, through studies and policy briefs to help shape other policy to ensure they are supportive of such programmes, and playing the role of convener to bring stakeholders together, bearing in mind that such efforts requires multi-stakeholder involvement for them to be successful.

In playing this role, however, donors should be aware of the need to ensure national and stakeholder ownership of the process and avoid being drivers of a closed intervention. Further, there has to be recognition that, the no single intervention will successfully ensure linkage development from mining to manufacturing but that only a package of interventions that mutually reinforce each other will deliver. As such, donors should not just focus on specific areas in their support but ensure the right framework conditions are created to ensure successful linkage development. Through their interaction with government and engagement on policy and other development matters, donors have the leverage to influence government policy and support initiatives that can support the integration of local manufacturers in the mining supply chain.

3.5 Role of Private Sector Associations and implications on linkage development from mining to manufacturing

3.5.1 Role of Private Sector Associations

Several private sector associations exist in Zambia whose members have vested interest in doing business with the mining firms or indeed promoting the interests of the mining industry. Five associations are worth citing hereunder due to the fact that they have played strong roles in promoting their members' interests with regard to mining namely the Zambia Chamber of Mines, the Zambia Chambers of Commerce and Industry, the Zambia Association of Manufacturers and the Mining Contractors Association and the Small Scale Association of Mine Suppliers.

On the one hand, the Zambia Chamber of Mines has championed the interests of mining firms with focus ensuring a favourable environment for competitive operations of mining firms. On the other hand the Zambia Chamber of Commerce, in general and in particular, its regional associations based on the Copperbelt and recently North Western Province (the new Copperbelt) have championed an agenda of ensuring that their members, who are a combination of service providers, traders and manufacturers have business opportunities with the mining firms. Further, the Zambia association of Manufacturers has been championing an agenda to integrate local manufacturers into the mining supply chain, while the contractors and small scale suppliers associations have also been working towards ensuring that their members are provided business opportunities in the mining industry.

Clearly, while it should be recognised that there are synergies that can be explored and exploited, there are embedded conflicts in these associations with regard to their members doing business with the mining industry. While some have been advocating policies and actions that ensure opportunities exclusively for traders or contractors others have been pushing for opportunities for manufacturers. Yet others such as the Chambers of Commerce have been advocating for interests of both traders and manufacturers.

The Small Scale Mine Suppliers Association, though small and not as established as the other associations, appears to attract more political support and sympathy than other associations due to the fact that its members are predominantly indigenous Zambians who are also alleged to be political cadres. Associations such as the Zambia Association of Manufacturers have not attracted as much political support partly due to the fact that most of the members are 'elite' Zambians of Asian origin and foreign companies, including multinationals.

Recently, however, the Zambia Chamber of Mines have been working together with alongside government ministries of commerce, trade and industry and the ministry of mines and are spearheading the Zambian Mining Local Content Initiative. The World Bank has played the role of the convener and facilitator for the work of the Focal group championing this initiative. DFID has also supported part of the work. Details on the role played by donors has been details under the respective heading.

Within this framework the Zambia Association of Manufacturers has, in collaboration with the Zambia Chamber of Mines been organizing and staging activities geared towards building business relations between the mining industry and the local manufacturers including staging exhibitions, buyer-seller meetings and seminars and arranging industrial for supply chain staff from mining firms to acquaint themselves with existing supply capabilities. ZAM has also been advocating for policies that favour linkage development including the formulation of a local content policy.

3.5.2 Implications of Private sector associations' activities on linkage development from mining to manufacturing

Notwithstanding the fact that the Zambia Chamber of Mines and the Zambia Association of Manufacturers and involved in activities that could promote the integration of the local manufacturing sector into the mining supply chain, the exclusion of other associations might work against these efforts especially in the face of a complex political economy.

To increase opportunities for success of their efforts, the two should explore potential synergies with the other associations and exploit them where they exist. For instance, contractors can be a conduit through which the manufacturers can access the mining procurement opportunities. Accordingly the contractors association can be an important ally in the success of their efforts.

CHAPTER 4

4. CONCLUSIONS AND RECOMMENDATIONS

This chapter presents key conclusions and recommendations targeting government policy, firm-level strategies and capabilities, lead mining firms, donors and private sector associations.

4.1 Key Messages and Recommendations for addressing gaps in Government Policy

4.1.1 Vision and Strategy Formulation

Although the vision for building linkages is non-existent in the vision 2030 and weak in the current five year development plan, Zambia has the opportunity to strengthen the vision as it develops a new development plan covering the period 2016 – 2020. Accordingly, Zambia also has the opportunity to lay down a clear strategy of how it intends to leverage backward linkages between mining and other sectors such as manufacturing and translating the strategy into programmes and activities.

The government should therefore, use the forthcoming planning processes to bring together all stakeholders to ensure an agreed and widely owned vision and strategies are developed. The work that is currently going on under the Zambian Mining Local Content Initiative offers an opportunity to government to learn and devise a vision and strategy that is realistic and attainable.

4.1.2 Legislation, Policy and Institutional alignment

Despite having some vision on building linkages as a means of ensuring sustainable contribution of the mining sector to Zambia's socio-economic development, the lack of clear policies, programmes and activities has adversely affected delivery in the past. With the new Minerals Development Policy of 2013, Zambia has the chance to start afresh.

The new policy has good pointers as to what needs to be done to strengthen both the legislative and institutional framework to foster the building of linkages. Given that some of the actions needed to build successful linkages fall outside the mandate of the Ministry of Mines, a new coordination mechanism should be put in place. The mechanism should, in particular, bring together the Ministry of Mines, Ministry of Commerce, Trade and Industry and the Ministry

of Finance, along with the Chamber of Mines of Zambia, the Zambia Association of Manufactures, the Zambia Consolidated Copper Mines Investment Holdings (ZCCM-IH)[18], and donors interested in promoting private sector development, particularly linkages, and other stakeholders. A comprehensive review of the various policies and legislation relevant to the development of linkages should be undertaken so as to aid the formulation of a systematic strategy of how these would be revisited and aligned to the building of effective linkages.

4.1.3 Enhancing Policy Capability

It is clear from the discourse above that Zambia currently has limited policy capabilities to build successful linkages. As already explained, this fact is also acknowledged by government. Deliberate and targeted interventions will have to be undertaken to strengthen Zambia's policy capabilities. While broader capacity upgrading is needed, priority should be given to ministries of mines, commerce and finance as the major players in linkage development.

4.1.4 Policy Incentives, Sanctions and Monitoring and Evaluation

It is clear that the lack of incentives and sanctions with accompanying monitoring and evaluation system lays perfect ground for policy failure. It is also clear that the absence of a monitoring and evaluation system supported by clear performance targets can be a hindrance to the delivery of programmes focussing on building linkages. As a matter of priority therefore, government should work with other relevant stakeholders and put in place a performance-based incentives and sanctions system. The system should be backed by widely agreed delivery targets.

Further, government should lead a multi-stakeholder process to devise and define measurement criteria, including indicators of progress. These measures should be backed by an elaborate monitoring and evaluation system to help track progress, foster accountability and learning for purposes of improving delivery and implementing incentives and sanctions.

Government should thus establish a monitoring and evaluation department in the ministry of mines and strengthen and align the monitoring and evaluation functions in both the ministry of commerce and finance to ensure they are able to track linkage development related activities.

[18] ZCCM-IH holds shares in several mining companies operating in Zambia on behalf of the Zambian Government. 20.6% in Konkola Copper Mines Plc, 20% in Lubambe Copper Mine Ltd (ARM), 20% CNMC Luanshya Copper Mines plc (CNMC Africa), 15% NFC Africa Mining Plc, 10% Mopani Copper Mines Plc (Glencore) and 15% Chibuluma Mines Plc.

The new Minerals Development Policy already speaks to some of these recommendations and thus provides a starting point.

4.1.5 Policy will, Leadership and Stakeholder Alignment

Effective leadership and alignment of stakeholders is necessary for the success of any effort to build linkages. The lack of leadership on the part of government as exemplified above is counter to the efforts of building effective linkages. The private sector through their associations such as the chamber of Mines and other interested associations such as the Zambia Association of Manufacturers can reach out to Government in this regard.

To push government into exercising leadership, the role of civil society and private sector associations becomes critical. Therefore, private sector stakeholders and civil society organisations should increase their advocacy and engage oversight institutions such as Parliament, senior political leadership and the high-level technocrats to solicit buy-in into the building of linkages as well as demand delivery from government. Further, such organisations should establish alliances with the media to raise awareness about the importance of linkages and the role that they can play in fostering development, job creation and poverty reduction. Bringing linkages down to job creation and poverty reduction is likely to get the general citizenry interested in the discussions and galvanise the voice demanding for government delivery on linkages.

Further, a functional monitoring and evaluation (M&E) system coupled with a rewards and sanctioning mechanism should be established to support implementation of envisioned activities and by fostering accountability and bolster policy will from government. Accordingly, stakeholders should leverage the inclusion of an a strategy pointing to the establishment of an M&E department in the Ministry of Mines, in the new Mineral Resources Development policy to push for the establishment and strengthening of an M&E system to track progress related to the programme.

4.1.6 Driving, Prioritisation and Sequencing

It is clear that up to this point there has been weak leadership on the part of government to drive the linkage development process. Accordingly, no elaborate work has been led by the government to identify, prioritise and sequence interventions to address the issues adversely affecting linkage development.

To reinvigorate and support government in this regard, stakeholders under the local content initiative should continuously be engaging political authorities and high-level technical staff in relevant ministries and agencies with the view to getting them to buy-in, take ownership and lead the development process. In doing so, the stakeholders should focus on and highlight how the whole linkage development process fits into the broader national development agenda and the realisation of the aspirations and objectives of the various stakeholders. The perceived benefits at national and individual stakeholder level have potential to galvanise support and accelerate implementation of the linkage development process.

Further, recognising that the capabilities of the players in the manufacturing sector are different and that issues adversely affecting linkage development are also different, with some requiring short to medium-term interventions and others longer-term interventions, sequencing of linkage development will be crucial. Government should work with other relevant stakeholders in identifying products and setting immediate term, medium to long-term targets for the process.

4.2 Key conclusions and recommendations for addressing Local Firm Strategies and Capabilities

It is clear from these findings that firm-level strategies and capabilities can play an important role in ensuring the competitiveness and successful linkage development between the manufacturing sector and the mining sector.

It is therefore, recommended any effort to develop backward linkages from mining to manufacturing should, besides addressing framework conditions, also establish a component of business development services that should offer systematic and targeted business development services. In particular, these services should help local manufacturers build capabilities to meet the needs of mining firms especially the core criteria for procurement decisions.

4.3 Key Conclusions and Recommendations for Lead Mining Firms

This section presents key conclusions and recommendations for lead mining firms with regard to efforts to integrate the local manufacturing firms. It is structured in a matter that it ties in with the different issues brought out in the findings of the study. It covers issues around mining supply chain configuration, company sourcing strategies and procurement policies.

4.3.1 Mining Supply Chain Configuration and Linkage Development

The nature of the Zambian mining supply chain entails that the first and second tier suppliers account for the bulk of business in the mining supply chain. Given that the source of the products going into the mining supply chain is dependent on procurement decisions made by both suppliers of core and non-core inputs, it is recommandated that the strategy to integrate the local manufacturing industry into the mining supply chain includes the different tiers of the supply chain.

It is further recommended that activities geared towards aligning first and second tier supply chain players with the aspiration of integrating local manufacturers into the mining supply chain, and building strong business relations between the local manufacturers and the tiers players be put in place as part of the strategy.

4.3.2 Company Sourcing Strategies and Procurement policies

4.3.2.1 Location of procurement decision making

The location of procurement decision making can have significant impact on the extent to which efforts to integrate local manufacturers can succeed. Opportunities for increased local sourcing were higher, at least in theory, where the local offices of a mining firm had decision making powers than when decisions were made at global headquarters level. This was so because most local producers were small, producing limited volumes and unknown in the business of supplying mining inputs. They could not therefore, even qualify to tender at that level.

With all other things held constant, domestic procuremnt decision making presents better opportunities for the integration of local manufacturing industry into the mining supply chain because local procurement staff are likely to be attuned to the policy and development discussions arround local sourcing within the country. However, this requires that incentives driving sourcing are aligned.

In line with the proposed development of a local content policy mandating local content and setting targets and indicators of progress, including a sunctioning mechanism, mining firms should modify their key performance bench-marks for procurement staff include local sourcing.

4.3.2.2 Supplier Information/Data base and circulation of tender opportunities

Given that only registred suppliers have access to procurement opportunities, it is recommended that the pre-qualification criteria be simplification, publicising and that prospective suppliers including manufacturers be assisted through deliberately designed traing programmes to understand the criteria and system for registration. could see more local manufacturers registered in the databases and provide a strong base for the integration of local manufcaturers into the mining supply chain.

It is further recommended that publicising of procurement opportunities be improved by establishing a national online system for mining procurement through which all mining firms can broadcast their procurement opportunities. Such as system can be managed by the Zambia Chamber of Mines, with potential suppliers having the option to register, with limited administration rights to upload capability statements and their quality certifications. The system should also allow for supplier recommendation by buyers to enhance opportunities for more business.

4.3.2.3 Procurement Policy/Tender Processes and practices

It can be concluded that unbundling of contracts offers greater opportunities for, whereas bundling and signing as well as renewal of large forward purchase agreements, while offering secure opportunities to already existing suppliers, errected barriers to new entrants and thus worked against the integration of local manufacturers into the mining supply chain. This is especially true given that currently, local manufacturers generally enter the supply chain as third tier suppliers, have limited ties with first and second tier suppliers and cannot participate in the bundled contracts.

It is recommended that the efforts to integrated local manufacturers in the mining supply chain should thus bring on board companies winning and executing these large bundled contracts.

4.3.2.4 Local sourcing-oriented tender evaluation criteria

It can be concluded that different mining firms had embedded different forms of local sourcing preference in their tender evaluation criteria. The variations can partly be explained by the lack of a guiding policy and common understanding of local content.

Along with the recommendation to develop local content policy that is value addition oriented, mining firms should be required to develop tender evaluation criteria aligned to the local content policy to support the integration of the local manufacturing industry into the mining supply chain.

4.3.2.5 Local Procurement Plans

It can be concluded that the lack of mandated local procurement, inscribed in a policy, with prescribed targets and indicators that reflect current and future local procurement spend, as well as the absence of a monitroing system and sanctioning framework at national level was working against the integration of the manufacturing into the mining industry .

Alongside the recommendation to formulate a value addition-oriented local content policy, mining companies should be required to develop annual procurement plans, with three to five year forecasts aligned to the local content policy.

4.3.2.6 Drivers of procurement decisions

It can be concluded that any effort to integrate the local manufacturing industry into the mining supply chain will be unsuccesful without taking cognisance of the drivers of procurement and putting in place measures to help local firms upgrade their capabilities and succesfully meet these drivers.

Accordingly, it is recommended that a multi-faceted programme with interventions geared towards assisting local firms put in place quality assurance systems and obtain certification, providing affordable long-term finance, as well as building business acumen by providing assorted, aligned and mutually reinforcing business development services, be put in place as part of the process.

4.3.3 Developmental Activities and Corporate Social Responsibility (CSR) Programmes

4.3.3.1 Developmental Activities

It can be concluded that mining firms recognise the need and value for them to engage in developing the capacity of their suppliers and can thus play an instrumental role in the building of successful linkages between the mining sector and the local manufacturing industry in Zambia through the implementation of supplier development programmes. It can further be highlighted that mining firms in Zambia are skeptical about working together in the area of supplier development.

It is recommended that the efforts to integrate the local manufacturing industry into the mining supply chain should leverage the on-going programmes of individual mining firms and, with conditions allowing, incrementally work towards establishing a bigger supplier development programme.

It is further recommended that mining firms be assisted in appreciating the value of working together by designing and implementing activities that could draw on and showcase succesful supplier development programmes that have been implemented elsewhere and have involved multiple mining companies. Leadership on the part of government and possibly the donor community may be necessary in this regard.

4.3.3.2 Corporate Social Responsibility (CSR) Programmes

It has been demonstrated that CSR programmes are an important facet of mining operations. This paper concludes that properly planned, well-coordinated and local content-aligned and purposefully executed CSR activities can contribute to the integration of local manufacturers into the mining supply chain.

To ensure this happens, within the context of the local content policy, it is recommended that mining firms be encouraged to spend more of their CSR resources on supplier development through the introduction of awards that recognise mining firms that spend most CSR resources on supplier development activities.

4.4 Key Conclusions and Recommendations for Donors

It is concluded that donors can play an important role in the development linkages between the mining supply chain and other sectors of the economy including manufacturing. Their role can be wide-ranging.

In this regard, it is recommended that donors support the integration of local manufacturing into the mining supply chain through provision of expertise and supporting the undertaking needs assessments for areas of intervention, provide technical expertise in operationalising such programmes, providing financial resources to implement such programmes, assist in undertaking baseline surveys and setting up monitoring and evaluation systems, facilitating and supporting experience-sharing and learning, providing evidence, through studies and policy briefs to help shape mining policy and other framework policies to ensure they are supportive of such programmes.

Beyond these roles, it is recommended that donors also play the role of convener to bring stakeholders together, bearing in mind that such efforts requires multi-stakeholder involvement for them to be successful. In playing this role, however, donors should be aware of the need to ensure national and stakeholder ownership of the process and avoid being drivers of as opposed to facilitators of the process.

4.5 Key Conclusions and Recommendations for Private sector associations

Notwithstanding the fact that the Zambia Chamber of Mines and the Zambia Association of Manufacturers are undertaking activities that could promote the integration of the local manufacturing sector into the mining supply chain, the exclusion of other associations might work against these efforts especially in the face of a complex political economy and the divergent orientations.

To increase opportunities for success of their efforts, it is recommended that the two explore potential synergies with the other associations and exploit them where they exist. For instance,

contractors can be a conduit through which the manufacturers can indirectly access mining procurement opportunities and increase the volumes of products directed to the mining supply chain. The Zambia Association of Manufacturers should therefore, engage and work with the Mining Contractors Association may be allies in this effort.

6. CONCLUSION

This research has identified factors promoting and constraining successful backward linkage formation from the copper mining industry to the manufacturing sector. It has also provided an in-depth analysis of government policy, manufacturing firm level capabilities and strategies, lead mining firms' strategies as well as donors' interventions highlighting how they can constrain and have impacted successful linkage development in Zambia, and provided actionable recommendations that can help shape the reforms that are aimed at increasing the volume and value of local manufactures entering the Zambian mining supply chain but also contribute to refocusing the on-going and future development efforts and discourse on the need for linkage formation.

The researcher's work and findings confirm points to the fact that the mining industry offers opportunities to support the growth and development of the local manufacturing industry and accelerate Zambia's structural transformation. However, seizing these opportunities will require alignment of policies, strategies and actions of multiple stakeholders including government, local manufacturing firms, lead mining firms, private sector association as well as donors. This confirms the working hypothesis adopted by the researcher.

7. RECOMMENDATION FOR FUTURE RESEARCH

This research has identified factors driving backward linkage development and has explored how the identified factors impact linkage development, in general and specifically in Zambia. It has also provided actionable recommendations that can be considered in the design of successful interventions to facilitate the development of linkages.

Recognising that all these efforts take place in a charged political environment, and that the subject itself has several stakeholders with vested interests, a comprehensive study on the political economy surrounding linkage development from the mining sector to manufacturing can be a good complement to this research.

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