Assessing the role of small-scale agro-processing projects as a sustainable livelihood strategy in rural communities in Buffalo City Municipality in Eastern Cape, South Africa.

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DECLARATION

I, **Richard Adom**, do hereby declare that this dissertation is the result of my investigation and research and that it has not been submitted in part or full for any other degree to any other university.

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ABSTRACT

Post-apartheid South Africa is ranked among many countries in the world with a high degree of income inequality, widespread poverty and high levels of unemployment despite the avalanche of government intervention projects such as agro-processing. Buffalo City Municipality is not immune to this alarming situation. The past two decades have witnessed significant assistance from the Eastern Cape government and Buffalo City Municipality with the intention of promoting an agro-processing strategy coupled with the aim of developing the agriculture sector in the region. The primary aims of agro-processing projects are to increase food production and reduce post-harvest losses, thereby reducing food insecurity and poverty. However, these projects in the municipality have not translated into the desired economic growth and development which could cascade into improving the employment and food security in the region. Buffalo City Municipality remains one of the poorest regions in South Africa 21 years after the attainment of democracy. This study, therefore, sought to analyse the role of agro-processing projects about poverty alleviation and sustenance of rural livelihoods. Also, the study identified some of the factors affecting the development of small-scale agro-processing projects in the region. The study collected data using triangulate research methods which consisted of interviews, opened-and close-ended questions from the field. Content analysis involving the use of government documents and existing materials from other scholars was relied on as a complementary method to the primary sources in the study. The study concluded that agro-processing projects in the municipality bear relevance in search for sustainable economic growth and development; however, sector departments need to adopt an integrated approach and the value the addition centre concept in promoting the agro-processing business in the municipality.

KEYWORDS: Agro-processing, Rural livelihood, Poverty alleviation, Economic growth.

LIST OF ACRONYMS

APAP	Agricultural Policy Action Plan
BCM	Buffalo City Municipality
BCMIDP	Buffalo City Municipality Integrated Development Plan
BER	Bureau for Economic Research
CIAT	International Centre for Tropical Agriculture
COMSA	Common Market for Eastern and Southern Africa
DAFF	Department of Agriculture, Forestry and Fisheries
DRDLR	Department of Rural Development and Land Reforms
DTI	Department of Trade and Industry
ECDC	Eastern Cape Development Corporation
ECED	Eastern Cape Economic Development
ECIC	Eastern Cape Industrial Corporation
ECRDA	Eastern Cape Rural Development Agency
ECSECC	Eastern Cape Socio-Economic Consultative Council
ECSEP	Eastern Cape Social and Economic Programme
FAO	Food and Agricultural Organization
GDP	Gross Domestic Product
GEAR	Growth Employment and Redistribution
HFSSA	House Food Security South Africa
ICD	Industrial Corporation Development
ICT	Information and Computer Technology
IDP	Integrated Development Plan
IDZ	Industrial Development Zone
IPAP	Industrial Policy Action Plan
ITAC	International Trade Administrative Council of South Africa
LED	Local Economic Development
MSEs	Micro and Small-Scale Enterprises
NDP	National Development Plan
PICC	Presidential Infrastructure Coordinating Commision
RDP	Reconstruction Development Programme

RII	Relative Important Index
SAPRS	South Africa Poverty Reduction Strategy
SEDA	Small Enterprises Development Agency
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
StatSA	Statistical Department of South Africa
SWOT	Strengths, Weaknesses, Opportunities and Treats
UNIDO	United Nations Industrial Development Organization
WDR	World Development Report
YES	Youth Enterprise Support

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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1. Introduction

This study outlines the role of small-scale agro-processing projects as a sustainable livelihood strategy in rural communities in Buffalo City Municipality in the Eastern Cape of South Africa post-independence. The chapter provides the background to the study and the problem statement; it also provides the research questions, the aim of the study, specific objectives and the justification of the study in the context of agro-processing, rural livelihood and poverty alleviation.

1.2.Background to the study

A study by World Bank (2008) Agriculture for Development acknowledged the enormous potential the agro-processing sector of developing countries possesses. The sector occupies a permanent position in the national development agenda in many developing countries, mainly as a tool to reduce poverty and sustain livelihoods, especially among the rural poor. The potentials of the agro-processing sector in less developed countries are primarily linked to the relative abundance of primary inputs and low labour costs. The United Nation Development Programme (UNDP, 2012) indicates that a $10billion private sector investment fortune exists in the agro-industry in Africa which includes: the establishment of a fruit processing facility in South Africa to distribute over $1billion market in the southern part of Africa. Also large-scale cultivation of soya beans and other oilseed plants to supply Eastern, Southern Africa (COMESA) and West Africa to meet over 400 000 tons supply gap. A study by World Food Programme (WFP, 2015) Sustainable Markets for Smallholder Farmers, highlights that intensive production technologies for fresh vegetables to supply an increasing urban market demand, investment in large-scale production of sorghum in East and West Africa to serve the breweries and the World Food

Programme, and the extensive cultivation of maize and rice can contribute over $5 billion to domestic markets. Despite the vast opportunities that exist in the agro-processing industry in Africa, little attention has been given to the agro-processing sector, the channels through which agricultural products meet consumers locally, on the continent and abroad. The magnitude of opportunities that are lost as a result this neglect become clear if one considers the income and employment gains that could be generated along value addition from raw commodities to consumption. A study by United Nation Industrial Development Organization (UNIDO 2013:1), Agribusiness Development: Transforming Rural Life to Create Wealth, indicates that, while industrialised countries add over $200 of value by processing one tonne of agricultural products, the least industrialised countries add less than $50. Also, while 98 per cent of primary agricultural yields in industrialised countries undergo an industrial transformation, in developing countries barely 30 per cent are transformed. However, agro-processing industries in developing countries contribute about 40 to 60% of manufacturing value added and agro-industrial products account for as much as half of their total exports. Agro-processing is, therefore, seen as an integral source for driving and transforming rural economies in Africa and many other developing countries as it brings about coaction between the industry and agriculture. A well-developed agro-industry will boost agricultural prices, minimise wastage, promote value addition, increase diversification, and improve employment and livelihood as well as export proceeds and shelf life extension, among others. It will also ensure an uninterrupted food supply in various forms, facilitate product distribution and growth of the national economy, ensure food security and reduce poverty in Africa (Olaoye, 2008).

South Africa has one of the highest levels of rural poverty in the world. Poverty headcount in some rural areas is as high as 98%, higher than the national average of about 44% (Millennium

Development Goals, 2015). Since the dawn of democracy in 1994, the government of South Africa has enacted policies such as the Reconstruction and Development Programme (RDP) and the Growth, Employment and Redistribution (GEAR) policy to promote sustainable development in the rural areas of the country. It was as a result of these development efforts that the government and development partners in the country found it appropriate to introduce agro-processing activities in the rural areas of the country, including the Buffalo City Metro Municipality, where agriculture is the mainstay of livelihood (Aliber et al., 2010). Agriculture continues to play a vital role in economic advancement and is a significant promoter to poverty alleviation in the municipality and South Africa in general. Nevertheless, agriculture alone is insufficient to address the high levels of unemployment, poverty and inequality that are so prevalent in South Africa today. Agro-process, therefore, occupies a unique position to help small-scale rural farmers become commercially successful, thereby, reducing poverty and improving rural livelihoods in Buffalo City Municipality. Distressingly, there are a host of policies, infrastructure and marketing impediments that are holding up the development of the agro-processing sector in the municipality. The challenges are divergent and stringent and need to be consigned on several fronts to attain paramount prosperity from the industry. Constraints in the acquisition of land by small-scale farmers for cultivation have impacted on their production, while the acquisition of quality raw materials, low labour productivity with slow adoption to technology, logistics networks, wastage related problems and low levels of value addition are significant constraints affecting the development of the agro-processing industry (Lambert, 2010). Other issues of concern are access to credit, weak or non-existent market development and inconsistency of government policy. It is the intent of this study to determine how agro-processing in the Buffalo City Metro Municipality has empowered the members of this municipality to create sustainable livelihoods.

1.3.Problem statement

The agro-processing industry in the Buffalo City Municipality is among the sectors identified by the Industrial Policy Action Plan (IPAP), the New Growth Path, National Development Plan, Medium Term Strategic Framework and Agriculture Policy Action Plan for its capabilities to accelerate development and create employment opportunities due to its strong interconnection and relation with the primary agricultural sector and other sectors of the economy Department of Agriculture, Forestry and Fisheries (DAFF, 2011). Additionally, the agro-sector has over the years displayed the highest employment multipliers compared to the other sectors of the economy. In 2013, the agro-processing sector's contribution to the total manufacturing sector was 4,8% of Gross Domestic Product (GDP) 3,6% of employment and 3,1% of investment (DAFF, 2013). The National Development Plan (NDP) had set an economic growth target of at least 5% by 2019, with the GDP increasing by 28,7%, employment by 39% and investment by 16 %. The Department of Agriculture, Forestry and Fisheries (DAFF, 2012) created a Directorate: Agro-processing Support, to supplement the programmes undertaken by the various governmental institutions, notably, the Department of Trade and Industry, by aiding the establishment and growth of Small and Medium Enterprises (SMEs) for agro-processing (Department of Agriculture, Forestry and Fisheries, 2011). Buffalo Municipality is engaged in agro-processing activities such as (Amathole, 2015):

- Honey: bottling honey, beeswax, honey meaderies,
- Berries: pack house, juice and jam manufacturing,
- Tomatoes: puree, juice manufacturing,
- Essential oils: manufacturing niche consumer goods (soaps, shampoo, candles, herbal medicine, etc.),
- Vegetables: packing and processing,

- Micro maize milling, and
- Cattle and poultry: abattoirs, leather tannery, wool wash.

Notwithstanding the interventions by the government and shareholders to reduce the incidence of poverty in the municipality through agro-processing and other development projects, very little success has been achieved. About 634,712 out of a population of 1,020 million people are estimated to live in poverty within the municipality (Eastern Cape Socio-Economic Consultative Council (ECSECC, 2012). The agro-processing sector remains largely impermeable implying entrance and active participation by small and medium enterprises remain curbed in the municipality. With its vast agricultural potential, the municipality has mostly failed to exploit the economic benefits that come with an energised agro-processing sector. It continues to provide raw content that does not drive the benefits that come with beneficiation and processing. This is untenable if one considers that, in addition to crop production, the municipality possesses the most significant potentials for livestock development. It has the highest number of cattle, goats, chickens and horses in Eastern Cape Eastern Cape Rural Development Agency (ECRDA, 2010).

Nevertheless, a large percentage of people in the municipality are unemployed and are living below the bread line. The combination of the HIV and AIDS pandemic, high poverty levels, low agricultural productivity and high post-harvest losses have compounded the problems of the municipality's food insecurity and poverty levels, especially among the rural dwellers and the vulnerable, Eastern Cape Social and Economic Programme (ECSEP, 2003). Nationally, the picture does not look different. The real value added to the agro-processing industry which measures the GDP contribution has slowed down substantially from 7,7% in 2010 to 1,5 % in 2011. Real export of all agro-processing products decelerated by 1,7% in 2014, the real import of all agro-processing products, however, increased by 10,5%. As a result, the trade deficit of agro-processing products

increased from R20932 million in 2010 to 30296 million in 2013 Department of Agriculture Food and Forestry (DAFF, 2011). The total employment in the agro-processing activities declined by 2,2% in 2013. Formal and informal employment also contracted by 2,2%; therefore, during 2013, agro-processing shed 9605 and 2321 formal and informal jobs respectively (StatsSA, 2015). This negative development has a direct impact on the Buffalo Municipality. Furthermore, the quantity of raw products from the farming sector that is transformed by the agro-processing industry in the municipality for the past five years has been significantly low due to the high rate of post-harvest losses. Smallholder producers continue to struggle with a tremendous number of post-harvest losses which adversely affect their business sustainability and manoeuvres. A study by Kaminski et al., (2014), Post Harvest loss in Sub-Saharan Africa, what do Farmers Say? reported the loss for roots and tubers at 10-40%; fruits and vegetables at 15-44%; whilst fish and seafood were at 10-40%; cereals, oilseed and pulse 15-30%; meat 5-8% and mill and dairy products 8-16%. Inherently, sustainable livelihoods amongst the citizens in the municipality especially rural communities are threatened (BCM Report, 2006). This developmental trend in the agro-processing sector raises specific questions: What are the bottlenecks hampering the development of agro-processing activities in the municipality? Why have agro-processing activities not resulted in much needed economic growth and poverty reduction? Why are small-scale agro-processing not developing to medium term industries? How does the institutional environment in which agro-processing operates affect the overall performance of the sector? This study sought to investigate the causes of these challenges, the growing trends, how livelihoods are affected by these developments and what could be done to remedy the situation.

1.4. Research questions

The main question guiding the study is: given all the efforts that have been put in, and the potential that exists, "why have agro-processing projects failed to contribute to meaningful poverty reduction in the municipality?"

The sub-questions are:

i. What are the trends of development in the small-scale agro-processing projects in the Buffalo City Municipality over the period from 2005 to 2015?

ii. What are the reasons behind the increasing trends of collapse in the small-scale agro-processing projects between 2005 and 2015 in the study area?

iii. What factors account for the declining performance of the agro-processing sector in the municipality?

iv. Do agro-processing projects contribute to employment creation and poverty reduction in rural communities of the municipalities?

1.5. The aim of the study

The goal of this study is to examine the potentials of agro-processing projects towards sustainable rural livelihoods and poverty reduction in rural communities in the Buffalo City Metro Municipality.

1.5.1 Specific objectives

1. To establish the trends of development in the small-scale agro-processing projects in Buffalo City Municipality over the period from 2005 to 2015,
2. To explore the reasons for the collapse of small-scale agro-processing projects in the municipality between 2005 and 2015,

3. To assess the factors that hinder the operations of small-scale agro-processing projects in the Buffalo City Municipality,
4. To analyse the performance of agro-processing projects regarding jobs creation and poverty reduction in the Buffalo City Municipality.

1.6. Justification of the study

This research will help to close the know-how gap by contributing to better comprehension and awareness of the relevance of agro-processing projects in rural livelihood towards poverty alleviation in rural communities in South Africa. Empirical research conducted on agro-processing in South Africa focuses on issues such as the impact of agro-processing on economic growth and development (Koira, 2008; Mudhara, 2009), as well as factors constraining and limiting the development of agro-processing in reducing rural poverty in South Africa Industrial Development Corporation (IDC, 2012). This study, therefore, will seek to identify reasons for the declining performance in agro-processing industries in rural communities in Buffalo City Metro Municipality in the Eastern Cape and ignite the debate on the role of agro-processing in the fight against rural poverty in South Africa in general and Buffalo City Municipality in Eastern Cape in particular.

1.7. The organisation of the study

This study is organised into eight chapters. Chapter one presented the introduction, problem statement, aim and objectives and justification of the study. In chapter two the literature about agro-processing processing projects is reviewed covering the definition, performance of agro-processing projects, sustainable livelihoods, constraints to the sector as well as the contribution of the agro-processing projects to food security and job creation. Chapter three describe the methodology, which covers the research design, the study area, sampling methods and data

management. Chapter four to seven presents the results followed by the discussion of the findings covering the trends of development of the agro-processing projects, reasons for the collapse of the projects, contributions of the agro-processing projects to job creation and sustainable livelihood and the constraints to the development of agro-processing projects in the study area. Conclusion and recommendation are made in chapter eight.

1.8. Conclusion

There are volumes of scholarly studies on the relevance of the agro-processing sector towards economic growth and poverty alleviation, especially in rural communities. The critical question in this study is whether the small-scale agro-processing industry could rightly be regarded as a backbone for economic boost and poverty alleviation in the Buffalo City Municipality. There is no concordance in this argument as various dissertations give different expositions in answering this question. A study by Hakizimana et al., (2011), Agriculture and Poverty Reduction in Developing Countries, found that vast numbers of people in the third world countries rely distinctively and indirectly on agro-processing for their sustenance; therefore, promoting the agro-processing sector implicitly has a greater reward in relation to poverty alleviation and in ensuring a substantial share of income for rural households. Also, it was argued that the agro-processing sector has a direct correlation to agriculture and multiple links to commerce and trade. A study by (Aliber, 2014), highlights that agro sector interdependence is crucial for sustainable livelihood and poverty alleviation as the small-scale agro-industries depend mainly on small-scale technologies and resources but are labour intensive regarding both skilled and unskilled labour which are essential for creating employment for rural dwellers. Nevertheless, other literature argues that it not any agro-processing activities that can achieve sustainable livelihood and poverty reduction in rural communities. Only well-resourced agro-industries based on the growth of small-processing

efficiency could achieve these goals. In a similar vein, the World Development Report (2008:1) indicated that relying on the agro-processing sector as the basis for economic growth in developing countries requires a production modification and sound investment in the industry. The next chapter of this study reviews literature on international and national levels of agro-processing industries, and provincial and local research on agro-processing development.

CHAPTER TWO

Literature Review

2.1 Introduction

The agro-processing industry, with it's strong forward and backward linkages has made numerous contributions to agricultural and economic development. The significance of the agro-processing industry can be gauged from its benefits to consumers, producers, agriculture and the economy as a whole. The agro-processing industry can function as a catalytic agent to bring about take-off in agriculture and ultimately in the economy as a whole (Singh et al.,1993). The rationale behind this chapter is to present the general view of the agro-processing industry and its contribution to employment creation and poverty alleviation in Buffalo City Municipality.

2.2 Agro-processing defined

Agro-processing is a set of techno-economic activities applied to all the products originating from agricultural farms, livestock, aquacultural sources and forests for conservation, handling and value addition to make them usable as food, feed, fibre, fuel and industrial raw materials (FAO, 1997). Wilkinson and Rocha (2009: 101) also defined agro-processing as the processing, preservation and preparation of agricultural production for intermediate and final consumption. Carlos et al., (2009:127) highlighted that the the agro-processing industry covers a broad area of post-harvest activities which entails artisanal, minimally processed and packaged of agricultural raw materials, the industrial and technology-intensive processing of intermediate and the fabrication of final products derived from agriculture. These activities include all operations from the stage of harvest till the material reaches the end users in the desired form – packaging, quantity, quality and price. The Standard Industrial Classification in 1992 categorises the following eleven divisions under the agro-processing industry: “food, beverages, paper and paper products, wood and wood products,

textiles, wearing apparel, furniture, tobacco, rubber products, footwear and leather and leather products." A study by Pattanshetti (2005), Agro-processing Industrial integration in India, further classified agro-processing based on various parameters – nature and stage of the processing, types of processing, raw materials used and their products. The study classified the agro-processing industry into primary, secondary and tertiary activities. Primary agro-processing industries are those processes which are engaged in the first stage of processing; these include drying, shelling, grinding and packaging. The secondary processing industries engage in a further stage of processing of more sophisticated agricultural products such as hydrogenation of edible oils, bakery, confectionary, weaving and spinning. Tertiary processing industries are involved in the advance modification of products of secondary products and byproducts of agricultural materials, for instance, transforming tomatoes into ketchup, dairy products into cheese. (Wilkinson and Rocha, 2008), further classify agro-industry into two categories, agro-food sector and agro-nonfood sector. The agro-food sector processes raw materials derived from agriculture, livestock and fishery into edible products which include fruits, vegetable, extraction of edible oil, milk processing, rice mills, animal feed, bakery, sugar, confectionary and spices. It is believed that the agro-food sector is much more complementary and is more easily classified than the non-food sector since their products have the same use. In most instances, their conservation mechanisms, for example, are intrinsically identical over a whole range of transient food products, whether they are fruit, vegetables, dairy products, meat or fish. The processing of agro-food products are done for preservation thus to increase lifespan and add value to increase nutritional value. Another study conducted by (FAO, 2003) Definition, Agro-Based Industry a Statistical Classification Perspective, indicates that the agro non-food sector processes raw material derived from agriculture, livestock and forestry into products of non-edible nature. These include wood

processing, paper and paper products, leather and leather products, processing of fibre like cotton wool, jute, silk, and processing of medicine. The study suggests that the non-food processing sector has a broad variety of end users and also demands an immense amount of transformation and there are usually specific sequences of execution, resulting in various transitional commodities before reaching the end output. Because of the value addition at each of the subsequent phases of transformation, the proportion of the primary output represented by the original raw material diminishes gradually. Austin's (1992), is of the view that many of the non-food industries steadily use artefacts and other fabricated products in a merger with agricultural raw materials.

Ncube et al., (2011), indicate that the South African agro-processing sector is dualistic with two sectors existing alongside each other; their study suggests there is a small percentage of commercial firms and an overwhelming majority of micro, small and medium-scale industries operating in South Africa. Atwood et al., (2015:76) revealed that approximately 245000 people are involved in fruit processing and 349000 farmers are involved in vegetable production in South Africa. Commercial agro-producers make up of less than 1% of the total producers in the country, progressive processors account for 8%, small-scale processors make up 28%, and resource-poor producers make up over 60%. The bulk of agro-processors in South Africa falls in the group of the cottage, small and medium scale enterprises and are run predominantly as informal enterprises with little or no modern technology facilities, are labour intensive with traditional production techniques and lack institutional capacity and support.

2.3 Review of related literature

2.3.1 Agro-processing and sustainable livelihoods

Sustainable development has been defined and interpreted in different ways. The World Commission on Environment and Development (WECD: 22) defined sustainable development as

the development that meets the needs of present generation without compromising the ability of future generations to meet their needs (Brundtland, 1992). This definition implies some sort of intergenerational equity. Sustainable livelihood and sustainable development are interrelated concepts. Helmore and Singh (2001) and Scones (2009), argued that sustainable livelihood is an integrative framework, an opportunity to promote the cross-sectoral and cross-thematic approach that should be the hallmark of development work - the combination of the resources used and diversity of activities undertaken in order to make a living. Husein and Nilson (1998) and Scoones (1998 & 2009) refer to sustainable livelihood as coping with and recovering from stresses and shocks, maintaining or enhancing its capabilities and assets both now and in the future, while not undermining the natural resource base. Sustainable livelihood, according to Tan (2009), and Warren (2002) embraced empowerment as participation in innovative enterprises. Helmore and Singh (2001:89) are of the view that the sustainable livelihood approach entails the building blocks familiar to human development they involve: income generation, environmental management, women's empowerment, education, healthcare, suitable technology, economic services and good governance to create coaction that creates sustainable livelihoods. Acharya (2006: 124), identifies four key strategies of earning sustainable livelihoods by the rural households. First, the production-based livelihood, a significant number of the small and marginal farmers gain livelihoods through production on small pieces of land. For these households, availability or access to inputs and improved methods of production are quite critical for their livelihoods. The second approach is the labour-based livelihood, most of the small landholders and landless rural households derive livelihoods by selling their labour. For their livelihoods, demand for labour, wage rates and prices of food are the critical factors. The third component is the exchange or market-based livelihood, rural households which produce surplus food and non-food agricultural products or non-farm

goods earn their livelihoods by selling these surpluses in the market. The marketing system for these products and relative prices of what they sell and what they buy affect their livelihoods, and finally, livelihoods transfer-based on entitlements, households without any income-earning asset or non-disabled person to work depend on their livelihoods on transfers from the government or other social organisations. Townsend (1993:291) argues that many people, particularly in the developing countries, are seriously restricted by the weaknesses of their entitlements to adequate food, water and shelter, so they are unable to achieve sustainable livelihoods beyond the level of bare existence. Loss of livelihood is a deep personal affliction and social sickness (Helmore & Singh, 2001:74). Building on this, Bekele (2008: 108), argues that it is essential to minimise the vulnerability of the deprived by diversifying their livelihood sources of the people to reduce poverty and food insecurity in rural communities in Buffalo City Municipality in the Eastern Cape. Lister (2004: 14) make reference to poverty as deprivation in the way of life. People are relatively deprived if they cannot obtain at all or sufficiently the conditions of life, that is, the diets, amenities, standards and services. Ruben and Peters (2005:13), point out that some systemic characteristics cause rural poverty. The most important factors are related to low labour production activity, lack of capital and knowledge, high operational costs and failing institutions. Tearfund's poverty research finding (2002) states that the cause of poverty is lack of self-empowerment, deprivation of services and availability of assets. Entrenched poverty is a well-established attribute of rural communities in South Africa (Bekele, 2008). Stimulating and supporting small-scale agro-processing projects could, therefore, provide sustainable livelihood opportunities for rural dwellers and strengthen the possibility for rural development. The creation of adding value to products through agro-processing brings job creation and economic well-being to rural households, mostly for families whose livelihoods depend on seasonal income-generating activities (DAFF, 2010).

The sustainable livelihoods are, therefore, a strategy to develop an effective tool for sustainable development and poverty reduction. Although people in rural communities usually select the occupations to engage in for their livelihood, some restrictions and constraints must be surpassed in order to safeguard sustainable livelihood. It is, therefore, prudent to develop strategic policies that will enhance the potential of people to participate in transforming agricultural produce and to provide high-quality goods sustainably to supplement the incomes of rural households.

2.3.2 An overview of the agro-processing sector in South Africa

South Africa and many emerging countries economies are in transition, especially those with enormous rural communities suffer from inadequate access to food and lack of employment (UNIDO, 2008). Agriculture-based products account for 50% of all exports from developing countries, yet only 30% of those exports involve processed goods compared to a figure of 98% in the developed world (UNIDO, 1998). Lack of agro-processing and storage facilities are among the primary reasons for high post-harvest losses, low exports of competitive value-added products and the variability of the food supply in South Africa. Judging from the statistics from DAFF (2008, and 2012), only 10% of food products traded in South Africa is processed, and the total volume of processed food crops exported is relatively low. Hakizimana et al., (2011) are of the view that strengthening the nutritional value and adding economic value through processing are some of the significant measures that will contribute to improving food security in South Africa. The development and introduction of new processing technologies offer the potential to improve food security and local industrialisation. Processing of agricultural products, therefore, occupies a significant position in the agribusiness value chain. Agro-processing improves the efficiency of harvesting, field handling, packaging, storage and marketing of agricultural produce and contributes to prolonging the shelf life of produce, thereby reducing spoilage and wastage of food

(Plucknett, 1979, FAO, 1985 and Rolle, 2006). The sector has the potential of increasing market opportunities for agricultural exports since processed goods generally have greater price stability than raw materials (Dijksra, 2001). Agro-processing is a source of foreign exchange earnings as well as food and fibre which are strategically crucial for national security (Makhathini, 2000). The agro-processing sector in South Africa is viewed as an essential component enhancing the economic prosperity of the nation and, as such, remains critical regarding job creation and export earnings (DAFF, 2008). More importantly, since most agro-processing activities occur in rural communities, their development and sustainability could potentially reduce poverty among rural dwellers. As recognised in the South Africa Poverty Reduction Strategy II (SAPRS II), no significant progress can be made in raising the average real incomes of South Africans as a whole without significant improvements in the productivity of the agriculture sector and the agro-based processing industry (WEF, 2005). It is in light of these factors that the government set a target to reduce post-harvest losses to an average of 15% by 2015. Achieving this goal will require supporting the establishment of agro-processing projects in South Africa. Thus, in a bid to minimise post-harvest losses and reap the maximum benefit from agriculture, the role of agro-processing has become critical to the economic development of South Africa and security of income and livelihoods of rural communities. Accordingly, many agro-processing projects are being developed in many regions of South Africa (Okorley et al., 2000). As a result, increased food crop production is envisaged with proportionate increase or improvement in agro-processing projects.

2.3.3 Growth and sustainability of small-scale agro-processing projects in the Eastern Cape

Various literature and researches have highlighted the trend and contribution of agro-industry to the Eastern Cape Province. A study by KPMG (2012), Small Enterprise Development: Research

on the Performance of the Agricultural Sector, indicates that the Eastern Province is well known for the production of livestock in the country. The report suggest that, the province houses about 28% of South Africa's sheep, 21% of its cattle and 46% of its goats. It is also the highest producer of mohair in South Africa, which in turn is the largest producer in the world (producing 55% of the world's mohair). About the production of crops, the province is the second highest producer of citrus fruit in the country, with oranges comprising 80% of its citrus output. Other deciduous fruits are also grown in the province, primarily apples, pears, and apricots. The study further indicates that the Eastern Cape is also a major producer of chicory, of which South Africa is the second-largest cultivator in the world. After a drop in the pineapple market, the province is also set to benefit from revitalisation initiatives. In addition to growing pineapples, there is also a regional initiative to produce dietary fibre from the pineapple peels and the by-products of the juicing process. The province also produces a quarter of South Africa's milk and dairy products. KPMG (2012) is of the view that Eastern Cape has a comparative advantage with the production of Honeybush tea and has benefited from regional initiatives, as researched by the Coega Development Corporation. Also, the province has the potential to benefit from the essentials oil trade, particularly with the production of the aloe ferox plant, which is used in the production of various cosmetic and medicinal products. Another study, The Agro-Processing Industry and its Potential for Structural Transformation of the African Economy - Lombo and Monica (2005) highlight that the agro-processing sector is a relevant industry closely linked to agriculture production and it is run predominantly by women in micro, small and medium-scale firms which operate spontaneously. It is observed that the agro-sector has a central role to play in generating employment opportunities and promoting women economic empowerment in rural communities including Buffalo City Municipality as women formed about 60% of the labour force engaged in

agro-processing industries. A study on Scenario Simulation of Small Farms' Production Efficiencies in the Eastern Cape Province, South Africa by Hosu et al., (2009:48) examined the role of agro-industries in the industrial towns of the province. The study indicates that Buffalo City Municipality, being an agricultural based economy, development of industries largely depends on the agro-industry. The study has also analysed the industrial scenario of the state regarding the development of agro-based industries. It is clear that agro-industries play a crucial role in economic advancement in the province regarding the increase in investment and generation of employment and cultural well-being by promoting traditional food products that they value more than just for their nutritional role. Based on the study, Melusi and Abbyssinia (2010), argue that the agro-processing sector in the Eastern Cape integrates the local economy into the global markets. This analysis suggests that the sector widens the consumer market, which means that processed products can be taken to distant and overseas markets at a lower cost than raw agricultural outputs. Processed products have a better shelf life, and the demand for processed products in international markets are always high. By this analysis it can be observed that processed products enjoy greater price stability on the world market and, therefore, increase market opportunities for exports, contributing to income securities particularly in rural communities which are mostly engaged in agro-processing activities. With rapid urbanisation coupled with rising income and changing lifestyle, the demand for processed products is on the rise leading to market expansion of processed products (Mhazo et al., 2005). Moreover, agro-processing also boosts the income of small or subsistence farmers by creating new markets. A study by Ampadu-Ameyaw and Omari on, Small-Scale Rural Agro-Processing Enterprises in Ghana: Status, Challenges and Livelihood Opportunities of Women (2011:10) argued that the agro-processing industry creates markets and provides better prices to the entrepreneurs of the industry. They study argued that an increase in

farm production and income due to demand from agro-processing activities translates into increments in the rate of capital accumulation in agriculture for rural subsistence processors which in turn give them added confidence for their agriculture activities. This analysis relates well to the situation in Buffalo City Municipality. Table 2.1 reflects the contribution of the agro-sector in the Eastern Cape Province regarding jobs generated from 2008 to 2013.

Table 2.1: Number of employees in the agro-sector in the Eastern Cape Province.

Agro-Sector Group	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**2012/13**
Process food and beverages	10,610	9,202	8,000	6,500	5,000
Manufacture of tobacco products	4,707	4,750	3,793	3,300	3,200
Manufacture of textile products	3,466	3,383	3,431	2,595	2,683
Leather and leather products	1,460	1,060	1,049	1,300	900
Process of wood and furniture	2,090	2,000	1,500	1,000	1,200
Process of paper products	2,089	2,000	2,300	2,200	2,950
Total no. of people employed	**24,422**	**22,395**	**20,073**	**16,895**	**15,933**

Source: STATS Eastern Cape, Bisho (General Household Survey - 2014)

2.3.4 The current state and challenges of the agro-processing industry in the Eastern Cape Province

A study by the Provincial Integrated Development Plan (PIDP, 2016) on Agro-Economical and Ecotourism Heartland, provides a brief history of the current state of the agro-sector in the province. The current development of the industry compared to crop production and agro-industrialisation and the challenges, export development of agro-products, SWOT analysis and the future roles of the agro-sector to the provincial economy. It was indicated that the performance of

the agro-processing industry is not satisfactory and is suffering from problems of marketing, finance, technology and raw materials and suggests that there is the need to develop separate support systems for the agro-processing industry in the province. It believed that non-existent or weak market development of small-scale agro-products is a major hindrance to the development of the sector in South Africa and the Eastern Cape. It a common knowledge that developing a good economy for smallholder processors are very cumbersome as these processors have to contest with established producers in the same market opportunities. Fragile organisational and supporting frameworks, as well as inadequate market information and knowledge, have compounded the predicaments of the small-scale agro-processors. ECDC (2015), study Develop Agriculture and Agri-Base Industry, indicate that the modernisation of domestic markets, particularly in South Africa and the Eastern Cape, has been a driving force attracting waves of investments in the economy by both multinational and transnational agro-producers and retailers over the past two decades. It is believed that with increasing civilisation and modification of consumption patterns and the rising of procuring abilities, the growth of innovative and commercial agro-production has outpaced the growth of small-scale unorganised agro-processors by a factor of five to ten. A study on Linking Farmers with Markets in Rural South Africa: Rural Development and Poverty Alleviation through Supply Chain Management by Thulasiwze Mkhabela (2007) argues that market innovation can provide a rise in economic prospects for the agro-processors, consumers, promoters and other role-players in the agro-processing industry. These opportunities include a reduction in entry barriers of traditionally protected industries, which are further leveraged by clearer information, less capture by elites, stronger access to services, and the potential for entrepreneurial farmers to combine resources and realise the collective worth of their land (Mkhabela, 2007:27). Also, Eastern Cape, supply chains of agricultural products typically involves

many players and agents with many farmers at one end and consumers at the other. The marketing of agro-products in the Eastern Cape is similar to what happens in several other smallholders agro-processing environments in South Africa, where smallholders agro-processors supply small products to different markets, mostly without any coordinated systems. To support this argument, Randela et al.,(2008) in their study Factors Enhancing Market Participation by Small-scale Cotton Farmers, disclosed that straightforward sales to customers at the production site and farm gate seem a quite persistent phenomenon in agro-business although few producers take their product to the commercial centres for sale. It is prevailing practice to see the traders trooping into the industrial site to buy the products from processors for sale in the towns and cities. Bouchitte et al.,(2011) study on Agricultural Markets and Small-Scale Producers: Access and Risk Management Tools argues that for small-scale agro-producers processing of products is just a fraction of the challenges because the products still need to be marketed in order to acquire the needed income to support their households. Marketing of agro-products at the local level remains unorganised and challenging, even though few individual smallholder producers are integrated with national or international markets. A study on Factors Limiting and Preventing Emerging Farmers to Progress to Commercial Agricultural Farming in the King William's Town area of the Eastern Cape Province, South Africa, by Khapayi and Celliers (2010), indicate that to choose a marketing layout, small-scale producers take into consideration transportation cost, trust levels among the role-players, profit margin, market information and knowledge and many other factors. It is a common practice that the small-scale processors often sell their products through distribution outlets with low rewards because they either have limited information on appropriate markets with good prices or have constraints in obtaining markets that offer good rewards. Generally, these producers individually sell their products at the local markets; however, some make use of market

agents or intermediaries to sell their products to foreign markets. The distribution layout that is mostly pursued in the province by small-scale agro-producers is illustrated in the diagram below. The indicators in figure 2.4 depict the different procedures that are pursued by producers in selling their processed products. Produce from small-scale producers are sold to consumers and retailers at farm gates, usually through informal negotiation where prices and conditions of exchange are informally mediated, while other products are sold through intermediaries to urban consumers and foreign markets. Figure 2.1 illustrates the distribution channels of small-scale agro-producers in Buffalo City Metropolitan Municipality and South Africa.

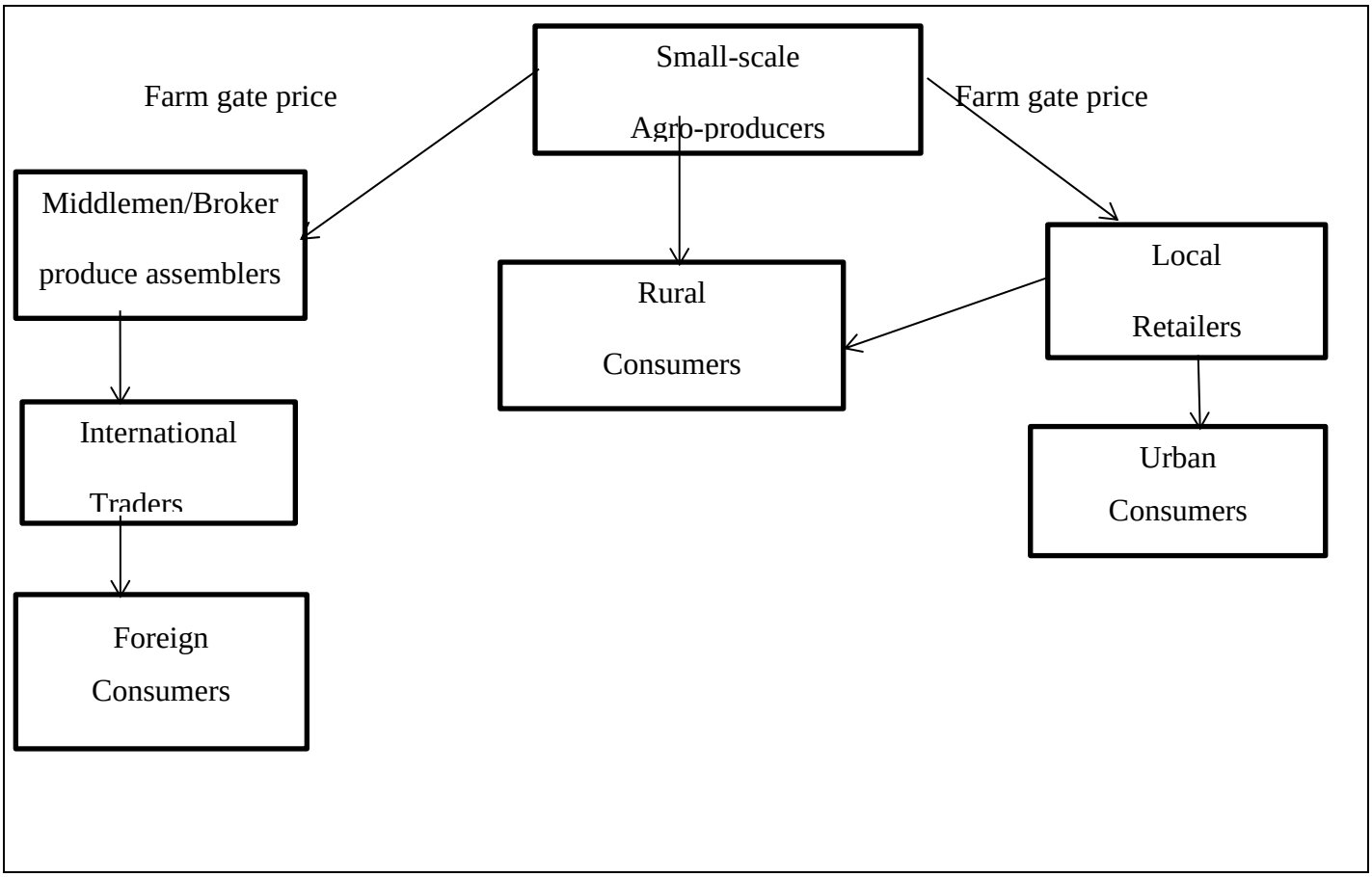


Figure 2.1 Distribution channels of small-scale agro-processing products in the Eastern Cape. Source: Agroenterprise CIAT.

2.3.5 Trade liberalisation and its impact on small-scale agro-processing in the province

A study titled Globalisation and the Rural Poor by Killick (2001), indicates that trade liberalisation and globalisation can be blamed for poor performance of small-scale agro-processing in the province this because world markets have become universal. Agro-producers in third world countries are ever more connected to consumers and associations in the advanced countries; subsequently, local producers of agro-products are facing growing market competitors, not only from global markets but regional markets simultaneously. Following the collapse of apartheid and

its complementary sanctions in 1994, South Africa became amalgamated into the international markets and this, among other reasons, granted institutional reforms that the country has experienced since then (Jenkins, 2011:18). Greenberg's (2013) study on Smallholders and Agro-Food Value Chains in South Africa: Emerging Practices, Emerging Challenges, highlighted that after the abolishing of marketing boards and market controls, the fundamental structural change was shifted from stagnant state-controlled agricultural markets to a vibrant and open-market orientation. While the commercial sector was geared for this development, emerging smallholders producers became exposed to a new environment with no prior experience and no government support. This change resulted in small-scale agro-producers and smallholder farmers once-impaired in productive markets-being virtually included in agro-marketing. Although these developments were oriented in favour of small-scale agro-producers, they still have to contest for markets with already well-established organised sectors.

For this reason, their sustainability in markets are still fragile (Jari et al., 2013). To support this argument the Inge Kotze (2015), a study on Farming Facts and Features: Reconnecting South Africa's Food Systems to its Ecosystems indicates that South Africa became a net importer. His study argues that South Africa food markets have become an extensive importer of certain food products such as rice, wheat and some vegetable types. He further highlights that the unprotected and atrocious foreign products from industrialised countries with huge production backing programmes have prevailed in the domestic industry to the detriment of the local smallholder producers who do not have the abilities to wrestle with these subsidised outputs. Jari et al., (2013) are of the view that small-scale agro-producers in the province and South Africa as a whole often face the predicaments of stringent food preservation benchmarks; inadequate marketing exposures; are found in rural communities, and most often depend on marketing agents. They are primarily

restricted by poor physical infrastructure and weak establishments in markets. To support this argument, Mhazo et al.,(1998) highlight that marketing of products is mainly unorganised, depends entirely on demand from the domestic markets which are meagre, unpredictable, and often under-developed and periodical. Also, these smallholder processors have little or no knowledge of their customers' choices regarding commodities spectrum, propensity and packaging and there is no consciousness to elevate the outputs from the informal agro-processing enterprises in the small towns. These factors have resulted in many small-scale processors receiving giveaway prices for their outputs by selling them at their farming-site or neighbourhood markets.

2.3.6 Development of small-scale agro-processing projects in the Buffalo City Municipality

A review of the literature relating to the agro-processing industry in the Buffalo City Municipality is discussed in this section. A study by Darlington (2014) on Local Economic Development and Urban Poverty Alleviation: A Case in Buffalo City Municipality, South Africa, stressed that the status of the agro-processing industry in the municipality is not isolated from the general phenomenon in the province and the country. A research by Buffalo City Municipality on the Integrated Development Plan Review (BCMIDPR, 2016), A City Growing with You indicated that, the agro-industry in the municipality is generally grouped based on its nature and structure. The Report (2016:27) highlighted that "The first category is the village and cottage industries which are owned and run at household level mainly in rural areas. They operate with very little capital investment and a high level of manual labour, mainly family labour and are operating without registration with any authority. The second category according to the study are the processing units that are operating as small-scale industries with a medium level of capital investment and semi-automation and are registered with the Small Scale Industry Act. The third category of units comprises large industries involving large investment and a high level of

automation and registered under the Factory Act of 1993." The agro-sector in the municipality have undergone three interrelated sets of innovations: first, raw materials supply and the development of processing of inputs and distribution referred to as "agroindustrial firms" second, institutional and organisational changes about agro-industrial firms and farms, which involved vertical coordination. The sector has also undergone complementary reforms in the farming sector which involve innovations in commodities configuration and content, technology, and sectoral markets. This third category is characterised by the modification in the food markets which have drifted markets from the manufacturers to consumers. A study by Louw et al.,(2006:101) argued that "Restructuring of food markets has led to the re-arrangement of food supply chains characterised by the rise in market dominance by supermarkets and large-scale agro-processors in the municipality. Commercial food processing, in particular, has grown more rapidly than the manufacturing sector as a whole over the period between 1994 and 2010. The sector accounted for 25,5% of total manufacturing sector between 1994 to 2010 and was the largest manufacturing sub-sector." Processing of food is distinctly crucial in promoting manufacturing capacity, efficiency and development as it has vigorous correlations with agriculture and industries and has capabilities to accelerate economic development in the municipality. An article in the Daily Dispatch (2015), Agri-Parks to Boost Rural Economics by Majangaza revealed that, the main food industries prevalent in the municipality include fruit juice processing, maize and rice milling, meat processing, honey processing, dairy products, fish processing, vegetable processing and canning products. On the product demand side, processing industries in the municipality have the advantage that their outputs always have a market wherever a population concentration occurs and where the potential for exporting exists. There are huge prospects of the agro-processing sector transforming agriculture which could translate into rural economic development in the

municipality in the form of income and employment generation, improvement in cropping patterns and promotion of off and on-farm development. A responsive agro-processing sector can boost the demand for primary agricultural products, deepen the values by vertically integrating primary production and food transformation schemes and reduce post-harvest wastes. Nthekeleng's (2014) study on, An Assessment of Local Economic Development (LED) for Sustainable Development and Poverty Alleviation in Buffalo City Metropolitan Municipality, indicates that agro-processing activities have the potential to minimise periodic utilization of a range of transformed products, increase the energy, improve the benefits and preservation of production mechanisms on the impact of growing livelihood and sectarian employment, while reducing marketing risks. The study argues that agro-industries further generate new demands for increase and varieties of primary products which are also convenient for transformation. Similarly, the sector contributes huge breadth in the transformation of farm outputs to consumers and in so doing reduces losses as the transformed products have broader markets. Integrated Agricultural and Rural Development Strategy (IARDS, 2012) is of the view that agro-industries are safety valves within rural communities which can take-in excess in the workforce and give a reprieve to the challenges of an enormous number of unemployed people in the rural communities in Buffalo City Municipality. Also, the agro-sector could also be an adjoining phase in seeking the formative and fundamental transformation of the municipality's economy. The sector has the potential to be the tool for development by generating lucrative off-farm occupations, boost income and reduce poverty. Furthermore, they can promote livelihood by securing food guarantees, upgrade nourishment, and ensure an energetic and effective labour force are absorbed into the mainstream economy. However, a study conducted by Industrial Development Corporation (IDC, 2012) established that promoting agro-industry in the Buffalo City Municipality is not without challenges. Agro-

processing industries in the municipality are highly neglected, under-resourced and mostly non-functional states. Serious constraints such as inadequate raw material supplies, widespread market deficiencies due to the poor nature of physical structures such as roads, telecommunications and power supply, and lack of credit avenues. Other constraints are lack of insurance policies, absence of equity jurisdiction, improper land ownership system, and pervasive corruption are the common fundamental challenges preventing effective and productive running of the agro-sectors in rural spaces in the municipality.

2.3.7 Constraints facing small-scale agro-processing projects in the municipality

Small-scale agro-processing projects in the municipality face numerous constraints that hinder their development and potential to contribute to food security compare to the commercial producers. Some of these constraints relate to scarcity of land, under-developed physical and institutional infrastructure. A study by DAFF (2012), disclosed that most of the small-scale agro-processing projects are found in the neglected communities and mostly in the former homelands where absence of both physical and institutional infrastructure restrict their expansions. Non-existence of proper roads, for instance, reduce the ability of a producer to transport raw materials, products and also access to information. Khapayi and Celliers (2010) study on Factors Limiting and Preventing Emerging Farmers to Progress to Commercial Agricultural Farming in the King William's Town of the Eastern Cape Province, South Africa, highlighted that access to capital is a significant constraints to small-scale producers. Khapayi, view access to finance as an archetypal problem that suppliers of agricultural raw materials, mainly small-scale farmers, face in the municipality. Dietz et al., (2000:28) stated that access to capital is a significant challenge to small-scale processors as the lack of it limits the start-up or expanding of processing businesses. Access to credit is often limited and, when available, farmers often restricted by either collateral

requirements by the banks, exorbitant-interest rates, cumbersome bureaucratic processes (Khapayi, 2010). Access to credit is also restricted to women who do not own valuables such as farmlands and estates or surety to serve as collateral in order to borrow from the financial institutions. Age also create bottlenecks for financial inclusions. Commercial banks consistently object to mainstream economically agile citizens, intentionally ignoring the older and the young potential processors. To support this argument SEDA (2013) study on Analysis of the Needs, State and Performance of Small and Medium Businesses in the Agriculture, Manufacturing, ICT and Tourism Sectors in the Country, argued that lack of financial support to small-scale projects, poor infrastructure development in rural communities, lack of an insufficient supply of raw material. Lack of trained labour, marketing problems, and inadequate technology are the main constraints impeding the advancement of agro-industry in the municipality. The availability of physical structure and technology are the engine for the development of an efficient agro-industry in the municipality. Buffalo City Municipality, however, has a massive infrastructure deficit, particularly the rural communities which are the centres of small-scale agro-processing activities. Lack of infrastructure in these communities has impacted negatively on the development of agro-industries. Lombo et al., (2015: 27), revealed that lack of infrastructure result to the excessive operational cost which is also a significant constraint to the development of small-scale agro-processing projects. Ncube et al., (2011) also argue that poor road network, variable power supply, lack of warehouse facilities, and lack of internet connection has forced most farmers to cultivate on subsistence basis or grow crops that are less perishable. Mudhara (2009), added that the high cost of transportation in agriculture has a direct impact on the operations and marketing programmes adopted by the processors. In many circumstances, huge operational costs are as result

of under-developed infrastructure facilities, inefficient institutions, and absence of formal markets (DAFF, 2012).

Obsolete technology is another critical constraint affecting the improvement of the simple agro-processing projects in the Buffalo City Municipality. A study on Linking Farmers with Markets in Rural South Africa: Rural Development and Poverty Alleviation through Supply Chain Management, by Mkhabela (2007), indicates that many of the small-scale and cottage industries in the municipality still depend on obsolete and conventional technology which are inseparable from meagre and inferior processing outputs and higher transactional costs of processing. The study also indicated that the majority of the agro-businesses operate informally and have restricted capability to develop products on their own or have the technology to improve their attribute and brand. The majority of these smallholder processors face the challenges of grappling with fast-changing markets, due to the absence of innovative technology cum development. (Tshintsha 2017: 68), argues that, comparatively, all the agro-processing activities, especially both the small and medium scales, are controlled by poor households that do not have access to technology because of their prohibited cost. He is of the view that, government interventions and support are needed in order to improve the productivity of smallholder agro-producers in the municipality. Also, an extensive innovation stimulus ought to be installed among the small-scale producers to improve their efficiency. Recognitions such as escalating operational ability, innovative technology and adaptation to technology and their merits, and organisational encouragement to the processing sector must be established among the producers. Technology transfer institutions are required to perform the following functions: provide affordable, user friendly and quality agro-processing technologies; research development, and transfer appropriate agro-processing skills to SME processors; train and capacitate small-scale agro-processors on the usage of agro-processing

technology and continuously research into latest innovation and transfer up-to-date agro-processing technology to keep abreast with trend of the industry (Rozhan, 2016).

In summary, it is crucial for one to understand that majority of the impediments in the agro-sector in the BCM are indisputably the same challenges that affect the whole of the Eastern Cape, South Africa as well as other third world countries. The challenges relate to an absence of certainty around the title, insufficient access to financing, and the relative absence of technology and mechanisation – all of these reflects the overall, a lack of skills, systems and investment. These challenges are disconcertingly intertwined, with tenure insecurity preventing collateralisation which in turn limits access to finance. Weak infrastructure (such as roads, warehouses, internet and processing facilities) limit access to markets, which constrains competitiveness. Lack of skills means that technologies which could lead to improved productivity are not taken up. Any solution aimed at addressing the municipality's low yields should aim to be holistic and multifaceted. It is, therefore, the responsibility of the three spheres of government to design effective and efficient programmes to address these bottlenecks. Otherwise, the potential of the agro-processing sector could never be realised. In light of the challenges and prospects, the leadership and management of the municipality could learn and take lessons from the developed and emerging countries that have successfully revolutionalised their economies from agriculture to the modelled global value-addition. A case in point is the experience of India, Chile and South Korea.

2.3.8. Agro-processing, food security and socio-economic development in BCM

A study bt FAO (2014:10), indicated that, "Food security is a situation where every individual, at all times, have physical and economic access to adequate, safe and nutritious food to meet their dietary needs and food choices for active and healthy life." Abdu-Raheem (2010) and Worth (2011), are of the view that South Africa cultivates sufficient food to feed the population; however,

a high degree of households experience on a daily basis food insecurity. In their analysis, though the standard of living has risen in the country, it has not reached the stage where it can substantially tackle the challenges of poverty and unemployment which are the causes of food insecurity. A study by House Food Security in South Africa (HFSSA, 2011: 25) disclosed that "While the national government provides social grants which help to minimize the rate and effect of food insecurity within the country, 40-50% of South Africans live in poverty and face the challenges of food insecurity on a daily basis." To support this argument, the DAFF (2008:22) revealed that about 14.3 million (35%) South Africans experience starvation and malnutrition on a daily basis, and a huge number of this population are children, women and the elderly. Altman et al., (2009: 16) study on Food Security in South Africa, indicated that the greatest challenge facing Buffalo City Municipality and South Africa, in general, is to provide the food needed by its citizens on a daily basis. Millions of people across South Africa-thousands of them from the Eastern Cape-do do not have enough to eat. In general, 2.2 million (13,3%) homes in the country had skipped a meal during the past one year. Toit et al.,(2011: 10) cited in the DAFF (2012: 17) study on food security in South Africa, "Eastern Cape is the largest province with the highest of households that skipped a meal on a daily basis. The province has a percentage of 17,6%, followed by Northern Cape 17,5%, North West 17,4%, Free State 15,7%, KwaZulu Natal 14,8%, Mpumalanga 14,8%, Limpopo 12,9%, Gauteng 10,8% and Western Cape 8,4." A study on Factors Contributing to Inequalities in Food Security in South Africa: Implications for Agricultural Policy (Manyamba et al., 2012) identified various factors responsible for food insecurity in South Africa and the Buffalo City Municipality; chief among them are: unemployment, low productivity in agriculture production and high levels of post-harvest losses. The post-harvest loss is a total of food lost along the food production progression, starting from harvesting, handling, to preservation,

transformation, packaging and distribution. Food losses are symtomatic, abysmally ramification of ineffective agro-processing systems. Agro-processing activities are, therefore, well placed to minimise post-harvest losses through value addition, improved processing techniques that ensure higher output, and also prolonging the accessibility of food commodities for a lengthy course which reduces the hunger gap between the harvest phase and the barren session when the cost of food escalate and many families face nutritional threats (DAFF, 2012). The stimulation and enhancement of agro-processing conservation at every stage of food production must be a crucial element of national strategic agenda for food security and must be an inherent component of agro-processing endeavours that seek to attain food security. Agro-processing is also critical for some reasons, the most critical one of which is the rebate of post-harvest wastage. Post-harvest wastes in cereals, tubers and dairy products were 43,6, 24,4 and 10,2 per cent respectively in 2007. This phenomenon can be attributed to ineffectiveness and non-functioning processing system (Aulakh, 2013). To back-up, this assertion, Perrira's (2014) study, indicated that barely 20% of yields in the municipality are transformed. Therefore, from the food security context, agro-processing has the responsibility of improving food supply and food safety and increasing the standard of living in the municipality through minimising food losses and waste.

In addition to food security, agro-processing can deliver significantly to sustainable livelihoods and poverty alleviation in Buffalo City Municipality. Agro-processing holds the key to transform livelihoods, especially in rural set-ups. The sector provides alternative sustenance opportunities for rural communities within the country and strengthens the feasibility of social advancement. Value-addition through agricultural transformation creates jobs and livelihood sustenance for rural dwellers, especially households whose sustainability is built on periodic-income enterprises (Sing et al., 2012). They are of the view that, the success of agriculture is based on establishing networks

of processing systems to contribute to processed commodities. The analysis further indicates that, with the establishment of processing units, the cultivation trend of the locality is transformed and revamped thereby, impacting on the revenue and employment structure of farmers and the processors thereby achieving sustainable livelihood goals as envisaged by NDP. Lawson et al., (2014: 24), suggests that agro-processing initiatives must assume an integrated approach and should be community driven-initiatives. Sustainable livelihood through agro-processing should focus on building skills and knowledge of communities, local services providers, farmers' organisations and agro-processors and active market engagement. The approach should emphasise on market orientation that enables smallholder farmers and agro-processors to successfully link themselves to potential markets, producing what they can sell rather than trying to sell what they have produced (Ferris, 2006: 7). Uphoff and Buck (2006: 107), further suggest that sustainable livelihood should build on rural agro-enterprise and must involve every facet of market structures and systems, both operational and establishment based on technical and economic conditions. This must involve pre-and-post processing activities which involve accumulation, sorting, preservation, transportation and marketing. Delgodo (1999), ECDC (2015) and DRDLR (2016) argued that the goal the agro-projects must: identify the commercial quality of products; explore new markets for products sales and promotion; provide business management skills for local producer groups and transmit agro-processing skills and techniques among local processors in a coordinated way. The achievement of these goals and objectives requires a wide range of proficiency in agro-production, marketing promotion and formulating policies that will promote the potentiality of households involved in transforming agricultural commodities

2.3.9 Promoting the development of the small-scale agro-processing projects

In order to improve the performance of the small-scale agro-processing project, production abilities, infrastructure development, efficient and effective identification of competitive markets and competent, skilled workforce need to be significantly enhanced (Aliber et al., 2014). Koira (2008), is of the view that efficient macro and micro-economic policies that ensure that the agro-sector remains competitive must be promoted. Killick (2001: 56), added that, in trade policy, "All export barriers such as export taxes for agricultural products and high import tariffs on inputs required by the agro-sector urgently need to be eliminated and proactive trade promotions pursued". Delgado et al., (1999) are of the view that to effectively transform the small-scale agro-sector in South Africa, policies and strategies must stress on (i) the creation of a conducive business environment and an equal playing field for the small-scale agro-enterprises ventures; (ii) enhance the resource supplies and support structures in rural communities; (iii) provide needed investment in infrastructure and other public goods, and (iv) promote the training of agro-owners. Gitonga et al. (2010), are also of the view that, the transformation of the small-scale agro-enterprises would only be achieved if the strong emphasis is placed on the creation of entrepreneurs, ensuring competitive products, stimulating local investors and human capital development, supporting cooperatives development, and developing agro-processing hubs. Therefore, policy strategists should not discriminate against agro-firms in trade and industry and related macro policies to ensure the total growth of the sector. Haggblade et al., (2010) argued that the development of the small-scale agro-processing depends on (a) the modernising the conventional food enterprise, (b) establish joint venture and strategic partnership with established enterprises, and (c) enhanced collaboration between governments, industry, and research and development organisation in the production of the best seeds, processes and technologies.

2.4 Conclusion

In this literature review, efforts were made to highlight the development of the agro-processing industry from international levels to the local perspectives. Literature from the developed countries such as Germany, USA, Australia and Japan indicates that policies which favour access to agro-processing technologies, marketing and infrastructure are vital for the success of small-scale agro-industries in stimulating industrial development and technological innovation (Bittar, 2013). The international literature further argued that most of the emerging countries such as South Korea, Singapore, Malaysia, China, India, Chile and Brazil had transformed their economies from predominantly agrarian societies into advanced economies through agro-processing. The literature indicates that the developed and emerging countries recognise that small-and medium-scale agro-industries are the engine room for economic upsurge and development. In most of these states, more than 70% of all enterprises belong to the small and medium industries sub-sector with agro-processing inputs and outputs accounting for more than 50% (UNIDO, 2013). In contrast, the picture is opposite in most of the third world countries, where the small-scale agro-processing industries are still in their formative stages taking a share of less than 10% in most of the countries. The literature, however, indicates that a developing country like Kenya has improved significantly in the small-scale agro-processing because the sector has contributed significantly to their economic growth (job creation, food security and sustainable growth) compared to other countries on the continent. The small-scale agro-processing industry in sub-Sahara Africa, like the broader agriculture sector, is experiencing limitations most of which relate to access to markets. Otieno et al.,(2006:9) argued that, "The major constraints to agro-processing as evidenced from the reviewed literature include; poor governance in key agricultural institutions, particularly the cooperative sector, failure of the private sector to fully fill up the capacity and functions previously performed

by the public enterprises after liberalisation; poor access to farm credit and high cost of modern farm inputs. Other constraints include failure to improve efficiency in agricultural production to facilitate effective competition with products from various parts of the world, poor infrastructure, and low budgetary allocation to the sector." For most of the developing world, particularly Africa, the literature reviewed falls short of qualifying and quantifying the extent to which these limitations have explicitly impacted on the development of the agro-processing industries.

Regarding the agro-processing development in South Africa, the literature reviewed established that the agro-processing sector is characterised as a dualistic industry. There is a tiny percentage of formal and commercial enterprises and a vast majority of micro, small and medium agro-enterprises operating alongside one another with a defined correlation. The traditional agro-industry in South Africa is monopolised by the medium scale enterprises (MSEs). The sectors are mainly the small-scale industries running foreign to the sphere of the contractual framework and government support structures (SEDA, 2012). Nevertheless, the role of agro-processing in South Africa's economy is in the sense that it has the potential to create higher demand for the commodities of other industries through backward or forward correlations. The sector contributes significantly to the total manufacturing value added as well as employment generation. The mean benefaction of the agro-sector to the output and value addition of the manufacturing category was 18.2%, and 19.8% respectively, during 2012-2014. Its contribution to domestic fixed investment was 15% and to employment 18% during the same period (Meyer et al., 2009). Despite agro-processing contributions to the economy of South Africa, constraints are impeding their development in the country. The literature review highlighted poor supplies of inputs, intermittent and inferior status of raw materials, challenges of dissemination and marketing caused by weak infrastructure facilities especially in rural communities, huge transactional expenses, lackadaisical

execution of government programmes, rudimentary technology usage and technical know-how, and poor vertical-horizontal linkages within the agro-sector (Louw et al., 2006).

Regarding agro-sector development in the Eastern Cape Province and Buffalo City Municipality, the literature highlighted that the agro-processing sector is a relevant industry relating to agriculture and is characterised mainly by small and medium-scale industries which operate as spontaneous and unorganised entities in the municipality. The processing sector is grouped into two main categories: small-scale or micro agro-processing and large-scale (macro) processing. The micro industries are monopolised by female producers and employees who are mostly uneducated with no proper training. Expertise in processing are derived predominantly from hands-on training, and vast numbers of the family labourer are engaged. This category of processing entities often process products that are poor in quality and unhygienic. However, the sector is noted for employment and income generation and depends mainly on local resources. The macro processing units, on the contrary, are predominantly foreign-owned enterprises, for instance, Nestlé and Cadbury or public enterprises like the Fan Milk company. These enterprises transform huge volumes of inputs and contribute immensely to the local economy through export operations (Visser et al., 2015: 40). The literature further revealed that the agro-processing industry contributes significantly to the economy of the Eastern Cape and Buffalo City Municipality regarding sustainable livelihood and food security. Despite the reality that these agro-enterprises offer opportunities for poverty reduction, food security and community development, they are not without challenges. Generally, while there is interest in increasing the output of agro-processed products, the literature showed that fully mechanised processing plants, particularly among the small-scale groups, are yet to be considered. Apart from the inability of the small-scale businesses to compete with relatively large scale agro-processing firms, the literature review found some

factors constraining the development of the sector and these need to be addressed. These factors include inadequate enforcement of agricultural and industrial policies, weak integration between agriculture and industry, technological inadequacies, lack of capacity to adapt to international markets' sophistication, inadequate infrastructural development, weak financial support of MSMEs and quality assurance challenges (Khapayi 2010). Based on the various literature reviewed for this study, it was deduced that there are some gaps in terms of agro-processing development and sustainable livelihood in the municipality, but none the literature reviewed focussed distinctly on the role of the informal agro-industry sector to sustainable livelihood and poverty alleviation in rural communities, especially in the Buffalo City Municipality. Also, there was no extensive study to understand the combined effect of all the factors which negatively impede the growth of the informal agro-processing sector, the rapid declining trend of small-scale agro-projects in the local communities in South Africa, the role of institutional innovation and models to transform small-scale agro-industries in rural communities. These gaps in the various academic works evaluated by the researcher informed the motive to investigate this critical sector of economic development. The next chapter looks at the methods used to answer the research question posed by the researcher.

CHAPTER THREE

The methodology of the Study

3.1. Introduction and rationale for the research methodology.

The primary goal of this chapter is to examine the procedures followed in carrying out this study. The chapter gives specific and incisive descriptions of how the research procedures were carried out in order to attain the research design for the study. Typical issues such as research design; the area of study, the framework of the study, the study population, sample size and analysis of data are considered in this chapter. Other issues considered in this chapter are ethical considerations and limitations of the study. In order to ensure that logical and analytical outcomes of the study are established and put into perspective, the triangulation method (qualitative, quantitative and mixed method) was chosen as the most convenient approach for this study. Quantitative research is guided by concepts that seek to assess "an explanation of variables in question and hypothesis in research" (Creswell, 2003: 119). In other words, in establishing the role of agro-processing projects in promoting livelihoods in the Buffalo City Municipality, this methodology assisted to acquire data of attributes from households and persons whose livelihood depends on agro-processing. Also, this data collection tool was used to identify some of the factors affecting the development of agro-processing industries in the municipality. Qualitative research, on the other hand, seeks to uncover certain phenomena by analysing the diverse social setting and the people who reside in these environments. It provides a means of assessing unquantifiable facts about actual people a researcher observed and communicated with (Monfared et al., 2015). In identifying the trend of development the industry, the reasons behind the collapse of projects, and the contributions of agro-processing on rural livelihoods this technique helped to unearth the mindsets of the study population regarding the relevance of the agro-processing on their livelihood. It also

assists in identifying the various type and level of assistance accessible to them, motivations to engage in the industry and prospects of the industry as a sustainable livelihood plan.

3.2. Description of the study area

Buffalo City Municipality is the study area for this study. The municipality is located relatively in the mid of the Eastern Cape Province. The municipality is bordered to the south-east by the extended coastline along the India Ocean. It is the heart metropolitan centre of the Eastern Cape. It is made up of the corridor of urban areas, extending from the coastal city of East London to the east, across Mdantsane and stretching to Dimbaza in the west. The municipality land area is approximately 2,515km^2, with 68km of coastline. The total population is estimated to be 1,020 million people (ECSECC, 2012). East London and King William's Town have been designated as the primary growth points and three other separate places within the municipality which offers substantial concessions to prospective and existing manufacturing entrepreneurs. Three main identifiable use patterns widely characterise the areas. The first are the diminant urban towns consisting of East London, Mdantshane, King William's Town, and Dimbaza which command the industrial and service sector and pull people from the entire Amathole Distric in hunt for work and access to improve urban services and provisions. The second are the areas bordering the urban areas and rural communities that remain under the influence of the urban centres. Finally, are the subsistence farming communities mostly in the north-eastern and south-western (coastal) sectors of the municipality and are characterised by high levels of poverty and unemployment. This is because the farmlands are underutilised. Buffalo City Municipality has stunted economic development and high of the jobless population which translates into the large levels of poverty in the municipality. This massive level of poverty was explicit in the 2012 statistician report where almost 50% of households in the municipality depend on income below R6000 monthly, and 35%

of families have no access to any form of income. The unemployment level in the municipality is approximated to be 35% (StatsSA, 2012). One of the significant constraints impeding the development of Buffalo City Municipality is lack of suitable education and skills development. A huge number of the Metro's potential workforce are illiterate or completed only basic education. Based on the census conducted in 2012, only 21% of the municipality's 20 years and above population completed Grade 12 education, 16% had post-school education, and only 17% of 15-24-year-olds were enrolled in the post-school study. The municipality is also facing the challenges of high levels of out-migration as a high number of the working population often move out to other provinces in search of employment opportunities. Figure 3.1 display the area of study which is the Buffalo City Metropolitan Municipality.

Figure 3.1 A Map of Buffalo City Municipality

Source: IDP, 2010

3.3 Research design

The research designs for the topic under discussion, “The role of agro-processing projects on rural livelihood towards poverty reduction” is to determine at the end of the study whether agro-processing has any impact on livelihoods in the Buffalo City Municipality. Both quantitative and qualitative methods were used in obtaining data for this study. A qualitative study is a form of social investigation that focuses on the way people translate and interpret their experience and the environment in which they reside (Hollowway, 2002). Researchers use the qualitative method to scrutinise the behaviour, attitudes, experiences and empathy of people and emphasise the understanding of these elements. The study used qualitative approach in the form of interviews, direct observations and documentary analysis to obtained data for the study. The method was used to identify complex, social and human factors hindering the growth of the small-scale projects, poverty reduction, and the contributions of the industry to sustainable livelihoods and to unearth reasons for the collapse of small-scale agro-projects. Quantitative method, on the other hand, adopts stringent and methodical procedures to obtain data for research work (Sousa et al., 2007). The quantitative method mostly is about computing relationships between variables. Therefore, the quantitative component of this study was to determine how production factors such as land, labour, capital, entrepreneurship, marketing, technologies and innovations affect the overall performance of the agro-sector in Buffalo Municipality. The quantitative data were solicited through structured and open-ended questionnaires.

3.4 Sampling population and sampling methods

The sampling was done at different levels starting with the Buffalo City Municipality, Eastern Cape Development Corporation, to community leaders, going down to employees in the agro-processing firms, technical experts, and non-governmental institutions in the agro-processing

sector. These institutions were identified through purposive sampling. Purposive sampling is a sampling approach where the researcher intentionally select whom to incorporate in the study based on their ability to provide the relevant and required data (Parahoo, 1997). Purposive sampling procedure was considered for this study because the researcher was seeking information on the role of agro-processing on sustainable livelihoods and poverty reduction in rural communities in the municipality and this required data in which the sample population are directly involved or have vast experience and knowledge in the industry. The sampling method was also used to choose communities and the projects within the municipality for the survey based on their past and present performance in the agro-processing industry. Based on these reasons the fruit processing factory in Kei Road community in the north-eastern zone, Stutterheim wood processing, Zwelitsa meat processing and King William's Town bakery firms in the central zone were picked. East London dairy farms and a fish processing firm in the coastal zone were also selected while Dimbaza leather factory in the western zone was picked. Stratified random sampling was also used to categorised respondents into two strata, agro-processors and non-processors categories. The respondents were split into comparatively correlative sub-groups (processors and non-processors) before a straightforward random sampling was used to choose participants for interviewing, presupposing that the target population was homogeneous and the people interviewed were similar to the general defined target population about the characteristics being studied.

3.5 Sample size and data collection methods

The sample of the study was influenced by the following: the budget, time availability, and the objectives of the study. Ninety (90) respondents from a sampling frame of 215 respondents were sampled. Seven projects within the municipality were selected for the study based on their

historical background and their contributions to the agro-sector in the municipality. The sample population included two managers from Buffalo City Municipality, three from the Eastern Cape Development Corporation, seven owners from selected firms, four local farmers and two leaders of private organisations in the agro-processing sector from the municipality. The survey was carried out between February and May 2017. The survey adopted a questionnaire in the form of face-face interviews with the respondents mentioned above to sought views on the trends of development in agro-processing projects in the municipality from 2000 to 2015. Open-ended discussions were also conducted with two managers from the Eastern Cape Industrial Development Corporation in King William's Town and East London. The discussions centred around opportunities and threats associated with small-scale agro-processing projects in the municipality. These data were supported by the direct observation in the agro-processing centres. The direct observations played a vital role in assessing the type of technologies used in processing products, the quality of processed products and the working environment of workers which includes; the presence of safety gear, cleanliness and operation guidelines. To supplement the qualitative data for the study, the quantitative method was also used to collect data from the respondents. 100 structured questionnaires were distributed to employees in the seven projects selected for the study. However, only 70 of the respondents responded and returned their questionnaires which gave a response rate of 70%. The number of respondents selected from each firm is proportional to the number of workers employed in the firm. The questionnaires centred on the demographic characteristics of respondents, the employment structure of respondents such as the number of jobs created by the agro-industries, the number of new projects established, the number that survived and the number of projects that collapsed within a specific period. Two field assistants were hired by the researcher to assist in the distribution of the questionnaire and to

interpret the questions to the respondents in their local languages since the questionnaires were designed in English. Table 3.1 reflects the proportional distribution of respondents included in the quantitative survey.

Table 3.1 Distribution of quantitative survey

Study area	Number of employees in the agro-processing industry	Number of respondents selected to be surveyed	Number of respondents who answered the questions	Percentage of respondents who participated in the survey
Kei Road fruit processing centre	20	10	8	80
Stutterheim wood processing factory	25	15	13	86
King William's Town bakery	50	20	14	70
Dimbaza leather factory	15	10	8	80
East London dairy processing firm	70	25	15	60
East London fish processing firm	20	10	7	70
Zwelitsha meat processing centre	15	10	5	50
	Total number of employees in the firms = (215)	**Total number of respondents earmark for survey = (100)**	**Total number of respondents who answered = (70)**	**Total percentage of respondents surveyed = 70%**

3.6 Data processing

The first objective of this study was to analyse the trends of small-scale agro-processing projects in the Buffalo City Municipality from 2005 to 2015. In this respect data were obtained from the fruit processing centre in the Kei Road, the Sttuterheim wood processing site, King William's Town bakery, Zwelitsha meat processing factory, East London dairy farm, and the fish processing centre and the Dimbaza leather factory. Data was also obtained from the leadership of the

municipality as well as the Eastern Cape Development Corporation. Information on the background and history of small-scale agro-processing projects in the municipality included: the number of new projects established from 2005 to 2015, the number of projects that survived throughout this period and the number of projects that collapsed from 2005 to 2015, ownership patterns and the classifications of the agro-processing projects. Descriptive analysis was used to analyse the average number of small-scale agro-processing projects established and those which had collapsed per year during the period between 2005 and 2015.

The second objective seeked to explore the reasons for the increasing trends of collapse in the agro-processing projects in the municipality. Qualitative data in the form of face-to-face interviews were arranged with the community leaders and leadership of the municipality to identify and discuss the reasons for the increasing trends of collapse in the agro-processing projects in the municipality. The discussions centred on the operational constraints, and the level of standardisation of the products. Field observation was also used to evaluate the quality of processing equipment.

The third objective relates to the constraints facing the small-scale agro-processing projects in the Buffalo City Municipality. In analysing this objective, data were obtained through open-ended interviews with two managers at Eastern Cape Industrial Corporation. Open-ended interviews were further conducted with the leadership of the ECDC to ascertain the role of government in improving the performance of small-scale agro-processing in the municipality. Direct observation was carried out by the researcher to assess the types of technologies used in processing and the working environment in which they work. Pictures and videos were taken to assist the researcher in analysing the information.

The fourth objective assesses the contributions of agro-processing projects to job creation and poverty reduction in Buffalo City Municipality. Qualitative data in the form of open-ended interviews, as well as a semi-structured questionnaire, was organised with owners of the seven selected firms, management of the Buffalo City Municipality, Eastern Cape Development Corporation as well as local community members. Discussions centred around different categories of employment created by the agro-industries, for instance, permanent and temporal employment, gender base employment, employment according to age and educational levels. Other information such as the demographic characteristics of respondents was obtained and analysed. The descriptive and inductive analysis was used to identify the contributions of the agro-processing projects to the people of the municipality. Table 3.2 summarises types of data collected from the key respondents.

Table 3.2 Summary of the different forms of data collected from key respondents.

Types of data collected			
Objectives	**Key informants**	**Qualitative data**	**Quantitative data**
To investigate the trends of development in the small-scale agro-processing projects in the Buffalo City Municipality between 2005 to 2015	Managers from BCM, ECDC, managers from the selected firms, and the community leader from the selected communities. (Interviews, open discussions, and questionnaires)	Type of ownership of small-scale agro-processing firms, reasons for the new establishment, persistence and collapsed firms and type and qualities of technologies used by the small-scale projects	Demographic characteristics, number of new establishments, persistence and collapsed projects, number of machines used by each project,
To explore the reasons for the collapse of small-	Local community leaders and leadership of the municipality.	Identification and significance of each factor, categorisation of equipment	Number of equipment and machines available at the processing firms,

scale agro-processing projects in the municipality between 2005 to 2015 To assess the factors that hinder the operations of small-scale agro-processing projects in the Buffalo City Municipality	(Interviews field observation and questionnaires) Interviews with project owners, the leadership of Eastern Cape Industrial Corporation, ECDC and direct observation in the processing sites	and machines and rating and standardisation of processed products Quality and availability of raw materials, access to capital, markets, infrastructure development, types of technology available to the small-scale processor	number and percentages of product quality, Number of firms producing standard products.
To analyse the performance of the agro-processing projects regarding job creation and poverty reduction in BCM	Local community leaders and non-governmental organisations, managers from ECDC and officials from the local municipality (Interviews and questionnaires)	Types of employment created (permanent, temporal, gender-based and nature of employment created based on age, gender and educational levels	Demographic characteristics, number of temporary, permanent, gender-based, age, and educational jobs created.

3.7 Pilot testing.

Before the main fieldwork, a pilot survey was done between 15th and 30th January 2017 to assess the appropriateness and effectiveness of the research tools. The testing was done to assist the researcher in assessing the feasibility of the data collection instruments. It also helped in making

necessary changes before the main collection of data from the field was undertaken. For this pilot study five (5) questionnaires were administered to farmers and agro-processors, two (2) agricultural experts and four (4) entrepreneurs in the agro-industry in King William's Town. The respondents gave their inputs about the suitability of the questionnaire. The researcher also conducted a trial interview with six processing entrepreneurs and two (2) agricultural experts in East London. These exercises were conducted between February and March 2017. After the pilot testing, necessary corrections were made and after that incorporated in the data collection tools to ensure that the research instrument generated valid and reliable information. According to Teijlingen et al.,(2006:2) "While pilot studies are crucial the study design, conducting a pilot study does not necessarily guarantee success in the main study, but it does increase the likelihood of success and minimise errors."

3.8 Limitations and ethical consideration to the study

Data for the study were assembled with few challenges which had an impact on the sample size and data collection strategies. The main problems were time, language barrier and financial challenges. Time constraint restricted the size of the sample population. The fact that the researcher is an employee at the Eastern Cape of Department Education posed a problem in data collection. The second problem encountered was a language barrier as the majority of the respondents are Xhosa speaking people; however, the questionnaires and the interviews were designed in English, and this led to some of the questionnaire being unanswered. This problem was, however, minimised since the field assistants were fluently in Xhosa, and they assisted in translating questions to the participants in their mother tongue. The long travelling distances to some of the fields of study also created financial challenges for the researcher. These challenges influenced the sample size of the study. Nevertheless, the sample population did not distort the substance of the

study. This is because a small sample population equitably gave an accurate impression of the target population since scholarly strategies were strictly considered.

Ethical consideration was considered in this study. The researcher took the following ethical aspects into consideration: Voluntary participation - participation in the research was entirely voluntary, and no participant was forced to participate in the study. Consent from the respondents was also sought before administering the research instrument. Respondents were given a consent form to complete and sign before administering the questionnaires or being interviewed. The anonymity of the participants was seriously addressed the researcher ensured that the identities of the respondents were hidden by not identifying any respondent by name or identity number. Confidentiality of the respondents was taken into consideration. The researcher and his team ensured that the confidentiality of the respondents was guaranteed and this was done by ensuring that the information of the respondents was kept safe and was used only for the intended purposes.

3.9 Data analysis techniques

Descriptive data analysis techniques were employed. The techniques involved the conversion of data into a numerical form before being analysed. This was done in order to make the data readable so that the relationship of the research problem could be "studied, tested and conclusions drawn." Questionnaires administered from the field were analysed using Statistical Package and Service Solution (SPSS) Version 22. This involved the coding of questionnaires and creating templates using SPSS software. Descriptive statistics, bar graphs, pie charts, cross tabulations and other diagrams were created for analysis. The interview data were transcribed, categorised and discussed. The direct observation also allowed for the taking of pictures which assisted to further explain the activities of agro-processing in the Buffalo City Municipality.

3.10 Conclusion

This chapter outlined the data collection tools and data analyse in this study. The study also adopted content reviews and a field research approach as its data gathering and analysis. Data were collected from various stakeholders in the agro-industry in the Buffalo City Municipality from a sampling population of 90 respondents. The purposive sampling method was mainly used to select participants for the study. Guided and open-ended interviews were held on a face-to-face basis with representatives from Buffalo City Municipality, the Eastern Cape Development Corporation, technical experts, academics in the agro-industry, managers in the Eastern Cape Industrial Corporation and managers of some of the financial institutions in the municipality. Questionnaires were distributed to employees in the seven selected projects and some community members. Data was further solicited through site visits in some agro-processing centres in the form of direct observation. The documentary analysis in the form of content review from government policies, journals, handbooks, newspaper and internet articles were extensively consulted to obtained data for this study.

CHAPTER FOUR

Data presentation and analysis

4.1. Introduction

The study set out to achieve four objectives as presented in section 1.5.1. The findings are presented such that each of the study objectives is addressed with their corresponding data. The Statistical Package for Social Science (SPSS Software) was used for the quantitative data analysis whereas inductive strategy was adopted to analyse the qualitative component of the data. Descriptive statistics were used to describe and summarise the nominal data and other characteristics of the subjects. Descriptive statistics were further used to present the data in frequency distribution tables, pie charts and bar graphs.

4.2 Trends of small-scale agro-processing projects in the municipality from 2005 to 2015

In order ascertain the trends of development of small-scale agro-projects in the Buffalo City Municipality from 2005 to 2015 as stated in the first objective, the study used qualitative and quantitative strategies to obtain data from the respondents for analysis and discussion. Key data components were demographic characteristics, ownership patterns of the respondents, background and history of some selected. Other characteristics analysed were types of firms and the products they processed, proportion and trends of new establishments, number and rate of survival of small-scale projects, and the trends of the collapse of the small-scale projects over a stipulated period.

4.3. Types of agro-processing projects and their products in some selected communities

This study was carried out in seven agro-processing projects in some selected communities in the Buffalo City Municipality. The projects included fruits processing in the Kei Road, the bakery firm in King William's Town, dairy and fish processing projects in East London, the Zwelitsha

meat processing centre, the Stutterheim wood processing project and the Dimbaza leather processing project. These projects are involve in various processing activities ranging from agro-food products such as bakery products, fruit juice, dairy products, processed meat and fish. The non-food products include wood processing and leather products. These projects were selected because of their past and present status in the agro-processing industry and their economic contribution to the municipality. Table 4.1 depicts the distribution of these projects and the products they processed in each community.

Table 4.1 Distribution of agro-processing firms and products in some selected communities.

Communities	**Type of processing firm**	**Percentage of quantities supplied to the municipality**
Kei Road	Fruits processing	4%
King William's Town	Bakery products	20%
East London	Dairy processing	30%
East London	Fish processing	60%
Zwelitsha	Meat processing	8%
Sttuterheim	Wood processing	25%
Dimbaza	Leather processing	2%

Source: A field study in March 2017 and Statistics Department in Bhisho.

Table 4.1 depicts the distribution of some selected projects analysed for this study. The results show that East London dominates in the processing of dairy products. The city accounts for 30% of all processed dairy products in the municipality (StatsSA, 2014). East London is also the hub of fish processing. The city accounts for about 60% of all fish products in the municipality,

Zwelitsa a small rural community near King William's Town, accounts for about 8% of all processed meat products in the municipality while King William's Town and Kei Road account for 4% and 20% of all fruits and bakeries products respectively. The Stutterheim wood processing firm ranks the highest of all wood products in the Buffalo City Municipality. The firm accounts for about 25% of all processed wood products in the municipality and also the whole of the Eastern Cape. The Dimbaza leather factory is noted for processing leather products. The project accounts for merely 2% of all leather products in the municipality. According to the respondent owners of the projects, the rate of distribution of the projects within the municipality was based on the availability of raw materials, markets for the products and other factors. These responses suggest that the location of a project in the municipality is influenced mainly by the available raw materials and markets for the processed commodities.

4.4 Demographic background of respondents

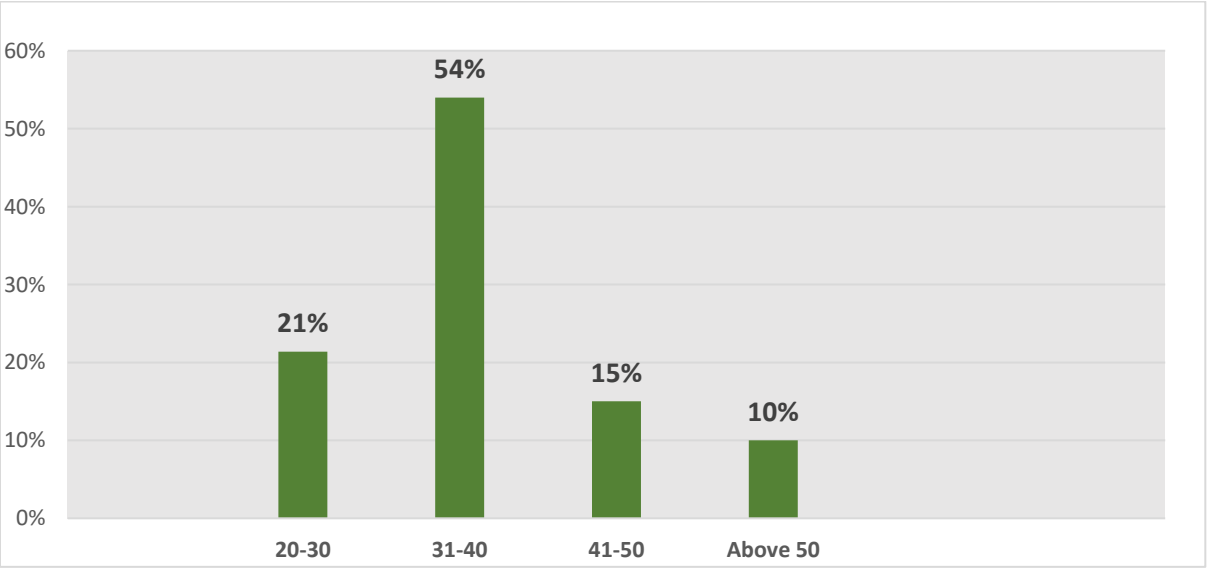
Several studies in the agro-sector have long observed a relationship between the performance agro-industry and a variety of demographic characteristics. For instance, features such as age, education and gender influence decision-making involving entry into the agro-environment, adoption to new technologies, the intensity of production and land use. In rural communities where the demographic profile of agro-populations is rapidly changing understanding how demographic characteristics influence decision-making is vital for designing and targeting resource for the running of the sector. Both qualitative and quantitative investigations of various studies linked the demographic characteristics of the processors to the ownership and managerial capabilities. For instance age, education, experience and gender influence the choices people make, and consequently indicate how one group of processors (older, female, less experienced, better educated) behaves given a particular situation. Understanding how these characteristics influence

behaviour enables them to contribute to the development of the sector or to understand the past or future development of the agro-industry. The demographic characteristics of the respondents also influence technological diffusion, adaptation to modern processing techniques, distributions and marketing operations, the income and wealth of processors and the output efficiency of the entire agro-processing activities in the municipality. Furthermore, the demographic attributes have a direct relationship with the categorisation of agro-businesses such as; cottage, small, medium, and large-scale agro-industries in the study area. Based on the above explanations and reasons this study dimed it necessary to analysed the age, gender, educational background and years of experience of respondents to determine their impact on the ownership patterns, and the trends of development in the agro-sector between 2005 and 2015.

4.4.1 The age distribution of respondents

Age influences individual working capabilities; it is also an essential factor to individual's choices and decision making because the way an individual thinks is closely linked to the number of years an individual has lived (Maxwell et al., 2001). Various research findings linked age to productivity; it is often said that productivity increases with age in the early life cycle and then decreases late in the life cycle as human capital depreciation exceed investment (The law of diminishing returns). According to (Neumark, 1998:28), the maximum productive age in the human cycle is considered to be between the ages of 20 to 45. The age of respondents in this study is captured in Figure 4.1. It can be seen that 15 of the respondents representing 21% were between the ages of 20 – 30, 38 representing 54% were between the ages of 31 – 40, 10 of the respondents representing 14% were between 41 – 50, and seven translating to 10% were above 50 years of age. The results indicate that most of the respondents are active working ages. The distribution reveals that the average age of the total respondents surveyed is 40 years. Based on the assumption of Neumark (1998), young

population are those between the ages of 20 to 40 years and that constituted 75% of the total population of respondents covered in the study. The older generation could, therefore, be defined as those above 40 years and that constituted 15% of the respondents covered in the study. The average age of the study population suggests that a more significant percentage of the population falls within the working age group: young, active, productive and energetic. The dominance of the young population in the agro-industry in the municipality suggests a bright future and potential for growth in the industry regarding increasing employment opportunities and reducing rural poverty if adequate resources are invested in the sector. The dominance of the young population in the industry is also an indication of potential job seekers who have found agro-industry as a source of employment, income generation and a livelihood strategy. This analysis relates well with the observation by ECSECC, 2012 that a massive number of young population in the municipality could be employed in the agro-sector and that well-developed agro-industry could be an important source of job and income generation activities to a significant number of unemployed youth.



4.1. Age distribution of respondents

Source: Field Study March 2017

4.4.2 Gender of respondents

Gender play an important role in deciding the type of occupation or profession one engages in especially in Africa Okorley et al., (2000). Cheryl et al., (2011) argued that men are usually associated with muscular occupation, while women are often associated with processing and household occupations. Therefore, to understand the ownership and trends of development of agro-industry in the municipality gender classification were used to ascertain the split of farming and agro-processing activities between men and women. Figure 4.2 depicts the gender distribution of the respondents. From the figure, it is clear that 45 of the respondents representing 64% were females whiles 25 representing 36% were males. The gender distribution of respondents suggests that more females engage in agro-processing activities than males in the municipality. The result suggests that gender-based bias through conventional patriarchal traditions, social norms and customary rights have contributed and still contributing significantly to the development of small-scale agro-processing industry the municipality. Nevertheless, the discussions with some respondents portrayed that regarding agricultural cultivation and supply of inputs to the agro-processing projects, men and women play equal roles, however, in the post-harvest, processing and distribution operations women dominate and this cut across all ages and ethnic background of different scale of operations. It was disclosed by the majority of the respondents interviewed that the inability of women to raise or secure enough capital to operate organised and formal agro-processing has contributed in no small number of them seeking jobs or establishing small-scale subsistence and agro-related businesses. These revelations compared very well to the observation by Kumalo (2001), and Okorley et al., (2010) that women formed the majority of small-scale agro-processors. However, lack of support by both government and private sectors have made women more vulnerable and more impoverished compared to men in agro-industry South Africa.

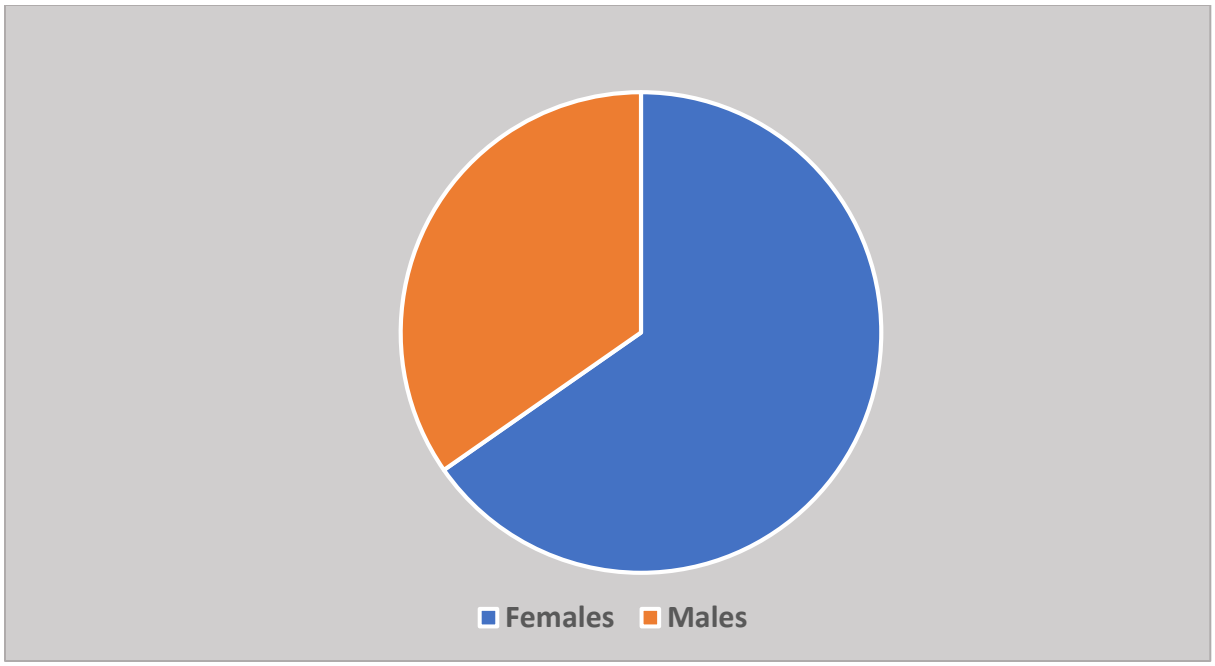


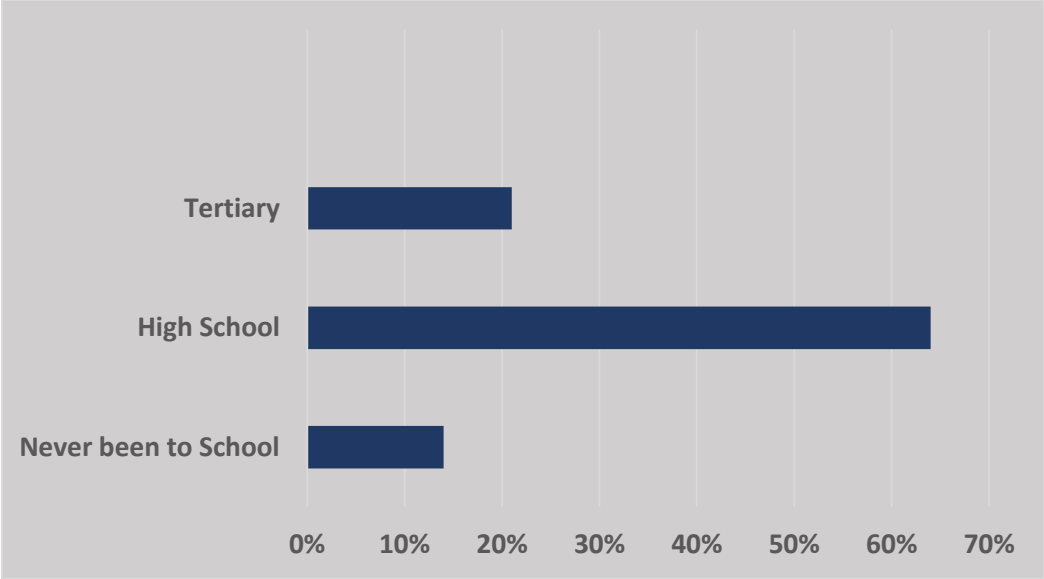
Figure 4.2. Gender distribution of respondents

Source: Field study March 2017.

4.4.3 Educational levels of respondents

Education's capability to change attitudes and increase understanding of complex issues provides a clear rationale for its role in promoting agro-processing. Consequently, it is widely believed that the higher the level of formal education of a producer the more likely that he will be able to effectively and efficiently operate a successful agro-business. There are numerous studies suggesting that education enhances; for example, the adoption of modern processing techniques (Stock, 2007; Best 2009), quality products (Wilson & Hart, 2000; Mathijs, 2003; Smithers & Furman, 2003; Lambert et al., 2007), and understand marketing trends (Jay, 2005). Furthermore, education is an essential tool for developing human skills, enhancing human capital, liberating people from poverty and open up new opportunities. Therefore, educational levels of respondents were analysed to ascertain its impact on agro-processing development in the study area. The data obtained from respondents regarding educational background indicated that ten respondents

representing 14% have not been to school, 45 representing 64% were high school certificate holders, and 15 of the respondents representing 21% were bachelor's degree holders. The results shows that the majority of the respondents are less educated, a result which suggests that the level of education of the respondents have contributed significantly to the current state of the agro-sector municipality. Majority of the respondents 90% who operates the cottage, small-scale, unregistered and unorganised agro-industries are those without any formal level of education. Respondents with secondary and tertiary levels of education are operating the organised and registered agro-industries. The results suggest that respondents with high educational levels understand better the procurement demands of the modern market and are better placed in accessing and comprehend market information. Also, educational levels of respondents affect the efficacy of the project management either through improvement in technical skills and familiarity required to operate new technological innovations such as digital management or enhancement of understanding of complex processing techniques, maintenance strategies, effectiveness in the implementation of nutrient accounting systems and improves the farmer's human capital. Similarly, the results suggest that respondents with higher educational background understanding better the ecological systems follow environmentally sustainable agricultural practices. Given the low levels of education among the majority of the respondents accessing and comprehending information about marketing channels and modern forms of processing becomes absolute impossible, and these are contributing significantly to the declining performance of the small-scale agro-industries in the municipality. Figure 4.3 depicts the distribution of the educational background of respondents.



4.3. Educational background of respondents

Source: Field Study March 2017

4.4.4 Years of experience of the respondents

The final demographic characteristics analysed the number of years respondents have been working in the agro-processing industry. Years of experience of respondents was dimed relevant because it affects the planning and sustainability strategies of the agro-projects. Experience is believed to increase the level of skills and knowledge at a particular practice (similarly to education) which, in turn, increases the efficacy of performance. In this context, experience has, in combination with education was used as a proxy for measuring the effect of human capital on agro-industry. The results indicate that 20 of the respondents representing 28,5% have worked in the industry for a period of 1 to 5 years, 35 representing 50% have worked in the industry between 6 to 10 years, while 15 of the respondents representing 21% have worked in the agro-processing industry for more than ten years. The results indicate that a high number of the respondents are very experienced in the industry in the municipality.

Table 4.2 Distribution of respondents based on their work experience in the industry.

Years	Total number of Respondents	Percentage of Respondents
1 – 5 years	20	28,5%
6 – 10 years	35	50%
More than ten years	15	21%
Total	**70**	**100%**

4.5. Ownership trends of small-scale agro-processing projects based on demographic factors

Ownership of agro-processing projects provides significant information that guides policymakers in taking relevant decisions about the sector. For example, to design and implement the appropriate gender-based policies for promoting agro-processing projects in the municipality, it is worth knowing the ownership of projects by their demographic characteristics. The ownership of respondents explored for this study was; age, gender, educational background and experience of respondents.

4.5.1 Ownership pattern of the agro-projects based on gender and educational levels

This study analysed some of the demographic characteristics of project owners in the study area to ascertain ownership patterns. Gender and educational levels of respondents were dimed relevant in assessing the ownership pattern in the agro-sector because these attributes served as a basis to understanding the roles performed by different gender categories, and access to resources such as land, capital, and adaptation to technology. Respondents were asked to indicate their gender and their highest level of education. Table 4.3 depicts the ownership of agro-processing projects regarding gender and educational levels of the owners.

Table 4.3 Agro-processing ownership characteristics regarding gender and education

Gender	Educational levels			
	No formal edu.	**High school edu.**	**Tertiary edu.**	**Total (%)**
Males	-	1	1	2 (29%)
Females	1	3	1	5 (71%)
Total	**1**	**4**	**2**	**7 (100%)**

The results presented in Table 4.3 reflect the ownership trends of the seven (7) projects selected for the study. The results show that two (2) of the projects (representing 21%) are male-owned. Of these numbers, one (1) of the owners had a high school certificate, and the other had a tertiary education qualification. Female ownership constituted 71% of the seven projects surveyed. Out of these numbers, three (representing 60%) had a high school education, one of the projects belonged to a female with a tertiary education qualification and other to an owner without formal education. The results indicate that most of the agro-processing projects are female-owned with less formal education compared to the male owners. However, it was observed that owners with tertiary education operate well organised and structured businesses compared to owners with no formal and high school education. The difference in educational levels has a significant impact on access to information, credit, training and other resources, as well as innovation and technology adoption. The above results confirmed the study by Okorley et al., (2000), who estimated that women do about (90%) of the activities involved in processing agricultural products in Africa and this makes them key stakeholders in improving the agro-processing sector. Khapayi (2010) argued that in South Africa the role of women in food production, processing and marketing is more important as they contribute significantly to the economy of rural communities.

4.5.2 Ownership of agro-processing projects regarding gender and age of respondents

The age of the firm owner is an essential characteristic because age affects the level of productivity of an individual. Also, age comes with experience about effective management. Therefore, ownership of agro-processing projects regarding gender and age were analysed in the study to understand the trend of development of the project in the agro-sector in the municipality between 2005 to 2015. Respondents were asked to indicate their gender and age. Table 4.4 reflects the outcome of the respondents.

Table 4.4 Ownership of agro-processing projects based on age and gender

Gender	**Age of Respondents**				
	20 - 30	**31 – 40**	**41 – 50**	**Above 50**	**Total (%)**
Males	-	-	1 (14%)	1 (14%)	2 (28%)
Females	-	-	2 (29%)	3 (42%)	5 (71)
Total	**0**	**0**	**3**	**4**	**7 (100%)**

Table 4.4 presents the ownership of the agro-processing projects based on age and gender of respondents. It can be seen from Table 4.4 above that all the project owners (100%) were 40 years and above. This implies that the youth in the municipality were not proprietors of agro-processing projects. There were various factors mentioned by the respondents as a contributing factor to this trend; firstly, the youth do not have access to land, finance, lack managerial skills and have low interest in owning the projects. Also, it was indicated that the capital costs involved in setting up an agro-processing project with modern technology are high, the youth are not willing to work with the indigenous people and equipment that is being used in agro-processing projects in the rural communities is out-dated were some of the reasons provided. Nevertheless, it was observed

that the youth made up about 70% of all the employees in the seven projects in the projects studied. These results suggest that agro-processing is a significant source of employment for the youth in the municipality.

4.5.3 Ownership of agro-projects based on management capacity and experience

Majority of the project owners analysed in the study did not have the necessary skills in operations, management, resource mobilisation and financial management. It was unveiled during the interviews with managers and owners of the projects that this was one of the critical constraints facing agro-processing projects in the municipality. Respondents were asked to indicate the duration of their projects and their years of involvement in the agro-processing industry. Table 4.5 reflects the responses of the respondents to the questions asked.

Table 4.5 Projects' scale and years of existence

Years of establishment	**Projects category**			**Total (%)**
	Micro	**Small**	**Medium**	
1 - 10 years	1(14%)	1 (14%)	-	2(28.5%)
11 - 20 years	1(14%)	1(14%)	-	2(28%)
21 – 30 years	-	1(14%)	1(14%)	2(28%)
More 30 years		-	1(14%)	1(28%)
Total	**2**	**3**	**2**	**7**

The results in Table 4.5 show years of existence of the projects analysed for the study. The results indicate that only one of the projects has existed for more than three decades and above. Of the total number of seven projects surveyed five (representing 71%) were micro and small-scale

projects although most of them have existed for more than two decades, and only two (representing 29%) have developed to medium scale projects. This result indicated that, even though over a period, all things being equal, agro-processing projects should grow from micro to become medium scale and subsequently large scale, it is seen from the results in Table 4.5 that most projects are not growing. Thus most projects are in the first and second years of development. This was attributed to the lack of transitional planning, and business continuity plans to mentor the younger generation to continue with the operation of the projects.

4.6 Proportion and trends of the establishment of agro-processing projects from 2005 - 2015

The number of new projects established between 2005 and 2015 was used to analyse the trend of development in the agro-processing sector in the municipality. The trends of the establishment as presented in Figure 4.1 reflect a general declining trend regarding the performance of the industry. Respondents were asked to indicate new projects that were established between 2005 and 2015 in the communities, how many projects were established per year and why they were established. Both Table 4.6 and Figure 4.4 depict the trends of new establishments in some selected communities between 2005 to 2015. The results indicate that, while some communities witnessed a marginal increased in the rate of new establishments, some experienced stagnation while others experienced a decline.

Table 4.6 Number of new establishments of small-scale agro-processing firms from 2005-2015

Communities	Total number of new firms established (2005-2015)	Average number of firms established per year	Percentage of new firms established (2005-2015)
East London	12	1,2	32,4%
King William's Town	10	1,0	27%

Kei Road Community	6	0,6	16%
Sttuterheim	4	0,4	10.8%
Dimbaza	3	0,3	8%
Zwelitsha	2	0,2	5,4%
Total	**37**	**3,7**	**100%**

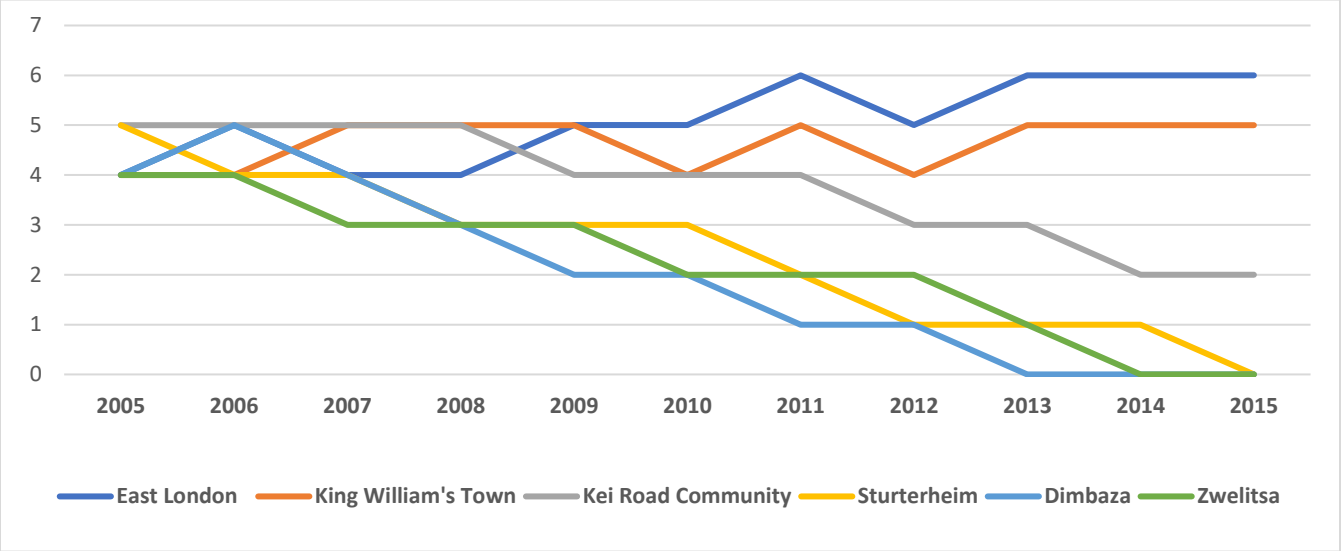


Figure 4.4. Trends of the establishment of small-scale processing projects from 2005 to 2015

Source: Field Study March 2017 and statistics from BCM

The results of both Table 4.6 and Figure 4.4 reflect a general trend of development of small-scale agro-processing projects established between 2005 and 2015 in some selected communities within the municipality. These communities are East London, King William's Town, Stutterheim, Dimbaza, Kei Road community and Zwelitsa. These communities were selected due to their historical background and their status in the agro-processing industry. The results indicate that East London and King William's Town experienced a marginal increase in new projects established between 2005 and 2015. The respondents disclosed during the interviews and

discussions that East London and King William's Town are the urban towns to where people are migrating, hence the average increase of new projects established because there is high demand for products. The results indicate these two communities experienced an average increased of 1,2 and 1.0 per annum respectively between 2005 and 2015. However, other communities which include Kei Road, Stutterheim, Dimbaza and Zwelitsa which are rural communities experienced a decline of new projects established in the same period. The study observed that though there was a marginal increase in the four communities, the average increase reflects a regression pattern. This development suggests that there was a decrease in the average number of new projects established in each subsequent year. In the form of a questionnaire, respondents were asked to give reasons for this trend of development based on the relative importance index (RII). The results indicate that 45% of respondents attributed the trend to rural-urban migration (most of the respondents disclosed that they had lost a considerable number of their customers due to migration), 25% mentioned rising levels of rural poverty due to high levels of unemployment, 15% associated the trend with deteriorating of infrastructure development such as poor roads. Other factors mentioned are inadequate supply of electricity and interrupted water supply especially in the rural communities, 10% blamed the high cost of transporting their products to urban centres, and 5% of the respondents blamed high levels of competition with the foreign products as a reason for the decline in the new establishment of new processing projects.

4.7 Rate of survival of small-scale agro-processing projects between 2005 and 2015 in BCM

The number of small-scale agro-processing projects that survived between 2005 and 2015 was also analysed to understand the trends of development of agro-projects in the municipality. Various factors were mentioned by the respondents that account for sustainability of projects. The study used both the qualitative and quantitative strategies to obtained data from respondents to analyse

the level of sustainability of small-scale projects. Respondents were asked to indicate agro-processing projects that survived between 2005 to 2015 and factors that contributed to their survival. Table 4.7 presents the trend of sustainability of small-scale agro-processing projects from 2005 to 2015.

Table 4.7 Rate and trends of survival of small-scale agro-processing projects from 2005 to 2015 in BCM

Communities	**Total number of firms in communities**	**Average number of new firms established per year**	**Percentage of new firms established**	**Number of firms that survived from 2005 to 2015**	**Average number of firms that survived per year**	**Total percentage of survived firms**
East London	12	1,2	32%	15	1,5	34%
King William's Town	10	1,0	27%	12	1,2	28,5%
Kei Road Community	6	0,6	16%	4	0,4	11,4%
Sttuterheim	4	0,4	10,8%	3	0,3	8,5%
Dimbaza	4	0,3	8%	4	0,4	11,4%
Zwelitsha	3	0,2	5,4%	2	0,2	5,7%
Total	**39**	**3,9**	**100**	**40**	**4,0**	**100%**

Source: Field study March 2017 and statistics from BCM

The results in Table 4.7 demonstrate the trends of development in the small-scale agro-processing sector in the municipality. The results show that East London has the highest number of surviving projects (34%), followed by King William's Town (28,5%). Kei Road and Dimbaza each have a survival rate of 11,4% while Sttuterheim and Zwelitsha have the lowest survival rate of 8,8% and 5,7% respectively. The study identified that the survival rates of processing firms in urban towns (East London and King William's Town) were higher than in the rural communities. Respondents

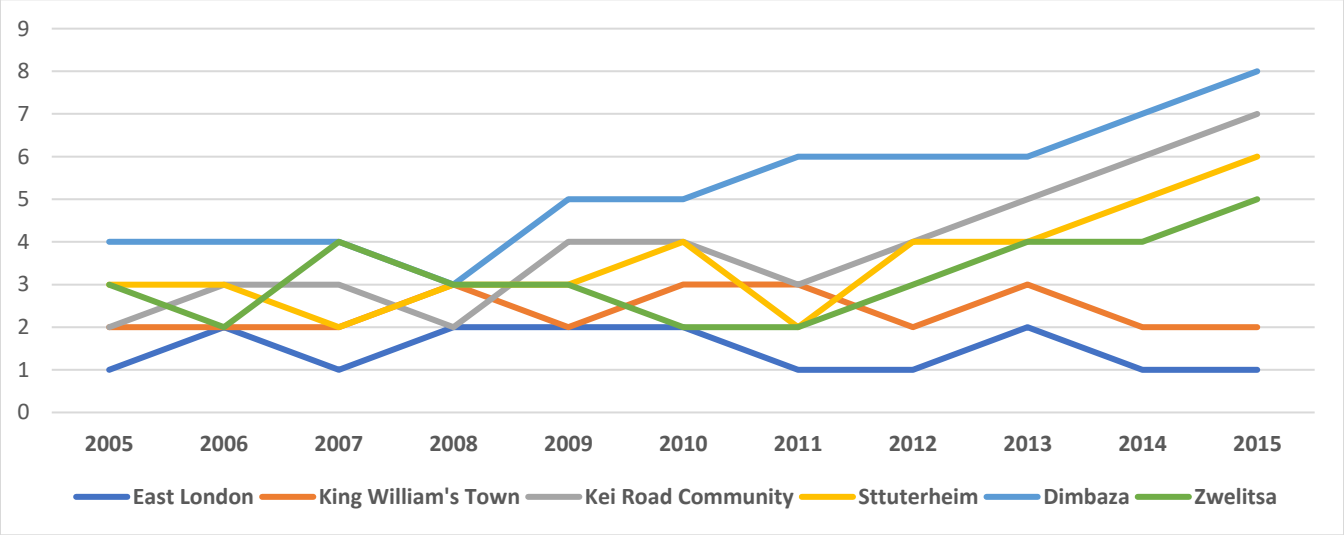
were asked to give reasons according to the Relative of Important Index (RII) why some projects in individual communities have higher survival rates than others. 65% of the respondents stated the availability of markets in certain communities especially in urban towns as the main reason why some projects survived while others collapsed, and 25% of the respondents indicated lack of infrastructure such as good roads, reliable electricity and water supply in rural communities as contributing factors to the low level of survival. The respondents indicated that only East London and King William's Town have proper infrastructure to sustain small-scale agro-processing projects; other communities lacked the infrastructure facilities hence most of the projects do not survive. 10% of the respondents identified lack of skilled labour and managerial capacity as factors for the low survival rate. Respondents disclosed during the discussions that the trained and professional employees who have the managerial skills to run the projects sustainably don't want to stay in rural communities, hence projects in rural communities are left to employees who have little or no managerial skills to run them sustainably.

4.8 Number and trends of collapsed small-scale agro-processing projects between 2005-2015

The number of projects which collapsed between 2005 to 2015 was also used to analyse the trend of development of small-scale agro-processing projects in the municipality. Respondents were asked to indicate the number of firms that collapsed between 2005 to 2015 and the factors that contributed to the collapsed of projects. Table 4.8 and Figure 4.5 indicates the general trends of collapsed projects between 2005 and 2015.

Table 4.8 Number of collapsed small-scale agro-processing projects between 2005 and 2015

Communities	Total number of new firms established 2005-2015	Average number of new firms established per year	Percentage of new firms between 2005 and 2015	Total number of collapsed firms	Average number of firms that collapsed per year	The overall percentage of collapsed firms
East London	12	1,2	32%	3	0,3	6%
King William's Town	10	1,0	27%	5	0,5	10%
Kei Road Community	6	0,6	16%	11	1,1	22%
Sttuterheim	4	0,4	10,8%	10	1,0	20%
Dimbaza	3	0,3	8%	12	1,2	24%
Zwelitsha	2	0,2	5,4%	9	0,9	18%
Total	**37**	**3,7**	**100%**	**50**	**5,0**	**100**



Trends of collapsed of small-scale agro-processing projects between 2005 and 2015

Source: Field Study March 2017

Table 4.8 and Figure 4.5 depict the trend of collapsed small-scale agro-processing projects in the Buffalo City Municipality between 2005 and 2015. The results show a general increase in the

number of collapsed projects in the study area. Dimbaza recorded the highest number (24%) of projects that collapsed between 2005 and 2015. The rate of collapse in the community suggests that on average more than two projects collapsed per year in the given period. Kei Road Community came next regarding an average number of collapsed projects in the given period. The community experienced 22% collapse projects between 2005 and 2015. The result also suggests that on average more than one project collapsed annually. Stutterheim recorded 20% collapsed projects which also indicates an average of more than one project collapsed per year. Zwelitsha experienced a total of 18% collapsed small-scale agro-processing projects between 2005 and 2015, and this translates into one collapsed projects per year in the given period. East London and King William's Town recorded the lowest number of collapsed projects between 2005 and 2015; these towns recorded 3% and 5% collapsed projects respectively. Respondents mentioned various factors that have contributed to the collapse of the agro-projects in the communities. Using the relative important index (RII), respondents mentioned the constraints in order of significance. 45% of the respondents identified a lack of markets as the main contributing factor, 30% of the respondents mentioned lack of capital both human and financial, 25% of the respondents identified poor and inadequate raw materials, 20% mentioned lack of technology while 15% of respondents indicated a high cost of energy and poor infrastructure have also contributed to the collapse of agro-processing projects in the municipality.

4.9 Conclusion

This chapter looked into the demographic background of the respondents and its relationship on the ownership patterns of the agro-industry in the municipality. The chapter also discussed the trends of small-scale agro-processing projects in the study area between 2005 and 2015. One of the main characteristics of the sampled respondents of the study was more than 75% of the

workforce in the agro-sector were between the ages of 20 and 45 years, residing in urban centres of East London and King William's Town the central hub of the economic activity in the municipality. These two towns have the highest number of both small and medium scale enterprises in the municipality. The ownership pattern and trend of development of the agro-processing projects in the municipality reflect the typical small-scale agro-processing projects prevalent in South Africa, which is mostly black female producers constituting over 70% producing on a small scale to feed themselves and their families and are the backbone of the rural economies. The results show that women are at a disadvantage when it comes to education and training and, therefore, find it difficult to integrate into mainstream economic activities. Also, they lack business and marketing skills that may allow them to put together a viable business proposal that may secure them support. Women, in general, have less access to formal channels that provides comprehensive skills training and development. Mostly they are less informed of the existence of such programmes and even when they do, time constraints often limit their access to such programmes as a result, most of them settled with informal agro-processing enterprises which are often constraint with shortage of working capital, lack of market opportunities and other challenges include: constraint in securing raw materials, and inadequate technologies. The results have also shown that the high levels of illiteracy among the majority of the workforce further compounds the problems for the small-scale agro-processing projects in the municipality. Generally, over 75% of the workforce had no formal education or hold high school certificate. The levels of education among the project owners have different implication on the ownership patterns. It was established that there is a relationship between the educational levels of the project owners and their entrepreneurship these include: (i) educated owners pursue more opportunity-based businesses; (ii) less educated owners are operate out of necessity; and (iii) people with no formal

education and secondary level education (high school) turn to work for salary and wages. Also, the educational levels of the owners affect the self-confidence, the general know-how and the competency, and eventually the human-capital enhances perceptions, feasibility and desirability of pursuing agro-processing enterprises.

Regarding the trend of growth for small-scale agro-processing projects in the municipality, the study established a sharp contrast between the trends of development in urban towns and rural communities. In rural communities which include: Kei Road, Stutterheim, Dimbaza and Zwelitsha, there is a declining trend regarding new establishments and high levels of collapse in the small-scale projects. Respondents from the local communities attributed these phenomena to the following: first, while rural areas in the municipality are glaringly more agricultural in outlook, there is a limited and decreasing trend of agro-processing activities. This can be explained by low levels of local demand of processed products, difficulties in accessing markets both local and abroad, inadequate access to improve social and physical infrastructure, lack of proper technologies for processing and competition from outside sources of supply. Secondly, high levels of rural-urban migration were mentioned as a cause of poor performance and high rate of collapse of the small-scale agro-processing projects in the rural communities mentioned. The findings established that a large proportion of the migrants are usually young adults between the ages of 20 and 40 years who are active and should be the bedrock of rural industrialisation has migrated to urban towns and cities resulting into lack of human capital in the rural communities to sustain the agro-projects. According to the respondents interviewed 90% disclosed that they were driven out of their communities by overwhelming push factors over pull factors. The results established three major push factors these are: (i) chronic poverty, (ii) lack job opportunities and (iii) poor infrastructure development in the rural communities. The problem of high migration from rural

communities to urban centres does not only affect the human capital of the agro-sector in the rural areas but also reduces the marketing population of processed products in those communities. According to the project owners, they have lost a considerable number of their customers due to migration. Other factors include: lack of coherence among the relevant government departments which must provide support to the agro-sector. As noted in the literature sufficient support is pre requisite to safeguard the success of the agro-projects.

A conclusion can, therefore, be drawn that the lack of vibrant economic activities such as agro-processing in the rural communities in the municipality is a contributing factor to the high levels of unemployment and rural poverty. As noted very little has been achieved through the agro-projects in creating jobs, reducing rural poverty and improving quality of life of the rural dwellers more than two decades into a democracy. It is the, therefore, imperative to introduce comprehensive strategies to improve the performance the sector. Strategies such as: increasing the quality of locally processed products to the standard of imported products, expand marketing opportunities and product diversification, sticking to regulations of conduct and practices, using different (cheaper) means of distribution to reach a broader customers, providing support to research, and supporting in term of finance and credits to agro-processing projects in rural communities. Nevertheless, all is not doom and gloom in the agro-sector development in the municipality. In contrast to the declining trends of development in the rural communities, the urban towns (East London and King William's Town) have seen marginal growth regarding the new establishment and decrease in the number of projects collapse. These trends of development are due to some factors: generally, these urban towns have better access to improve social, physical infrastructure, and have more productive opportunities than in rural communities. There are good roads, regular supply of electricity, water and human capital to sustain agro-enterprise. Also, the

urban towns provide strong markets for processed products it was found that the urban towns have all the supermarkets, wholesalers' and retail businesses which are prerequisite for any successful agro-enterprises. The research findings also indicate that agro-processing projects in urban towns improve their competitiveness, they can enhance their packaging, promote and market their products effectively. They have formal credit agreements with their clients and have adequate systems for managing account (ITC, 2010). These business practices are necessary if agro-processing projects are to improve their operations and attract credit and other financial support to expand their business operations. Nevertheless, the results show that the projects in these towns have not attained their full potentials in creating the much-needed jobs, and reduce poverty on a large scale. It is, therefore, imperative to introduce strategic measures to improve the performance of the post-harvest handling systems. These measures include: (i) enhance the quality of products on the local market; (ii) expand the prospects of products to international markets; (iii) minimise losses by reducing urban organic waste disposal; (iv) expand the quota of edible products accessible to urban consumers; (v) improve the cash return of devidents to producers; and (vi) promote the growth of small and medium enterprises (SMEs) by providing support services such as packaging, storage, transport and logistics, printing and labeling, advertising, quality control, and information systems.

Chapter Five

Reasons for the collapse of small-scale agro-processing projects in Buffalo City Municipality

5.1 Introduction

The objective of the under the chapter analyse the performance and operational constraints of the small-scale agro-processing projects in the study area in terms of reasons for the collapse of small-scale projects, equipments and machineries available to the projects, rate of product quality by the agro-processing projects and the perceptions towards the small-scale agro-processing products. Data for this chapter was solicited from the seven projects selected for the study using both qualitative and quantitative methods.

5.2 Causes of the collapse of small-scale agro-processing projects in the municipality

Factors that contributed to the collapse of the agro-projects were analysed in with owners and managers of the seven projects as well as the leadership of the municipality, and ECDC. Questionnaires were also distributed to employees of the selected projects to seek their views as well. The discussions and analysis aimed to identify the various contributing factors causing the collapse of agro-projects in the municipality. Table 5.1 depicts the outcome of respondents.

Table 5.1. Reasons for the collapse of small-scale agro-processing projects in the municipality

Type of project	No. of respondents	Percentage of respondents	Reasons for the collapse of firms within each category					
			Lack of Technology	Inadequate raw materials	Lack of markets	Lack of capital	Poor infrastructure facilities	Low prices of products
Fruit processing project	8	11%	5	6	6	7	4	6
Meat processing project	5	7%	2	4	4	3	2	3

Fish processing firms	6	8,5%	4	5	5	4	3	5
Dairy processing project	13	18,5%	8	8	10	12	9	7
Bakery project	17	24%	10	12	15	8	6	10
Leather processing project	8	11%	7	7	8	8	5	8
Wood processing project	13	18,5%	8	9	10	10	6	9
Total	**70**	**100%**	**44 (15,3%)**	**51 (17,7%)**	**58 (20%)**	**52 (18%)**	**35 (12%)**	**48 (16,6%)**

The results in Table 5.1 show the various factors and their levels of contribution to the collapse of agro-processing projects in the municipality. Lack of markets for small-scale agro-products contributed most to the collapse. Fifty-eight (58%) of the respondents indicated that locally processed products relied mainly on the local markets to sell their products. The owners of the projects who were interviewed disclosed that the local markets had been invaded with imported products with lower prices making it difficult to sell their products thus resulting in the collapse of local projects. Also, it was disclosed that locally processed products use packaging materials that are below the recommended standards. Hence most consumers prefer imported products which have excellent and proper packaging materials. The next reason mentioned was lack of capital for small-scale agro-projects 52% of the respondents associated the collapsed of agro-projects in the municipality to inadequate access to capital to sustain the operations of the industry. Respondents indicated that the overwhelming majority of small-scale agro-processors do not qualify or cannot access any form of loans because they cannot pledge any form of collateral to the financial institutions or are illiterate to follow the procedures to secure loans. Inadequate access to raw

materials ranked third among the factors that have contributed to the collapsed of the projects in the municipality between 2005 and 2015. Respondents indicated that the success of every agro-processing project depends on the sufficient supply of raw materials. Managers of the seven projects disclosed during interviews that 50% of agro-projects in the municipality collapsed between 2005 and 2015 due to an inadequate supply of raw materials. These observations confirmed the argument made by the (DRDLR, 2015) which argued that inadequate supply of raw materials has hindered agro-processing development in South Africa. In solving these challenges it was indicated that agrarian reforms in the municipality must focus on alternate routes, aimed at empowering and supporting hundreds of thousands of smallholder farmers through irrigation schemes, and other well-resourced materials to improve productivity. Poor and inadequate technologies have also contributed to the collapse of some agro-processing projects in the municipality. A total of 44% of respondents associated the collapse of agro-projects between 2005 and 2015 with deficient or inadequate machinery. The owners of the leather and wood processing projects and other respondents disclosed that due to high prices of the machines and lack of funds to buy modern machines meant that they could not produce quality products to compete with the foreign products. This result suggest that they cannot stay in the competitive market, hence the high levels of collapse in those projects. Poor infrastructure ranked the least as a factor that has contributed to the collapse of the agro-projects in the municipality 35% of the respondents attributed the collapse of some projects to poor infrastructure such as poor roads, interrupted electricity and water supply, lack warehouses, internet, and processing facilities. During the interaction with the project managers and owners, it was revealed that some of the processed products could not be transported to the market centres due to the unsatisfactory nature of roads

and the high cost of transportation. It was also disclosed that electricity and water supply to the rural communities where these projects are located was not consistent to sustain these projects.

5.3 Types of equipment available to the agro-projects in the BCM

Types of technologies available to small-scale processors in the municipality was another component used to assess the performance of agro-projects in the municipality between 2005 and 2015 as indicated in the objective of the study. The standard of processed commodities is highly influenced by the technologies that are used for production. Access to modern and improved technology leads to improved and quality products attractive to markets, while weak and low-level technologies produce low-quality products that are often rejected by consumers. Respondents were asked to indicate the type of technologies or machinery available to them in the following categories: (i) traditional technology or locally made machines, (ii) medium or improved technologies and (iii) modern or advanced technologies. Table 5.2 depicts the different forms and percentage of technologies used by different firms.

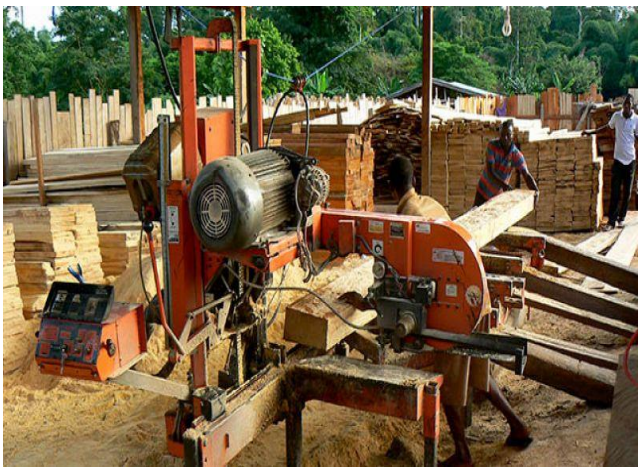
Table 5.2. Number and categories of equipment available to agro-processing projects in the municipality

Firms	**Total number of equipment available to firms**	**Classification of machines used for processing**			**Percentage of machines used**
		Locally made machines	**Improved machines**	**Modern machines**	
Fruits processing	6	4	2	-	6%
Dairy processing	27	5	10	12	26.7%
Bakeries	20	4	10	6	19.8%
Meat processing	14	2	8	4	13,8%

Fish processing	10	3	5	2	9.9%
Leather processing	9	5	4	-	8.9%
Wood processing	15	7	6	2	14.8%
Total	**101**	**30**	**45**	**26**	**100%**

The results in Table 5.2 suggest that 45% of the firms used common or improved forms of equipment for the processing of agricultural products. A smaller proportion (26%) of the firms used advanced or modern equipment to transform primary commodities to finished and semi-finished products, while 30% of the firms used traditional or locally made equipment for their operations. However, the owners of the seven projects interviewed indicated that their most preferred equipment for operations is modern or advanced equipment. Four out of the seven owners of the projects disclosed that for efficiency in production and high-quality products they preferred modern equipment; however, the high cost of the machines deterred them from acquiring them. This assumption, therefore, indicates that most of the small-scale agro-processing projects that used traditional and medium or improved equipment produced sub-standard products. Nevertheless, two of the owners preferred medium or improved machines because they are user-friendly, less expensive to acquire and maintain and technicians are available to repair them if they are damaged. Only one of the owner preferred traditional or locally made equipment for operations because of the affordability of the equipment. Also, a respondent indicated that the traditional or locally made equipment symbolised their traditions and custom. Figure 5.4 depicts some of the equipment and machinery used by the small-scale agro-processing projects in the municipality.

Fruits processing project in Kei Road



Wood processing project in Stutterheim

Dairy processing firm in East London

Bakery project in King William's Town

Fish processing firm, in East London

Leather processing project in Dimbaza

Figure 5.1. Agro-processing equipment and machinery available at processing firms

Source: Field study in March 2017.

5.4 Standardization of production and perception of agro-products by the respondents

With the escalation of quality, certification programmes and the emergence of consumer safety, as well as the rectification and authentication of local and international food safety laws, the quality of small-scale agro-processing products, were assessed to determine its influence on the feasibility of the industry. The owners of the seven projects were asked to rate the quality of their products subjectively. Figure 5.2 depicts the results of the respondents

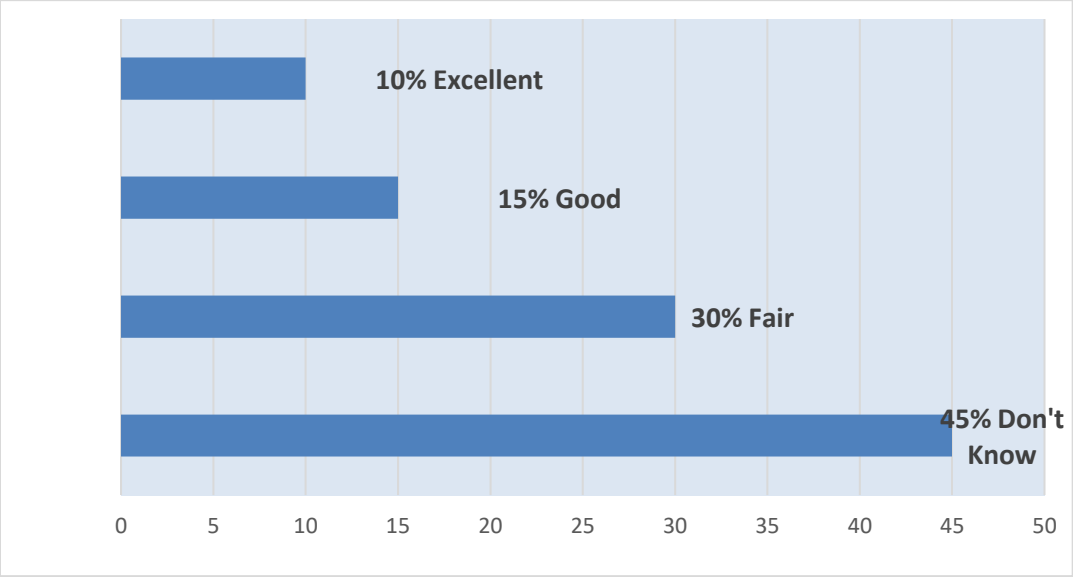


Figure 5.2. Self-rated the quality of processed products

Source: Field study March 2018

As shown in Figure 5.3, 45% were not able to rate the quality of their products whiles 30% of the project owners self-rated their product as fair, and 15% and 10% self-rated their product as being good and excellent respectively. Though the results were subjective, the fact that some owners of the agro-processing projects were not confident or were not able to rate the quality of their products suggests that there is lack of market research among the projects. This results also have a significant impact on the marketing of their products. If project owners cannot guarantee the

quality of their products, then it brings to doubt the quality of the products. It also raises the question of how they advertise their products or what they tell their consumers or how they convince their potential consumers to increase demand for their products. In essence, unless the projects are monopolistic, the quality of the product should be one of the significant factors determining their market share or competitiveness. Considering the stiff competition posed by foreign products, locally processed products have lost their market share both at home and abroad. Most of the locally processed products cannot penetrate the local markets left alone the foreign markets. Having such a high proportion of agro-processing projects operating and selling products without compliance with the Standard Board suggests that many processed products in the market could be breaching the law, especially about food safety for consumers.

5.5 Conclusion

This chapter analysed the reasons for the collapse of small-scale agro-processing projects in the municipality. It was noted that different factors have contributed to the collapse of the projects. Notable among them is lack of market opportunities, inadequate access to capital, unreliable supply of raw materials, low prices of locally processed products, lack of technology and poor infrastructure development in the rural communities where these projects are located. It was indicated in the study that though South Africa has standards for processing products, most of the projects especially the informal sector are not in compliance. There is the need for the Standard Board and other relevant institutions to promote awareness and compliance to the locally processed products to improve the quality and competitiveness of the processed products in the municipality, South Africa and international markets. The enforcement agency must complement education and capacity development activities to assist the agro-processing projects to apply technology to enhance the quality of their products. There should be a reward, and other inducement mechanisms

encourage quality control and compliance by the small-scale projects. The techniques of improving products to meet national and international standards should form the crucial and strategic component of national competitiveness programme of the agro-processing projects. To be able to compete with foreign products the national competitiveness should be critical, it should focus on the short-term objective of import substitution and then build on that achievement for competitiveness in the international market. If agro-processing projects cannot invest in getting international certification to improve their competitiveness in the international market, at least they should focus on improving quality control to improve their competitiveness in the local and national markets. With the tremendous potential for rural income and employment, the municipality should use agro-processing to stimulate inclusive growth in the municipality. It was noted that without proper strategies, most of the agro-processing projects would not be able to compete with imported products and trend of collapse will continue. The increasing collapse of agro-processing projects will worsen the current high unemployment, food insecurity and poverty in the municipality.

CHAPTER SIX

The constraints facing the small-scale agro-processing projects in the BCM

6.1. Introduction

This chapter examines the various obstacles accounting for the poor performance of the small scale agro-projects in Buffalo City Municipality as indicated in the fourth objective of the study. Agro-processing is among the pivotal sectors in the economy of the municipality due to its extensive contributions to job creation, minimising post-harvest losses, boosting foreign exchange earnings, and shelf life extension among others. The sector also contribute to continual accessibility of food in different forms and improve product distribution and development of the local and the national economies (Ampadu, 2012). Nevertheless, the small-scale agro-processing sector in the country and Buffalo City Municipality in particular faces numerous challenges that have impeded their growth. Notably among the challenges are inadequate access to markets, shortage of skills and technical know-how to improve production efficiency, lack of capital for start-up or sustaining operations, lack of access to appropriate technologies and poor integration and trust among various role-players in the industry. In addressing these challenges, the study conducted interviews with project managers of the selected firms, the leadership of the ECIC, organised focus group discussions in some agro-processing centres and direct observation in some agro-processing firms. Questionnaires were also distributed to employees of the seven projects selected for the study. The subsequent sections of this study analysed the findings of the results and presented them in frequency tables, diagrams and graphs

6.2 Major constraints facing the small-scale agro-processing sector in the municipality

This section seeks to identify the significant challenges facing small-scale agro-processing projects in the municipality by DAFF and Mudhara's (2012 and 2009) argument that small-scale agro-

processing projects face many challenges throughout their operations from processing to marketing. This study used the Important Relative Index (RII) to rank the constraints facing the sector. In order to ascertain whether challenges are facing the industry, both managers and non-managers from the seven selected projects were asked in the questionnaire if small-scale agro-processing projects face routine problems in their business operations. As presented in Table 6.1, 50 of the respondents (representing 71%) strongly agreed that their projects faced constraints, 10 of the respondents (representing 14%) agreed that were challenges, 7 (representing 10%) were not sure if there were challenges or not while 3 of the respondent (representing 4%) disagreed that there were challenges. Table 6.1 reflects the responses of respondents.

Table 6.1 Opinions on constraints facing small-scale agro-processing projects.

Opinion	**Frequency**	**percentages**
Disagree	3	4
Neutral	7	10
Agreed	10	14
Strongly agreed	50	70
Total	**70**	**100**

6.3 Challenges of the agro-processing sector based on the Relative Important Index (RII)

Table 6.1 shows that overwhelming majority of the respondents strongly agreed that the small-scale agro-processing sector in the municipality faced many and different challenges which limit the potential for growth, generating more employment opportunities and increased productivity that can reduce poverty and improve sustainable livelihood. Results in Table 6.1 reveal the challenges facing the projects in the municipality in order of significance as indicated by the

respondents interviewed using the RII to rate the challenges. Table 6.2 depicts the responses of respondents.

Table 6.2. Challenges facing small-scale agro-processing projects in order of significance

Major constraints	**Frequency**	**Percentages**	**RII Ranking**
Lack of markets	17	24	1
Lack of capital/ finance	15	21	2
Inadequate raw materials	13	19	3
Low prices for locally processed products	11	16	4
Lack of technology	8	11	5
Poor infrastructure	6	9	6
Total	**70**	**100**	**6**

Table 6.2 indicates that lack of markets was the leading constraint, mentioned and ranked highest by 24% of the respondents. It was followed by a lack of capital for the small-scale agro-producers indicated by 21% of the respondents. Inadequate raw materials ranked third regarding challenges to the industry by 19% of the respondents. Low prices for locally processed products, lack of technology and inadequate infrastructure facilities were mentioned by 16%, 11% and 9% respectively by the respondents. These results ranked similar to Table 4.5 as reasons for the collapse of different agro-processing projects in some selected communities in the municipality. Other constraints identified were the uncoordinated and weak implementation of policies to boost the agro-processing sector, and unreliable and the high cost of energy such as electricity and fuel, especially in rural communities. Respondents indicated that projects located in rural communities incurred up to 20% higher costs to operate compared to similar projects located in urban areas.

This is because they have a reliable supply of electricity. Respondents stated that these challenges forced about 75% of the agro-processing projects to operate below their capacity and generate much of the needed jobs.

6.4 Constraints of marketing on the growth of agro-processing projects in the municipality

The problem of marketing was analysed in the study to assess its impact on the growth of agro-processing projects in the study area. To examine these constraints respondents were asked to indicate if poor marketing systems have impacted on operations of their projects. Table 6.3 reveals the responses of the respondents.

Table 6.3. Opinions on marketing challenges facing agro-processing projects in BCM

Opinions	**Frequency**	**Percentages**
Disagree	2	3
Neutral	5	7
Agree	13	19
Strongly agree	50	71
Total	**70**	**100**

Table 6.3 shows that 50 of the respondents (representing 71%) strongly agreed that lack of and poor marketing systems affect them directly in the operations of their agro-projects, 13 (representing 19%) agreed. On the contrary 2 of the respondents (representing 3%) disagreed and 5 (translating to 7%) were neutral. Also, respondents were asked to indicate which aspects of marketing constraints affected them significantly. In order to assess the challenges based on their significance, the RII was also computed. The results in Table 6.4 suggest that the most significant

constraint was lack of bigger markets to sell their products. 20 out of the 70 respondents surveyed (translating to 29%) identified that problem. Competition with foreign products followed it, 15 (representing 21%) mentioned this constraint. Constant changing of customers' satisfaction ranked third with 13 responses representing 19%. 12 of the respondents (representing 17%) indicated that they were unable to adapt to the change, while 10 (translating to 14%) mentioned insufficient market information as their major constraint. Table 6.4 summarised the categories of the constraints and their significance.

Table 6.4. Ranking of marketing constraints in the small-scale agro-processing sector

Constraints of marketing	**Frequency**	**Percentages**	**RII Ranking**
Lack of bigger markets	20	29	1
Competition with foreign products	15	21	2
Changing customer satisfaction	13	19	3
Inability to adapt to change	12	17	4
Insufficient market information	10	14	5
Total	**70**	**100**	**5**

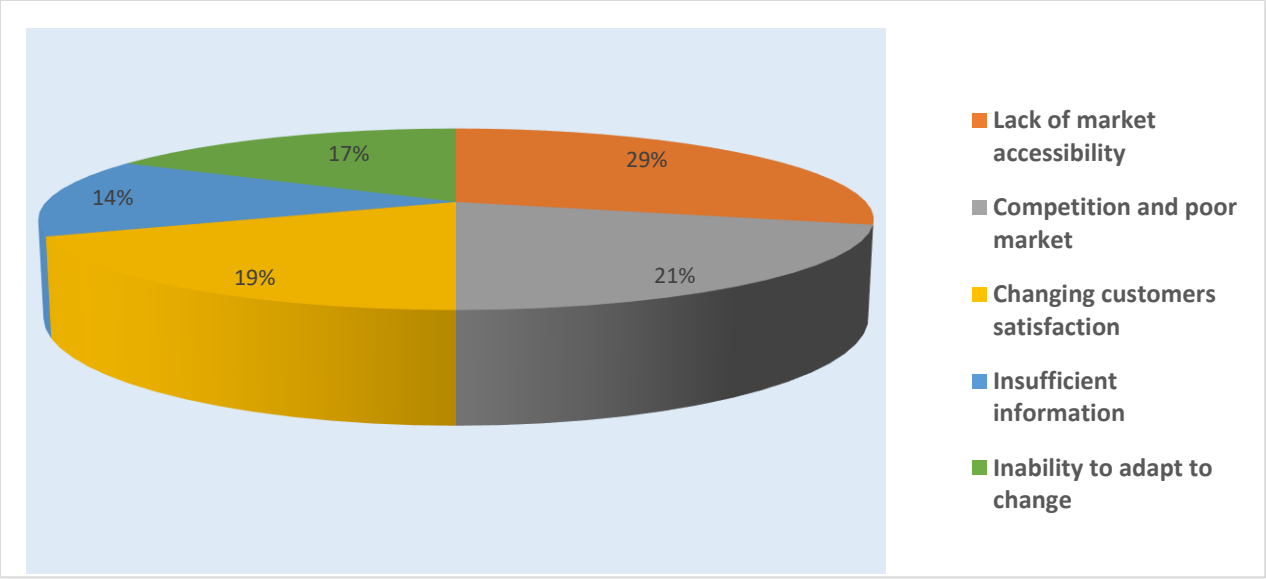


Figure 6.1 Constraints of marketing within the agro-sector

Source: Field study March 2017

The interviews and discussions with the owners and managers brought out details of marketing impact on the sector in the municipality. Marketing of locally processed products was found to be mostly informal. More than 70% of the projects were situated in rural communities which depend on the demand from the informal markets which were small and unreliable. Demand was inconsistent and periodic. The results suggest that there is a general lack of marketing expertise and information. Producers have little knowledge of the customers' taste in terms of range, preferences and packaging and there is no efforts to promote the locally processed products. The respondents further indicated that even among the projects that had overcome this hurdle of entry barriers, there was fierce competition among them as each competed for a market share. The impact of trade liberalisation and dumping of cheap imports was a great challenge to agro-processing firms in the municipality. 21% of the sampled projects face keen competition with imported products as a result of trade liberalisation. Prices were also in some instances determined by buyers who sometimes buy on credit. This finding relates well to Koira's (2014) argument

which stated that the major marketing challenges facing the small-scale agro-processing projects are their inability to accurately identify its competitive advantages, understand the market trend, identify their customer relationships, and provide quality and adequate services to its customers which greatly thwart their products' marketability and profit margins.

6.5 Lack of financial support

Small-scale agro-processing projects are saddled with the constraint of access to credit. Limited access to credit affects their capacity to take advantage of rising demand and to adopt and operate modern and high-level processing technology (Ampadu, 2012). Access to financial support was analysed in the study to comprehend its impact on the overall growth of the projects in the municipality. Respondents were asked to indicate if access to finance is a challenge to small-scale agro-projects. Table 6.5 reflects the responses of the respondents.

Table 6.5. Opinions of respondents on financial constraints facing agro-processing projects

Opinion	**Frequency**	**Percentage**
Disagree	5	7
Neutral	10	20
Agree	25	35
Strongly agree	30	42
	70	**100**

Table 6.5 shows that 77% (35% agree plus 42% strongly agree) of the respondent concurred that lack of financial support was a significant constraint to the operations of their agro-projects. However, 5 of the respondents (translating to 7%) disagree that lack of financial support was a

problem to sustaining their projects while 10 of the respondents (representing 20%) were neutral and did not know whether access to financial support was a problem or not. About access to financial support, 15 of the respondents (representing 21%) indicated that they have access to financial support while 55 (translating to 73%) didn't have access to any form of financial support. Figure 6.2 summarised the responses of respondents regarding access to financial support.

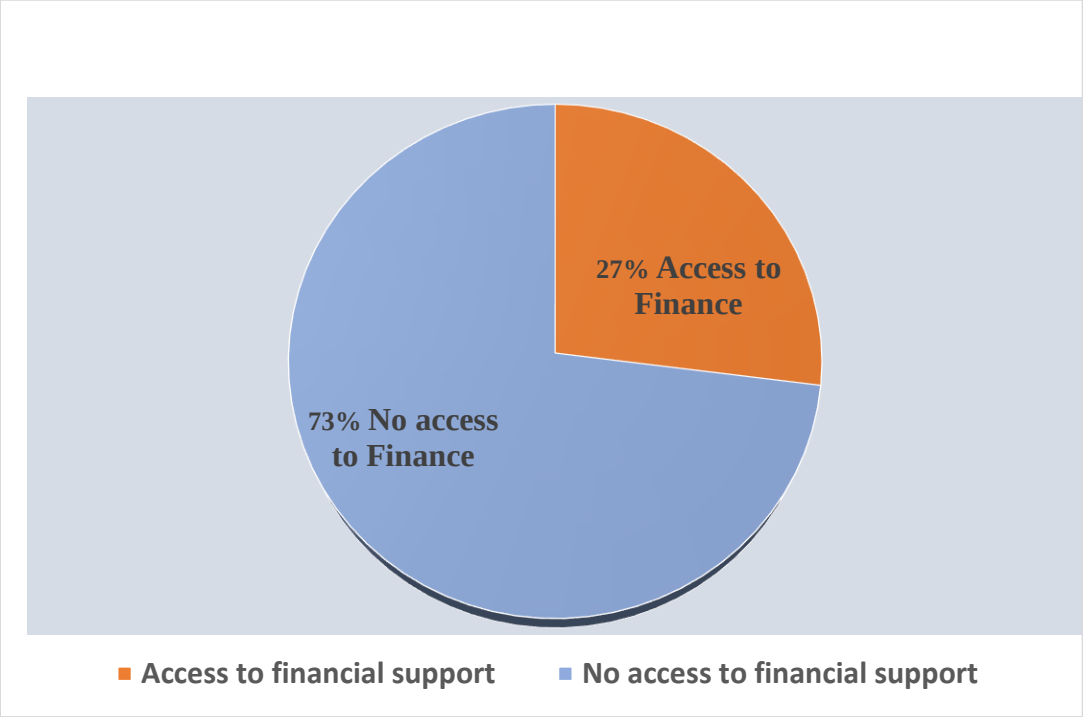


Figure 6.2. Access to financial support

Field study March 2017

These results in both Table 6.5 and Figure 6.2 revealed that more than two-thirds of the respondents did not have access to financial support and agreed that inadequate access to financial support had caused their agro-projects to failed. The financial constraints include a lack of support from financial institutions, families and friends, making it impossible to sustain the operations if their savings were to be depleted and they were unable to cover operational costs any longer.

Respondents identified various factors restricting them from accessing financial support. These factors were analysed in order of their significance using the Relative Important Index. Table 6.6 reflects the responses of respondents regarding factors contributing to the lack of financial support to small-scale agro-processors.

Table 6.6. Ranking of financial constraints facing small-scale agro-processing projects

Constraints	**Frequency**	**Percentage**
Lack of collateral	24	34
Repayment period	15	21
High-interest rates	13	19
Bureaucratic processes	10	14
Lack of education	8	11
	70	**100**

The results in Table 6.6 show that 24 of the respondents (representing 34%) could not secure loans from financial institutions because they did not have collateral to pledge to guarantee them access to loans, and 15 (representing 21%) indicated that the repayment periods were very short. They disclosed that the short repayment period required high bonds each month an amount they could not afford. Beside short repayment periods, 13 of the respondents (representing 19%) mentioned high-interest rates charged by the financial institutions as a hindrance to secure loans. 14% of the respondents mentioned bureaucratic processes such as long application periods, application fees, and risk assessment. Lack of education was mentioned by 8 of the respondents (representing 11% of the sampled population). Access to market-based credits from banks and other financial institutions such as factoring and leasing companies and organisations are minimal. Lack of access

to credit by agro-processing firms is one of the significant constraints on the development of agro-processing industries (ITAC, 2016). From the field observations and discussions project owners, the significant difficulties associated with credit acquisition by agro-processing projects were long bureaucratic and application processes, short moratorium and repayment duration, inadequate level of credit and high-interest rate. The interviewees (owners of the seven projects selected for the study) indicated that there are no structured institutional mechanisms in the municipality to facilitate the flow of financial resources from the formal sector through financial institutions to support the small-scale projects.

6.6 Access to adequate and quality raw materials by the small-scale agro-processing projects

Access to adequate and quality raw materials by the small-scale agro-processing projects was assessed in the study. Respondents were asked to indicate whether access to raw materials is a constraint and what impact does raw materials inadequacies have on the operations of their projects. Table 6.7 displays the responses of the respondents.

Table 6.7. Opinions of respondents on access to raw materials

Opinion	**Frequency**	**Percentage**
Disagree	8	12
Neutral	12	17
Agree	22	31
Strongly agree	28	40
	70	**100**

The results in Table 6.7 show that a total of 71% (31% agree and 40% strongly agree) of respondents agreed that lack of adequate and quality supply of raw materials was a significant constraint to the operations of agro-industry. However, 8 of the respondents (representing 12%) disagreed that raw materials were a challenge, while 22 (31%) were neutral suggesting that they may or may not have the problem of raw materials supply. In terms of the impacts on the projects, results in Table 6.8 show that 8 (representing 12%) of the respondents claim no impact at all, 10 (14%) were moderately affected suggesting that the operations could survive with a shortage of materials, 23 of the respondents (representing 33%) were poorly affected suggesting that the operations could survive but at a minimum capacity. However, 29 of the respondents (representing 41%), disclosed that they were affected severely as a result inadequate or quality of the raw materials supplied. These respondents indicated that the operations of their projects collapsed as a result of an inadequate supply of raw materials. Table 6.8 depicts the responses of respondents regarding the impact of raw materials on their projects.

Table 6.8. Impact of raw materials supply on agro-projects operations

Impact of raw materials on agro-processing projects	**Frequency**	**Percentage**
No impact	8	12
Moderate impact	10	14
Bad impact	23	33
Severe impact	49	41
	70	**100**

During the interviews with the owners, managers and officials from the Eastern Cape Industrial Development Corporation, it was disclosed that high cost of raw materials and lack of access to

raw materials were the major hindrances to small-scale agro-processing operations in the municipality. It was unveiled that reduced access to roads was a significant hindrance to accessing raw materials from the farms. The respondents stated that delays or failure to get access to raw materials affect the entire operational process of the projects. However, the most important factor identified by the respondents as a contributing factor to inadequate access to raw materials was the transportation cost. About 50% of the project managers interviewed complained of the high cost of transportation as a significant challenge facing them. Poor road network and high transport fares increase the transaction costs of transporting raw materials from the producer field to the processing site as well as delivery and distribution to retailers. Other constraints mentioned were the high cost of raw materials, limited accessibility and many other challenges.

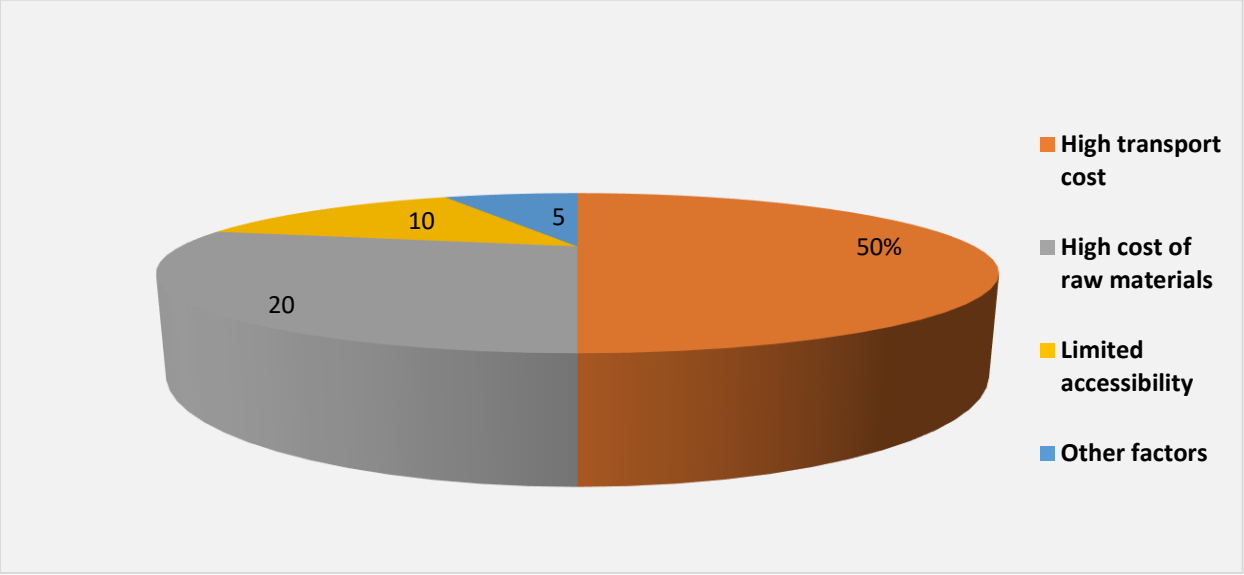


Figure 6.3 Major constraints faced by agro-processing projects in acquiring raw materials

Source: Field study March 2017

6.7 Low prices for locally processed products

Low prices for the locally processed products were analysed in the study to access its impact on the growth of the industry in the municipality. Respondents were asked to indicate whether low prices of products affect the operations and sustainability of the industry and what are the causes of the low prices. Table 6.9 depicts the responses of the respondents.

Table 6.9. Opinions of respondents on low prices of locally processed products

Opinion	Frequency	Percentage
Disagree	12	17
Neutral	15	21
Agree	19	27
Strongly agree	24	34
Total	**70**	**100**

Table 6.9 shows that 61% (27% agree plus 34% strongly agree) of the respondents indicated that low prices of locally processed products affect the operations and general growth of the industry. However, 12 (representing 17%) disagreed that low prices affect the operations of the industry while 15 of the respondents (representing 21%) were neutral suggesting that they were either affected or not affected by low prices of products. Respondents identified lack of market opportunities to sell their produce, lack of market information on consumers preferences, inability to hold on to permanent customers, inability to produce quality products that could compete with foreign products and poor packaging of products. During the interviews, project owners identified that low patronage of locally processed products by consumers was a primary challenge to agro-processing projects. It was disclosed that many consumers, especially in rural communities, still

prefer unprocessed products due to lack of trust and confidence in the quality and nutritious values locally processed products contains. With the advent of many cheap imports, demand for locally processed products is dwindling and affecting prices. Fluctuating demand affects project operations through continuous re-adjustment of operational capacity as well as stock schedule.

6.8. Technological challenges in the agro-industry in the municipality.

Efficient agro-processing operations depend on functional technology and diverse systems. Increasingly, the quality, durability and branding of processed products are moulds by improved processing, packaging and marketing technologies. Therefore, the level of technology use is an important factor influencing the quantity and quality of processed products (Kamau, 2010). The kind of technology used also reduces cost by saving on input use such as energy and power and reduces drudgery. Technologies can generally be grouped under manual tools or machines, and motorised equipment. Most projects analysed combined both manual and motorised equipment but in different proportions. The field surveyed undertook revealed that most of the micro and small-scale agro-processing projects in Kei Road fruits processing and the Dimbaza leather firm rely solely on manual tools whereas the East London dairy processing, fish processing centres and King William's Towns bakery depend largely on motorised equipment but in varying proportions. Stutterheim wood processing centre and Zwelitsha meat processing relied on both manual and motorised equipment. Figure 6.5 displays some of the equipment used for processing in the municipality.

Motorised equipment in KWT bakery

Manually removing shells for processing in Kei Road fruit processing firm

Figure 6.4. Manual and motorised equipment used for processing agricultural produce

Source: Field study March 2017

6.9 Infrastructure constraints facing small-scale agro-processing projects in the municipality

Infrastructure constraints regarding poor roads, unstable and high cost of energy were analysed in the study to ascertain their impact on the operations of the agro-processing projects. Respondents were asked to indicate whether they have challenges with infrastructure in the transaction of their businesses. Table 6.10 depicts the responses of respondents to the question.

Table 6.10. Opinions of respondents on impact of infrastructure development on agro-projects

Opinion	Frequency	Percentage
Disagree	15	21
Neutral	12	17
Agree	25	36
Strongly agree	18	26
	70	**100**

The results in Table 6.10 show that the majority of 62% (36% agree and 26% strongly agree) of the respondents indicated that a lack of infrastructure development affects the operations of the agro-processing projects. Nevertheless, 15 the respondents (representing 21%) disagreed that infrastructure in the form of unstable and high cost of electricity supply is affecting the operation of their projects, 12 (representing 17%) were undecided suggesting that they do not know if infrastructure development was a challenge or not. Owners of the projects as well as managers of the projects in the course of interviews disclosed that erratic power supply and increased cost of energy serves as a substantial operating constraint to the agro-processing projects in the municipality. The majority of the projects do not have standby power sources such as generators. Frequent power cuts, as well as uninformed power outages, disrupt processing schedules and the ability of the projects to cope with demand. Also, the respondents indicated that high power surges associated with unexpected and intermittent power outages lead to equipment breakdowns. The agro-processing projects do often lose perishable products. Another worrying trend is the rising cost of power in the municipality. Other infrastructure constraints mentioned by the majority of

the respondents are poor nature of roads linking farms to processing centres, lack of warehouses for storage, lack of internet facilities to boost communication and poor processing facilities.

6.10. Barriers to entry and constraints to operations and growth of the agro-processing sector in the municipality

Qualitative data gathered through discussions with the leadership from ECIC and ECDC revealed the most significant challenges that the agro-projects encounter. The respondents indicated inadequate access to marketing channels and local markets, lack of extension support and business skills strategies, lack of access to suitable packaging materials, and limited capacity to mobilise capital for equipment purchase and working capital were the significant constraints identified. The majority of respondents from the ECDC also indicated marketing as a significant challenge for small-scale processors. Processors have to fight with the well established large agro-procesing firms who have access to market information both at home and abroad and well-organised marketing channels such as advertisement and other media agencies. Respondents from the local municipality were of the view that farmers and agro-producers and the agro-processors produce mainly to cushion themselves from food insecurity arising from the failure of the marketing system. Market failure means that agro-producers and farmers are unable to sell their products and subsequently use the proceeds for buying other basic requirements. Market failures occur mainly due to poor infrastructure and institutions in the municipality that has large parts that are underdeveloped. Poor infrastructure in the form of poor roads and transport that is not readily available is also a problem for these processors. These transport and distribution constraints have isolated the producers from the markets. Respondents from the communities represented by their leaders also emphasised another important phenomenon experienced by these small-scale processors which are also a direct result of market access challenges thus leading to post-harvest

losses. The respondents stated that many smallholder agro-producers are often not able to store or market their products resulting in tonnes of on-field waste. The respondents attribute this phenomenon to certain structural supply-side constraints. Another challenge identified by owners and managers was lack of human capital; this challenge posed a severe constraint for small-scale agro-processing industries. Human beings are different from any other resource and hence require particular skills to manage them. Unfortunately, many small agro-processing projects in the municipality are managed by their firm owners who often lack the requisite human resource management skills. As a result, many agro-processing projects are experiencing high labour turnover. Some of these projects also lack proper motivating and incentive mechanism that can attract and retain talent. Therefore, they are not able to find skilled employees, especially if they are competing with larger-scale companies that can offer more job security and better compensation packages. Most of the projects also fail to invest in skills training and development. A small number of small and medium-scale agro-processors have received formal training in processing techniques. Furthermore, respondents from ECIC disclosed that the majority of the producers in the municipality are endowed in factors of production such as land, water and capital assets. As a result, the majority of these processors produce in fewer quantities of products that are equally of poor quality, which often leads to their products being rejected by output markets.

Despite these challenges, the small-scale agro-processing projects continue to play an essential role in livelihoods creation amongst the rural poor in the municipality. The next chapter analysed the contribution of agro-sector to job creation and poverty reduction in the rural communities in the municipality.

CHAPTER SEVEN

The contributions of agro-processing projects to job creation and poverty reduction

7.1. Introduction

The fourth objective of the study is to establish the contributions of small-scale agro-processing projects for job creation and poverty reduction in the Buffalo City Metropolitan Municipality. Agro-sector is considered as one of the important sector within the economy of the municipality for its extensive contributions to job creation, sustainable livelihood, minimise post-harvest losses, and foreign exchange earnings (ECRDA, 2015). The sector also promote availability of food in various forms and enhances product distribution and growth of both the local and national economies. Analysing the contributions as indicated in the objectives of the study, data were sought through the employment structure of the agro-processing industry such as new jobs created per year from 2005 to 2015, seasonal employment, permanent employment, gender base employment and professional employment. Demographic characteristics from section 4.4 of chapter 4 were used to analyse some aspects of jobs created by the small-scale agro-processing projects. The study further analysed the general perceptions and views of agro-processing activities in the local communities in the municipality.

7.2. The number of jobs established by the agro-processing projects in the selected projects from 2005-2015

The number of jobs established by the agro-processing projects were analysed and discussed under this objective. Respondents were asked to disclosed the categories and year they were employed in the sector. The respondents were picked from the seven projects selected for the study. Table 7.1 and Figure 7.1 depict the trends of employment of respondents from 2005 to 2015.

Table 7.1. Proportion and trends of jobs created by the agro-processing projects 2005-2015

Year	Leather processing firm Dimbaza	Dairy processing firm East Lond	Fish processing firm East Lond	Fruits processing firm Kei Road	Bakery processing firm KWT	Wood processing firm Stutterheim	Meat processing firm Zwelitsha	Total number of employment per year
2005	6	15	8	6	12	8	15	**70**
2006	5	15	10	6	12	8	14	**70**
2007	5	16	9	6	13	8	13	**70**
2008	4	18	9	5	13	7	12	**68**
2009	3	18	10	5	14	7	12	**69**
2010	5	16	11	6	13	7	12	**70**
2011	4	14	9	6	14	7	12	**66**
2012	4	13	8	5	13	6	11	**60**
2013	3	12	9	5	13	6	10	**58**
2014	3	11	7	4	10	5	9	**49**
2015	3	10	7	4	10	5	8	**47**
Total	**45**	**158**	**97**	**58**	**137**	**74**	**128**	**697**
Annual Average	**4.0**	**14.4**	**8.8**	**5.3**	**12.5**	**6.2**	**11.6**	**63.3**

Source: Field Study, 2017, and Statistics Department in Bhisho

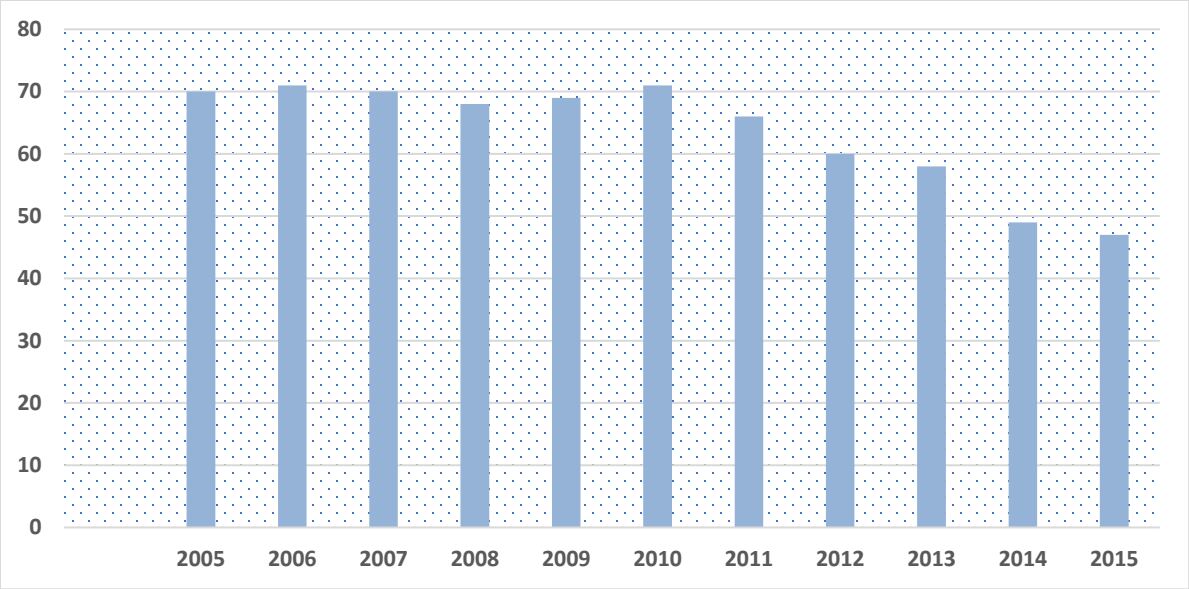


Figure 7.1. Employment created by the agro-processing projects between 2005 and 2015. Source: Field Study March 2017 and Statistics Department in Bisho.

Both Table 7.1 and Figure 7.1 reflects the average number of jobs created per each project between 2005 and 2015. On average, fourteen (14) jobs were created per year by the dairy project in East London. The highest number of jobs created by the project was eighteen (18) in 2008-09, and the lowest number of jobs created was fifteen (15) in 2005-06 and 2014-15. The bakery processing firms in King William's Town came next regarding some jobs created from 2005 to 2015. This project created total employment of 138, which translated to 12,5 jobs per year. The highest number of jobs created by the firm was 14 in 2009 to 2011 whereas the lowest number was 10 in 2014-15. The fish processing firm in East London ranked third regarding the number of jobs created. On average 8,8 jobs were created per year between 2005 and 2015 with the highest number of 11 in 2010 with seven the lowest number in 2014-15. The meat processing firm in Zwelitsha ranked fourth in the amount of employment created. The firm created a total of 129 jobs with an average number of 11 jobs per annum. The Dimbaza, leather processing firm, created the least number of jobs among the seven processing firms analysed for this study. A total number of 45

jobs were created with an average of 4,0 jobs per annum. The firm recorded its highest number of jobs (6) in 2005 and the lowest number of 3 from 2013 to 2015. The owners of the projects through in-depth interviews explained that the trend of employment created by the projects reflects the period of marginal increase and decrease of growth and development in the agro-processing sectors. The owners of projects, the leadership from the municipality as well as ECDC disclosed that some factors influence the rate of employment. The factors were arranged according to the Relative of Important Index (RII). 75% of the respondents identified the availability of markets as the main factor that influenced jobs creation. They disclosed that when demand for their products increases, more labour is required to produce more and hence more jobs are created, and when demand decreases less labour is required, and thus fewer jobs are created. 65% of the respondents indicated that time and season affect the proportion of jobs created in their projects. According to the respondents they required more labour in summer than winter because summer is the period for cultivation and harvesting of agricultural produce hence more labour are employed during summer thus increasing in job creation. 50% of the respondents identified the availability of raw materials as the main factor that has contributed to job creation. The respondents argued that when raw materials are available for processing more labour is needed for production hence more jobs are created; however, when raw materials are scarce less labour is required hence fewer jobs are created.

7.3 Number of jobs created based on the gender of respondents between 2005 and 2015

The proportion of jobs created based on gender was analysed to establish the split of agro-processing activities between men and women in the municipality. This was aimed at examining the contributions of the sector regarding job creation about both males and females. Respondents were selected from the seven firms selected for the study. Interviews, as well as questionnaires,

were used to obtained data for this analysis. Respondents were asked to disclosed their gender, the processing activities they were involved in, and the year he or she was employed. Both Table 7.2 and Figure 7.2 reflect the proportions of jobs created based on gender between 2005 to 2015. This analysis was based on Table 7.1, the employment created by the seven projects selected for the study.

Table 7.2 Number of jobs created based on gender in the municipality (2005-2015)

Year	**Males**	**Percentage of males**	**Females**	**Percentage of females**	**Total number of jobs created (2005-2015)**
2005	25	35,7%	45	64,2%	70
2006	30	42,8%	40	57,2%	70
2007	27	38,5%	43	61,5%	70
2008	30	44,1%	38	55,8%	68
2009	29	42,0%	40	57,9%	69
2010	22	31,4%	48	68,5%	70
2011	29	43,9%	37	56,1%	66
2012	20	33,3%	40	66,6%	60
2013	29	50,0%	29	50,0%	58
2014	19	38,7%	30	61,2%	49
2015	14	29,7%	33	70,2%	47
Total	**274**	**39%**	**423**	**61%**	**697**

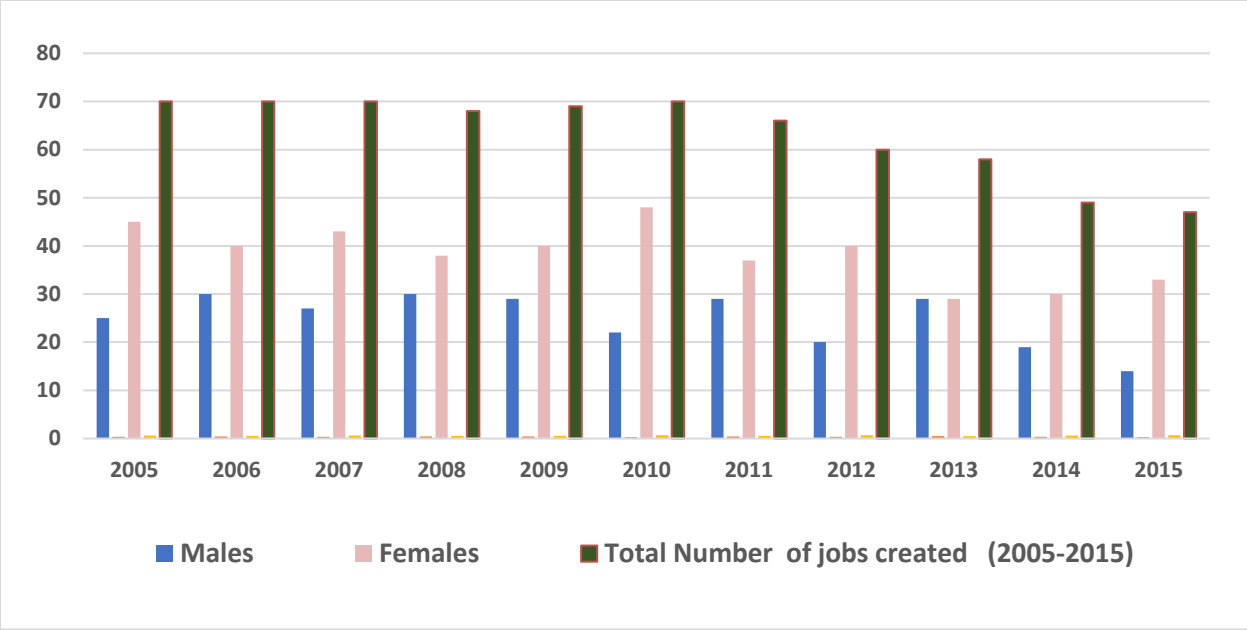


Figure 7.2. The proportion of jobs created within the agro-sector based on gender

Source: Field Study March 2017

The results depicted in both Table 7.2 and Figure 7.2 reflect the number of jobs created between 2005 and 2015 based on gender. The labour force was predominantly female being 61% of the total employees sampled for the study compared to 39% of males. Various studies carried out in different parts of Africa established similar results, i.e. that women constitute a more significant proportion of employees in the agro-processing industry (Kumar et al.,1998). During interviews with community leaders and some employees of the agro-processing projects, the reasons more females are involved in the agro-processing activities than males in the municipality were unearthed. Firstly, 75% of the respondents disclosed that women are commonly less skilled than men to partake in economic opportunities because burdened than men. Women are liable for households and child-rearing. This burdens restrict women's capacity to participate in income-earning ventures which mainly require a minimum fixed time before being profitable. As a result

of time constraints, these women worked in part-time jobs and informal arrangements and were paid less with more flexible conditions. These working conditions were more suitable to the women hence their dominance in the agro-processing activities in the municipality. Secondly, 60% of the respondents interviewed indicated that the nature of tasks, such as caring for children and elderly household members, require women to stay near their homes, which often limits their options to work far away. Instead, these women concentrate on certain phases or activities of the supply chain such as packaging and post-processing activities which the small-scale agro-processing provides in the rural communities within the municipality, hence their dominance. Thirdly, 55% of the respondents interviewed disclosed that occupational segregation into low-technology occupations has limited the opportunities of women to generate new skills and capabilities. This has hindered their future professional development and has contributed to more women in small-scale agro-processing activities than men.

7.4 Number and the nature of jobs created by the agro-processing projects based on the level of education of respondents

Levels of education of respondents profoundly influence the type of employment created in the agro-processing sector. This is attributed to the fact that people with high educational levels will seek higher positions of employment compared to people with low levels of education. As indicated in Figure 7.3 a higher percentage of respondents for this study had high school certificates and above. Agro-processing contributes to employment creation to all sectors of the population, both educated and non-educated. This analysis aimed to attest to this fact. Respondents were asked to indicate their highest levels of education and the category in which they were employed. Table 7.3 and Figure 7.3 depict the proportion of employment created by the small-

scale agro-processing projects in the municipality regarding educational background of respondents.

Table 7.3 Number of employment created based on educational levels from 2005 to 2015

Type of processing activities	**Educational levels of respondents**			**Total number of jobs created**
	No formal education	**High school level of education**	**Tertiary level of education**	
Fruits processing	8	38	12	58
Dairy processing	35	73	50	158
Bakeries processing	30	62	45	137
Fish processing	20	49	28	97
Meat processing	25	61	42	128
Wood processing	18	26	20	74
Leather processing	20	20	5	45
Total	**156 (22%)**	**339 (49%)**	**202 (29%)**	**697 (100)**

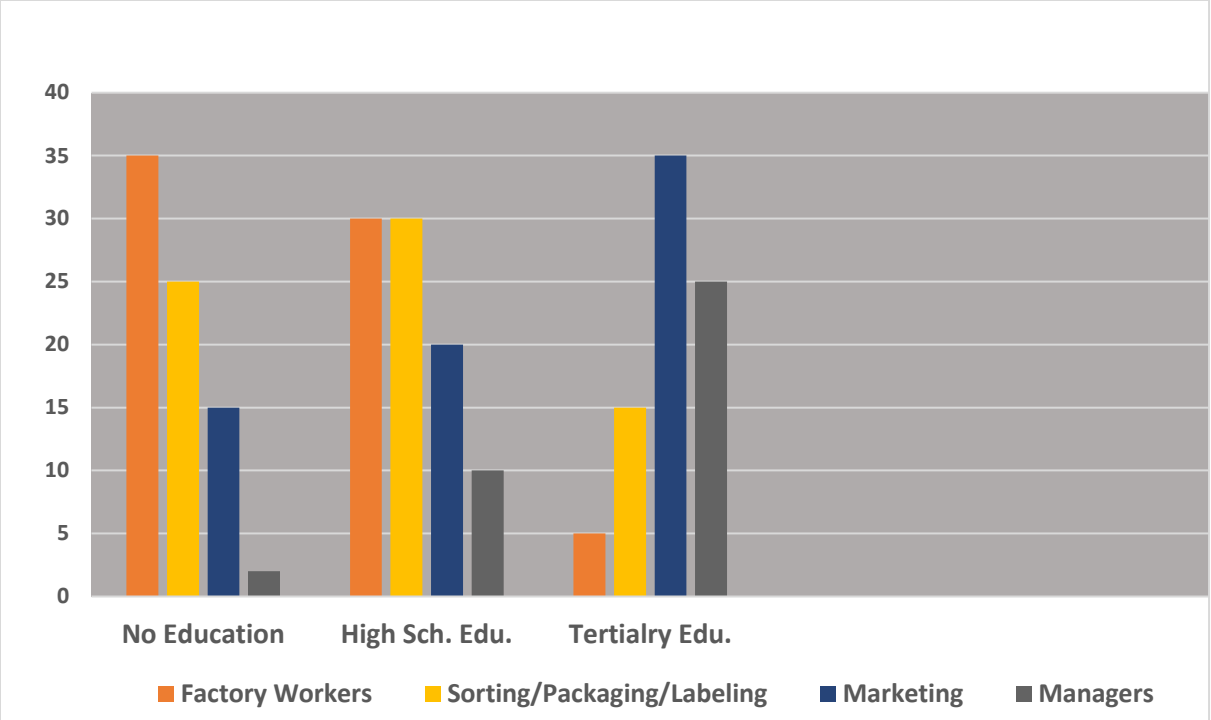


Figure 7.3. Number and nature of jobs created based on levels of education

Source: Field Study March 2014

Both Table 7.3 and Figure 7.3 depict the number of jobs created by the small-scale agro-processing projects in the municipality. The results of the study suggest that most of the firms 35% recruited workers with no formal education as factory hands, followed by workers with high school certificates 30%, and only 5% of workers with tertiary qualifications were recruited as factory workers. According to the response of the owners, this sector does not require any special skills to operate. What is required most in this sector was is physical abilities. Also, the owners disclosed that the cost of retaining workers in this sector is cheaper and they are readily available compared to trained and skilled workers. In the category of sorting, packaging and labelling the results show that more workers 30% were recruited from high school levels, followed by workers without formal education 25% and workers with tertiary education 15%. According to the managers

interviewed, this sector required certain levels of technicalities and skills; therefore, it was prudent to employed workers with average levels of education.

Regarding marketing of agro-products, the study shows that more workers 35% were employed from tertiary levels followed by workers with high school certificates 20% and workers without formal education 15%. According to the managers marketing of agro-products required special skills and knowledge such as good communication and accounting knowledge. These abilities are acquired from tertiary institutions hence their dominance in this sector. The interviews with the managers revealed that higher education increases the ability of entrepreneurs/managers to build comprehension, expertise and management understanding of the required resources to promote and develop their enterprises. Nieman and Nieuwenhuizen (2009:31) state that tertiary education increases entrepreneurial capacity. The discussions categorised employment in the industry into three groups (i) low wage jobs which were associated with workers with no formal education receiving often less than the median processing wage, (ii) medium wage activities associated with workers with high school certificates, and (iii) high wage jobs associated with workers with tertiary qualifications.

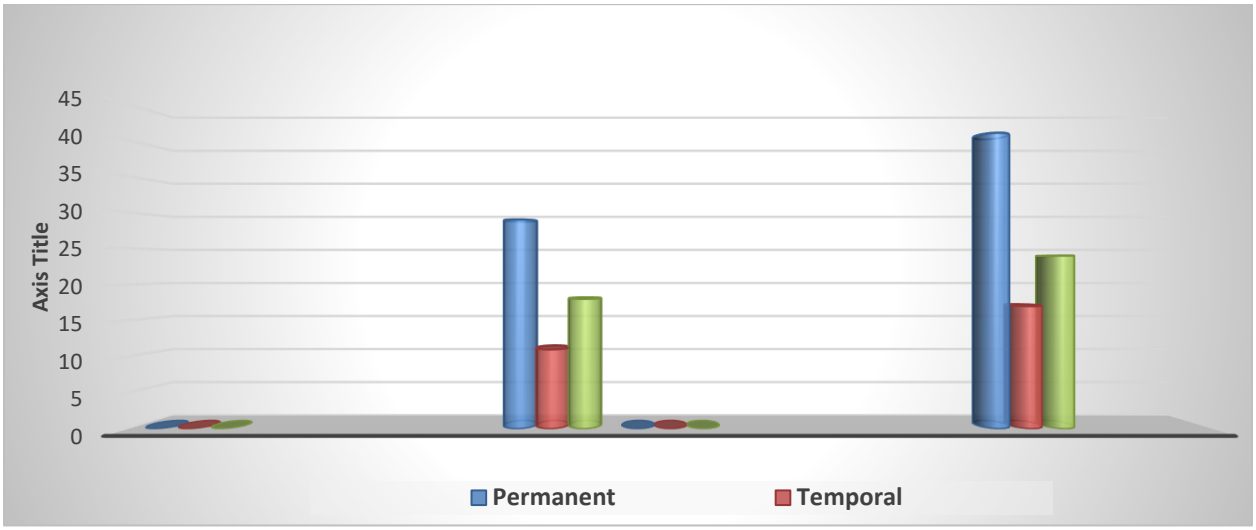
7.5. Number of jobs created by the agro-sector regarding permanent and temporary employment

To further assess the contributions of small-scale agro-processing projects regarding employment generation in the municipality, analysis on the nature of jobs created was analysed. Data were obtained through a quantitative survey as well as interviews conducted with managers of the firms. The purpose of this analysis was to examine the extent to which the agro-processing sector in the municipality has contributed to the creation of employment on temporary and permanent bases thereby reducing poverty. Respondents were asked to indicate the type of employment they were

offered regarding permanent and temporary (seasonal). Table 7.4 and Figure 7.4 reflect the responses of respondents.

Table 7.4 Nature of jobs created by the agro-processing industry in the municipality

Agro-processing project	Permanent employees	Males	Females	Temporary employees	Males	Females	Total of respondents
Fruits processing	**3**	1	2	**5**	2	3	**8**
Dairy processing	**4**	2	2	**6**	2	4	**10**
Fish processing	**4**	1	3	**5**	2	3	**9**
Bakery processing	**10**	4	6	**7**	3	4	**17**
Meat processing	**2**	1	1	**3**	1	2	**5**
Wood processing	**3**	2	1	**10**	5	5	**13**
Leather processing	**3**	0	3	**5**	2	3	**8**
Total	**29**	**11**	**18**	**41**	**17**	**24**	**70**



7.4. Number of permanent and temporal jobs created by the agro-sector

Source: Field Study March 2017

Both Table 7.4 and Figure 7.4 show the nature of jobs created by the agro-processing sector regarding permanent and temporary jobs. The average number of permanent jobs created was smaller than that of temporary jobs in all the processing firms surveyed. Also, the results show that females were more frequently employed both on a permanent and temporary basis. On average, 29 permanent jobs existed in all the seven processing firms surveyed; out of this number 18 (62%) of them were females and 11 (38%) were males. About temporary jobs, 41 respondents indicated that they were employed on a temporary and seasonal basis. 24 representing 59% were females while 17 of the 41% were males. According to the project, owners interviewed the number of males and permanent employees was small and has not changed over the past 20 years. However, the female permanent employees fluctuated based on the season and time. Most 75% of the respondents interviewed indicated that it is the project owners' strategy to maintain low levels of permanently employed workers to minimise costs, which could occur when firms are not producing, but permanent workers have to be paid. Also, temporary workers are prone to low wages and are easily laid off when production is low without any legal complications.

7.6. Number of jobs created by the agro-projects based on the age of respondents

The contributions of the agro-processing sector to job creation regarding age was also analysed in this study. The main reason for this analysis was to determine whether all age groups have benefited from the agro-processing sector regarding job creation. Respondents were asked to indicate their ages in groups of 20-30, 31-40, 41-50 and above 50 years and their employment status whether employed or unemployed. Table 7.5 and Figure 7.5 displayed the responses of the respondents.

Table 7.5. Number of jobs created in the agro-processing sector based on ages of respondents

Agro-processing projects	Ages of respondents				Total number of respondents
	20 - 30	**31 - 40**	**41 - 50**	**Above 50**	
Fruits processing	2	4	1	1	8
Dairy processing	3	4	2	1	10
Fish processing	2	4	2	1	9
Bakery processing	4	8	3	2	17
Meat processing	2	3	-	-	5
Wood processing	4	5	2	2	13
Leather processing	2	3	2	1	8
Total	**19**	**31**	**12**	**8**	**70**

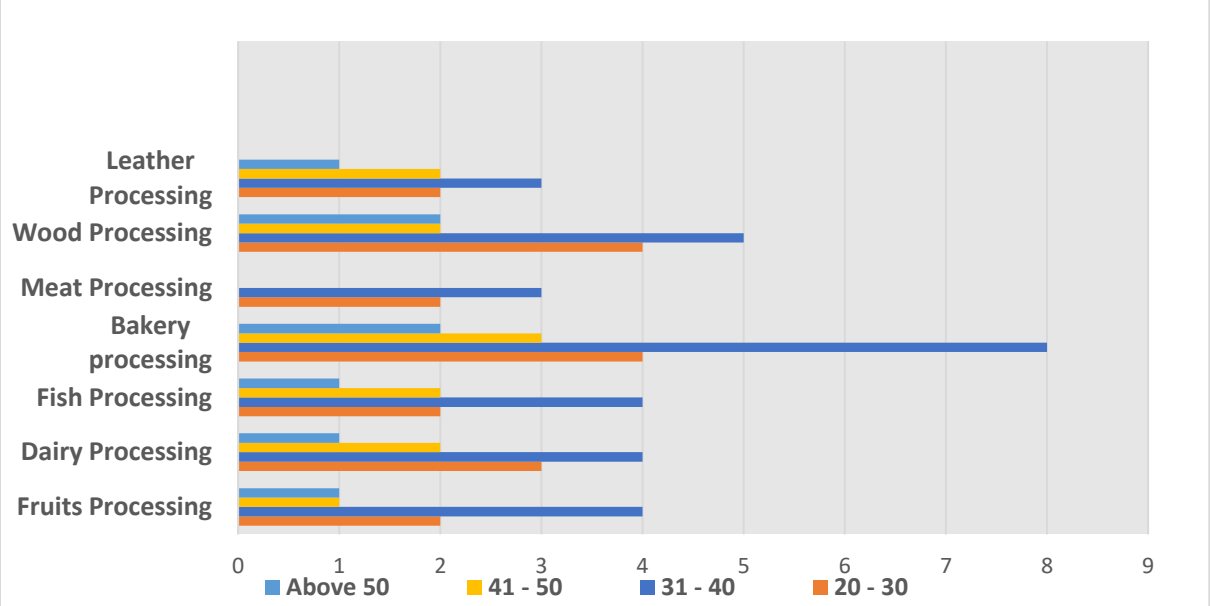


Figure 7.5. Distribution of jobs created based on age

Source: Field Study March 2017

The results in both Table 7.5 and Figure 7.5 reveal that the higher number of respondents were between the ages of 31- 40 years. Out of a total number of 70 respondents surveyed, 31 of them representing 44% were between the ages of 31 – 40 years, 19 of the respondents 27% were between the ages of 20 – 20, those between the ages of 41 – 50 years were 12 representing 17% and those above 50 years were 8 (11%). From the study, it can be assumed that the age mean of the total respondents surveyed was 40 years. It, therefore, that suggests that those below the age of 40 years were considered young while those above 40 years were old. Base on this analysis 71% of the total respondents surveyed for this study was young, and the older population was 29%. Respondents attributed the dominance of the young population in the agro-processing sector to massive levels of unemployment in the municipality. Community leaders interviewed also indicated that the young population in the industry is indicative of potential job seekers who found the agro-processing sector as a source of employment, income generation and a livelihood strategy. According to opinions of managers of ECDC and BCM who were interviewed, the dominance of young population in the agro-processing sector in the municipality is indicative of the bright and potential growth of the industry if they are supported.

7.7 The relationship between the agro-processing projects and sustainable livelihood in rural Communities

Data gathered from respondents from the local municipality, ECDC and local communities through their leaders further identified the contributions of the agro-processing sector to a sustainable livelihood. Respondents from the ECDC indicated that the agro-processing sector plays a crucial role in poverty reduction and hunger in rural communities. According to the respondent's many people are directly and indirectly employed in the sector in the municipality thereby. By their estimation, one thousand (1000) people in the municipality were directly

employed in agro-processing firms that process agricultural products and in servicing machines. Also, the respondents revealed that the sub-sector of the industry generates backward employment linkages thus creating markets for raw materials from agriculture produce and thereby generating income for rural farmers. Based on their analysis more than a million people in the municipality are involved in the cultivation of primary products to feed the local industry or to feed themselves and their families, thereby, escaping poverty and food insecurity. Respondents from the local municipality during interactive discussions also indicated that, apart from employment and income that comes with agro-processing, the sector also assists in reducing post-harvest losses and increases the shelf-life of processed products, thereby reducing food insecurity in the municipality. According to these respondents, about 40% of agricultural produce in the municipality goes to waste every year due to weak or lack of agro-processing activities resulting in millions of people being food insecure, especially in the rural communities. Some of the participants in the local communities disclosed that agro-industry contributes to by-products in their communities. Small-scale processing in rural areas ensures that by-products from processing remain available within the area. These by-products often have significance as animal feeds, such as bran from the milling of cereals, oppress cake and the residue from oil extraction. Also, it was disclosed by the respondents from the municipality as well as ECDC that agro-processing projects are strategically positioned and have contributed to rural development from different perspectives such as education, health, and development of infrastructures such as roads, electricity and water, thereby assisting in reducing the rural-urban income gap. Small-scale agro-processing projects also enhance small farmers by providing market opportunities for their products within rural communities.

Nevertheless, it was disclosed during the course of interviews with the officials from ECDC local municipality that, despite the contribution of the sector to the municipality, descriptive results show that jobs levels in the sector are decreasing at an alarming rate while at the same time its contribution to sustainable livelihood is decreasing as well. It can, therefore, be concluded that this contributes to the declining total employment in the province and the country as a whole. Respondents indicated that the acquisition of technologies and the regulatory environment such as unfavourable regulations and uncoordinated policies are the contributing factors to the declining performance of the sector. The next chapter of the study will look into factors accounting for declining performance of agro-processing projects in the municipality.

7.8 Conclusion

This chapter discussed the employment created by the agro-processing sector in the Buffalo City Municipality and also provided information that will help address the critical knowledge gap that could assist in boosting the job creation in the sector. The results indicate the characteristics of the workforce, their skill constraints and their employment capacities. It is evident from the study that the agro-processing sector creates job opportunities to a different sector of the population; males and females across all age groups, people with tertiary qualifications, high school certificate holders as well as the population without formal education. It also creates permanent employment as well as temporary or seasonal jobs for different categories of the population. From the study it was noted, females constitute the highest proportion of the workforce in the agro-processing industry based on the demographic characteristics; age, educational levels, years of experience, temporal, and permanent employment. Since most of the projects in the agro-processing sectors are micro and medium scale enterprises; it is a general indication that the majority of these women operate as small to medium scale enterprises. Several reasons account for the dominance of women

in the small-scale agro-processing sector in the municipality. Most importantly, as a result of household and child-rearing, women are not only much less likely to participate in the labour force, those who do are also much more likely to engage in self-employment activities rather than higher-paying wage employment. Due to childcare responsibilities economically active women often leave the labour market and thus accumulate less work experience. It was also established that as a result of time constraints more of the women employees prefer to work as part-time jobs and in informal arrangements that pay less, provide fewer benefits, but more flexibility. As a result women in the agro-sector suffer from wage gaps, evidence from the study indicate that this more prevalent in rural communities in the municipality. Wage inequalities are typically due to (i) contractual arrangements differ for men and women, with women usually having worse conditions of employment, and; (ii) typically women receive lower wages for the same work. The results from the seven projects studied for this research shows that on average women are paid 25% less than males in rural communities, and 15% less than males in urban centres. Perhaps this justifies the reason why women are more miserable in the agro-processing sector though they form the majority in the industry. It is, therefore, imperative to adopt strategies to improve the performance of women in the agro-sector. For the sector to grow and contribute significantly to socio-economic development, there is a need for capacity enhancement activities that target female project owners. Officials from the DAFF and other government agencies should organise systematic management training for the women employees especially in resource mobilisation, financial management and modern manufacturing techniques in order to realise maximum contribution of the sector to the municipality economy.

It was also noted that a considerable number of the workforce in the agro-sector had a low level of formal education, approximately 80% of the workforce in the agro-sector has only a high school

certificate or has no formal education. The lack of higher education was found to affect the workforce of the agro-sector in some ways. These include farm management and entrepreneurship, resource management and record-keeping, financial planning and management, marketing, processing and packaging, transport, natural resources management, and mechanical and electrical knowledge. It was found that poor quality education even among the educated workforce affects the of the employee's performance especially, in management and marketing operations. It affects mostly their ability to understand agro-processing in a more environmentally sustainable manner, health and safety compliance, and to make more progress towards meeting international safety standards. These developments call for more periodic training and other capacity development activities for the employees in the agro-processing projects in order to improve their operational and managerial efficiency. A considerable investment in primary adult education and training should be promoted to improve the skills and technical know-how of the employees. Project owners should be exposed to modern technologies by organising the exhibition and mini technological fair to be abreast with modern processing techniques.

Regarding the number and the types of jobs created, the study found that there is a relationship between the number of jobs created by the agro-processing projects and the concept of market theory. The theory states that; a project will maximise profit when the marginal cost of employing an extra worker equals the marginal revenue from that additional worker. If the marginal revenue is higher than the marginal cost, the firm's profit will increase by adding more workers. The project's profit maximisation motivates the project managers to determine the number of workers required, whether permanent or temporary (Mtabazi et al., 2007 and Kipene et al., 2013). The results found that projects in the urban centres have employed more workers because the demand for their products are high and are making more profits compared to projects in the rural

communities. It was also established that there are more employees on temporary contracts than on permanent jobs. It was noted that small-scale agro-processing in the rural communities are more linked to temporal operations than permanent due to the seasonal supply of raw materials and the fluctuating nature of their markets for the processed products. Most of the agro-projects in the rural communities depend on local farmers for their raw materials which are often cultivated seasonally. The results indicate that during the dry season most crops are harvested. Hence, plenty of raw materials are available for processing. Seasonal jobs for temporal workers, therefore, depend very much on time for harvesting agricultural products and the availability of raw materials. It is, therefore, economically wise and strategical to rely on temporal workers to reduce losses. Also, the markets for most of their products are seasonal. Some of the products are used only at a particular season either during winter or summer. Therefore, the demand for workers depends on that particular period. It was noted that although the number of temporal employees in urban projects is higher than permanent employees, the number is still higher than in rural communities. Projects in the urban areas obtain their raw materials from different sources, therefore, can produce throughout the year, also, because they produce different products they have the available markets in throughout the year.

CHAPTER EIGHT

Summary of the findings, Conclusions and Recommendations

8.1. Introduction

The foregone chapters present data, which support the argument advanced at the beginning of this study interrogating whether small-scale agro-processing projects in the rural communities in Buffalo City Municipality in the Eastern Cape of South Africa contribute to job creation and poverty reduction. This chapter, therefore, looks at the role of the agro-processing sector in promoting rural livelihood and alleviating poverty using the triangulation research methods. The chapter provides a summary of the research findings, draws conclusions in line with the findings, and provides recommendations.

8.2. Summary of the research findings

In addressing the first objective, the study analysed the structure, distribution and trends of development of the small-scale agro-processing projects in the municipality between 2005 and 2015. The findings established that women owned over 70% of all small-scale agro-processing projects and about 79% of the owners have no formal education or had only high school education. It was also discovered that all the small-scale agro-processing projects have owners that are 40 years and above, an indication that the youth are not interested in owning small scale agro-projects or do not have the resources and the experience to establish their projects. Nevertheless, more than 70% of the workforce in the projects were youth below 40 years of age. The findings further established that 71% of all the agro-processing projects were micro and small level projects that have operated for over ten years without expanding the scale and their operations. The development reflects the survival or subsistence nature of the majority of the projects. Only 29% of all the projects were medium scale projects operating with average capital and moderate

facilities. Also, about 72% of the projects operated using simple structures locally made and rudimentary processing technologies and have low skills for operations, resource mobilisation and low financial management.

In relation to the development of the agro-projects between 2005 and 2015, the study established that the general trend of developing new establishments was generally in decline in most of the communities in the municipality. The findings established that between 2005 and 2015 the new processing projects established in Kei Road increased by just 16% indicating that on average less than one project was established per year during the study period. Stutterheim, Dimbaza and Zwelitsha experienced negative growth regarding the new establishment of projects. The findings indicated that these communities recorded 10%, 8% and 5% which translates to a mean average of 0,4; 0,3 and 0,2 of establishments per year respectively, an indication which suggests that on average less than one new project was established per year in the communities between 2005 and 2015. Nevertheless, East London and King William's Town recorded a marginal increased regarding new establishments. These communities recorded 32,4% and 27% respectively during the study period, an indicator which suggests that on average more than one (1) project was established per year over the study interval.

Regarding the rate of survival, the study findings revealed that East London and King William's Town have survival rates of 34% and 28% respectively. This analysis suggests that on average existing projects in these communities have a 34% and 28% chance of surviving. However, in Kei Road, Stutterheim, Dimbaza and Zwelitsha the survival rates were 11%, 8.5% and 5,7% respectively. These results suggest that most projects in these rural communities do not survive for a year. The average mean of the projects were: 0,4, 0,3 and 0,2 respectively. The finding revealed that East London and King William's Town recorded 6% and 10% representing a mean average

of 0.3 and 0,5 respectively of projects collapsed during the study period, an indication which suggests that these communities recorded less than one collapsed project per annum. Kei Road, Stutterheim and Zwelitsha recorded 22%, 20% and 18% (representing 1,1; 1,0; and 0,9) respectively of collapsed projects between 2005 and 2015, an indication that on average more than one project collapsed per year in the communities. Dimbaza recorded the highest number of collapsed projects (24% representing 1,2 of the average mean) between 2005 and 2015, an indication which suggests that nearly two of the agro-projects collapsed per annum.

The second objective analysed the reasons for the collapses of the small-scale agro-projects in the municipality. The most significant factor identified was a lack of market opportunities (20%), followed by inadequate access to capital (18%), lack of adequate and quality of raw materials (17.7%), low prices for locally processed products (16,6%), lack of technology for processing (15,3%), and lack of infrastructure development which was ranked least of the constraints was (12%). About a self-rating of processed products, the findings indicate that 45% of project owners have no clue of the quality of their products, while 30% rated their products as fair which suggests that they have little confidence in their products, 15% and 10% rated their products as good and excellent respectively. The findings established that as a results of the above reasons and many other causes such as low resources in production such as land, water and capital assets, the most of the projects produce low-cost products that are equally of cheap quality, which often leads to their products being abandoned by consumers. The findings concluded that the growing clustering in the value-added trend is a global phenomenon, caused by growingly formidable consumers that are concern about products safety. The strong awareness of consumers make it very difficult for small-scale producers to enter high-value markets in light of the low quantity and poor quality of their products.

The third objective of the study assessed factors restricting the growth of processing projects in the study area. The study found that small-scale agro-processing projects faced some challenges. Using the Relative Important Index (RII), the study established the constraints based on their magnitude. Based on the ranking, the biggest and the highest challenge identified was lack of market opportunities. Out of the 70 respondents surveyed for the study, 17 (representing 24%) mentioned limited access to markets both locally and abroad as their main constraint. The constraints identified under marketing were lack of market accessibility, competition and poor market networks, changing customers' satisfaction, insufficient market information and inability to adapt to change. Limited access to credit or finance was pointed as the second most challenging constraint facing small-scale agro-projects in the municipality. 15 (representing 21%) of respondents identified this constraint. Factors restricting access to finance were mention as lack of collateral, short repayment periods, high-interest rates, bureaucratic processes, and lack of education. The third constraint mentioned most was lack of raw materials for processing. 13 (representing 19%) of the respondents identified the constraint of inadequate and quality of raw materials as factors responsible for poor performance of small-scale agro-processing projects in the municipality. Factors such as high transport cost of moving the raw materials from the farms to the processing site, the high cost of the raw materials, limited accessibility and other factors were identified as constraints to access raw materials. The next constraint the study established was low prices for locally processed products. Out of the 70 respondents surveyed, 11 (representing 16%) mentioned this problem as a hindrance to the growth of small-scale agro-projects. The study established that locally processed products often depend on the domestic markets which compete with imported products. Also, the study established locally processed products use packaging materials that are below the recommended standard; therefore, their

products failed to attract customers, hence the low demand which eventually leads to low productivity. Lack of access to technology was also established to be a major constraint to the growth of the small-scale agro-projects in the municipality. The finding established that 8 (representing 11%) of the respondents mentioned the problem. The findings established that efficient agro-processing operations revolve on functional technologies and innovative systems. Increasingly, the quality, durability and branding of processed products are mould by improved processing and packaging technologies. Therefore, the technology used by the agro-projects in the municipality influenced the quantity and quality of the processed product.The technology used has increased the cost of production regarding energy and power and had reduced the effectiveness of the operations. The next constraint established by the findings was lack of infrastructure development. This constraint was mentioned by 6 (representing 9%) of the respondents surveyed. Infrastructure challenges such as poor road networks, lack of warehouse facilities, lack of internet, unstable electricity and water supply were established to be a major contributing factor to the poor performance of the small-scale agro-processing projects in the municipality. It was established that frequent power cuts, as well as uninformed power outages, disrupt processing schedules and the ability of the projects to cope with demand. For instance, high power surges associated with unexpected and intermittent power outages often leads to equipment breakdowns which often results in processing firms losing products due to perishability. Another troubling trend is the rising cost of energy in the municipality. Other constraints established by the study include the following: lack support from research and training institutions, private sector consultants, small enterprise advisors and engineering workshops affect agro-processing operations and projects exist to supply consumers' needs. Consumers needs do change regularly. Therefore, there is the need to incessantly innovate to meet changing consumer needs. Research and training institutions, private

sector consultants, small enterprise advisors and engineering workshops are useful for advancing the improvement of the operations of agro-processing projects. Regarding inadequate human capital, the findings established that this problem posed a serious challenge to the small scale agro-projects. Lack of skills means that technologies which could lead to improved yields are not taken up. Any solution aimed at addressing the municipality's poor performance in the agro-sector should aim to be holistic and multifaceted.

The fourth objective of the study sought to analyse contributions of agro-processing projects to job creation and poverty reduction in the Buffalo City Municipality. The general findings indicate that the number of jobs created by small-scale agro-processing projects differed with each project and was influenced by the demographic factors of respondents such as gender, age, educational levels and experience. The results indicate that 697 jobs were generated by the seven projects selected for the study from 2005 to 2015. Out of this number East London dairy and the fish processing projects created 158 and 97 jobs respectively, the King William's Town bakery project created 137 jobs, Zwelitsha meat processing firm 128 jobs, the fruits processing firm in Kei Road generated 58 jobs, and wood processing project in Stutterheim created 74 jobs while the leather processing project in Dimbaza created a total of 45 jobs. Regarding the gender classification of employment, the study established that 423 (representing 61%) were females while 274 (representing 39%) were males. Various reasons were enumerated for this disparity between men and women's involvement in small-scale agro-processing projects. Notable among them was that women are less able than men to participate in economic opportunities because they face more burdens than men. In addition, the study established that the agro-processing projects in the municipality have created jobs for all levels of educational status: 156 (representing 22%) of jobs were generated for people without formal education, 339 (representing 49%) jobs were created for

people with high school certificates while 202 (translating to 29%) jobs were established for university graduates. The level of one's educational level influenced the category of employment. It was discovered that the majority (70%) of respondents without formal education were recruited as 'factory hands' such as cleaning, sorting and washing. Respondents with high school certificates were involved in middle stages of processing such as milling, grinding labelling, canning and bottling. Respondents with tertiary qualifications were involved in the managerial and marketing departments of the projects. The proportion of permanent jobs was smaller 41% compared to temporary jobs 59%. The study established that the dominance of temporary jobs was not by chance; rather it was a strategy by project owners to reduce the need to pay workers in times of low productivity which arise for various reasons such as inadequate raw materials or power outages. The study revealed that 55 (representing 79%) of the respondents are satisfied with the agro-processing projects in their communities because the projects serve as a source of employment and means of earning income. Other benefits identified with the projects include: agro-processing projects reduced post-harvest losses thereby improving food security in the local communities, increased agricultural production and increased revenues of local farmers. The projects also serve as a catalyst which stimulates rural development from different dimensions such as health, education infrastructure development such as roads, electricity and water. However, 15 (representing 21%) argued that the projects have little impact in generating sustainable jobs and to earn income. According to this group of respondents, the sector is plagued with numerous challenges such as limited access to markets both locally and abroad, and lack of appropriate technologies to create meaningful livelihoods from the projects.

8.3. Conclusion

The study assessed the role of small-scale agro-processing projects as a sustainable livelihood strategy in the rural communities in the Buffalo City Municipality in the Eastern Cape of South Africa. The study pursued four objectives which were:

(i) to establish the trends of development in the small-scale agro-processing projects in the Buffalo City Municipality from 2005 to 2015,

(ii) to explore the reasons for the collapse of small-scale agro-processing projects in the municipality between 2005 and 2015,

(iii) to assess the factors that hinder the operations of small-scale agro-processing projects in the Buffalo City Municipality,

(iv) to investigate the contribution of agro-processing projects to employment creation and poverty reduction in the municipality.

The study observed that the primary owners and workers of agro-processing projects in the municipality are women. Secondly, most of the projects 71% were micro and small businesses with a small percentage (21%) being medium scale enterprise. These findings, therefore, suggest that the operating systems of agro-processing projects in the municipality are micro and informal small enterprises. Other findings drawn from the study was that the ownership of most of the projects have a low level of formal education and this affects the operations, training and skills development as well as research for information and adoption of modern technologies. It was evident that over 80% of the project owners lack adequate capacity in areas such as resources mobilisation and financial management. The trends of the establishment, sustainability and collapse of small-scale agro-processing projects in the Buffalo City Municipality were analysed and presented in tabular and graphical forms. East London and King William's Town had a

marginal increase in new establishments. These communities also recorded higher numbers of project sustainability and the lowest rate of collapsed projects. Nevertheless, communities such as Kei Road Community, Stutterheim, Dimbaza and Zwelitha recorded a massive decline regarding the new establishment of projects, decline in their sustainability and a vast increase in the number of collapsed small-scale agro-processing projects.

Reasons for projects collapsing were enumerated as lack of market opportunities, lack of financial support, inadequate or inferior quality of raw materials, low prices for locally processed products, lack of modern technologies, and poor infrastructures such as poor roads, electricity and water. The study concluded that the quality of processed products is highly influenced by the technology used for processing. For this reason, agro-processing equipment is classified based on their ability to produce products that preserve the quality structure. The machinery analysed for this study are grouped under; locally made or traditional equipment improved equipment and modern machines. Locally made equipment are mostly operated manually to transform products, improve machines combine components to perform varieties of processing activities, while modern machines perform complex activities than improve machines. Regarding standardisation of products, the study concluded that because the majority of the products produced by the small-scale agro-producers are of poor quality, they are unable to penetrate larger markets.

Factors impeding the growth and performance of small-scale agro-processing projects in the municipality were analysed and displayed in the form of frequency tables, pie charts and other diagrams. The significant challenges facing small-scale agro-processing projects in the municipality are: limited market opportunities both home and abroad, limited access to capital, inadequate access to raw materials, low demands for locally processed products, lack of modern technologies to enhance production, poor infrastructure in the form of poor roads, limited water

supply and interrupted power supply. Other constraints were lack of human capital, limited access to extension officers to support business development and lack of access to appropriate packaging materials for processed products. In conclusion, the model needs to be changed from "agro-processing" to "agro-business", as this is the only way to move from subsistence production to commercial production.

The contribution of small-scale agro-processing projects regarding employment generation and poverty reduction was analysed and displayed in the form of frequency tables and graphs. Agro-processing projects employed all groups of people, males and females, young and old, literates and illiterates. The majority of workers (61%) employed by the projects were women with no formal and high school education while a small number of workers completed tertiary education. It was further observed that the small-scale projects employed more temporal workers than permanent employees. Temporary workers represented 59% while permanent employees made up 41%. The main reason for this was to minimise costs as permanent employees are paid even when there is no production; however, temporary employees do not enjoy such benefits. Agro-processing projects also assist in reducing post-harvest losses and thereby increase food security especially in the rural communities, boost agricultural production of rural farmers and provide market outlets for their produce often within their local areas, thereby increasing their revenues and reducing poverty in communities. Finally, the agro-projects are catalysts which stimulate rural development from different dimensions such as road, electricity, water health and education.

8.4 Recommendations

Based on the findings as presented in the study and the conclusions drawn the following recommendations are encouraged:

(i) The study findings show that females constitute the highest proportion of ownership and workforce in the sector also the majority of the owners had a low level of formal education. As noted in the discussions, this phenomenon had impacted negatively on their operational capabilities, training and adaptation to modern technology. Besides, it was revealed that the low levels of education among the owners of the project had affected their access to credit, capacity to mobilise resources, operational and financial management. As a remedy to this constraint, periodic training and capacity development activities for the owners and project managers is imperative to improve their operational and managerial efficiency. Also, vocational and technical education must be expanded to absorb the owners and managers to acquire more knowledge and skills to advance their projects.

(ii) The leadership of the municipality and government should develop and implement strategies that will support (kick-start the funding process, provide infrastructure and the appropriate legal framework for patent protection); an active start-up market with regular investments, entries and exists; academia for research and development; and finally, incubators and accelerators to support young entrepreneurs. Such a phenomenon will create the culture of entrepreneurship and self-confident among the youth in establishing their agro-businesses.

(iii) The research findings revealed most of the agro-projects collapsed due to lack of opportunities and limited access to capital to sustain the operations of the business. To improve the availability of capital for the small-scale agro-processing projects it is suggested that, government work with financial institutions to improve the provision of adequate and affordable financing. The transformation of the agro-sector could be achieved if the following innovative and integrated systems are promoted: (i) credit provision with rationale interest rates and tenor (ii) equity

financing to expand the financing make-up and circumvent high dependence on debt, (iii) lease finance to increase regular investment instruments and to help projects who may not have adequate financial abilities for assets acquisition with regular investment instruments. Other may include insurance products, and business and financial advisory services. In addition to the above, limited access to credit could be partly addressed through the establishment and transparent operation of entrepreneurship funds such as the Youth Enterprise Support (YES) or creating a favourable environment for banks to lend below the market rate to the manufacturing industry through a special fund set up by the government specifically for agro-industries.

(iv) The findings also established that one of the significant challenge to the development of agro-projects in the municipality is lack of market opportunities. It is recommended that cooperative marketing should be developed as part of the extensive institute building programme for the small-scale agro-projects. Expert and assets acquisition should be identified as the core of the programme. Other cooperative efforts in financing, purchasing and production should also be encouraged as successful marketing rests on the type, quantity, quality, and price of the product produced as discussed in the findings. Also, small-scale agro-projects can improve their market share by ensuring they produce quality products with a definite edge over those of their competitors with suitable packaging materials that will attract consumers and, finally, the small-scale sector should be identified from those of the traditional sector for special attention. A developing agro-brand backed by appropriate promotions must, therefore, be developed for such projects. Furthermore, appropriate marketing locations, technologies, products and systems should be developed as special programmes to support small-scale agro-projects.

(v) Findings from the study show that projects with modern technologies produce quality products and can expand their operations. It is therefore imperative and more cost-effective to improve access to modern technologies at the micro-scale and the medium-scale levels. This could be achieved if the government encourages and creates a conducive environment for local manufacturers to manufacture agro-processing equipment at the municipal levels as a strategy to lower costs of equipment for small scale-processors. Each of the district municipalities must establish an agro-technology development hub to address peculiar agro-manufacturing needs for local processors as a strategy of decentralising industrialisation.

(vi) The findings of the study further established several factors that limit the growth of small-scale agro-projects in the study area. These include inadequate and poor quality of raw materials, poor infrastructure development such as roads, the high cost of energy, and disruptive supply of electricity and water. As a recommendation, the following must be enforced firstly, agricultural extension support, NGOs, and private institutions should increase and improve the services they give to farmers so that the local farmers can increase the number of their products to meet the requirements of the agro-processors. Secondly, DAFF should increase the number of agricultural extension experts in order to monitor the quality of inputs from agricultural production and outputs of agro-products to meet the requirements of consumers. These strategies will assist local processors to meet the quality standards and also to increase the prices of their products. Finally, the government should allocate more resources to develop rural infrastructure such as poor roads, subsidise prices of energy, and the regular supply of water and electricity to reduce the cost of operations among the small-scale processors in the rural communities. The measure will serve as incentives and assist in boosting agro-processing in the municipality.

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APPENDICES

Questionnaires and interviews conducted on the topic: Assessing the role of small-scale agro-processing projects as a sustainable livelihood strategy in rural communities in Buffalo City Municipality in the Eastern Cape, South Africa. The questionnaires and the interviews were conducted with respondents from Buffalo Municipality, Eastern Cape Development Cooperatives, Eastern Cape Rural Development Agency, Industrial Development Corporation, farmers and entrepreneurs in the agro-processing industry in March 2017.

A: DEMOGRAPHY INFORMATION.

1. Indicate your age in years 0.1.

20 - 30	31 - 40	41 - 50	51 - 60	61- 70	70+

2. Gender or Sex. 0.2.

Male.	Female.

3. Marital status. 0.3.

Married.	Single.	Divorced.

4. Educational Background. 0.4.

Never been to school.	Up to primary level.	Up to High school.	Complete Matric.	Up to tertiary-undergraduate level.	Postgraduate level.

5. Race or Racial Group 0.5.

African.	Coloured.	Indian.	Asian.	White.

B : OCCUPATIONAL STATUS.

6.1. Are you involved in the agricultural sector?

Yes.		No.	

6.1.1. If yes to 6.1., what is your role in the agriculture sector? 0.6.1.

Farm labourer.	Farm manager.	Farm owner.	Others; specify……

7. Are you directly involved in farming activities? 0.7.

Yes.		No.	

7.1.If your answer is yes, what type of farming are you involved in? 0.7.1.

Subsistence farming.	Commercial farming.	Both.

8. What do you produce on your farm? 0.8.

Grains.	Fruits.	Poultry.	Livestock.	Medicine.	Other, please specify…….

9. Do you add value to your agriculture produce? 0.9.

Yes.		No.	

9.1. If your answer to 9 is yes, which sectors are you involved in the processing sector? 0.9.1.

Please tick at the appropriate column (you may tick more than one).

sorting	
Labelling	
Packaging	
Bottling	

Abattoir	
Fermentation	
Milling	
Washing	
Storage	
Others; please specify	

10. How many years have you been involved in agro-processing? 0.10.

Less than one year.	2 – 4 years.	5 – 7 years.	8 – 10 years.	Over 10 years.

C: FINANCIAL AND FACILITIES STATUS OF THE INDUSTRY.

11. Do you receive any financial or technical assistance from any institution? 0.11.

Yes.		No.	

12. If yes to 11, list the organisation (s) that offers your institution some assistance. 0.12.

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13. What kinds of assistance did you or your institution received, if you have received any form of assistance? Please tick at appropriate column. 0.13.

Loans.	
Technical assistance.	
Special training.	
Gifts.	
Others, please specify.	

14. Do you have access to financial assistance? 0.14.

Yes.		No.	

15. If your answer is yes to 14, state where you often source your financial assistance from?Tick the appropriate space. You may thick more than one. 0.15.

Loans from banks.	
Raise capital from family members.	
Personal money raise from other sources.	
Received capital from government departments.	
Capital was raised through co-operatives.	
Other sources, please specify.	

16. Do you have access to facilities in your agro-processing activities? 0.16.

Yes.		No.	

17. If your answer is yes to question 16, please indicate the facilities that you have access to? Please tick at appropriate columns the machinery at your disposal (You may tick more than one). 0.17.

Cutting machines.	
Slicing machines.	
Washing bays.	
Storage facilities.	
Abattoir.	
Packaging.	
Milling machines.	
Grading.	
Tractors.	
Others; please specify……	

18. How would you rate your facilities in your agro-processing site? 0.18.

Poor.	Fair.	Good.	Very good.	Excellent.

D: SOCIO-ECONOMIC IMPACT OF AGRO-PROCESSING ENTERPRISES.

19. Do you or your community benefit from agro-processing activities? 0.19.

Yes.		No.	

20. If yes to 19, what type of benefit do you or your community derive from agro-processing?

0.20.

Create employment.	Provide food to the community.	Create income for the community.	Others please, specify……

21. Do agro-processing activities have any impacts on other businesses in your community? 0.21.

Yes.		No.	

22 If your answer is yes to 21, which businesses benefit from the agro-processing in your area? (Tick the appropriate column you may tick more than one column). 0.22.

Farmers can expand their farms and supply to the factory.	
Market women buy their products from the factory and sell.	
More shops in the communities depend on the agro-processing products.	
Big shops come to buy from the factories.	
More people are employed in the factory and farms.	
Other benefits please specify,…….	

E: COOPERATIVE ASSOCIATIONS AND AGRO-PROCESSING DEVELOPMENT.

23. Are there any co-operatives in the local area? 0.23.

Yes.		No.	

24. If yes to 23, what types of co-operatives are they 0.24.

Farmers co-operatives.	Agro-processing co-operatives.	Market women co-operatives.	Others, please specify……..

25. Do these co-operatives have any benefits to agro-processing and farming activities? 0.25

Yes.		No.	

24. If yes to question 25, what type of benefits do you derived from cooperatives? 0.26.

Reliable supply inputs.	
Reliable markets.	

Capacity building.	
Access to financial support.	
Value adding and agro-processing opportunities.	
Technical support.	
Others, please specify.	

F: PROBLEMS AND CONSTRAINTS IN AGRO-PROCESSING DEVELOPMENT.

What are the factors restricting you and your co-processors in your community from attaining full potentials from the agro-processing industry 0.26.

Transportation problems.	
Problems of electricity.	
Lack of store facilities; stores, freezing houses, drying houses, cleaning system.	
Limited raw materials for agro-processing industry.	
High input cost.	
Market information.	
Low and inadequate prices of products.	
Competition from established company.	
Inadequate demand.	
Poor education, improper training, poor motivation and incentives, lack of exposure to improved system.	
Huge gap between seasons: working only the rainy period.	
Poor research and development activities for modern technology.	
Small farming; average farming land or lack of access to farmlands.	
Lack of financial support; lack of collateral.	
Others, please specify……	

27. How do these factors affect your agro-processing business? 0.27.

Inadequate profit.	
Lack of development in activities.	
Inability to pay my debts.	
Inability to expand my business.	
Complete closure.	
Other impacts, please specify……	

28. Is there any other agro-processing type taking place in your community? 0.28.

Yes.		NO.	

29. If yes to question 28, how does this competition affect your business? 0.29.

It affects my business negatively.	
It helps my business positively.	
It has no impact on my business.	
It helps my business to expand.	
Both positive and negatively.	

30.In your opinion, what do you think should be done to solve some of the challenges facing the industry in your area? Tick the appropriate space you may tick more than one space. 0.30

Government should establish agro-processing centres.	
Transportation facilities should be improved.	
Better prices for agro-processing products should be ensured.	
Promoting exports of agro-processing products.	
Organise farmers and processors into the organization to produce specific products.	
Develop suitable formal market institutions that protect the right of small-scale agro-processors.	
Other suggestions, please specify……	

G: BUILDING, TRAINING INSTITUTIONS CAPACITY DEVELOPMENT IN THE AGRO-SECTOR.

31. Do you attend or have you ever attended any agro-processing workshop or training? 0.31

Yes.		No.	

32. If your answer is yes to 32, what type of training did you have? 0.32

Capacity building training.	
Marketing skills training.	
How to use modern technology in agro-processing activities.	
Value addition training.	
Other forms of training, please specify…….	

33. Who organised the training? Tick at appropriate space. (You may tick more than one) 0.33.

The provincial government of Eastern Cape.	
Buffalo City Metro Municipality (BCMM).	
NGO.	
Eastern Cape Development corporation (ECDC).	
Eastern Cape Rural Development Agency (ECRDA).	
Industrial Development corporation (IDC).	
Others, please specify……..	

33. What are some of the main reasons for the workshops and training? 0.33.

Develop suitable market institutions that protect the right of the poor farmers and small-scale agro-producers.	
Develop knowledge-driven production processes to survive in globalising world establishment.	
Tapping of research and development capacities of the multinational corporation by encouraging direct investment and promoting ventures.	
Promoting and stimulating primary agriculture.	
To achieve cost-effective and enhancing productivity growth.	

34. Would you be interested in attending a capacity building workshop in future? 0.34.

Yes.		No.	

H: SUSTAINABLE DEVELOPMENT AND AGRO-PROCESSING INDUSTRIES.

35. Explain whether agro-processing has a role in promoting economic development in your community? 0.35.

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36. Do you think community leadership or kingships should be involved in the running of agro-processing projects in the communities? 0.36

Yes.		No.	

37. If your answer is yes to question 36, what do you think the leadership of the local municipality and community leaders should do to transform small-scale agro-processing in industries in their local communities? 0.37.

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38. In your opinion, do you think agro-processing is helping in the fight against poverty in your community? Yes / No 0.38

39. If no to question 37, in your opinion what do think the national and provincial and the governments and stakeholders can do to avert the situation? 0.39

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40. In your opinion what do you think the cooperatives can do to improve and sustain the performance of small-scale agro-processing industries in the local communities? 0.40

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