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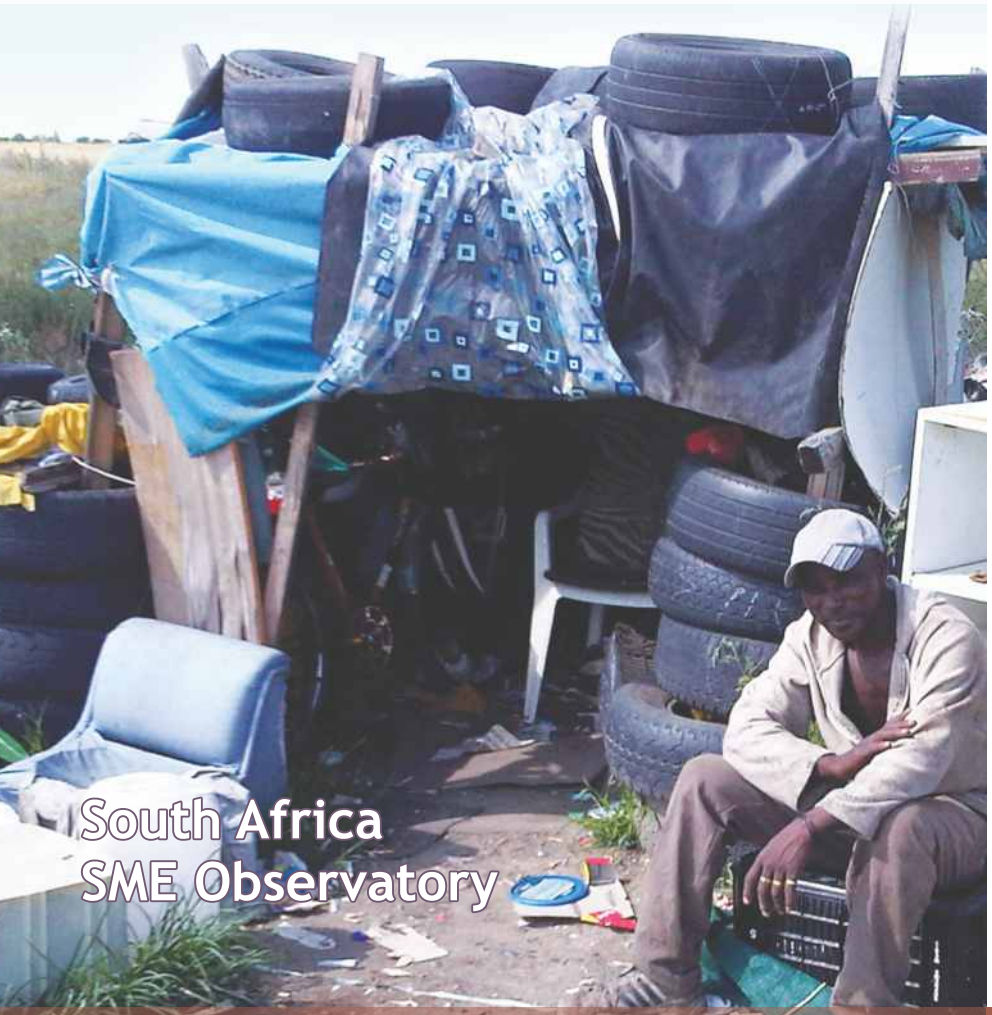

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Unrecognized Waste Management Experts: Challenges and Opportunities for Small Business Development and Decent Job Creation in the Waste Sector in the Free State

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Unrecognized Waste Management Experts: Challenges and Opportunities for Small Business Development and Decent Job Creation in the Waste Sector in the Free State

by Catherina Schenck*
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First published 2012

978-92-2-126990-8 (print)
978-92-2-126991-5 (web pdf)

ILO Cataloguing in Publication Data

ILO publications and electronic products can be obtained through major booksellers or ILO local offices in many countries, or direct from ILO Publications, International Labour Office, CH-1211 Geneva 22, Switzerland. Catalogues or lists of new publications are available free of charge from the above address, or by email: pubvente@ilo.org

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Cover Photo by Ferdi Schenck

Printed in South Africa

Foreword

The waste management sector in South Africa holds significant potential for employment creation in both the public and private sphere. Currently the sector represents a missed opportunity for the creation of decent and formal employment opportunities. There are examples of excellent waste management in South Africa, but the opposite is more often the case. Sorting of waste at households and in industry is an exception and landfill sites are often poorly managed with no material recovery facilities to divert recyclables from going into landfills.

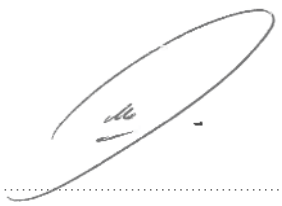
Despite this situation, waste provides income generation opportunities for many thousands of people both in the formal and in the informal economy. Self-employed, informal waste pickers work either on the streets or at landfill sites, recovering items that have a value, sorting them and selling them on to buy-back-centres who in turn sell them on to end users. End users such as paper mills, plastics companies and metal or glass smelters are keen to get access to these recyclable materials.

In the context of the New Growth Path and the prioritization of the Green Economy as a growth driver waste management and recycling is getting increased attention. In August 2011 the Packaging Council for South Africa submitted for national debate the Packaging and Paper Industry Waste Management Plan with increased recovery and recycling targets for different waste streams.

In November the same year, the Green Economy Accord was signed by several ministries together with the business community, organised labour and community representatives. The Green Economy Accord commits to improved waste recycling re-use and recovery and to identify and promote recycling projects to bring small entrepreneurs in the informal economy into viable commercial activities with improved working conditions.

Against this background the Free State SME Development Initiative commissioned a study to review the challenges and opportunities for small business development and decent job creation in the waste sector in three selected municipalities in the Free State. The report highlights the vulnerable situation of waste pickers, the important role of buy back centres and make recommendation for better waste management including sorting at source.

The Report was written by Professor Catherina Schenck, University of Western Cape, Associate Professor Derick Blaauw and Lecturer Kotie Viljoen from University of Johannesburg. The study was guided and edited by Jens Dyring Christensen, Chief Technical Advisor of the Free State SME Development Initiative with support from the DETEA and ILO Team. Many individuals contributed to the study and the validation of the findings as acknowledged in the report. The generous funding by the Flanders International Cooperation Agency (FICA) made the study possible.



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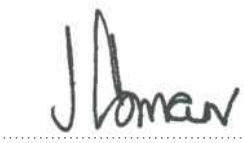

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List of Abbreviations & Acronyms

BBC	-Buy-back centres
CBO	-Brazilian Classification of Occupations
CUT	-Central University of Technology
DSD	-Department of Social Development
DEA	-Department of Environmental Affairs
GTZ	-Gesellschaft für Technische Zusammenarbeit GmbH
FHN	-Fundamental Human Needs
IDP	-Integrated Development Plan
ILO	-International Labour Organisation
LWP	-Landfill Waste Picker
NGO	-Non Governmental Organisation
NICRO	-National Institute for Crime Prevention and the Reintegration of Offenders
PACSA	-Plastic Federation of South Africa
PETCO	-PET Plastic recycling South Africa
RAG	-Recovery Action Group
SIFE	-Student in free enterprise
SWP	-Street Waste Picker
TB	-Tuberculosis
WIEGO	-Women in Informal Employment Globalizing and Organizing.

Recyclable materials:

PET	plastic usually clear or green, sinks in water, rigid, glossy e.g. cool drink bottle, peanut butter jars, vegetable oil bottles
HDPE	high density Poly Ethylene, milky coloured or dyed e.g. milk and water jugs, juice and bleach bottles
LDPE	Low Density Poly Ethylene (clear and mixed) flexible not crinkly e.g. 6-pack rings covers, bread and sandwich bags, shrink wrap
PVC	Poly Vinyl Chloride, semi-rigid, glossy, sinks in water e.g. detergent/cleanse bottles, pipe, copper cable strippings
PS	Poly Styrene, often brittle glossy e.g. Styrofoam, packing peanuts, egg-cartons, foam cups
PP	Poly Propylene, semi-rigid, low gloss e.g. margarine tubs, straws, screw-on lids

SECTION A - INTRODUCTION AND CONTEXTUALISATION OF THE STUDY

1. INTRODUCTION

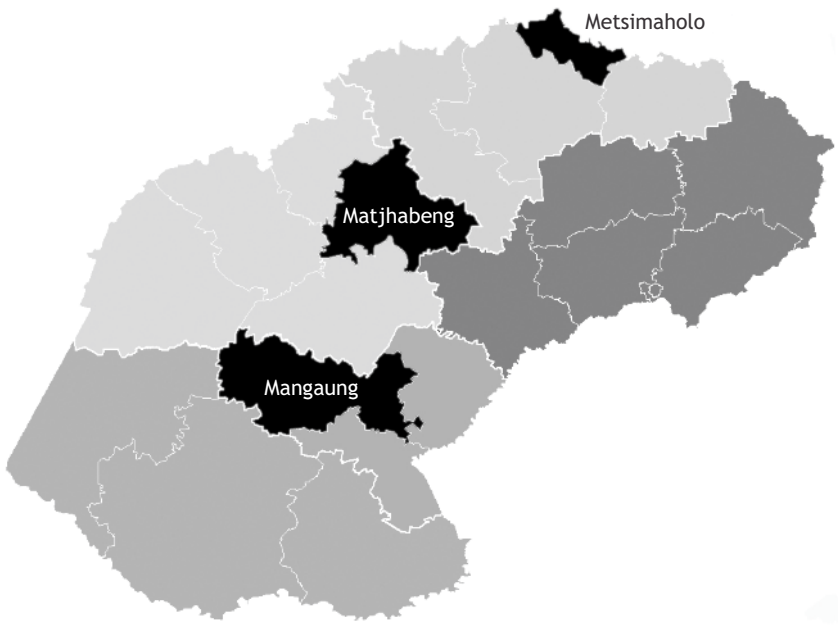
The Thesaurus (2012) defines waste as leftovers, excess or unwanted, discarded goods. Waste can be loosely defined as any material that is considered to be of no further use to the owner. However, most discarded waste can be reused or recycled. What may be of no further use to one person, who regards it as waste to be dumped, may be of use to the next person, who may well be a waste picker, for whom it provides a livelihood. With the official unemployment rate in South Africa standing at 24.9%in the second quarter of 2012 (Statistics South Africa, 2012) and the estimated actual rate at 35%, the collection and selling of waste offers an important alternative for survival for those who cannot find employment in the formal labour market (Viljoen, Blaauw & Schenck, 2012; Fiehn & Ball, 2005; Masocha, 2006).

Informal waste pickers are a common sight on landfill sites and the streets of cities around the world as millions of people make a living collecting, sorting, recycling and selling valuable material disposed as waste (Dias, 2012). This is also the situation in the Free State province in South Africa.

The waste pickers are linked to the buy-back centres (BBCs), who play an important role in creating formal jobs and informal income-generating opportunities for the unemployed and informal waste pickers. The BBCs serve as the link between the formal (recycling companies) and the informal waste collectors (waste pickers). The BBCs play a crucial role in facilitating the recycling potential of these informal-sector participants as the BBCs are the agents to whom the waste pickers can sell their recyclable waste (Viljoen et al., 2012). Very little research has been conducted on the BBCs except for the original study by the researchers of this present study (Viljoen et al., 2012).

The International Labour Organisation (ILO) commissioned the researchers to conduct research on the waste pickers and the BBCs in the three major municipalities of the Free State, namely Mangaung, Matjhabeng and Metsimaholo. The aim is to extend the data collection and analysis to waste pickers at landfill sites in Sasolburg, Mangaung and Matjhabeng. The research study will form the basis for stakeholder dialogue in the waste sector, and it will be used to inform the design of interventions by the provincial and municipal government with the support of the ILO.

The following maps indicate the location of Mangaung, Matjhabeng and Metsimaholo in the Free State.



2. AIM OF THE RESEARCH

The aim of the research was to:

- interview provincial and municipal governments and other relevant stakeholders and industry players in the waste sector;
- determine the socio-economic profile of the waste pickers on the landfill sites and streets in the three municipalities;
- determine the profile, role and functions of the BBCs in the waste system;
- share the results at stakeholder dialogue-workshops at district and provincial level with the aim of making recommendations for developing unique best-practice models for the coexistence of the waste pickers with each city/town's formal waste management system; and
- deliver policy briefs and publications

The following research process was followed in gathering the information needed to adhere to the terms of reference.

3. RESEARCH PROCESS

The researchers were already engaged in a survey on street waste pickers and the BBCs in the major cities and capitals of South Africa when the ILO requested us to conduct this study. The questionnaire used in the survey on street waste pickers was then adapted for the purpose of researching the waste pickers on the landfill sites in the Free State. The research process deployed was as follows.

3.1 Reconnaissance phase

The research team visited the three municipalities in February and March 2012 on a reconnaissance with the following aims:

- We wanted to meet with the relevant stakeholders in the waste system with a view to informing them of our presence and research activities and in order to prepare the ground for the fieldworkers. These visits also assisted the research team in getting a sense of the functioning of each municipality regarding the waste pickers on the streets and the landfill sites.
- The stakeholders who were identified, other than the waste pickers and the BBCs, included the relevant local and provincial government departments. A further important group of stakeholders is the industry players (i.e. the converting industry and their representative bodies such as RAG, Petco and PACSA).
- We needed to locate, identify and observe the landfill sites in preparation for the fieldwork and to prepare the "gatekeepers" for the prospective research activities and fieldworkers on the landfill sites. We met some of the waste pickers on the landfill sites to prepare them for the arrival of the fieldworkers who conducted the interviews. Permission for the research activities was also obtained from the gatekeepers as well as from the waste pickers on the landfill sites
- We obtained the required permission to conduct the research from the managers of the various landfill sites of the three municipalities.
- We discussed the intended research process with the landfill managers so that they could recognise the fieldworkers when they arrived at the landfill sites.
- We regarded the reconnaissance process as extremely important for developing trust in the process and the personnel involved. It further assisted us in preparing the fieldworkers to find the landfill sites, to know what to expect and to know who would be allowed to enter the landfill sites.
- We also used the opportunity to determine the prevalence of street waste pickers in the cities and towns of the municipalities.
- To locate and visit the BBCs, a questionnaire was completed. The BBCs are regarded as important role players as they are the direct buyers of the waste from the waste pickers and have a close relationship with the waste pickers. There is no existing database indicating where BBCs can be found. The street waste pickers were very helpful in directing us towards the BBCs.

The Reconnaissance Report was submitted to the ILO as a precursor to the findings of the main study. The report is included as annexure B. The report featured detailed information forthcoming from the interviews with the local and provincial governments and the industry stakeholders. The findings were also integrated in the main report.

3.2 Completing the questionnaires

The second phase of the research was the actual completion of the 410 questionnaires on the landfill sites by the two fieldworkers over a period of two months. Fifty-two (52) questionnaires were completed amongst the street waste pickers. The questionnaires with the street waste pickers were completed during the national study. A few additional questionnaires were subsequently completed. Most of the street waste pickers were from Bloemfontein. Only a few could be found in the other municipalities. All questionnaires were covered with a consent form which informed the waste pickers of the study and asked their permission to participate in it. Participation was voluntary. They were also told that they could terminate the interview at any time. On occasion, the fieldworkers also requested permission from the waste pickers to take photos. Some of the photos will be added to the report if the researchers regard them as informative. The following landfill sites were visited:

Mangaung: The northern and southern landfill sites as well as the landfill site at Botshabelo.
Matjhabeng: The landfill sites at Welkom, Odendaalsrus, Allanridge and Hennenman.
Metsimaholo: Sasolburg, Deneysville and Oranjeville.

The population of the study was regarded as all the waste pickers on the landfill sites and in the streets of the identified municipalities, as well as the BBCs. The instruction to the fieldworkers was to interview as many waste pickers as possible. Availability, convenience and snowball sampling was followed. All the waste pickers and BBCs available and willing to participate in the research project were interviewed. Most of the waste pickers were willing to be interviewed. However, a few "refused" and indicated they did not have the "time" to complete the questionnaires as they were busy working.

BBCs that only bought scrap metal were not included in the study. The researchers were well received by all BBCs and all were more than willing to participate in the study.

3.3 Capturing and analysis of data

The questionnaires were "cleaned" and the data captured and analysed during June and July 2012. Some of the questionnaires had to be discarded as they were incomplete. In addition, some participants had at some point refused to participate further, and their questionnaires had to be discarded as well. The questionnaires each took about 20 minutes to complete.

4. OBSERVATIONS FROM THE VARIOUS LANDFILL SITES

The following observations by the fieldworkers and researchers are informative and contextualise the fieldwork and the results of the research.

4.1 Mangaung

Northern site: The northern site was regarded as the more "organised site" by the stakeholders. The fieldworkers felt that the waste pickers on the landfill site were organised, as there were structures in place and they were well managed. The waste pickers had rules which they implemented to maintain the order on the site. For example, no alcohol usage was allowed on the site. The landfill site was closed to newcomers and the number of people on the landfill site was controlled to prevent the site from being overcrowded. The BBCs bought waste from the landfill waste pickers daily as the volumes of the waste picked was sufficient.

The waste pickers had demarcated areas where they could sort the waste. Eight to ten (8-10) people worked together in a demarcated area. Some provided their own shade. However, a need was expressed to have shaded areas where they could sort and store their waste. It was observed that the younger men mainly collected scrap metal and offloaded the waste from the vehicles of members of the public.

Southern site: The southern landfill site had been described as the "disorganised" site and as being more difficult to manage. This was not the experience of the fieldworkers. Some of the waste pickers mentioned that unwanted elements had been banned from the landfill site by the municipality as a result of their criminal behaviour. The "unwanted" persons apparently came mainly from Lesotho. The waste pickers alleged that the banned people had set a huge stockpile of tyres alight which had burned for almost two weeks. (When the team visited the Department of Social Development (DSD) they were informed of a cooperative project they were planning with the youth on the site. DSD planned to buy a baling machine for the youth).

Botshabelo: This site also seems to be well managed. The waste pickers were mainly local people from Botshabelo. There was a committee who managed the site. According to the fieldworkers, plenty of expired food was being dumped at this particular site.

4.2 Matjhabeng

Welkom: Gangsterism and racketeering on this landfill site concerned the research team and the fieldworkers. The gang intimidated the waste pickers as well as the BBCs. There had been incidents of violence in which the drivers of BBC trucks had been attacked and hurt. Some of the older women were openly being robbed of the higher value waste they had collected. The members of the gang were drunk on a daily basis, arrived at around noon, and it was unsafe for the fieldworkers to be on the landfill site. The waste pickers allegedly had to sell their white paper to the gang leader and had to pay him a daily fee to be on the landfill site. The gang leader owned a Spaza shop on the landfill site.

Odendaalsrus: The landfill site was experienced as a well-managed and organised site. An outstanding feature of the site was that the people had built huts with tyres as places where they did the sorting of the waste and where they stored their personal belongings while collecting waste. The waste pickers were cooperative and seemed organised with a committee who had regular meetings

Photo 1: Hut built from tyres to store and sort waste

Allanridge:
This is a small dump and the availability of waste is less than at the larger landfill sites. It appeared that the income is less than on other sites owing to its distance from the BBCs. Their waste was also collected by a different BBC from outside of the Matjhabeng Municipality. Some of the waste pickers lived on the site and requested fencing of the landfill site.

Hennenman:
Waste pickers complained of unpleasant working conditions due to the regular burning of the plastic and paper. The plastic and paper blown by the wind created problems for the farmers.

Photo 2: Burning of plastic and paper

4.3 Metsimaholo

Sasolburg:
The site was orderly and the people worked in groups. The waste pickers cooperated well with the fieldworkers and expressed their concern about the closing of the site in the near future.

Photo 3: Sasolburg landfill

Deneysville: This landfill site was very small. Mainly women were working on the site. The volume of waste was limited, and the BBCs only collected and bought the waste weekly or biweekly.

Oranjeville: The Oranjeville landfill site was very small with limited waste. The BBC that bought their waste only visited the site once every fortnight as it was not worth their while coming more regularly. There were mostly women on the landfill site. On the day of the visit, there were only around ten people on the landfill site.

SECTION B - LITERATURE REVIEW ON WASTE PICKERS AND BUY-BACK CENTRES

1. INTRODUCTION

This literature study will cover the literature on waste pickers who collect waste both in the streets and on landfill sites as the related study will include waste pickers on the streets and landfill sites in three municipalities in the Free State province in South Africa. It is difficult to separate the literature on studies conducted on landfill sites and those conducted on streets as most of the studies refer to both groups of waste pickers. In this literature study, we would like to confirm Samson's (2010) comment on her literature review, i.e. that it was difficult to draw generalisations and comparisons from the research studies as most of the research was done on a small scale and different methodologies were used. At most, trends can be highlighted. These trends will be referred to in the course of the study.

The literature used in this study was sourced with the assistance of the libraries of the University of South Africa, the University of Johannesburg and the University of the Western Cape and all the databases these libraries have access to. The internet was also explored as sources such as newspapers commented on the work done by waste pickers in various cities around the world and made an attempt to inform their readers of the existence of these people. These popular articles are not scientifically based, but they do provide pockets of good information. It is important to note that we did not include scientific articles other than those written in English, which excludes articles written in Latin American and Asian countries.

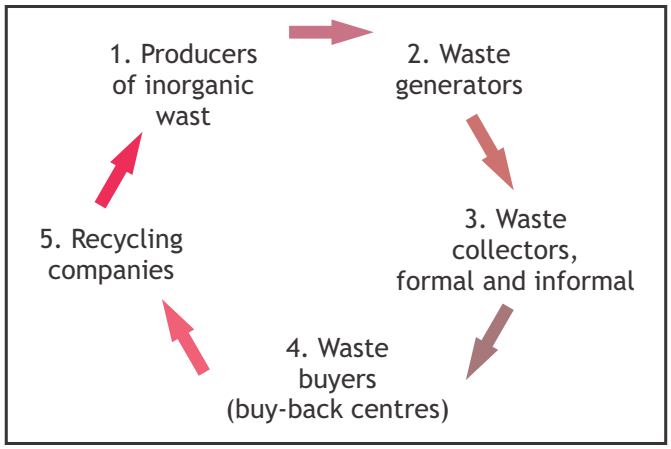
2. THE CONTEXT OF WASTE

Recyclable waste is a free resource which portrays wealth for some and is a source of livelihood for the poor (Ullah, 2008:2). Liberman (2004:72) comments that, for a lucky few of the 43 million unemployed rural Chinese workers looking for jobs in the cities, "[o]ne man's garbage is another man's home…" The garbage dumps provide homes and a means to make a living (Liberman, 2004:72).

The supply of waste is greater in developed countries than in developing countries as more waste is produced in the former (Medina, 2007). Waste pickers can only make a living if there are people generating waste (Schenk & Blaauw, 2011b). Medina (2007) further states that the amount and kind of waste generated in First and Third World countries differ markedly. The average US resident produces over 1.5 kg of recyclable waste per day while a person in a poor country will produce only 125 g of recyclable waste per day (cf. Schenck & Blaauw, 2011b).Waste pickers sort the recyclable waste and sell it to waste dealers, also called buy-back centres (BBCs) (Langenhoven & Dyssel, 2007). The BBCs then sell the waste to the recycling companies (Ullah, 2008). Waste pickers and BBCs therefore play a crucial role in the waste-recycling industry and serve as a link between the waste picker and the recycling companies (Viljoen et al., 2012:3).

Simply illustrated, the waste cycle can be represented as follows.

Figure 1: The waste cycle



Source: Adapted from Schenck & Blaauw, 2011b

The waste cycle includes the waste buyers (middlemen) or the buy-back centres (4) who buy the waste from the waste pickers (3) on the street or landfill sites (Viljoen et al., 2012). The BBCs play a crucial role in facilitating the recycling potential and the income of the informal waste pickers (Viljoen et al., 2012).

In summary, waste pickers can be regarded as people who have "created" their own jobs and who are working for themselves. They are self-employed but cannot operate without having access to:

- waste; and
- waste buyers.

Although they do act as "reclaiming agents" for the buy-back centres, waste pickers are paid only for what they deliver without receiving any other benefits (Samson, 2010; Schenck & Blaauw, 2011b). Because they are self-employed, labour legislation does not apply to them (Visser & Theron, 2009).

3. DESCRIPTION OF THE TERM "WASTE PICKER"

Samson (2010) rightfully states that the terminology used for waste pickers is not simply of academic interest since terminology reflects and shapes attitudes and perceptions. The various descriptions of a waste picker's activities do not differ greatly. The difference lies in what they are called. Samson (2010) describes the waste pickers as people who reclaim reusable and recyclable materials from what others have cast aside or thrown away as waste. Chvatal (2010) describes waste pickers as individuals whose survival depends on collecting and sorting out waste as a way of generating income (Benjamin, 2007; Gill, 2007).

References made to waste pickers differ from one country to the next. This also holds for the ways in which they are perceived by the broader community. "Vultures", "parasites" and "scavengers" are just some of the derogatory terms used for individuals who collect waste for a living (Chvatal, 2010; Visser & Theron, 2009). In Asian countries such as India and cities such as Kathmandu, they are called "rag pickers" (Dhakai, 2012). In some Latin American countries, a distinction is drawn between different waste pickers according to the kind of waste they collect. In Mexico, waste pickers on the dumpsites are called "pepenadores", cardboard collectors are referred to as "cartoneros" and those collecting aluminium cans are "buscabotes" (Medina, 2005). In Columbia, a generic term is used for waste pickers, namely "basuriegos", but they distinguish between scrap-metal collectors called "chatarreros" and glass-bottle collectors who are known as "frasqueros" (Medina, 2005). Women in Informal Employment, Globalizing and Organizing (WIEGO) (2012) refers to waste pickers as "catadores" in Portuguese and "recicladores" in Spanish. Egyptians refer to their waste pickers as "zabaleen" (Smague, 2009).

In South Africa, various terms are used in different geographic areas to describe the work of waste pickers. In Cape Town, the work done by street waste pickers is called "skarreling" (scuttling) or, referring to the person, a "skarrelaar" ("scutler") or a "delwer" (digger) (Schenck & Blaauw, 2011b). Some descriptive terms are "grab grab", "mining" and "minza" (which means "trying to survive"). Some call them "ukuzizamela" (trying for yourself) (Benson & Vanqa-Mgijima, 2010). Waste pickers in Johannesburg are called "BayaHlupheka"(struggling to make ends meet) (Sentime, 2011). Some BBCs refer to the waste pickers as "hawkers", "bergies" (mountain people) and "vagrants" (Cape Town) (Langenhoven & Dyssel, 2007; Benson & Vanqa-Mgijima, 2010).

Chvatal (2010) noted that waste pickers can be further divided into either "career" or "transient" waste pickers (Benjamin, 2007:43). "Career" waste pickers are regarded as pickers who have scavenged over a long period of time, are knowledgeable about the activity of salvaging waste, earn a steady income from the activity itself and who usually belong to a close-knit and organised community. "Transient" pickers, in contrast, come to a dump in search of nourishment or for other considerations. They may be driven by, for example, starvation. Transient waste pickers are forced to scavenge for food and other necessities. Distinguishing between these two groups is often difficult as many of the urban poor come to the landfill site in search of materials with which to furnish their homes and to reuse for their own purposes.

In 2008, at the First World Conference of Waste Pickers, the term "waste pickers" was adopted as the most appropriate generic term to use for people involved in the collection phase of the recycling industry (WIEGO, 2011:2). Consequently this term will be used in this study.

4. WASTE PICKERS IN THE INFORMAL ECONOMY

The informal economy is the context within which waste pickers operate. According to Webster (2010:230), South Africa's labour market can be divided into three zones, namely the core (formal employment), the non-core (outsourced and part-time work) and the periphery, which includes informal work and the unemployed.

South Africa is not creating, what Webster (2010:230) refers to as "conventional capitalist relations of production based on the separation of capital and labour. Instead the prevalent form of labour in the informal economy is self-employment". These are the jobs that people create themselves, but they cannot be called "decent jobs". Decent work emphasises the importance of workers engaging in social dialogue where they can present their views, defend their interests and negotiate over wages and working conditions. Jobs like that performed by the waste pickers lack these hallmarks of decent work as defined by the International Labour Organisation (Webster, 2010). According to Webster (2010), people in the informal economy are saying, not with words but with their actions,"... that it is better to have a bad job that no job at all".

In Schenck and Blaauw (2011a), some of the waste pickers expressed the following sentiments:

> *"It was because of hunger. Sometimes you may find at home that there was no one helping me and my child with food. I then saw people collecting and selling recyclables, then I also decided to do the same" (Schenck & Blaauw, 2011a:144).*

> *"I came from prison six years ago, when I came back I realised that it is the only way to survive…no one will employ an ex-convict."(Schenck & Blaauw, 2011a:144)*

Waste picking is accessible to all who are physically able to do so, and there are no barriers to entering this market. Although waste pickers work for themselves, it is important to note that the informal economy is linked to the formal economy as it produces for, trades with, distributes for and provides services to the formal economy (Inclusive cities, 2011). Webster (2010) also confirms this statement by saying:

> *"These two economic activities are not geographically and analytically separate. They are interconnected, although in a very unequal way. The value chain of the waste system illustrates the interconnectedness very well (see Figure 1). This interconnectedness is illustrated for example in that waste pickers in the informal sector play an important role in diverting recyclable waste away from landfill sites and increase the recycling rates of waste" (Medina, 2008; Sembiring & Nitivattananon, 2010).*

Recycling companies and BBCs also rely on the waste collected by the waste pickers (Langenhoven & Dyssel, 2007; Ullah, 2008; Viljoen et al., 2012:4). Although their activities are interlinked, it is by no means guaranteed that waste pickers can move from the informal to the formal zone and be recognised for the significant role they play in the formal sector.

In many countries such as Brazil, Argentina, Colombia and Bangladesh, waste pickers are already officially recognised. For example, since 2002, waste pickers have been recognised in the Brazilian Classification of Occupations (CBO). This does not imply that they are now part of the formal economy, but they are at least recognised and accommodated within the municipal waste-management systems (WIEGO, 2012; Medina, 2008; Dias, 2011; Bonner, 2008; Waterhous & Crary, 2011; Ullah, 2008).

For the urban poor in developing countries, informal waste recycling is a common way of earning an income (Medina, 2008; Chvatal, 2010). Informal waste recycling therefore is an adaptive response to chronic poverty, deprivation, scarcity and alienation (Wilson, Velis & Cheeseman, 2006). Waste picking may enable the people with no skills to move into the informal economy and maybe, for a lucky few, into the formal economy, as was expressed by one of the landfill overseers in the study by Chvatal (2010:74):

"So this is the place where they can start. Over 15 years that I have been involved with the site now, out of this site, people starting here, there is two or three Code 14 drivers now and there is somebody working at the Spar in Malmesbury and we got a few people that we know started here and now sitting there…." (meaning they have progressed).

The participant continued:

"Waste picking …….is an unskilled profession and give unskilled labours the opportunity to enter the labour market and give them exposure to other jobs".

5. INCIDENCE OF WASTE PICKERS

The World Bank estimates that there are 15 million waste pickers around the world while Bonner (2008) states that India has an estimated six million waste pickers. If this is the case, it means that almost half the waste pickers of the world are in India. Subsistence waste picking occurs in most developing countries in Asia, Latin America and Africa, as well in the East. Medina (2007) indicates that 2 per cent of the urban population in developing countries survive by salvaging material from waste recycling, which represents 64 million waste pickers in the world. In 2008, Medina estimated that 1 per cent of the world population make a living from waste picking.

More detailed figures are that, in Kolkata, 20,000 people live from waste picking, in Manila the figure is 12,000 and in Mexico City 15,000 (WIEGO 2012). In Cairo, Egypt, there are around 40,000 informal waste collectors (GTZ, 2011).

In South Africa, there is only speculation about how many waste pickers there might be. Langenhoven and Dyssel (2007) refer to the South African Yearbook for 2004/5 which indicates that, during that period, roughly 37,000 people in South Africa earned a living from recycling. In the study by Viljoen et al. (2012), an attempt was made to determine the number of waste pickers in the streets of Pretoria and Bloemfontein. The frequent movement of the street waste pickers from one location to the next made an accurate estimation difficult. Although the BBCs have records of all the waste they bought from the waste pickers for the day, it was found that the same waste pickers sell to different BBCs on the same day. The number of persons selling waste on a particular day can therefore not simply be added to arrive at an accurate figure (Viljoen et al., 2012). We shall never know the exact number of people making a living in this manner, as they are not organised and registered, are self-employed and are always on the move.

Wills (2009) also emphasises that another limitation faced in identifying waste pickers is that the occupational and industrial classification codes used by Statistics South Africa (SSA) do not identify informal waste pickers as a distinct category of worker. What is known is that waste picking is an easy market to enter and leave as there are no barriers to entering and leaving, and no qualifications, permit or permission is required (Hayami, Dikshit & Mishrah, 2006; Theron, 2010).

6. ACTIVITIES OF WASTE PICKERS

Waste picking is described as a labour-intensive activity (Lowitt, 2008). Most street waste pickers collect the waste from the streets using a trolley or bags (McLean, 2000a; Schenck & Blaauw, 2011a). The waste, which is heavy, has to be moved or carried over long distances. This favours males and younger individuals who can collect and move greater quantities of waste; it decreases the waste that older pickers can potentially collect (McLean, 2000a; McLean, 2000b; Schenck & Blaauw, 2011b). Some waste pickers prefer not to carry the waste over such long distances but rather opt to sell the waste to hawkers or waste collectors with pickups. However, street waste pickers preferring this option have to sacrifice some of their income because they are offered lower prices by the hawkers (McLean, 2000b:5).

Not all recyclable waste is collected. Waste pickers only collect the waste for which there is a market (Nzeadibe, 2009a; Nzeadibe, 2009b; Schenck & Blaauw, 2011b; Masocha, 2006). Reasons given by respondents in the Durban study for not collecting certain products is that the selling price of the recyclable waste is not sufficiently high, the commodities are scarce or the waste pickers were not aware that certain waste products could be traded (McLean, 2000a). The most popular recyclable waste products that are collected by the waste pickers include paper, cardboard boxes, plastic bottles, as well as scrap metal (Schenck & Blaauw, 2011b). In Durban, all respondents collected cardboard with less than 50% collecting other forms of paper (McLean, 2000a). In Braamfontein, paper and plastic materials are the most desirable recyclable waste products (Sentime, 2011).

7. SOCIO-ECONOMIC ASPECTS OF THE WASTE PICKERS

In the following section, the socio-economic features as described in the literature will be summarised.

7.1 Demographic features

7.1.1 Race and origin

In South Africa, waste picking is primarily an occupation for blacks with a very low representation from other population groups (McLean, 2000a; Benson & Vanqa-Mgijima, 2010; Schenck & Blaauw, 2011b; Sentime, 2011). The respondents of the studies by Benson and Vanqa-Mgijima (2010) in Cape Town and Sentime (2011) in Braamfontein, Johannesburg, consisted of mainly blacks as well as few white and coloured people as well.

It seems that there is a common trend, internationally and nationally, for waste pickers to be migrants from rural areas who came to the urban areas or cities to look for work (Ullah, 2008; Dhakai, 2012; Hayami et al., 2006; Simon, 2010; Nzeadibe, 2009a). In South Africa, many waste pickers are migrants who moved from rural to the urban areas in an attempt to find employment (McLean, 2000a; Benson & Vanqa-Mgijima, 2010). The study in Braamfontein (Johannesburg) included immigrants from countries such as Zimbabwe, Lesotho and Mozambique, but more than half of the waste pickers were South African citizens who came from provinces such as KwaZulu-Natal, the Eastern Cape and the Free State. A few came from Limpopo, the Northern Cape, Mpumalanga and the North West (Sentime, 2011). No foreign street waste pickers were found in the Pretoria study (Schenck & Blaauw, 2011b), but most of the waste pickers were from outside the province of Gauteng where Pretoria is located. Only three (3 per cent) were from the Gauteng province. The same pattern was found by Blaauw (2010) in his national study on day labourers where most of the day labourers in the cities had migrated from the rural to the urban areas, as well as between provinces (Harmse, Blaauw & Schenck, 2009).

7.1.2 Sex and Gender

Worldwide it seems that there are more men than women picking waste, but it also seems that this differs from one country to the next, as well as between contexts, depending on the kind of work to be done (Gutberleta & Baeder, 2008; Dhakai, 2012). Ullah (2008) states that, in Dhaka City, the majority of waste pickers was female, and only 24 per cent were male (Bonner, 2008). In contrast, in India, the waste pickers were predominantly male (Hayami et al., 2006). In Brazil, it seems that women prefer being organised and part of cooperatives, as more than half (56 per cent) of the organised waste pickers in associations and cooperatives were woman (Gutberleta & Baeder, 2008; Dias, 2010).

In South Africa, 97.2 per cent of the street waste pickers in Pretoria (Schenck & Blaauw, 2011b) and 75 per cent of the waste pickers in Durban were males (McLean, 2000b). All three areas researched in Cape Town also reported a small percentage of women waste pickers (Benson & Vanqa-Mgijima, 2010), which is in accordance with the results of international studies. Schenck and Blaauw (2011a) find that women tend to collect and sell in order to provide for their families, but they also collect to reuse and to transform materials from the landfill sites to be used at home. Chvatal (2010) is the only researcher who found a landfill site in the Western Cape where only women were collecting waste. However, men are able to collect heavier and more lucrative material such as metals (Schenck & Blaauw, 2011a). An overseer of a landfill site in Cape Town confirmed the value of the women:

> *"...I found strange, women are much better workers than men. They are more organised..." (Chvatal, 2010:82).*

7.1.3 Age

The data from the different studies worldwide could not be compared. WIEGO (2012) reported that, in the world population of waste pickers, 25 per cent are between 50 and 64 year of age, and 7 per cent are over 65 years of age.

In Dhaka City the waste pickers' ages varied between eight and 55 years with an average age of 29.92 years (Ullah, 2008:6). In Kathmandu, Nepal, according to Dhakai (2012), ages range between 15 and 59. Dhakai (2012) also confirmed that, in Nepal, there are 3,965 children who pick waste, some who are as young as 12 years of age.

In South Africa, no children were mentioned as living from waste picking. In Cape Town, the majority of waste pickers were between the ages of 23 and 80 (Benson & Vanqa-Mgijima, 2010) while in the study in Mitchells Plain (Cape Town) by Langenhoven and Dyssel (2007), nearly half of the waste pickers were between the ages of 50 and 65. In Durban, most of the waste pickers were between 31 and 60 years, with an average age of 45 years (McLean, 2000a:11). The waste collectors in Braamfontein were all relatively young, and there were only a few older people (Sentime, 2011). The youngest waste picker in Braamfontein was 15 years of age, and the oldest waste picker was 78 years (Sentime, 2011). The study amongst the street waste pickers of Pretoria claimed that nearly half of the respondents were between the ages of 41 and 50, which is considered to be a person's prime working age (Schenck & Blaauw, 2011b). The ages ranged between 20 and 60 years in the Pretoria study. It seems that waste picking is possible for the aged. Child labour, in this industry, does not seem to be a concern in South Africa although a study by Benjamin (2007) found waste picking by children to be widespread on the landfill sites in South Africa.

7.2 Schooling/education

One of the main socio-economic features of the waste pickers is their low level of schooling and literacy (Samson, 2010). They consequently have a lack of skills with which to enter the formal job market, an inability to find formal employment and limited job options.

An observation of one of the overseers of a landfill site in the Western Cape confirmed the above as follows:

> *"...(it) is basically a start from nowhere because most of the people working here cannot read and write and never had a job before or was staying in the bush or things like that. And here they get an opportunity because we need very, very low skills, you basically need no education. So this (waste picking) is the place where they can start..." (Chvatal 2010:74)*

In Brazil, it was determined that only 14 per cent of men and only 6 per cent of women had attended school (WIEGO, 2012; Carrasco, 2009). Dhakai (2012) confirmed that the literacy rates were very low in Kathmandu, Nepal. Ullah (2008) regards the waste pickers in Dhaka City, Bangladesh, as very vulnerable as the majority (64 per cent) of them were illiterate. Ullah (2008) also found that up to 90 per cent of the respondents in India were illiterate (Hayami et al., 2006).

The educational level of the waste pickers in South Africa is also very low, which corresponds with the findings in other countries. McLean (2000a) states that only 14 per cent of the male and only 6 per cent of the female waste pickers in Durban attended school. In Braamfontein, Johannesburg, almost half of the waste pickers were illiterate (Sentime, 2011). It is significant that Sentime (2011) found that waste pickers with qualifications higher than Grade 12 originated from Zimbabwe and that those with Grade-12 qualifications predominantly came from Mozambique and Lesotho. Although all the respondents in Pretoria had some schooling, the level of schooling was very low (Schenck & Blaauw, 2011b). Schenck and Blaauw (2011b) found that 76 per cent of the waste pickers in Pretoria had completed some primary schooling while only 24 per cent had completed some secondary schooling. Only 1 per cent had completed Grade 12. Poverty or a lack of money was the main reasons given for the low levels of education in the Pretoria area (Schenck and Blaauw, 2011b). The waste pickers either did not have enough money to pay their school fees and clothes, and/or they had to start working to supplement the family income. Some said that they had to look after the cattle and could not attend school. These are some of the quotes from the interviews:

> *"I did Standard six…my father was unable to pay for my school fees...as a result I dropped out and started looking for a job."*
> *"I did Matric, but could not pass or complete it…I just dropped out." (Schenck & Blaauw, 2011a)*

In the study by Blaauw (2010) on day labourers in South Africa, circumstances were found to be similar.

7.3 Shelter/housing

Samson (2010) reports that the studies she consulted indicate that most of the waste pickers experience problems related to housing. They live in informal settlements, on the streets or at and on the landfill sites in self-made structures (Dhakai, 2012). In South Africa, a similar situation presents itself. In Durban, it was found that 85 per cent of the respondents slept on the streets close to the BBCs (McLean, 2000a). Visser and Theron (2009) state that of the ten (10) waste pickers interviewed in Cape Town, eight (8) slept on the street. Another study in Cape Town also reported that the waste pickers lived on the streets, in the bushes and along the rivers and that they did not have any access to basic facilities (Benson & Vanqa-Mgijima, 2010). The majority (69 per cent) of the street waste pickers in Pretoria also slept "on the street". Only 4 per cent slept at home, 4 per cent in backyard rooms, 15 per cent in the veldt or under the bushes, 4 per cent in hostels and another 4 per cent in deserted houses. In total, 96 per cent slept elsewhere and not at home (Schenck & Blaauw, 2011b). These results are an indication of the poverty levels among waste pickers, their disconnectedness with their families as well as the fact that street waste pickers cannot leave their trolley/pushcart or collected waste alone and therefore they sleep close to their collected waste. Schenck and Blaauw (2011b) reported that, when probed about where they slept, the waste pickers indicated that they slept "where it is safe". "Safe" implies sleeping in groups on the streets, in the veldt or in deserted homes for protection.

7.4 Access to basic amenities

Accessing basic services such as toilets, drinking water and water for washing their clothes presents difficulties, particularly for those living on the street or at the landfill sites (Schenck & Blaauw, 2011b). This matter was not addressed in the other literature consulted. The waste pickers indicated that they use the filling stations, shops and rivers for water and toilet facilities and for washing their clothes. Some of the BBCs made their facilities available for the waste pickers (Viljoen et al., 2012).

According to Schenck and Blaauw (2011b), the respondents further explained that sleeping on the street presented difficulties for accessing food as they earned very little. Some of them also said that they just earned enough for "bread and dop" (bread and alcoholic drink). Some cooked for themselves, bought food from the shops or collected food from the dustbins at residences and restaurants. Thirty-six per cent indicated that that they had received food from churches, feeding schemes and community members.

7.5 Income

It is difficult to make generalisations about or comparisons between the income of waste pickers as the studies were conducted in different countries, within different time frames and using different currencies. What is clear from the research studies is that the waste pickers earn very little (Visser & Theron, 2009).The results of the study in Pretoria confirms the fact that street waste pickers' incomes are very uncertain, as they vary significantly from one day to the next (Schenck & Blaauw, 2011b), depending on the amount of waste they are able to collect. The prices paid for waste are also one of the determinants of waste pickers' income (Tangri, 2010). The income they earn usually barely covers their own accommodation and food bill, which makes it difficult for them to support a family or dependents (McLean, 2000a; McLean, 2000b; Langenhoven & Dyssel, 2007).

The lowest income for those in Cape Town in 2009 was between R15 and R20 per day, and the highest was around R100 a day (Visser & Theron, 2009). In comparison, Simon (2010) found that $1 (R8) a day was the going rate for a waste picker in India. The average lowest daily income for street waste pickers in Pretoria in 2010 was R19.15 and the average highest income was R96.78 per day. The average daily earning was R50 a day (Schenck & Blaauw, 2011b). In a more recent study, Sentime (2011) found that, in Braamfontein, the income generated by waste pickers ranged between R50 and R250 per day (Sentime, 2011). The results of the study in Braamfontein also revealed that male waste pickers earned a higher income than female waste pickers, as no women earned more than R150 per day (Sentime, 2011).

There are indications that the waste pickers on the landfill sites can earn more than the street waste pickers as they have easier access to recyclable waste. A waste picker on a landfill site in Pretoria claimed that he could earn up R600 per day (Mashego, 2012) which is significantly higher than what the street waste pickers earned on the streets of Pretoria.

For some of the waste pickers, the income from picking waste was a supplementary source of income, but for most waste pickers, it was their only source of income. In Durban, waste picking was the only source of income for all but one of the respondents (McLean, 2000a). In Cape Town, it was found that waste picking is done by the elderly to supplement their pension in order to feed their family and other dependents such as their grandchildren (Benson & Vanqa-Mgijima, 2010). However, the majority of responding waste pickers in Cape Town stated that they depend on social security and that waste picking is an additional income to the grants they receive (Benson & Vanqa-Mgijima, 2010).

To put into perspective the prices that the BBCs paid to the waste pickers, it is clear that some waste pickers tend to blame the BBCs for the low prices paid. They also do not trust the scales and the fluctuations in the prices. What was revealed in the study by Viljoen et al. (2012) is that prices are determined according to a very complex structure. The prices depend on supply and demand, the volume of waste delivered, transport prices, the distance between the BBC and the recycling companies, their own cost structures including salaries and the hiring of premises. The BBCs also informed Viljoen et al. (2012) that, in order to lessen confusion, they tried not to change the prices paid for the products. One of the waste pickers confirmed this as follows:

> *"...they use their scale to weigh our waste. I do not know how their scale works...we accept anything…there is nothing we can do about it…" (Schenck & Blaauw, 2011a)*

The income earned by the waste pickers is also linked to the time spent on collecting waste and the time spent on accessing waste (Ullah, 2008). McLean (2000a) explained that the number of days worked, whether the waste picker owned a trolley, the kind of recyclable waste collected and whether collectors operated in one or more areas affect their income. It was found that waste pickers using a trolley earned more than those who collected waste with bags or carried it on their heads (McLean, 2000a). The weather also affect their earnings as the prices paid for damp waste is less than that of dry waste (Langenhoven & Dyssel, 2007; Sentime, 2011).

An increase in the number of waste pickers, with the concomitant increase in competing for the waste, presents difficulties (Sentime, 2011; Benson & Vanqa-Mgijima, 2010). A waste picker described the problem as follows:

> *"Because everyone who is experiencing hunger wants to do this job." (Schenck & Blaauw, 2011a:147)*

7.6 Hours/days working

Waste pickers work long hours, often being involved in more than 12 hours of uninterrupted work, and they often work every day of the week, including weekends (Visser & Theron, 2009; Gutberleta & Baeder, 2008; Carrasco, 2009). In Pretoria, Schenck and Blaauw (2011b) found that the waste pickers started at between 6 a.m. and 8 a.m. and sold the waste to the BBCs at any time between 10 a.m. and 3 p.m.. After selling the waste, some started collecting more waste, sometimes until 6 p.m. (Schenck & Blaauw, 2011b). The hard-working qualities of the waste pickers were also emphasised by a landfill operator:

> *"These guys don't come here just to sit here for a day...They come here to do the recycling: to support and supply." (Chvatal, 2010:84)*

Another participant in the study by Chvatal (2010:84), who formed a close bond with the waste pickers, also confirmed that they were hard-working.

"They are willing to work and they work very hard and they… sometimes it's raining and they come to work. They are so…how can I now...they want to work. They are very hard workers and everyday they are on the job here because if they go home with nothing…What they going to do if they only sitting there and there is not income…"

This independent spirit and the fact that they work for themselves should be acknowledged and taken into account when policy interventions are considered.

7.7 Number of years working as a waste picker

According to Samson (2010), a number of studies looked at the length of time that waste pickers usually work in the sector. It seems that the general trend is that most waste pickers remain in the business for between one and five years, and only a few have been collecting waste for more than 10 years (Visser & Theron, 2009; Schenck & Blaauw, 2011b; McLean, 2000a; Langenhoven & Dyssel, 2007). Benson and Vanga-Mgijima (2010) indicated that one of the waste pickers in Cape Town had been engaged in waste picking for 20 years. There is of course always the exception to the general trend. No reasons have been suggested for the short time spent at picking waste.

7.8 Previous work history

Many waste pickers in Cape Town and Pretoria indicated that they had lost their employment owing to retrenchment. Some of the waste pickers said that they still had other temporary employment while only a few had never had any formal job before (Benson & Vanqa-Mgijima, 2010; Schenck & Blaauw, 2011b). In Pretoria, most street waste pickers previously had what they referred to as a "full-time" job, but when probed, this proved to be mainly temporary, short-term, unskilled jobs like gardening and assistant positions in the construction context (Schenck & Blaauw, 2011b). The waste pickers' work history can be illustrated by some qualitative comments:

"I was working a...on a farm and were laid off."
"I was working at a clothing factory. Then the factory was closed down."
"I was not working…" (Schenck & Blaauw, 2011a:144).

This is confirmation that waste picking is a barrier-free way of earning an income when needed.

8. THE WORKING CONDITIONS OF THE WASTE PICKERS

The following matters emerged as typical of their working conditions.

8.1 Physical challenges

The waste pickers described their working conditions as harsh. The trolleys are heavy, and they have to walk long distances. Some of the waste pickers described their work as follows:

> *"We push this trolley as it is very heavy as it is strong...I start to collect at Naledi and continue until Protea Glen...I get up early before people are up because if I go when people are up, I will only collect little." (Schenck & Blaauw, 2011a:145)*
> *"I feel very sad doing this job because of the body pains. I do a lot of walking for the whole day in order to find the recyclable waste." (Schenck & Blaauw, 2011a:146)*

8.2 Health challenges

Working with waste and sometimes contaminated waste daily presents some real health hazards for the waste pickers. They suffer from a multitude of health problems which seem to be related to waste picking. Ray et al. (2004) showed that the waste pickers were exposed to and showed the pervasiveness of low haemoglobin, unhealthy gums, frequent diarrhoea, dermatitis and respiratory infections (Dhakai, 2012; Chvatal, 2010). Waste pickers essentially "work in filthy, smelly, fly-ridden conditions" and are susceptible to eye irritations, colds and foot and hand injuries with limited accessibility to health care when they need it. A landfill manager confirmed this with an example:

> *"...and the other problem is that the fact that you had food stuff. A guy opens a packet, he sees somebody's supper from last night and they eat it. So there is a huge risk in terms of hepatitis, gastro diseases and a whole range of other stuff..." Chvatal, 2010:65)*

Guy Rogers, a reporter from the Eastern Cape Herald newspaper, reported on waste pickers who salvaged food from a hazardous waste-management facility in Port Elizabeth. In this case, the waste pickers admitted that they were aware of the dangers of salvaging and selling contaminated food but nevertheless said: "It's better than starving".

Mashego (2012:5) quotes a waste picker on a dumpsite near Pretoria where they also recovered expired food:

> *"From my experience, no one has died because they have eaten expired food."*

The waste picker further explained that they also sold the dumped food across the borders in neighbouring like Lesotho, Mozambique and Zimbabwe:

> **"Some people dry the meat in the sun and store it until their next trip home."**

A participant in the study by Schenck and Blaauw (2011a) explained also:

> *"I am sick and it has been four years now that I am suffering from this cough. My eyes are also troubling me, probably because of the sun. I think, this cough is due to coldness in the morning, the waste that I collect, dust and we come across lots of toxic material." (Schenck & Blaauw, 2011a:146)*

8.3 Safety and security challenges

Seager and Tamsane (2010) emphasised the lack of safety and security of persons sleeping on the street, and this was also the reason why the waste pickers in Pretoria said that they usually sleep together (Schenck & Blaauw, 2011b).

The safety and security of waste pickers comprise one of the main reasons why the municipalities or companies responsible for the landfill sites do not want to allow people on the landfill sites as people have been injured and even killed, as explained by a manager of a landfill site:

> *"If you have to see the operation, you've got 10 to 15 big machines operating on the site and you got 50 to 60 people. The nature of the game is this: that when the waste come in, the first thing they do, is you spread the waste because you need to flatten it and that is where they jump in, that is where they see if there are things of value." (Chvatal, 2010)*

The manager explained that it was in one of these incidents that a waste picker had been killed by one of those big machines. The manager further explained:

> *"If any of the people was injured, got sick or dies on the site, the city would be exposed to liability." (Chvatal, 2010)*

The above incidents have led to the closure of some of the landfill sites to the waste pickers, but then, in their desperation to access the waste, they broke the fences down in order to get in as this is their livelihood (Chvatal, 2010). Mashego (2012:5) quoted one of the waste pickers on the Pretoria landfill site as follows:

> *"Why do I have to look for a job? I am making enough money here."*

Racketeering and gangster elements also present huge difficulties as a landfill manager mentioned to Chvatal (2010):

> *"...your gangster activity, that is your drug activity. So they come here to rob the people…so they try to make trouble on the site, threaten your staff…"*

When the waste pickers in the Pretoria study were asked whether they experienced any work-related injuries, most answered in the negative although the only safety issue they raised was that they could be run over by cars at intersections when pushing their trolleys. They did not cite crime as a concern although they had previously mentioned that they slept together "where it is safe" (Schenck & Blaauw, 2011b). Langenhoven and Dyssel (2007) learnt that theft was an important stumbling block for the waste pickers as they were carrying the cash they had just received from the BBCs.

In the study by Schenck and Blaauw (2011a), women told the researchers that they were more exposed to crime and therefore often moved together with men when on the streets.

> *"In winter, the morning and nights are dark and one cannot see properly while rushing to collect as many as possible. I nearly got raped if it was not for some boy who came to my rescue..." (Schenck & Blaauw, 2011a:146)*

In the Sowetan (local Johannesburg-based daily newspaper) of 2 July 2010, a journalist, Ratsatsi, wrote about a group of female waste pickers being raped and robbed at a dump. One of the waste pickers told the reporter that, despite the rape incident, she still had to go to the dump because she had to feed her three children:

> *"My husband died last year and I am now the breadwinner..."*

8.4 Weather conditions

The weather plays a significant role in the lives of the waste pickers (Langenhoven & Dyssel, 2007; Mclean, 2000a). When it rains, they either cannot collect waste and do not earn an income, or the BBCs may pay less when the paper and cardboard are damp or wet. Covered storage of their collected waste and a place where it can be sorted seem to be much needed.

9. RELATIONSHIPS OF WASTE PICKERS

It seems from the literature that the relationships of the waste pickers with their families, BBCs, the public, the police and metro police and fellow collectors are worth exploring.

Figure 2: Relationships of the waste pickers

Source: Adapted from Schenck and Blaauw (2011b:424)

9.1 Family

The studies in Pretoria and Durban revealed that the street waste pickers have little or no contact with their families (Schenck & Blaauw, 2011b; McLean, 2000b). The majority (84 per cent) of the respondents in Pretoria who have families visited them only twice a year or less. Only 3 per cent saw their families daily, 1 per cent weekly, 6 per cent monthly and 6 per cent quarterly (Schenck & Blaauw, 2011b). Their poor income was given as an important reason why they could not visit their families more regularly. They only went home when they could afford to do so (Schenck & Blaauw, 2011b; McLean, 2000b).

Adding to the picture of being "disconnected" from their families, the general trend among waste pickers in South Africa is that the majority are unmarried, although a few are widowed. In Pretoria and Braamfontein, more than half of the respondents were unmarried (Sentime, 2011; Schenck & Blaauw, 2011b). Blaauw (2010) also found that the day labourers in South Africa said that they did not go home if they did not have money to take home. It was difficult to face the family if they arrived empty-handed.

Despite the little contact the waste pickers had with their relatives in Durban and Pretoria, the waste pickers reported that they had on average four people who were financially dependent on them (McLean, 2000a; Schenck & Blaauw, 2011b). They had little contact with their families but were financially responsible, and this was the reason for their migration to the cities. Whether they are able to support these dependents remains an open question (McLean, 2000a). Most of their dependents live at the homes of these waste pickers, which were mostly in rural areas, and the waste pickers have to send money home (McLean, 2000a). Only 9 per cent of the waste pickers in Durban were able to send money home regularly. Similarly in Pretoria, only 23 per cent were able to send money home four times a year, 23 per cent twice a year and 9 per cent once a year (Schenck & Blaauw, 2011b).Thirty-six per cent of the waste pickers indicated that they could barely sustain themselves and did not earn enough to send any money home (Schenck & Blaauw, 2011b).

9.2 The public

Waste pickers experience socio-economic exclusion, stigmatisation, marginalisation and discrimination (Gutberleta & Baeder, 2008; Carrasco, 2009; Gerdes & Gunsilius, 2010; Dias, 2009; Sentime, 2011; Langenhoven & Dyssel, 2007). Schenck and Blaauw (2011b) found that the waste pickers described the responses from the public towards them as either "scornful" or "sympathetic" (e.g. "they give us food and money") or "indifferent". Some quotes illustrate this further:

> *"...some people are okay and they even encourage us while others look at us like we are hobos." (Schenck & Blaauw, 2011a:149)*

One of the waste pickers summarised their relationship with the public like this:

> *"You know, in this world the type of job you are doing defines you." (Schenck & Blaauw (2011a:149)*

It is clear that waste pickers have to survive a physically and socially hostile environment. Medina (2007) even reported on a "social cleansing" campaign in Colombia in 1994 during which 2000 "disposable" waste pickers were killed. Despite the hostile environment, a waste picker described the importance of what they do:

> *"The public don't understand that we are doing a great job, because if there is no one who collects and sells waste, then there will be no newspapers, not bottles, plastics and tins!" (Schenck & Blaauw, 2011a)*

They also feel good about the fact that they manage to earn an income and make a living to support their families and contribute to the environment, but on the negative side, a waste picker expressed the following:

> *"I feel so sad doing this job and I was so stressed"*
> *"...frustration, confusion, rejection, sadness, and loss of self- worth." (Schenck & Blaauw, 2011a:149)*

9.3 Municipalities and waste-recovery companies

It seems that it is a worldwide phenomenon for municipalities and local authorities not to value the contribution of waste pickers as they usually do not engage with them but rather ban them or see them as a nuisance (Tangri, 2010:5; Samson, 2010). Not much research has been completed to determine the relationships between waste pickers and municipalities and companies that manage the waste or landfill sites. Researchers such as Samson (2010) recommend that waste pickers be included in the waste-management systems. India and the Latin American countries are good examples of this kind of inclusion (Samson, 2010). Less focus on this process could be found in Africa and South Africa. The municipalities are regarded as the key role players in this process (Samson, 2010).

In the study by Chvatal (2010), many of the waste managers of the landfill sites acknowledged and agreed that the waste pickers contributed towards reducing and minimising waste. As one of the managers said:

> *"…in the long run, if you put everything together it's a massive heap that goes out." (from the landfill site) (Chvatal, 2010:69)*

Another operator told Chvatal (2010):

> *"...and that is a win-win situation for everybody...so everybody wins"*
> *"…it does a lot. We basically saving." (Chvatal 2010:72)*

The waste pickers work for themselves at no cost for the municipality of the recovery company and should be recognised and acknowledged for this contribution.

9.4 Police and metro police

Waste pickers in Durban, Cape Town and Braamfontein reported bad experiences with the metro police (McLean, 2000b; Benson & Vanqa-Mgijima, 2010; Sentime, 2011). They mentioned harassment and the confiscation what they had collected and their trolleys; these actions prevent them from earning an income. They did not report any harassment or bad treatment from the South African Police Service.

9.5 Buy-back centres

The waste pickers and BBCs are in a symbiotic relationship with each other. The waste pickers depend on the BBCs to buy the recyclable waste collected, but at the same time, the BBCs need the waste pickers as the income of the BBC also relies on the waste pickers and the amount of material they supply (Schenck & Blaauw, 2011a; Langenhoven & Dyssel, 2007). The waste pickers in Cape Town and the street waste pickers in Pretoria claim to have a good working relationship with the staff of the BBCs, who in general treat them well (Benson & Vanqa-Mgijima, 2010; Schenck & Blaauw, 2011b). The only complaint against the BBCs is that the prices paid for the waste are very low, fluctuate and differ between the various BBCs (Benson & Vanqa-Mgijima, 2010).

According to Viljoen et al. (2012), the BBCs indicated that their relationship with the waste pickers is mostly businesslike. Some BBCs in Pretoria offered additional assistance to the waste pickers such as "banking" the money of some street waste pickers to reduce their risk of being robbed while some provided meals, clothing, bags, trolleys and blankets and saved their money. One BBC in Pretoria even provided shelter. Some of the BBCs also made transport available to the waste pickers if they had too much waste to be carried in their trolleys. This personal relationship with the waste pickers gives the BBCs a competitive edge above other BBCs who do not provide these services. The relationship between waste pickers and BBCs needs to be further researched (Viljoen et al., 2012; Schenck & Blaauw, 2011b).

Some comments by the waste pickers cited in the study by Schenck and Blaauw (2011a:150) give an indication of the relationship between the waste pickers and the BBCs:

> *"Truly speaking, they are treating us good."*
> *"People at the scrap yard treat me as an angel, because I am their customer."*
> *"They treating us fairly, and they also have respect for us. They know that we are in business with them and if they do not respect us, they will lose us."*

9.6 Fellow waste pickers

It seems from the comments of the waste pickers that most of them work on their own and in competition with one another. Some support each other when sick or share a trolley when starting out as a waste picker (Schenck and Blaauw, 2011b). It was further stated that those on the street work mainly on their own but sleep together on the street or in the veldt for safety reasons. Only 4 per cent of the street waste pickers interviewed by Schenck and Blaauw (2011b) worked collaboratively, 3 per cent assisted each other in collecting waste, like sharing a trolley, and 1 per cent said that they would assist each other financially. Three per cent shared food and shelter. Female street waste pickers were found to be mostly in a relationship with a male waste picker and not working on their own. Benson and Vanqa-Mgijima (2010) reported that the waste pickers believed that "when you work, you work on your own".

On the landfill sites, it was found that relationships and subgroups had formed. Managers of landfill sites felt that some of these subgroups were problematic (Chvatal, 2010). On the landfill sites in the Western Cape, stories suggested social, ethnic and/or racial divides and stereotypes. The Xhosa newcomers were often the scapegoats and therefore held responsible for all mishaps. At some of the landfills sites, the Rastafarians were to be blamed for disruptions (Chvatal, 2010). This matter needs further investigation.

10. SUMMARY OF THEMES EMERGING FROM THE LITERATURE

The literature study brought to the fore the complicated and multifaceted nature of the waste management system in which the waste pickers function on a continued basis. The system functions at different levels. The macro level includes the enabling environment in the form of policies, laws and regulations which governs the waste management system in South Africa. Below the macro-environment exists the meso-level, consisting of the relevant institutional framework, infrastructure and waste-collection schemes at local-municipality level. Most important for the waste pickers themselves are the micro-level of operations. This is an actual market transaction between waste pickers and BBCs, on the one hand, and between BBCs and the converting industry, on the other. The emerging themes forthcoming in the literature under each of these levels are briefly summarised below.

10.1 Macro-level

Waste pickers are present in all developing countries, facing similar socio-economic challenges, poverty, exclusion and marginalisation despite the important role they play in the waste cycle. Many of the laws, policies and strategies in place for waste management and recycling do not necessarily acknowledge the role of waste pickers in the broader waste-management system.

10.2 Meso-level

In 2010, the total volume of waste generated in South Africa amounted to 60,211,308 cubic metres. Almost 87 per cent of municipalities lack the capacity or infrastructure for minimising waste (Muzenda et al., 2011:3). There is a backlog in providing adequate collection services for solid waste in municipalities, and only 55.1 per cent of households' refuse was removed by the municipality in 2009 according to StatsSA (2010). These factors provide the opportunity to include waste pickers, giving them the opportunity to earn a living. However, the literature suggests that the overall system does not involve the waste pickers in a formal way.

10.3 Micro-level

The importance of the BBCs emerged in the survival of the waste pickers as the BBCs are the link between the waste pickers and the formal economy. The relationship is, however, deeply symbiotic. The waste pickers depend on the BBCs to buy the recyclable waste collected. At the same time, the BBCs rely on the waste pickers to supply the material they need for their own survival.

A significant volume of waste is sold to BBCs (DEA, n.d.). Only a few studies, i.e. Langenhoven & Dyssel (2007) in Mitchell's Plain in Cape Town, Sentime (2011) in Braamfontein and Sobuce (2012) refer to BBCs. A recent case study by Viljoen et al. (2012) is the first study on the role of BBCs in the recycling chain. The study by Viljoen et al. (2012) discusses and compares the role and links of BBCs in the recycling industry in Pretoria and Bloemfontein. The study by Sobuce (2012) interviewed two BBCs in Kokstad in the Eastern Cape.

The BBCs contribute towards the increase in recycling activities directly through their waste-management activities and indirectly through the informal activities of the waste pickers who sell the waste to the BBCs. In this way, they reduce the strain on the landfill sites (Davie, 2002). They further create job opportunities, on different levels. On their sites, they create job opportunities for workers who weigh, clean, sort, bale and transport the waste. Each BBC also creates jobs for entrepreneurs who start, operate and manage the BBCs. They further create income-earning opportunities for informal waste collectors and informal waste pickers (Sobuce, 2012). Some BBCs also add extra value to the waste by processing the waste, e.g. tissue paper and plastic pellets.

This micro-level relationship is a very vulnerable one, and any attempted policy intervention will have a definite impact thereon.

Several policy recommendations are emerging from the literature study. The fieldwork phase played an important role to validate these. The results of the fieldwork are presented in the next sections. Section C represents the results of the study among the waste pickers themselves. This is followed by a section (D) focussing on the prominent role of the BBCs at the micro-level. Section E represents the analysis of the broader waste-management system forthcoming from the interviews with the province, municipalities and the converting industries.

SECTION C - ANALYSIS AND INTERPRETATION OF FINDINGS

1. INTRODUCTION

The aim of this section is to present the basic qualitative and empirical results of the study. Three aspects are highlighted in the discussion. The first subsection of the report covers the information gathered on the broader waste system in the three municipalities. The thematic results of this qualitative research process are the outcome of a series of contact sessions with the formal stakeholders of the waste systems (e.g. employees of the municipalities) and those interested in the waste system e.g. business partners and NGOs.

The second subsection gives an analysis of the results of the research project amongst the waste pickers themselves in the three major municipalities of the Free State namely Mangaung, Matjhabeng and Metsimaholo. The last subsection deals with the information from interviewing the BBCs. This provides important complimentary information as the BBCs act as an important link between the informal waste pickers and the big recycling companies in the industry.

2. THE BROADER WASTE SYSTEM IN THE MUNICIPALITIES OF MANGAUNG, MATJHABENG AND METSIMAHOLO

Stakeholders were interviewed in an informal and unstructured way in order to obtain the widest possible range of information and points of view on the broader waste-management system. Provincial, municipal or local-government employees such as waste managers and government officials as well as private stakeholders in the waste system were interviewed to enable the researchers to understand the context in which the street and landfill waste pickers function and to understand the challenges and strengths of the broader waste systems. The ILO provided a list of people to be approached and interviewed, and interviewees referred the research team to other people who were subsequently interviewed as well. The follow-up process falls within the scope of snow-ball sampling.

The results is presented in the form of observations in terms of the strengths in the system as well as the perceived structural challenges existing within the broader waste-management system

2.1 Strengths

- The research team experienced a positive attitude towards the proposed project and initiatives of the ILO in the Free State. All relevant stakeholders, including the directors, managers, "access control" workers and the self-appointed committee leaders of the occupants of the landfill sites, expressed their support for the research. All stakeholders were of the opinion that the waste-management systems in the Free State need attention.

- The municipalities, and in particular the Matjhabeng Municipality, were very positive about the project as it falls within the scope of a key area in their IDP (Integrated Development Plan). They were looking forward to receiving the eventual findings of the research to assist them in their future planning process. This illustrates an existing appreciation for the possible role of the waste pickers in the broader waste-management system.

- Training institutions and some businesses expressed eagerness to participate in a broad recycling strategy and their willingness to contribute their knowledge and resources. This offers learning opportunities for the students and community-engagement opportunities for the academic staff.

- The recycling companies or the industry players like PACSA and PETCO were very supportive of the process. They are involved in initiatives with the waste pickers, in particular in Sasolburg. Their processes will also be easier if the broader waste system is working together closer and more coherently.

- The waste system is recognized as offering job opportunities and income-generating opportunities for a variety of people, and it should be enhanced. This is confirmed by the National Waste Management Strategy (DEA, 2010) which indicates that 90,000 jobs exist in the recycling sector.

- The existing waste management policies are facilitative towards the inclusion of waste pickers. The implementation is, however, challenging.

- Interesting initiatives from various people, organisations and businesses around waste were shared. These include the "clean Free State Campaign", CUT students training waste pickers, NICRO'S "Urban rangers", youth-development projects and the waste-collection projects of women in informal townships. This is an indication of the commitment, enthusiasm and support for the role of waste pickers in the broader waste-management system. It also shows the assets and strengths already available and the opportunities in waste.

- There are still much waste in townships as well as on the landfill sites that can be recycled. Plans need to be made on how it can be accessed in the most optimal way.

2.2 Possible structural challenges

- One of the main aspects mentioned by all stakeholders was that the management of waste, in particular by the municipalities or at the local government level, is problematic. There seems to be a lack of political will, lack of proper control and little or no co-operation from municipalities.

- Some of the stakeholders argued that the municipalities do not regard the environment as a priority but rather focus on more tangible infrastructure like houses, roads and water for "political gain". These factors can be used to mobilize political support while waste and the environment is less visible and effective in campaigning for votes and political power. It was mentioned for example that: "Waste is not a delivery". Despite the focus on housing and roads, the remark was made that "[s]ervice delivery in general needs attention".

- Remarks were also made to the effect that engineers are often appointed in the position of waste manager and that they often focus on the "clean" aspects like the storm-water systems, electricity provision and other tangible services. Waste management is not always at the top of their list of priorities.

- On provincial level, it was shared that municipalities often have an attitude of "you cannot tell us what to do" despite interventions or attempts by province to support their waste-management processes. This sentiment was also supported by some municipality officials. They emphasise that, despite the instruction of the Premier of the province to focus on waste and waste pickers, municipalities do not value the waste-management system.

- Mention was made of municipalities that do not always comply with waste-management regulations. This is of concern as these regulations form the basis of sustainable waste-management programs.

- It seems that waste management is not centralized in a particular section or department within the municipalities but resides within various departments. "We work in silos," was one of the remarks made to this effect. "Recycling is a grey area in the municipality - they do not know where it falls," was another. This fragmented approach creates significant stumbling blocks for the implementation of a coherent waste-management system, incorporating waste pickers in a systematic manner.

- As a result of the above, one of the major challenges in the broader waste system is the lack of coordination and miscommunication within municipalities, provincial and national government structures as well as between them and external stakeholders. In some instances, the different interest groups operate to the detriment of other well-functioning projects. This prohibits the possibility of achieving economies of scale in the implementation of the various existing projects and initiatives.

- Frequent references were made to the fact that stakeholders perceive that the people in the waste-management system do "not take responsibility" for what they need to do. This reflects on the possibility of a lack of accountability within municipalities. It must be noted that this is an issue not limited to the waste-management sector but is a well-documented overriding problem within local and provincial government in South Africa.

- There seems to be a lack of an overall strategic waste-management plan in all the municipalities. Addressing this issue successfully may be a pre-requisite for any intervention with the waste pickers to have any chance to succeed. The ILO can play a significant role in facilitating this process. One of the stakeholders mentioned that there is "nobody to give direction".

- The need was expressed for knowledgeable and skilled people in the waste system. Training is seen as critical for the people managing the waste within local government. The researchers are aware of a project by the Department of Science and Technology to address this matter.

- A matter of significant concern is that many of the officials responsible for waste on local and provincial government level are in an acting capacity rather than serving in a permanent position. As a result, they do not have the authority to plan strategically, make any decisions or take any responsibility. This prevents the municipalities from having a vision and strategy and continuity, and it adds to the breakdown in communication amongst the stakeholders. “We are only doing the work without any strategic direction in the operation,” was a comment to confirm this perception.

- It was observed that there are very few street waste pickers in some of the areas like Matjhabeng. An official mentioned that some of the municipalities discourage these activities as complaints were received by residents. On observation, it seems that some of the waste pickers prefer the landfill site to the streets as the waste is more and the income higher.

- Issues of crime in the form of racketeering and gangsterism are prevalent on the landfill sites, and in particular, reference was made to the landfill site in Welkom which can lead to conflict for any project. The other landfill sites were experienced as mainly quiet and peaceful. The landfill sites where there were some form of order and organizing efforts were calmer and cooperative. The management of landfill sites is therefore a critical issue that needs to be addressed as part of the broader waste-management system.

- The influx of illegal migrant waste pickers was a concern for many stakeholders. However, the research team was told that many of the issues related to illegal migrant waste pickers were dealt with by the relevant authorities.

- Reference was made to the fact that there are no recycling companies based in the Free State. All waste is transported to recycling companies in other provinces, resulting in less income to the BBCs and waste pickers in the Free State. Establishing recycling companies in the province can also increase the demand for waste. This presents of course its own sets of challenges.

The above thematic discussion provided clear evidence that the challenges within the system need to be addressed satisfactorily as a non-negotiable prerequisite for any effort to successfully integrate waste pickers in a workable and sustainable broader waste-management strategy in the long run.

The following subsection of the report deals with the empirical data forthcoming from the interviews with the waste pickers themselves.

3. FINDINGS OF EMPIRICAL STUDY AMONG WASTE PICKERS IN THE FREE STATE

During the interviews, a total of 410 questionnaires were completed in good order for the sample population of the waste pickers on the land fill sites. The sample size for the street waste pickers was 52. The order of the presentation of the results reflects the basic order of sections of the research instrument. The first part of the questionnaire contained questions pertaining to the standard demographic information required by research of this nature. The results of these findings are presented in the next sections.

3.1 The basic demographic characteristics and features

3.1.1 Sex

Unlike many other informal economic activities, the gender distribution of landfill waste pickers (LWPs) is far more equitable. In the sample (410), there were 212 male and 198 female respondents. The gender distribution therefore is 51.7 and 48.3 per cent respectively for the male and female LWPs. In other informal economic activities, this distribution tends to be almost exclusively dominated by males. An example of this is day labourers in South Africa. In 2007, the distribution for this informal labour-market activity was 96.4 per cent male and 3.6 per cent female (Blaauw, 2010).

The information from the 52 street waste pickers, interviewed at the same time as the LWPs in the Free State, displays a similar gender bias as Blaauw's study. Of the 52, only seven were women. The distribution is, therefore, 87 per cent male and 13 per cent female. One explanation for this is that the street waste pickers are even more exposed to danger, and the physical effort to transport the heavy loads over vast distances also may be beyond the ability of most potential female street waste pickers.

3.1.2 Race

The findings of Saunders (2005) on the racial composition of the informal economy in South Africa are also evident in the racial composition of LWPs in the Free State. The racial composition reveals that it is primarily black members of the population that engage in waste picking in land fill sites in the Free State. No less than 403 (98.29 per cent) of the 410 respondents were black. The remaining 1.71 per cent (7 respondents) was from the coloured population. The racial composition of the research population in terms of Bloemfontein's street waste pickers is exactly the same with only black and coloured people in the sample. The distribution is however slightly different as 83 per cent of respondents were black people and 17 per cent were coloured people.

3.1.3 Country and province (RSA) of origin

Table 1 presents a breakdown of the country of origin of LWPs.

Table 1: The country of origin of LWPs in the Free State, 2012

	Frequency	Percentage	Valid cumulative percentage
South Africa	364	89.43	89.43
Zimbabwe	1	0.25	89.68
Namibia			
Swaziland			
Mozambique			
Botswana	2	0.49	90.17
Lesotho	40	9.83	100.00
Other			
Total	407	100.00	100.00
Not specified	3		
Total	**410**		

Source: Survey data

Three respondents did not want to specify the country of their birth. Of the 407 respondents who answered this question, almost 90 per cent were born in South Africa. The remainder was born in Lesotho (9.83 per cent) with two LWPs from Botswana and one from Zimbabwe. It is interesting to note that all 52 of the street waste pickers interviewed in Bloemfontein stated that they are form South Africa.

The origins of the LWPs born in South Africa reveal the following results, which are presented in Table 2.

Table 2: Provinces where South African LWPs were born

Province	Frequency	Percentage of South African respondents	Valid cumulative percentage
Gauteng	5	1.34	**1.34**
Mpumalanga	1	0.27	**1.61**
KwaZulu-Natal	4	1.08	**2.69**
Eastern Cape	20	5.38	**8.06**
Limpopo	1	0.27	**8.33**
North West	15	4.03	**12.37**
Free State	322	86.56	**98.92**
Northern Cape			
Western Cape	1	0.27	**99.19**
Not Specified	3	0.81	**100**
Total	**372**	**100**	**100**

Source: Survey data

As expected, the vast majority of respondents were born in the Free State. The corresponding data of the 52 street waste pickers in Bloemfontein reveal an even more homogenous group of people. With the exception of 2 (4 per cent) respondents born in both the Eastern- and Northern Cape, the other 48 (92 per cent) were all born in the Free State.

The above data corresponds to the follow-up question in terms of language spoken by the respondents.

3.1.4 Language

There is a clear correlation between the language that is mostly spoken by the respondents and their racial distribution. As expected, the vast majority of the street waste pickers in Bloemfontein as well as the LWPs in the Free State were Sesotho speaking. Interesting to note is the significant number of IsiXhosa-speaking people (13.41 per cent) that were part of the LWP respondents. One would expect that these LWPs originated from the Eastern Cape Province. This is investigated further by looking at the provinces where the IsiXhosa-speaking South African LWPs were born.

Table 3: Language predominantly spoken by LWPs in the Free State and street waste pickers in Bloemfontein, 2012

	LWPs in the Free State		SWPs in Bloemfontein	
Language	Number of respondents	Percentage of respondents	Number of respondents	Percentage of respondents
English	4	0.98		
Sesotho	327	79.76	36	69.23
Sepedi	1	0.24		
IsiZulu	7	1.71		
IsiNdebele				
Xitsonga				
Afrikaans	3	0.73	6	11.54
Setswana	12	2.93	5	9.62
IsiXhosa	55	13.41	5	9.62
Tshivenda				
SiSwati				
Shona	1	0.24		
Other				
Total	**410**	**100.0**	**52**	**100**

Source: Survey data

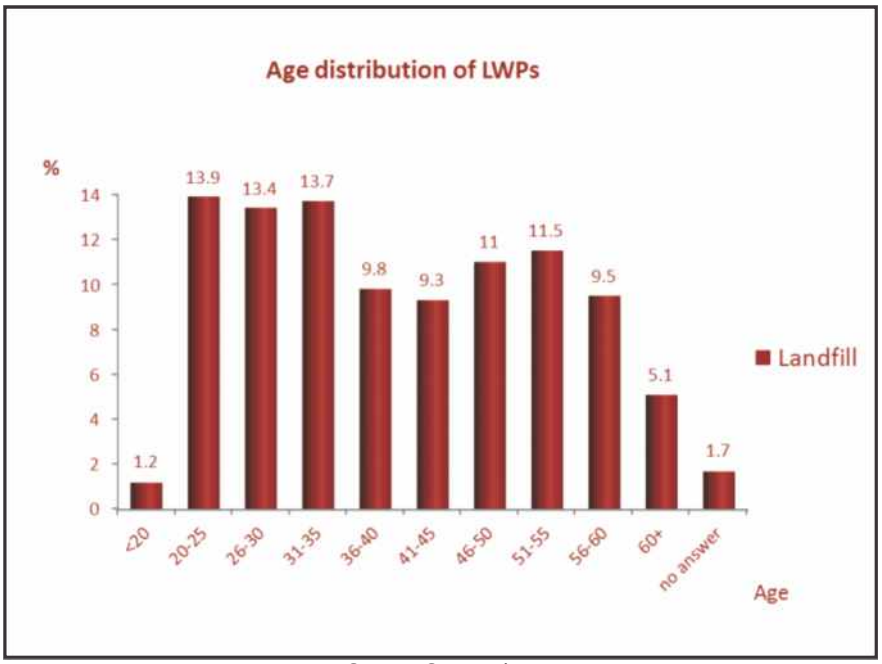
The hypothesis that the IsiXhosa-speaking LWPs are mostly migrants proved to be inaccurate as only 14 of the 55 were born in the Eastern Cape. The majority (38 out of the 55) were indeed born in the Free State. It may well be that their parents are originally from the Eastern Cape.

The larger percentage of Afrikaans-speaking street waste pickers in Bloemfontein accurately reflects the bigger representation of coloured people among the street waste pickers as opposed to the LWPs.

3.1.5 Age and marital status

Figure 3 illustrates the age distribution of the LWPs, who were interviewed in the survey, in the Free State.

Figure 3: The age distribution of LWPs in the Free State, 2012



Source: Survey data

Almost 42 per cent of the respondents in the survey were less than 35 years of age with an average age of just over 40. The corresponding data for the street waste pickers in Bloemfontein painted more or less the same picture. The average age of the street waste pickers was 39, with the youngest 16 and the oldest 72.

In terms of South African legislation, the term youth includes people aged between 15 and 34 (Vakalisa, 2005:53; Schenck, 2009). A significant proportion of LWPs can therefore be classified as young. This is a manifestation of the persistent unemployment and under-employment amongst the youth of South Africa (Vakalisa, 2005:53). It is interesting to note that overall the LWPs are older than, for example, the day labourers in South Africa. The study by Blaauw (2010) showed that, in 2007, more than 70 per cent of day labourers in South Africa were younger than 35 years old. This is explained by the fact that being a day labourer requires much more physical strength in terms of the tasks required of them.

No fewer than 163 (39.8 per cent) of the respondents indicated that they had never been married or were single at the time of the research. The data furthermore showed that 29 per cent were married, by either a Western or a traditional marriage. Twenty seven (6.6 per cent) of the LWPs were living with a partner, and 12 and 11.7 per cent were separated or divorced and widowed respectively.

The data for the street waste pickers in Bloemfontein again paint much the same picture with 27 per cent being married and eight per cent living with a partner. A larger percentage of the street waste pickers were single or had never been married (54 per cent).

The next section of the questionnaire focused on the human capital of the waste pickers.

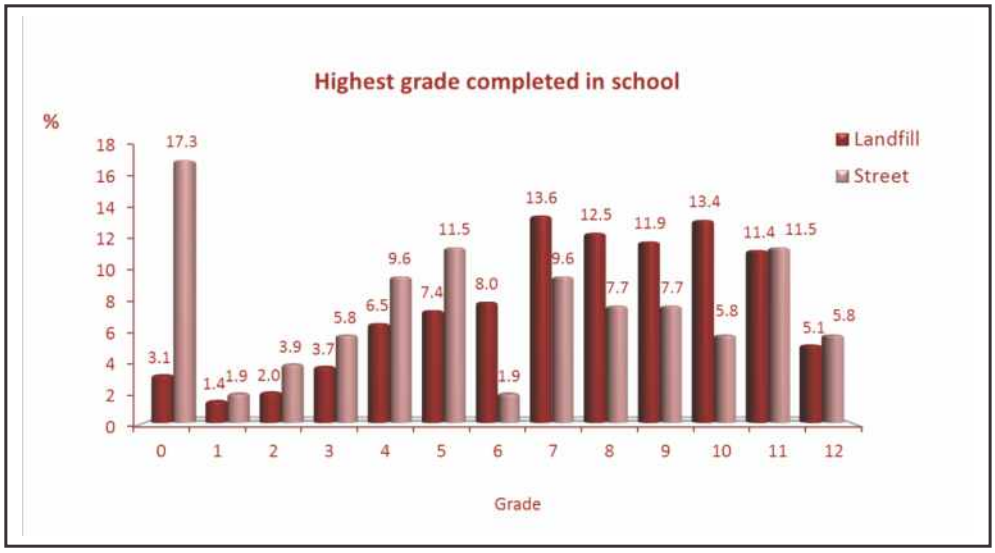
3.2 Human capital

Sen (1999) suggests that poverty may be seen primarily as capability deprivation. This would imply that there are a number of ways in which a person's life situation may increase her ability to escape a life of poverty. The development of human capital is therefore an important aspect in efforts to alleviate poverty and to enable people to participate in the mainstream economy. Aspects of human capital include basic education.

3.2.1 Level of education

Figure 4 shows the highest levels of education at school of the waste pickers in the Free State.

Figure 4: Highest levels of school qualification of landfill and street waste pickers in the Free State, 2012



Source: Survey data

From the figure, it is clear that landfill waste pickers have higher levels of school education than the street waste pickers. Of the total number of 352 landfill respondents, 54.3 per cent obtained some secondary-level education, which entails Grade 8 to Grade 12. Of these, 37.8 per cent ended their education somewhere between Grade 8 and Grade 10, and only 16.5 per cent completed either Grade 11 or Grade 12. In comparison, only 38.5 per cent of the total number of 52 street waste pickers reported some secondary education. From these, 21.2 per cent obtained schooling to somewhere between Grade 8 and Grade 10, and only 17.3 per cent obtained Grade 11 or Grade 12. Of all respondents, 42.6 per cent of landfill waste pickers and 44.2 per cent of street waste pickers obtained only some primary education while 3.1 per cent of landfill waste pickers and 17.3 per cent of street waste pickers have no formal schooling at all.

Only 5.8 per cent of the street waste pickers and 5.1 per cent of the landfill waste pickers completed Grade 12. No street waste pickers and two landfill waste pickers had other qualifications. One had obtained a two-year Certificate in Building Management and another one had completed an N3 (Business Management). In terms of the education of waste pickers in the Free State, the overwhelming majority therefore did not complete their secondary school education, which corresponds with the findings by most other studies in South Africa, such as McLean (2000a), Sentime (2011) and Schenck and Blaauw (2011a) who concluded that the education level of waste pickers in South Africa is very low.

The low level of education of the waste pickers inhibits their chances and competitiveness in entering the formal job market, but it allows them to enter waste picking as it does not require any qualification or skills. A qualitative analysis of the reasons for not completing their schooling is summarised in Table 4

Table 4: Reasons for waste pickers in the Free State to leave school early or not attending school, 2012

Thematic analysis of reasons for leaving school	Landfill waste pickers		Street waste pickers	
	Total	%	Total	%
Theme 1: Financial difficulties				
Money/financial problems/difficulty	168.0	46.3	15.0	35.0
One or both parents died, no money for school	41.0	11.3	9.0	21.0
Poverty	20.0	5.5		
Failed Grade 12 and did not have money to go back			1.0	2.3
Had to go and work (have to support grandmother)	18.0	5.0		
Parents did not work	1.0	0.3		
	248.0	**68.3**	**25.0**	**58.3**
Theme 2: School-related				
Worked on farm	16.0	4.4	1.0	2.3
School stopped at Grade 8	1.0	0.3		
No school /school closed	10.0	2.8		
School too far (lived in rural area)	8.0	2.2		
Failed Grade 12			1.0	2.3
	35.0	**9.6**	**2.0**	**4.6**
Theme 3: Family-related				
Had to herd cattle for father			1.0	2.3
Had a child to support			1.0	2.3
Domestic problems	17.0	4.7	8.0	18.6
Parents did not want him to go to school, took him out	15.0	4.1		
Parents became too old or sick to support me	7.0	1.9		
Got married, pregnancy	21.0	5.8		
No food			1.0	2.3
No one to care for me			2.0	4.7
Went to stay with my uncle, had to change school, did not go back			1.0	2.3
	60.0	**16.5**	**14.0**	**32.6**
Theme 4: Behavioural issues				
Parents moved from farm to farm	5.0	1.4		
Just left school (two said they did not like school)	4.0	1.1		
Ran away from home			1.0	2.3
Grew up in flat and not accepted in community	1.0	0.3		
Did not need to go to school	1.0	0.3		
	11.0	**3.0**	**1.0**	**2.3**
Theme 5: Health-related				
Health problems/too sick to attend school,	4.0	1.1		
Mental disability	1.0	0.3		
	5.0	**1.4**		
Theme 6: Age related				
I became too old for school	**3.0**	**0.8**		
Theme 7: Other reasons				
Still in school			1.0	2.3
Farmer did not allow them to go to school	1.0	0.3		
	1.0	**0.3**	**1.0**	**2.3**
Grand Total	**363.0**	**100.0**	**43.0**	**100.0**

Source: Survey data

Financial difficulties are the most prominent reason for not attending or not completing Grade 12. This is further exacerbated by family reasons, such as cases where one or both parents had died or had fallen ill, leaving the rest of the family with no money to afford school. In other cases, the respondents had to search for work to support the parents and/or other family members. Important reasons which are related to school are that many waste pickers worked or lived on a farm in rural areas with no schools nearby, making it difficult for them to attend school. Some waste pickers reported that they did not attend school as their parents often moved from one farm to the next. Only four landfill waste pickers and one street waste picker reported that they had just left school because they did not like it or because they ran away from home. From this analysis, it is clear that very few waste pickers left school early by choice, and most have low or no education due to their financial and family circumstances. A lack of financial support can therefore be considered as the main cause for not completing a secondary level of formal school education. Poverty or the lack of money was also observed as the main reasons for street waste pickers in Pretoria to leave school early (Schenck & Blaauw, 2011).

3.2.2 Language proficiency

Apart from the impediment of low levels of education, waste pickers also have to deal with a limitation in terms of language proficiency. Language skills are an important aspect of human capital, and the degree of language proficiency also plays an important role in finding and sustaining work. Table 5 represents the survey results of the waste pickers' language proficiency in terms of how well they think they can speak and understand English and Afrikaans.

Table 5: Language proficiency of waste pickers in the Free State, 2012

		Not at all		Somewhat		Well	
		N	%	N	%	N	%
How well do you understand English	Landfill	141	34.4	**180**	**43.9**	89	21.7
	Street	18	34.6	19	36.5	15	28.9
How well do you speak English	Landfill	**172**	**42.0**	153	37.3	85	20.7
	Street	**21**	**40.4**	16	30.8	15	28.9
How well do you understand Afrikaans	Landfill	98	24.0	**169**	**41.3**	**142**	**34.7**
	Street	7	13.5	14	26.9	**31**	**59.6**
How well do you speak Afrikaans	Landfill	106	25.9	**170**	**41.6**	**133**	**32.5**
	Street	7	13.5	14	26.9	**31**	**59.6**

Source: Survey data

A large percentage of landfill waste pickers (42 per cent) and street waste pickers (40.4 per cent) indicated that they cannot speak English at all, whereas 43.9 per cent understand English to some extent, and 41.3 per cent and 41.6 per cent respectively speak and understand Afrikaans to some extent. Only 34.7 per cent and 32.5 per cent of landfill waste pickers can respectively understand and speak Afrikaans well. On the other hand, 59.6 per cent of the street waste pickers claim to speak and understand Afrikaans well. The reason for this might be the fact that, for many people in the Free State, Afrikaans is their mother language. Afrikaans is therefore the preferred second language for waste pickers.

Language proficiency directly influences a person's progress in the workplace (Schoeman, De Beer & Visser, 2008). These critical impediments, namely financial support, low levels of education and restricted language proficiency, make it very difficult for these people to access even the lower levels of the informal-sector job market.

3.2.3 Training

Despite these limitations, some waste pickers do have other training which is presented in Table 6.

Table 6: Training of waste pickers in the Free State, 2012

	Landfill		Street			Landfill		Street	
	N	%	N	%		N	%	N	%
Baker	1	1.2	1	5.3	Machine operator	2	2.5		
Brick layer	2	2.5	1	5.3	Miner	6	7.4		
Brick maker	1	1.2			Nurse	1	1.2		
Builder	1	1.2	1	5.3	Painter	2	2.5	3	15.8
Business training	5	6.2			Panel beater	2	2.5	2	10.5
Butchery training	1	1.2			Photography (informal training)	1	1.2		
Caregiver	2	2.5			Plasterer			2	10.5
Carpenter			1	5.3	Plumber	1	1.2		
Ceiling fitter			1	5.3	Railway worker	1	1.2		
Computer training	2	2.5			Security guard	4	4.9	1	5.3
Data capturer	1	1.2			Sewing	1	1.2	2	10.5
Domestic worker	22	27.2			Signage	1	1.2		
Electrical (informal training)	1	1.2			Sleeper layer	1	1.2		
Factory worker	2	2.5			Stock taker	1	1.2		
Farm worker	9	11.1			Tiler			2	10.5
Front-end loader driver	1	1.2			Train driver	1	1.2		
Gardener			2	10.5	Training at abattoir	1	1.2		
Horse trainer	1	1.2			Welding	1	1.2		
Kitchen assistant	1	1.2			Winch driver	1	1.2		
Locomotive driver	1	1.2							
Total						**81**	**100**	**19**	**100**

Source: Survey data

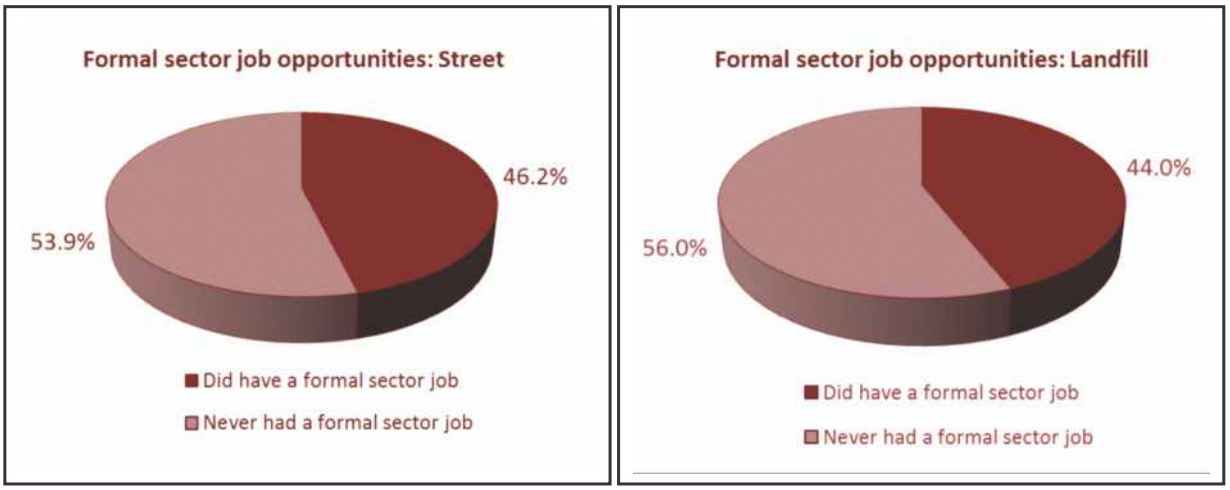
Table 6 shows that most of the training is in the low-skilled job sections of the informal and formal sectors. Training in domestic work, farm work and mining dominates the training amongst landfill waste pickers. The training that dominates amongst street waste pickers is training as painters, panel beaters, gardeners, tillers and plasterers, which suggest that most waste pickers might have been day labourers, piece-work labourers or short-term contract workers. This observation is also supported by the number of street waste pickers that indicated training in construction and building-related work – a sector known for the use of low-skilled day labourers and project-specific, short-term contracting. Eleven of the nineteen street waste respondents indicated that they were previously active in some kind of building activity.

The next section of the questionnaire probed the important aspect of the employment history of the waste pickers.

3.3 Employment history

The results of the waste pickers' employment history show that 56 per cent of the landfill waste pickers and 53.8 per cent of street waste pickers never had any formal sector job before as indicated by Figure 5.

Figure 5: Formal-sector involvement of waste pickers in the Free State, 2012



Source: Survey data

The types of formal-sector jobs that some of the waste pickers had are listed in Table 7. Waste pickers claimed to have worked as the following in the formal sector: domestic workers (16.6 per cent), general workers (8 per cent), farm workers and seamstresses (4 per cent each), gardeners (3.43 per cent), cleaners and machine operators (2.9 per cent each), painters and security officers (2.3 per cent each). Not all these jobs are, however, regarded as formal-sector jobs, which indicates that the number of waste pickers who have never had a formal-sector job might be much higher than what the waste pickers reported.

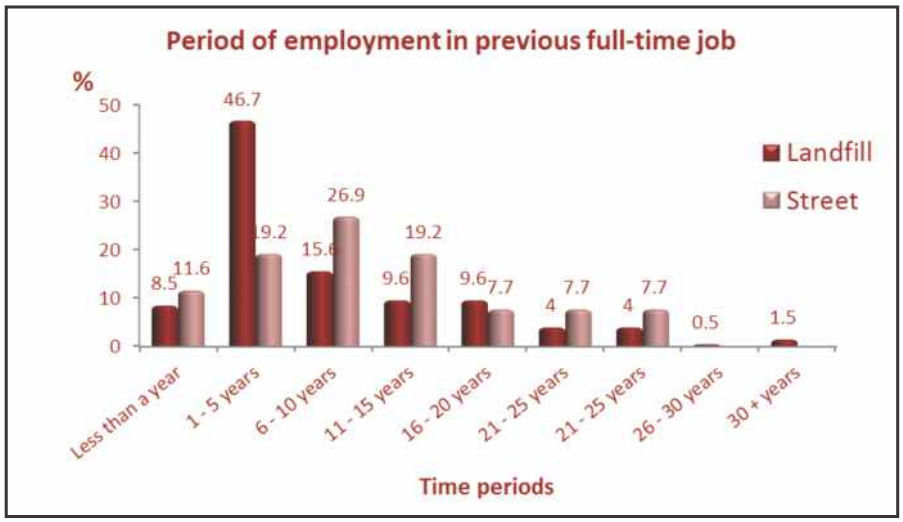
Table 7: Type of job that the waste pickers had in the formal sector

Air conditioner installer	Cutter	Painter	Security officer
Assistant manager	Delivery assistant	Fabric painter	Shop fitter
Bakery assistant	Domestic worker	Panel beater	Sorter (asparagus)
Block man (butcher)	Driver	Petrol attendant	Stacker
Brick layer	Electrician assistant	Photographer/part time	Stock taker
Builder	Factory worker	Plasterer	Tailor
Butcher assistant	Farm worker	Plumber	Train driver
Car washer	Food processor	Ceiling fitter	Trench digger
Caregiver	Front-end loader driver	Rigger	Tyre fitter
Carpenter	General labourer	Road builder	Waiter
Chef	Locomotive driver	Rock-drill operator	Welder
Cleaner	Machine operator	Seamstress	Winch driver
Clerk	Mechanic	Secretary	Wrapper (paper)
Construction worker	Operator		
	Packer		

Source: Survey data

From the landfill waste pickers who had a previous full-time job, 8.5 per cent had the job for less than one year while 46.7 per cent had the job for between one and five years. This indicates that more than half (55.2 per cent) of them therefore had the job for five years or less.Figure 6 shows the period of employment in previous full-time jobs. From the landfill waste pickers who had a previous full-time job, 8.5 per cent had the job for less than one year while 46.7 per cent had the job for between one and five years. This indicates that more than half (55.2 per cent) of them therefore had the job for five years or less.

Figure 6: Period of employment in previous full-time job

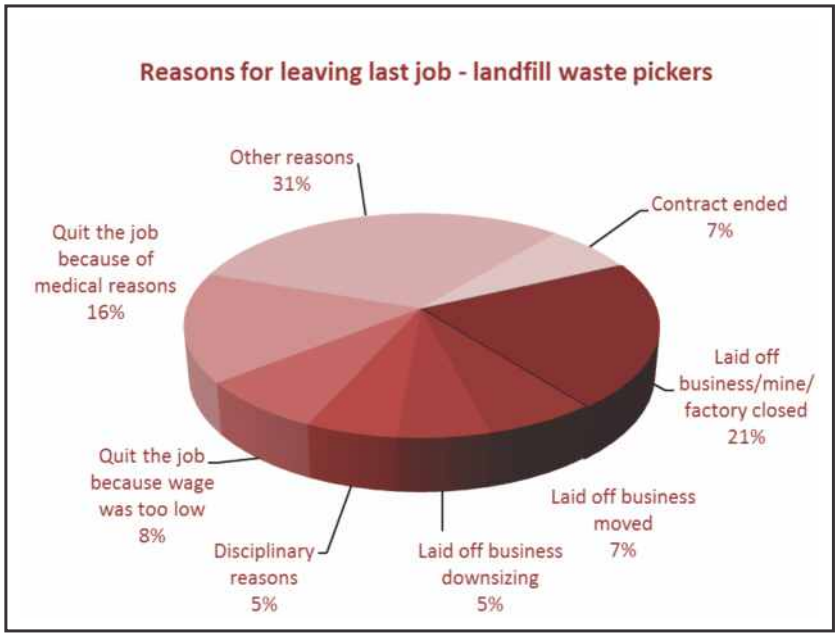


Source: Survey data

Most of the street waste pickers (69.2 per cent) had their previous full time job for longer than 5 years. Only 30.8 per cent had it for five years or less of which 19.2 per cent had the job between one and five years and 11.6 per cent had it for less than a year.

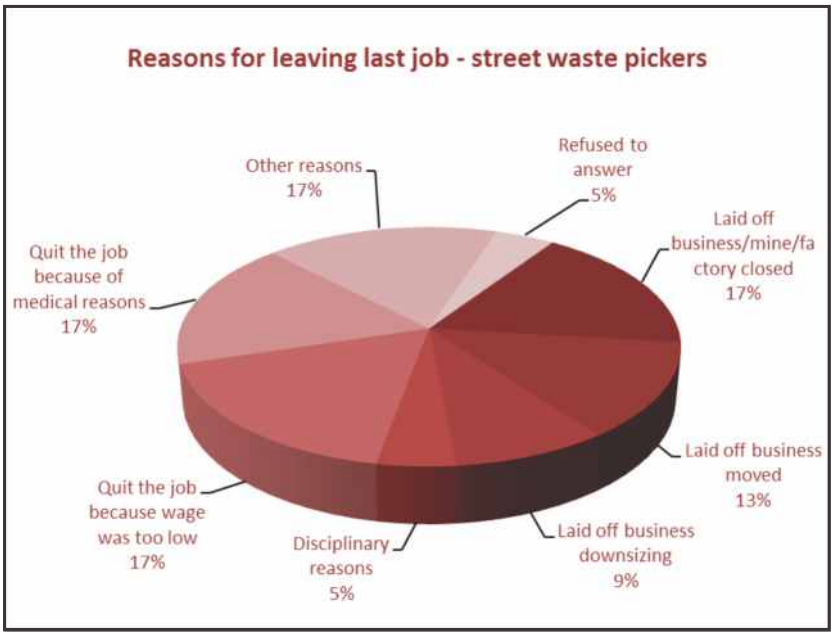
The period of employment and the reasons for leaving their last job presented in Figure 7 and Figure 8 show that many waste pickers were laid off from their previous jobs for different reasons. Landfill waste pickers who lost their previous job due to the closure of the business/mine/factory amounts to 21 per cent compared to 17 per cent for street waste pickers. Another 7 per cent of landfill and 13 per cent of street waste pickers lost their jobs because the businesses had moved, and 5 per cent of landfill and 9 per cent street of waste pickers lost their jobs because of the downsizing of the business. Seven per cent of the landfill waste pickers' contracts ended and were not renewed. Another 8 per cent of landfill and 17 per cent of street waste pickers quitted because of wages that were too low. Almost the same percentage of landfill and street waste pickers quitted their jobs because of medical reasons, namely 16 per cent and 17 per cent respectively.

Figure 7: Reasons for landfill waste pickers in the Free State to have left their previous job, 2012



Source: Survey data

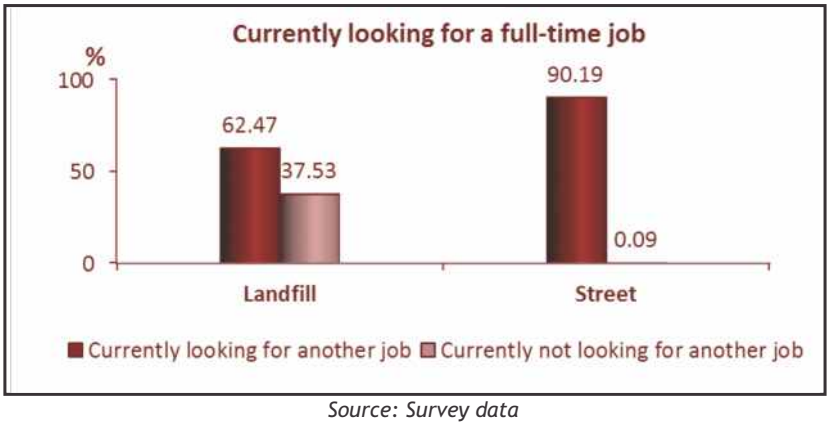
Figure 8: Reasons for street waste pickers in the Free State to have left their previous job, 2012



Source: Survey data

Waste pickers who left their previous job because of disciplinary reasons amount only to 5 per cent for both landfill and street waste pickers. The remaining 31 per cent of landfill and 17 per cent of street waste pickers quitted their jobs or were laid off for various other reasons which mainly consist of a range of challenges, such as difficulties getting to work, family responsibilities and other personal problems. The results of a question on whether the waste pickers were at the time of the interview looking for a full-time job are depicted in Figure 9.

Figure 9: Number of waste pickers in the Free State currently looking for a full-time job, 2012



Source: Survey data

The majority of the landfill waste pickers 253 (62.47 per cent) and almost all (90.19 per cent) of the street waste pickers indicated that they were at the time looking for a full-time job. This might indicate that they were not happy in their job as a waste picker. What is surprising is that 152 (37.53 per cent) of the landfill and 9.8 per cent of the street waste pickers indicated that they were not looking for a full-time job. The reasons why these waste pickers were not at the time looking for a full-time job are summarised in Table 8.

Table 8: Reason for waste pickers not at the time looking for a full-time job in the Free State, 2012

Reasons		Landfill		Street	
		N	%	N	%
Happy being a waste picker	Own boss, want to work for myself, want to be a waste picker, I like my work, satisfied here, the job is good, can do this job, can look after myself	57	39		
	Happy with life/current circumstances/job	34	23.3		
	Get sufficient income, doing well enough	7	4.8		
Medical reasons	Injury caused by vehicle accident, health reasons, medical reasons	12	8.2	1	16.7
Qualifications and language skills	No qualification, cannot do another job, cannot speak other language well,	7	4.8		
As additional income	Get a good grant, satisfied with this	1	0.7		
	Still in school			1	16.7
	On pension/too old	24	15.8	4	66.7
Family reasons	I am pregnant	1	0.7		
	I have a baby to look after	1	0.7		
Total		**146**	**100**	**6**	**100**

Source: Survey data

Of the waste pickers who were not looking for a job at the time, 66.1 per cent of the landfill waste pickers seemed to be happy in their work as 39 per cent indicated that they liked their work and were satisfied with their job, whereas 23.3 per cent indicated that they were happy with their life and current circumstances. Another 7 (4.8 per cent) indicated that they obtained sufficient income and were doing well enough. None of the street waste pickers who were not looking for a full-time job indicated that they were happy being a waste picker. Most street waste pickers (66.7 per cent) indicated that they were too old or on pension and that waste picking was just an additional income. Waste picking at the landfill sites seems to be an additional income opportunity for only 25 (16.5 per cent) of the waste pickers who were not at the time looking for a full-time job and were either on pension, too old to work full-time or received social grants. Only 4.8 per cent indicated that their lack of qualification or their language proficiency inhibited them from looking for a full-time job.

Table 9 gives an indication of the type of jobs that the waste pickers who were looking for a full-time job at the time would like to get.

Table 9: Type of job that respondents were looking for at the time

Type of job	Landfill	Street	Type of job	Landfill	Street
	%	%		%	%
Any job	64.6	57.8	Gardener	1.6	4.4
Army/soldier	0.4		General worker	0.4	
Assistant to electrician	0.4		In the mining or building industry	0.4	
Baker, anything	0.4		Irrigation		2.2
Boiler maker	0.4		Mining	1.2	
Brick laying	0.4		Municipal work	1.2	
Brick making, glazing	0.8		Not sure	0.4	
Building industry	0.4		Paint, plastering	0.4	
Caregiver/cleaner	0.4		Painter	0.8	8.9
Caregiver/carpentry	0.4		Panel beating		2.2
Ceiling fitter		2.2	Paving		4.4
Cleaning	1.6	4.4	Pipe fitter	1.2	
Cleaning, domestic	0.4		Plastering	0.4	
Construction	1.2	2.2	Raising chickens	0.4	
Contracting	0.4		Seamstress in clothes factory	0.4	
Domestic and in café	0.4		Security	2	2.2
Domestic work	6.5	2.2	Selling	0.4	
Domestic, sewing,	0.4		Spray painting, car wash, anything	0.4	
Domestic/anything	0.4		Stock taking	0.4	
Driver	1.2	2.2	Tyre fitter	0.4	
Electrician related	0.4		Want to work for the government	0.4	
Engineering job	0.4		Welding		2.2
Factory worker	0.4		Woodwork, fireman	0.4	
Factory worker,	0.4		Work assistant	0.4	
Farm work	1.2		Workshop to repair cars		2.2
Farm work/anything	0.4				
Total				100	100

Source: Survey data

It is alarming to see that 64.6 per cent of the landfill and 57.8 per cent of the street waste pickers were willing to accept any job that is offered to them. This indicates how desperate they are in finding a full-time job.

From the employment history and job-prospect findings, it is clear that more landfill than street waste pickers were satisfied with their work as a waste picker. Some waste pickers even indicated that they earned sufficient income and were doing well. An analysis of the income earned by landfill and street waste pickers will shed more light on the income-earning opportunities for waste pickers.

Given the employment history, it is imperative to study the income earned by the waste pickers. This is discussed in the following section.

3.4 Income patterns and dependents

3.4.1 Income

An analysis of the income earned by waste pickers indicates that half of the landfill waste pickers (49.4 per cent) do not sell their waste daily. They sell their waste at different time intervals as shown in Table 10.

Table 10: Summary of the income usually earned by the waste pickers in the Free State, 2012

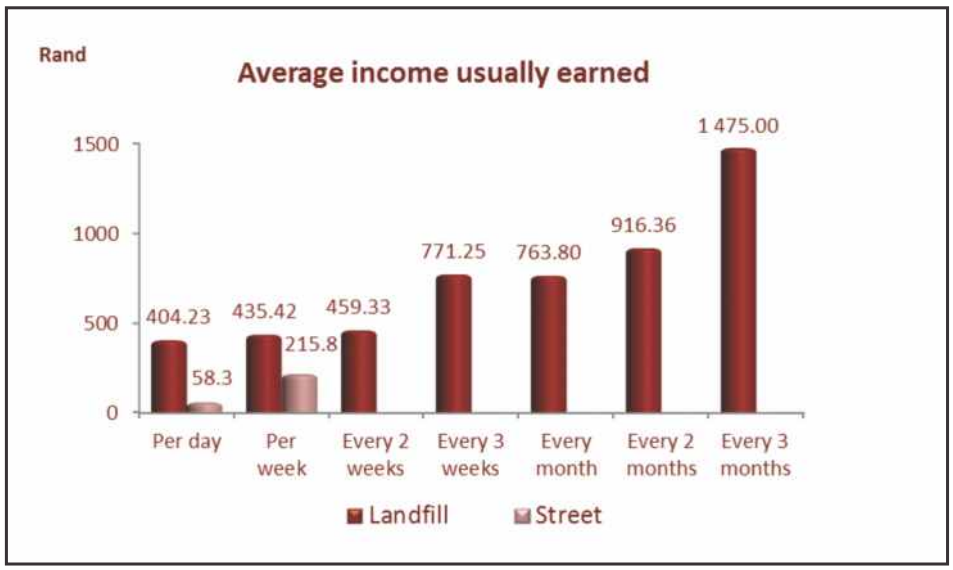
Landfill waste pickers					
Interval	**N**	**%**	**Minimum**	**Maximum**	**Mean**
Per day	204	50.6	6	3 000	404.2
Per week	91	22.6	20	2 000	435.4
Every 2 weeks	45	11.2	60	1 700	459.3
Every 3 weeks	4	1.0	175	2 500	771.3
Every month	46	11.4	20	3 000	763.8
Every 2 months	11	2.7	150	2 200	916.4
Every 3 months	2	0.5	950	2 000	1 475.0
Total	**403**	**100.00**			
Street waste pickers					
	N	**%**	**Minimum**	**Maximum**	**Mean**
Per day	35	85.4	10	250	58.3
Per week	6	14.6	140	350	215.8
Total	**41**	**100.00**			

Source: Survey data

Almost a quarter (22.6 per cent) of the landfill waste pickers sold their waste on a weekly basis, and another quarter sold after periods ranging from two weeks to three months. The majority of the street waste pickers (85.4 per cent), however, did sell their waste on a daily basis, and only 14.6 per cent sold on a weekly basis. Reasons why some waste collectors might sell their waste only after a period might be that there is not enough waste to make it viable to sell the waste on a daily or even weekly basis and that the buy-back centres therefore only visit these sites once a week or bi-monthly. Another reason might be that some waste pickers want to sell larger quantities of waste in order to benefit from higher prices offered by buy-back centres for larger quantities of waste supplied (DEA, n.d.:17; Viljoen et al. 2012).

An analysis of the average income usually earned by the waste pickers for each of these periods is graphically illustrated in Figure 10. The waste pickers who sold on a daily, weekly and bi-monthly basis earned almost the same average income, which implies that, for some waste pickers, it takes a week to collect what others are collecting in a day due to limited access to waste. It is important to note that the average income earned by waste pickers who sold every three weeks was slightly higher than those who sold monthly. Comparatively, waste pickers who sold on a daily basis received a higher income than those who sold after a period of time.

a) Figure 10: Average income earned by the waste pickers in the Free State, 2012

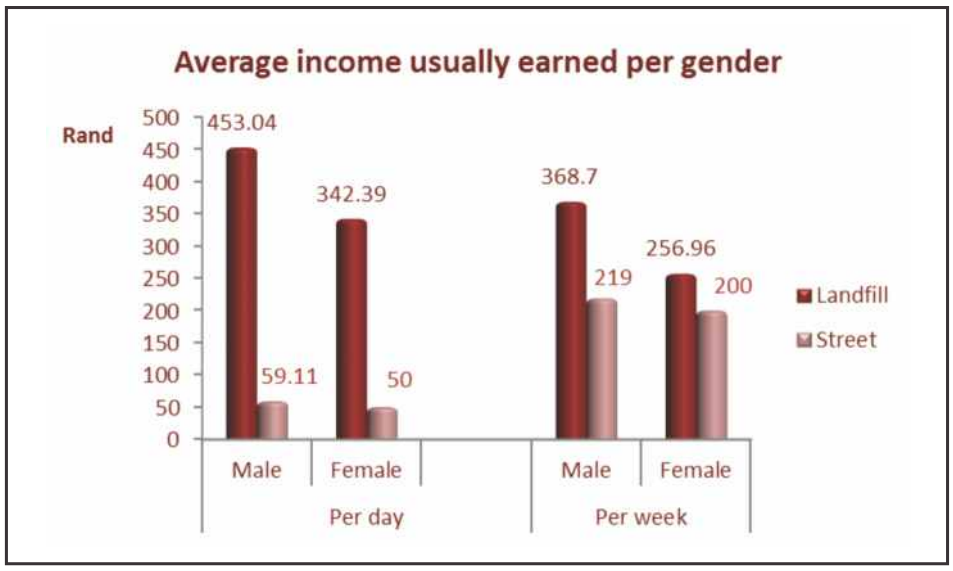


Source: Survey data

Compared to the landfill waste pickers, the street waste pickers earned much lower incomes. The average income for the 85.4 per cent of street waste pickers who sold on a daily basis was only R58.30, which is significantly lower than the R404.23 that their counterparts on the landfill sites earned per day. One reason for this might be that, on landfill sites, waste is more freely available and in larger quantities, and the close proximity of the waste on the landfill sites makes it more accessible.

To enhance the comparison of average income earned per day and per week with that of longer periods, the data for periods between two weeks and three months were adjusted to a weekly income. The data was also disaggregated for male en female waste pickers to determine whether gender plays a role in the average income earned.
Figure 11 shows that the difference between the average adjusted income earned per day and per week is larger for the waste pickers on the landfill sites than for waste pickers in streets – and this holds for both genders. The gender differences in terms of street waste pickers are very small. The average income shows that gender does not seem to play a significant role amongst street waste pickers but surely amongst landfill waste pickers.

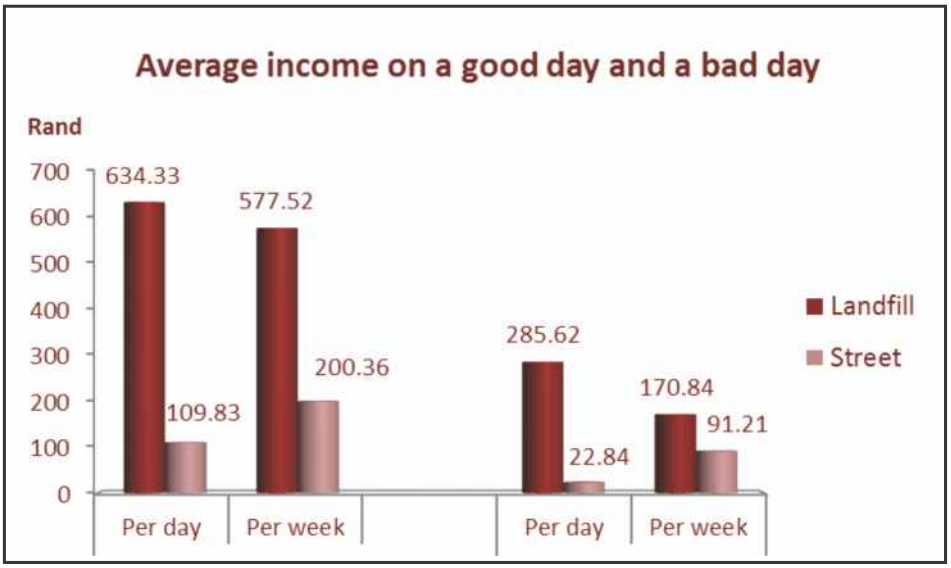
Figure 11: Average income earned by the waste pickers in the Free State according to gender, 2012



Source: Survey data

Another factor that has an impact on the livelihood of the waste pickers is the unpredictability of their income. Waste pickers do not always earn the same income, and their income fluctuates from day to day. The waste pickers were therefore asked to indicate what their incomes were on bad days and on good days. Because some waste pickers earned their income over a week or sometimes over a longer period of time, the income of those waste pickers were adjusted to a weekly income. It is again clear that the daily and weekly average income for bad and good days was lower for street waste pickers than for landfill waste pickers. We can therefore conclude that, on average, the landfill waste pickers earned substantially higher income.

Figure 12: Average income (adjusted) of waste pickers in the Free State on a good day/week and a bad day/week, 2012



Source: Survey data

The large difference in the income earned on a bad day/week and a good day/week for all waste pickers in Figure 12 points to their vulnerability in terms of the uncertainty regarding their income-earning opportunities. The differences in the average income between landfill and street waste pickers might point to the fact that waste is abundant and more accessible on landfill sites than on the streets. The large difference between good and bad days or weeks can be ascribed to factors such as the availability of waste due to strike actions or bad weather and stronger competition for waste on certain days or times of the year. Most studies amongst waste pickers acknowledge the negative impact of bad weather on the income-earning opportunities of waste pickers (Langenhoven & Dyssel, 2007; Sentime 2011). The BBCs in the Free State indicated that December and January are busier months as consumers generate more waste which becomes accessible to waste pickers. Fridays are reported as the busiest day and the reason might be that the waste pickers need more money for the weekend (Viljoen et al., 2012).

An analysis of the adjusted daily and weekly income earned per landfill site is summarised in Table 11.

Table 11: Adjusted daily and weekly income earned by waste pickers per landfill site in the Free State, 2012

Landfill site	Male	Female	Per day	Male	Female	Per week
Allanridge	3	1	232.5	2	3	39.6
Bloemfontein South	19	16	223.14	18	22	359.13
Bloemfontein North	16	8	190	2	1	1166.67
Botshabelo	6	12	601.39	21	13	197.3
Deneysville	3	3	345	1	10	60.91
Odendaalsrus	13	13	218.58	10	3	180.23
Oranjeville	0	3	35	1	2	50
Hennenman	4	3	157.29	6	10	78.43
Sasolburg	13	6	969.37	12	10	472
Welkom	37	25	499.36	23	30	425.39

Source: Survey data

It is evident from Table 11 that the size of a landfill site did play a role in the income-earning potential of waste pickers. The highest daily average income was earned in Sasolburg and the lowest in Oranjeville and Deneysville, which are the smaller landfill sites. The highest weekly average adjusted income was earned in Bloemfontein North, which is much higher than that of any other landfill site. On some of the landfill sites however, the figures seem exceptionally high. In Sasolburg for example, the daily average income is R969.37. This does not mean that the waste pickers on those landfill sites can earn an income of R20 000 - R30 000 per month. Waste pickers who reported an income usually earned per day might include waste pickers who work for only one day in a week, or those who store their waste for some period and earn those high incomes on the day on which they sell the waste. It might also be that some waste pickers did not understand the question. This also holds for the high average daily incomes at Botshabelo versus the relatively low average daily incomes at the landfill sites in Bloemfontein. The income data should therefore be used with caution.

Table 12 shows the periods for which the waste is stored on the different landfill sites. Most waste pickers on the smaller landfill sites, namely Welkom, Hennenman, Deneysville and Allanridge, store their waste for longer periods of time than on the other larger landfill sites, with the exception of Sasolburg.

Table 12: Waste-storing periods on the different landfill sites in the Free State, 2012

Landfill site		Daily	Weekly	Every two weeks	Every three weeks	Monthly	Every two months	Every three months
	N	%	%	%	%	%	%	%
Allanridge	14	35.7	35.7	0		28.6		
Bloemfontein South	79	44.3	50.6	3.8		1.3		
Bloemfontein North	27	88.9	11.1	0				
Botshabelo	81	22.2	42	6.2		17.3	9.9	2.5
Deneysville	26	23.1	42.3	0		34.6		
Odendaalsrus	49	53.1	26.5	18.4			2	
Oranjeville	6	50	50	0				
Hennenman	35	20	45.7	34.3				
Sasolburg	57	33.3	38.6	19.3		7	1.8	
Welkom	139	44.6	38.1	3.6	2.9	10.1	0.7	

Source: Survey data

The storing of waste relates to the volume, price and frequency at which waste is collected by the BBCs. It is important to know that BBCs play a significant role in the income-earning potential of the waste pickers since they are directing the volumes, price and frequency and type of waste collected. Some of the landfill sites are far from the BBCs. Eleven BBCs that buy waste from the street waste pickers and landfill waste pickers have been identified in the Free State. Two BBCs in Vanderbijlpark, Gauteng, also buy from the landfill sites in the Free State. The BBCs do not buy all types of waste from the waste pickers as indicated by Table 13, which summarises the kind of recyclable waste products that the BBCs buy as well as the average prices the waste pickers receive for the different waste products, which also have an impact on their income potential.

All BBCs, except for one who did not want to reveal data on the products bought and the prices paid for the products, buy white paper and glass from the waste pickers. Not all BBCs in the Free State buy the other waste products. Seventy five per cent of the BBCs buy cardboard and cans. Two thirds buy PET, HDPE, LDPE and PP.[1] There is a lower demand for magazines, newspapers, coloured paper, plastic mix, mixed and unsorted waste and PVC.

Table 13: Waste products bought by the BBCs serving the Free State waste pickers, 2012

Waste product	Waste pickers	N	Mean price (kg)	Maximum price (kg)	Minimum price (kg)	Std. dev
White paper	**Street**	**12**	**0.9**	**1.2**	**0.5**	**0.185864**
	Landfill	**12**	**0.98**	**1.8**	**0.5**	**0.301888**
Coloured paper	Street & landfill	5	0.52	0.9	0.2	0.327109
Magazines	Street & landfill	7	0.22	0.4	0.05	0.13496
Newspaper	Street & landfill	7	0.18	0.4	0.05	0.114953
Cardboard	Street & landfill	9	0.26	0.6	0.1	0.151328
PET	**Street**	**8**	**1.28**	**1.9**	**0.9**	**0.328416**
	Landfill	**8**	**1.44**	**1.9**	**0.9**	**0.329231**
HDPE	Street	8	0.8	1.2	0.5	0.20702
	Landfill	8	0.9	1.9	0.5	0.427618
LDPE	**Street & landfill**	**8**	**1.05**	**2.5**	**0.4**	**0.755929**
Plastic mix	Street	7	0.84	1.7	0.4	0.419751
	Landfill	7	0.93	1.7	0.5	0.434796
Cans	Street & landfill	9	0.39	0.8	0.2	0.176383
Glass	Street & landfill	12	0.22	0.4	0.1	0.089629
PP -	Street	8	0.68	1	0.4	0.249285
	Landfill	8	0.75	1	0.4	0.226779
Unsorted plastic	Street & landfill	2	0.98	1.3	0.65	0.459619
Mixed waste	Street & landfill	6	0.23	0.5	0.05	0.147196
PVC	Street & landfill	3	0.73	1	0.2	0.46188

PET – plastic usually clear or green, sinks in water, rigid, glossy, e.g. cool drink bottle, peanut butter jars, vegetable oil bottles.
HDPE – high density polyethylene, milky coloured or dyed, e.g. milk and water jugs, juice and bleach bottles.
LDPE – low density polyethylene (clear and mixed), flexible, not crinkly, e.g. 6-pack ring covers, bread and sandwich bags, shrink wrap.
PVC – polyvinyl chloride, semi-rigid, glossy, sinks in water, e.g. detergent/cleanse bottles, pipe, copper cable strippings.
PS – polystyrene, often brittle glossy, e.g. Styrofoam, packing peanuts, egg-cartons, and foam cups.
PP – polypropylene, semi-rigid, low gloss, e.g. margarine tubs, straws, screw-on lids

Source: Survey data

There is great potential for PET recycling (Plastic Federation of South Africa, 2010:5), but the demand for PET is still not very high in the Free State. The prices differ between the BBCs and have a direct influence on the waste pickers' income-earning potential.

The highest price per kilogram is paid for PET, namely R1.28 for the street waste pickers and R1.44 for the landfill waste pickers. According to the BBCs, the difference in the prices is mostly a function of the variance in the volumes provided by the landfill and street waste pickers. It is clear that the prices offered to street waste pickers are somewhat lower for selected waste products. Different prices are paid for white paper, PET, HDPE, Plastic mix and PP. The waste product that is the second most valuable is LDPE, followed by white paper and plastic mix.

[1]See Table 13 for explanation of the abbreviations.

According to the BBCs, the prices do not change often, which gives the waste pickers some certainty on the income to expect for their waste. However, the perceptions amongst the waste pickers concerning the income they earn for their waste do not reflect this. Most landfill (58 per cent) and street waste pickers (64 per cent) perceive their income as worse than what they expected to receive for their waste, as illustrated in Figure 13.

Figure 13: Perception of the price received for waste in the Free State, 2012

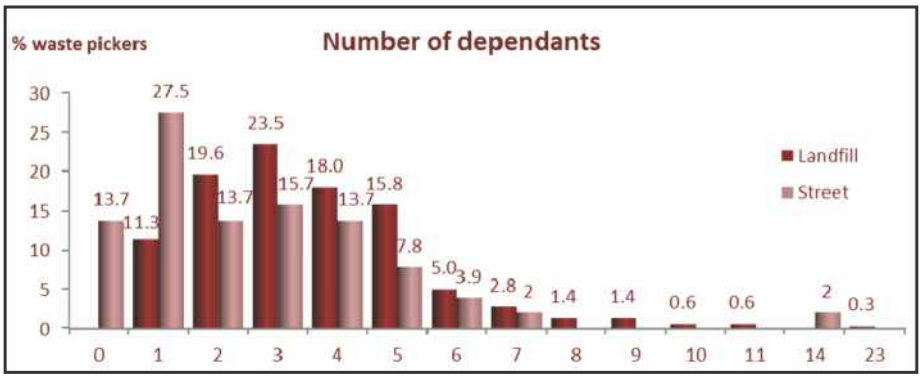
Source: Survey data

Although the income earned by waste pickers was perceived to be fair, it is important not to ignore the fact that most of the waste pickers have a number of people who depend on their income.

3.4.2 Dependents

Amongst the street waste pickers interviewed, only 13.7 per cent indicated that they have no dependents, as depicted by Figure 14.

Figure 14: The number of people who depends on a waste picker's income in the Free State, 2012



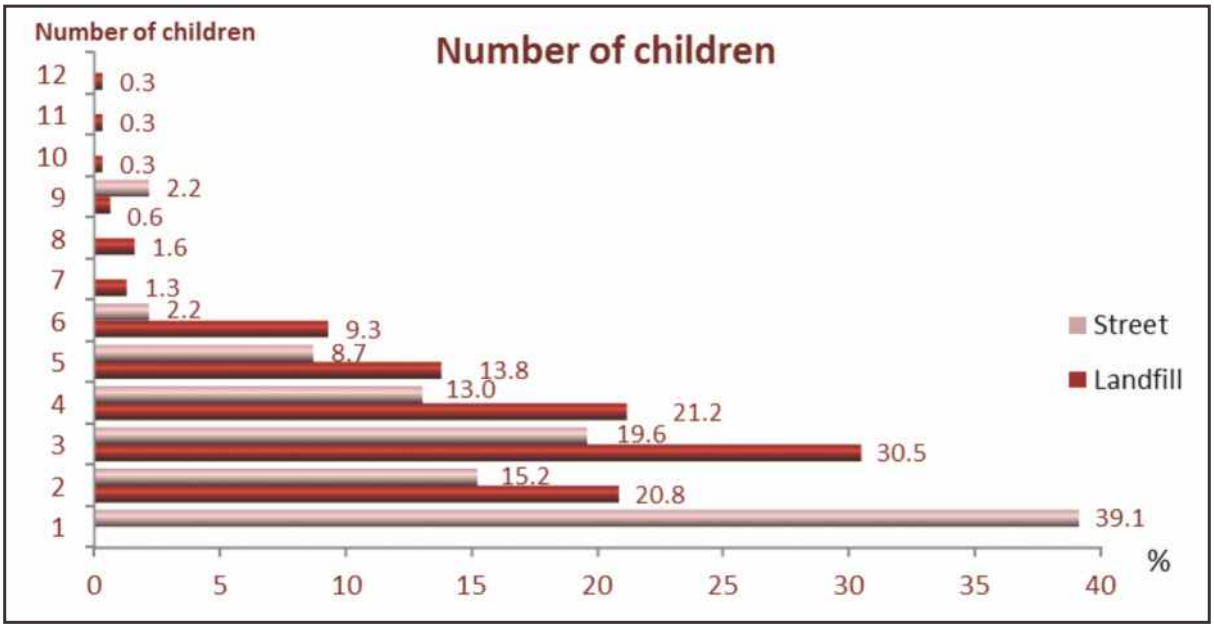
Source: Survey data

More than two-thirds of the landfill respondents (72.4 per cent) had up to four people to support with their income. Twenty five (11.9 per cent) supported six or more dependents while the maximum number of dependents was 23. Street waste pickers seem to have less people depending on their income than do landfill waste pickers. A high percentage of street waste pickers (84.3 per cent) supported only between one and four people, and only 7.8 per cent had to support six or more people while the maximum number of dependents was 14. On average, each landfill waste picker supported 4 dependents (mean value of 3.6), and street waste pickers supported 3 dependents (mean value of 2.6) with their income. The dependents of street waste pickers were lower in number than the average number of four dependents found in the results of the studies by McLean (2000a) and Schenck and Blaauw (2011).

The dependents did not always belong to the same household. The majority of the landfill and street waste pickers had only themselves or one household to support. There were only 2.9 per cent landfill and 7.7 per cent street waste pickers that supported more than one household.

The number of children amongst the dependents varied between zero and 17, as shown in Figure 15. The landfill waste pickers in this survey had on average more children than the street waste pickers. The average number of children for landfill waste pickers was three (mean value of 2.83), whereas for street waste pickers, the average was only two (mean value of 1.8). The majority of landfill waste pickers had two children whereas the majority of street waste pickers had no children. The reason for this might be that more street waste pickers can only sustain themselves and that their level of income is so low that they do not have money to share with their dependents.

Figure 15: Number of children that depend on a waste picker in the Free State, 2012

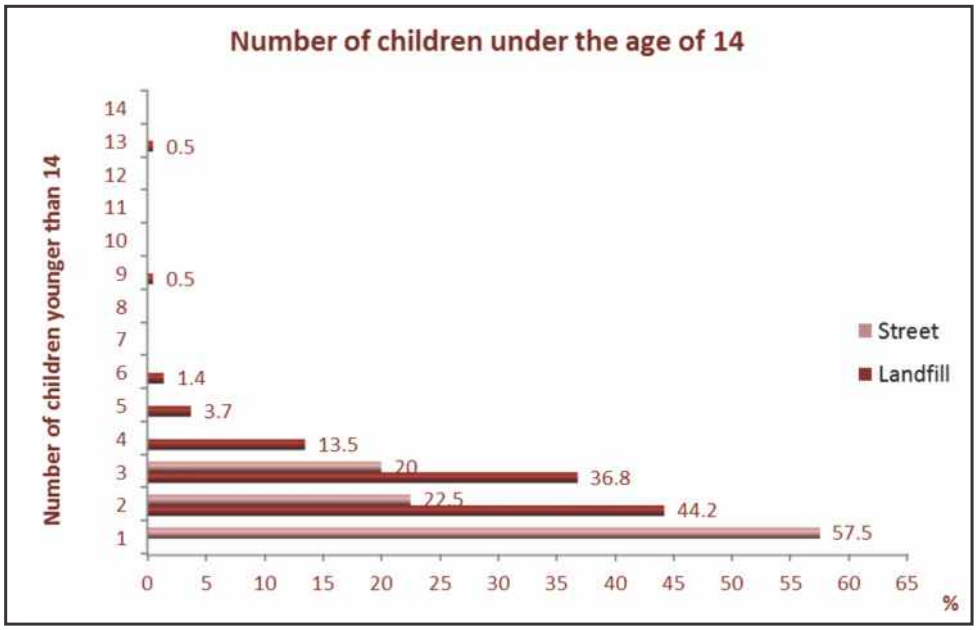


Source: Survey data

It is important to know how many of these dependent children were under the age of 14 as those children are eligible for a child support grant. Such a grant will supplement the average household income. The data concerning the number of children under the age of 14 are depicted inFigure 16.

Of the 312 landfill waste pickers that indicated that they have children, 215 or 68.9 per cent indicated that they have children under the age of 14 years. The majority of the 215 (81 per cent) respondents indicated that they have one or two children under the age of 14 who are eligible for child support grants. The remaining 19 per cent have three to 12 children under the age of 14 years.

Figure 16: Number of children of waste pickers under the age of 14 in the Free State, 2012



Source: Survey data

In contrast to the landfill waste pickers, 57.5 per cent of the street waste pickers with children indicated that they do not have children eligible for a child-support grant. Only 42.5 per cent have one or two children eligible for child-support grants. The child-support grants were the largest source of additional income for the waste pickers, as indicated in Table 14.

Table 14: Other sources of income available to waste pickers in the Free State, 2012

Other sources of income	Landfill		Street	
	N	%	N	%
Another job	7	5.2	2	16.7
Child-support grant	97	71.3	5	
Disability grant	10	7.4	2	16.7
Old-age grant	14	10.3	3	25.0
Pension from a previous job	6	4.4	41.6	
Other grant (not mentioned above)	1	0.7		
Financial assistance from family members /relatives or friends	1	0.7		
Total	136	100	12	

Source: Survey data

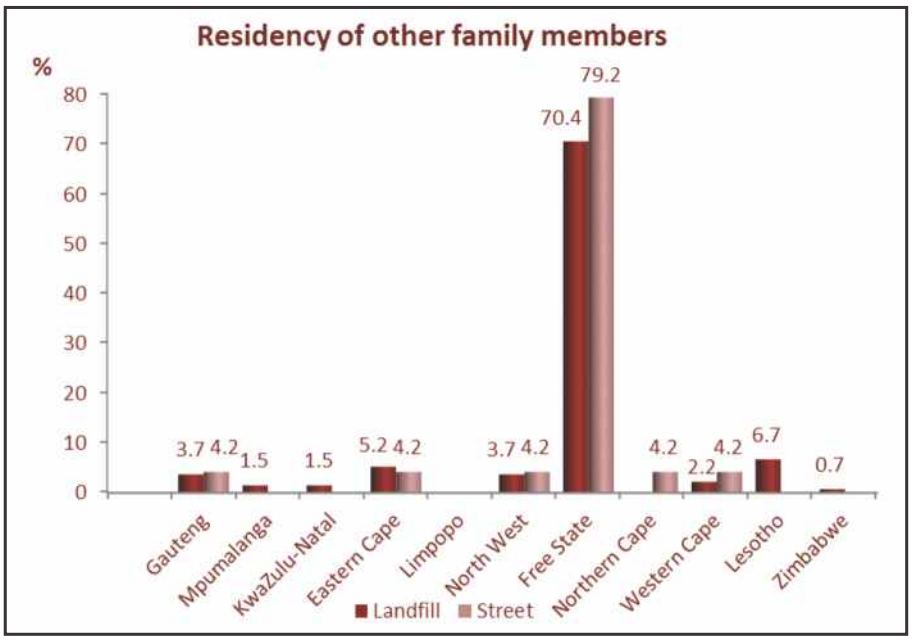
Other sources of additional income were disability grants, old-age grants, pension from a previous job, financial assistance from family or friends and other jobs.

3.4.3 Relationship with family

Some of the waste pickers had close relationships with their family whereas the families of others did not live with them. Of the 400 landfill waste pickers that responded to the questions related to their families, only 135 (33.8 per cent) indicated that they have family that do not live with them. Of the 52 street waste pickers, only 24 (46.15 per cent) have family that do not live with them.

Figure 17 shows the province in which the family, who do not live with them, reside.

Figure 17: Province in which the family of waste pickers in the Free State live



Source: Survey data

Notwithstanding the fact that family members were not living with them, a significant number of family members was residing in the same province where the waste pickers work, namely 70.4 per cent for landfill waste pickers and 79.2 per cent for street waste pickers. Only 29.6 per cent of landfill and 20.8 per cent of the street waste pickers had family living in other provinces. Only 7.4 per cent had family living in neighbouring countries. Because most other family lived in the Free State, 86.7 per cent of the landfill and 80.9 per cent of the street waste pickers visited their family once or more than once a year. Of these, 23.3 per cent of landfill waste pickers visited their family once a month, and 19.4 per cent of landfill and 38.1 per cent of street waste pickers visited them weekly. The frequency of the visits is shown in Table 15.

Table 15: Frequency of visits to other family and relatives not living with the waste pickers, 2012

Frequency of visits	Landfill		Street	
	N	%	N	%
Daily	8	6.2		
Weekly	25	19.4	8	38.1
Twice a week	1	0.8		
Twice a month	3	2.3	2	9.5
Monthly	30	23.3		
Every two months	1	0.8		
Four times a year	7	5.4	2	9.5
Twice a year	7	5.4		
Once a year	29	22.5	5	23.8
Sometimes	5	3.9	3	14.3
Seldom	1	0.8		
Do not visit them	10	7.8		
Long time ago	1	0.8		
They visit often	1	0.8		
Refused to answer			1	4.8
Total	**129**	**100.0**	**21**	**100**

Source: Survey data

In a question on whether they send money to relatives that do not live with them, 69 (50 per cent) of the 138 landfill waste pickers and 6 (30 per cent) of the 20 street waste pickers who responded to the question indicated that they do send money home.

Table 16 shows the amounts and frequency of the money that was send to relatives and other family. The amounts that the waste pickers sent to their family and relatives not living with them ranges between R23 and R2000. The highest percentage of waste pickers sent small amounts of between R2 and R300 to other family members. Only 13.4 per cent sent amounts of between R301 and R500, and only 16.6 per cent sent amounts of more than R500. Most waste pickers did not specify the frequency of their financial support to their family. Only six street waste pickers sent money to family members not living with them.

Table 16: Amount and frequency of money sent to other relatives, 2012

Frequency	R2-R300	R200-R400	R301-R500	R501-R800	R800-R1000	R1001-R2000	What I can afford
	Percentage						
Weekly	14.9	1.5	1.5	1.5			
Monthly	1.5				3		
When I visit	3						
When they need it	1.5						
Frequency not specified	40.3	6	10.4	4.5	3	1.5	1.5
Yearly						1.5	
Bi-weekly	1.5						
Every 2nd week			1.5				

Source: Survey data

The study then proceeded to investigate the working lives of the waste pickers. The results are presented in the next section.

3.5 The work life of landfill and street waste pickers in the Free State

The following section explores the feelings and perceptions of the LWPs in terms of waste picking.

3.5.1 Feelings and perceptions of the LWPs concerning waste picking

Respondents were asked to indicate the reason for entering into this informal economic activity. Unsurprisingly, the vast majority of the waste pickers on the landfill sites (177 representing 43.4 per cent of the sample) said that this was the only option available to them to earn any form of income. The standard response was "...only option for income". The same message was conveyed by another group (39 or 9.5 per cent) who stated that they: "...couldn't find another job". The rest of the sample had the same message but used different phrases such as: "...work is very scarce".

As far as the street waste pickers go, the response was virtually the same. In their sample, 49 per cent used the same phrases such as: "...only option for income". These responses confirm the fact that economic hardship has moved the vast majority of waste pickers to take up this activity.

Given the lower demand for unskilled workers in South Africa (Loots, 1998), the waste pickers were in essence forced into the informal economy by their socio-economic circumstances. Their current occupation can in fact be regarded as a spin-off of a labour market where the focus is more and more on skills that they never had the opportunity to obtain given their low level of education and human capital.

However, for a very small minority of the LWPs, the reasons were less bleak, and they saw this as an opportunity to increase their existing income stream instead of it being their sole source of income. The most notable reasons cited by this small group are presented in Table 17.

Table 17: Additional reasons for taking up waste picking by LWPs in the Free State, 2012

Answer	Frequency	Percentage of respondents
"Able to give my children an education"	1	0.24
"Can be my own boss"	1	0.24
"It started as fun and now it's my job"	1	0.24
"To find food for pigs"	1	0.24

Source: Survey data

The respondents were prompted to indicate aspects of the waste picking that they like and dislike. The responses to this question contained very few surprises and are directly linked to the above analysis. The most frequent answer featured the word income in one way or another. Examples include: "Bring a little income; Bring in some money; Give me a little money..." Just over 300 or 78 per cent of the land fill site sample provided an answer to this effect. The same applies for the street waste pickers where the word income featured in the answer almost without exception. That waste picking is the only alternative to being unemployed is evident.

However, there were some interesting exceptions. Around 30 (7.5 per cent) of the land fill site waste pickers enjoyed the idea of being "...my own boss". Three respondents even indicate that they make "...lots of money". Focussing on the negative aspects of the activity revealed a number of themes. Table 18 provides a thematic analysis of these responses.

Table 18: Thematic analysis of dislikes of waste picking among LWPs in the Free State, 2012

THEME	TOPIC AND RESPONDENTS' ANSWERS	NUMBER OF RESPONDENTS WHO PROVIDED ANSWERS
Theme 1	**No dislikes**	
	No problem; none; nothing;	83
Subtotal		**83 (22.3%)**
Theme 2	**Bad working conditions and safety concerns:**	
	Bad smell; bad odours; bad smell from sewerage; bad smell, allergy, dead infants; bad smells, medical waste; dust, bad smells, animal carcasses	49
	Security, bad working condition; no safety rules and hazardous chemicals; many dangerous things on the dump; high incidence of infections and disease; stench, sharp objects can injure	66
	Dust; dust causes disease, allergies in eyes; dust	38
	from the crusher	
Subtotal		**203 (54.7%)**
Theme 3	**Income very little or too low**	
	Insecure income; little income; low income; not enough money; work for little money; inconsistent income	18
Subtotal		**18 (5%)**
Theme 4	**Exposed to criminal elements**	
	The tsotsies; the tsotsies bother me; people from outside come and steal our…; people stealing my stuff; property being stolen; the young boys intimidate us; fighting and theft (gangsters from Lesotho); boy harasses her; boys stealing her waste	10
Subtotal		**10 (2,7%)**
Theme 5	**Health-related**	
	Accidents; illnesses	9
Subtotal		**9 (2.4%)**
Theme 7	**Exposed to the elements, smoke & hard work involved, too little waste available**	**47 (12.6%)**
	Working in the sun; smoke, sunburn; smoke, heavy physical work; very hard work for little; need shelter for rain; too little waste.	
Theme 8	**Did not want to comment /not understood**	**8 (2.1%)**
TOTAL		**372 (100%)**

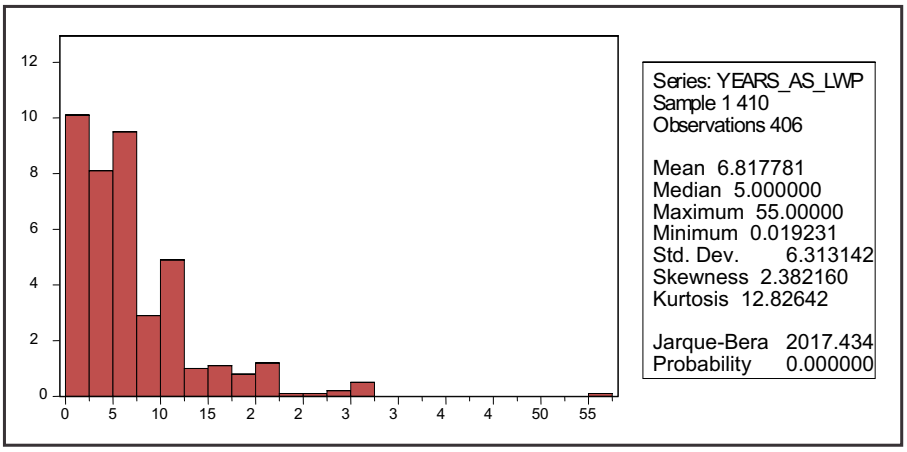
Source: Survey data

The concerns for their health and the unpleasant working conditions are evident in the answers provided by the LWPs. In spite of this, they have very little choice but to engage in this activity. It indeed shows determination to make an honest living in spite of the significant opportunity costs involved in engaging in this activity with potentially uncertain and irregular returns. This determination is further in evidence when one considers that, in spite of the negative aspects highlighted by the LWPs, as many as 22.3 per cent of the them indicated that they do not have a real significant problem with the waste picking.

The responses from the street waste pickers told a very different story. Their biggest dislike was the fact that they earn very little money for the effort it takes to collect waste on the streets. This was by far the most prominent response with health and associated risks only mentioned by three of the 27 respondents that answered this question.

The next question probed the length of time that the waste pickers have been involved in this activity. Figure 18 provides the basic information from this question.

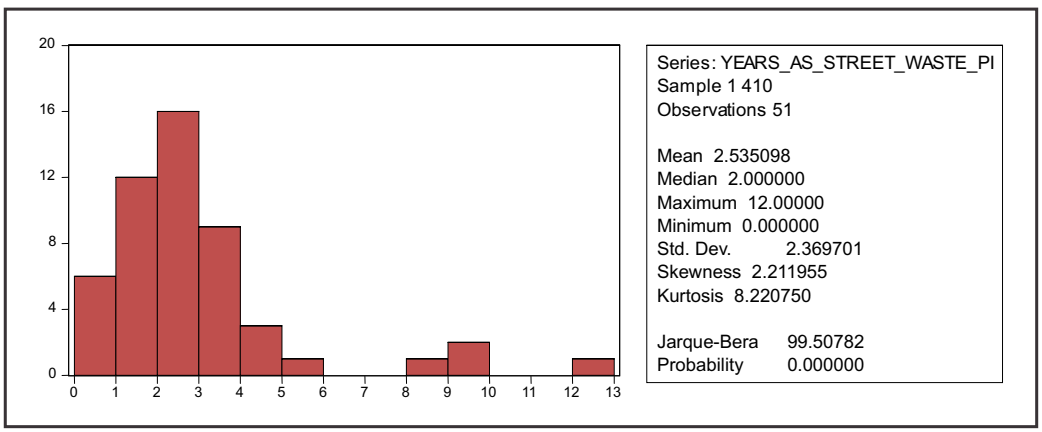
Figure 18: The number of years as LWPs in the Free State, 2012



Source: Survey data

The average length of time that the LWPs in the Free State have been involved in this informal economic activity was 6.82 years. The median is slightly less at five years. One respondent has been picking waste for no less than 55 years. According to the rest of the completed questionnaire, the particular individual started with this activity at the age of nine years. Again the account of the street waste pickers reveals a different story. Figure 19 represents the results for them.

Figure 19: The number of years as street waste pickers in the Free State, 2012



Source: Survey data

The average length of time spent waste picking is less than half of that of the waste pickers on the landfill sites, i.e. two and a half years, with a median of two years. The one respondent started on the day of the interview. The respondent with the longest work history recorded 12 years as opposed to the LWPs which had one respondent recording more than 50 years.

The reasons for this important difference are something that needs to be investigated with a focused qualitative study. The data clearly show that street waste picking is something that is a more recent phenomenon compared to collecting waste from landfill sites. The latter has been around much longer as an informal economic activity. Other possible social explanations may be that picking waste on landfill sites offers a bigger sense of togetherness than the lonely life as a street waste picker. This is open for debate as there are instances of street waste pickers working together as well. The need for focused qualitative research is clear.

The data seem to indicate that the LWPs are mostly connected to one particular land fill site. In fact, 397 (97.78 per cent) respondents indicated that they have always been working on that particular land fill site while only nine LWPs indicated that they have previously worked at another land fill site. Five LWPs indicated where they had collected before their current location. Of these, two were active as street waste pickers and the other three collected at landfill sites in Kroonstad, Bloemfontein-South and Allanridge.

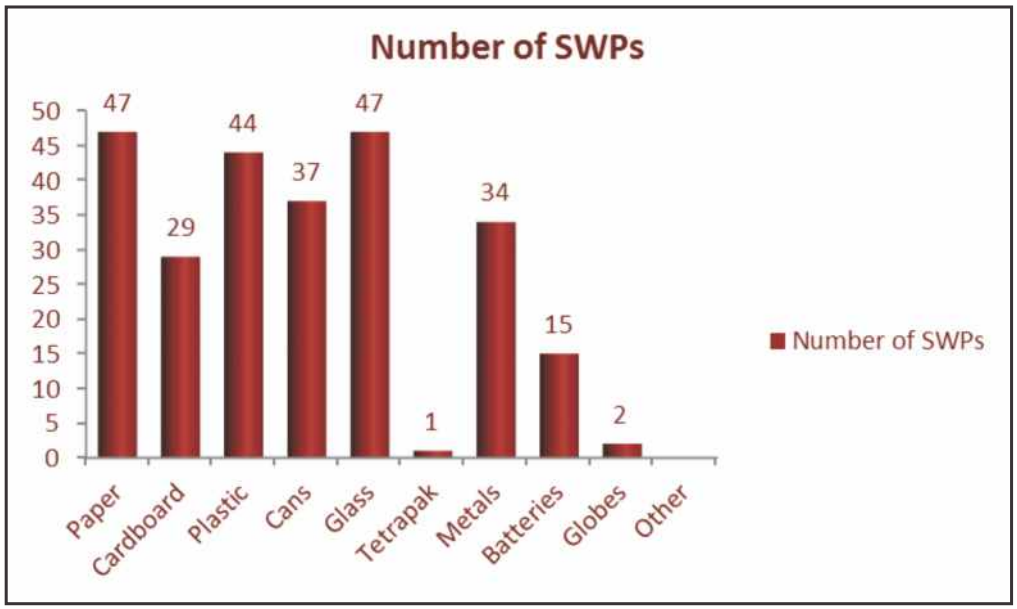
The street waste pickers are also for the most part keeping to one area with 84.31 per cent indicating that they only operate in the area in which the interview was held with them. The ones that are not restricted to a particular area made it clear that they go where the waste is. As one respondent put it: "...follow the bins." Another said: "...all across Bloemfontein."

The respondents were asked to indicate how many other waste pickers were also working on the same landfill sites. The median answer in this regard was 80. It must be noted that many were not able to supply any concrete answer and merely indicated "many" and "lots".

3.5.2 What do the waste pickers collect?

The waste pickers were asked to indicate all the products that they recycle.

Figure 20: Recyclable waste collected by street waste pickers in the Free State, 2012

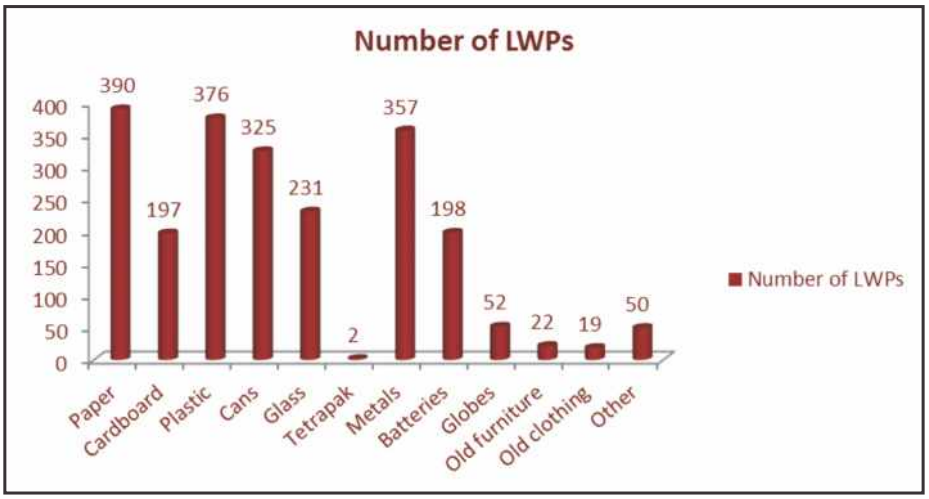


Source: Survey data

Paper (47 respondents), plastic (44 respondents) and glass (47 respondents) were collected by almost all the street waste pickers. Cans (37 respondents), metals (34 respondents) and cardboard (29 respondents) also featured prominently. Only one street waste picker collected Tetrapak.

Figure 21 provides the results for the LWPs. The results differ very little, except that metals are collected proportionally more by the LWPs as opposed to their counterparts on the streets.

Figure 21: Recyclable waste collected by LWPs in the Free State, 2012



Source: Survey data

Figure 21 indicates that the most popular items collected by the LWPs was paper, plastic and metals with 390, 376 and 357 respondents respectively indicating that they collected these items. Glass was collected by 231 LWPs, and 198 and 197 respondents respectively collected batteries and cardboards. Tetrapak, on the other end of the scale, was collected by only two LWPs. This is no surprise as research shows that there is almost no BBCs that buy Tetrapak from waste collectors.

An interesting point is the content of the answers obtained from the 50 respondents among the LWPs who also itemised their collections under "other". Table 19 provides the information collected.

Table 19: Additional information as to items collected by LWPs in the Free State, 2012

Other	Frequency	Percentage of respondents	Valid cumulative percentage
Bones	5	10	10.00
Cell phones	2	4	14.00
Computers	1	2	16.00
Deposit bottles	34	68	84.00
Electrical appliances	3	6	90.00
Food for pigs	2	4	94.00
Furniture, shoes	1	2	96.00
Thing you can use at home	1	2	98.00
Tyres	1	2	100.00
Total	**50**	**100**	

Source: Survey data

3.5.3 What do the LWPs use to store the waste that they have collected and where is it stored?

Being waste pickers on the land fill sites, it comes as no real surprise that trolleys were not often used in this regard while the street waste pickers often used trolleys. Almost all (401) of the LWPs in the survey used plastic bags to store the waste. Only one respondent indicated the use of a wheelbarrow or boxes. Four LWPs used bins as well.

Given that bags was the most popular storing mechanism, it comes as no surprise that storage on site was by far the most convenient place of storage. This was the case for 98 per cent of the respondents, with storage at a friend as the only other alternative. All waste pickers indicated that the lack of covered storage is a problem.

3.5.4 What equipment do the street waste pickers use to collect waste?

The most popular item used was plastic bags. Thirty-six street waste collectors said that they used it. Fourteen suggested that they used some trolley, and four made use of a wheelbarrow in their endeavours.

3.5.5 How long do waste pickers engage in this activity on a daily basis?

The earliest starting time for the LWPs is 4 a.m. However, only one respondent testified to that. It would seem that the vast majority of the LWPs start between 7 a.m. and 8 a.m.. Three respondents said that they start at 06:00. The earliest finishing time reported was 10 a.m. More than half of the respondents finish at 5 p.m. or later with 8 p.m. being the latest finishing time.

It would seem as if, in general terms, the street waste pickers start earlier with their collection than the LWPs. By 5 a.m. in the morning, 29 per cent of the street waste pickers would already be up and busy collecting waste. In fact, the earliest starting cited by the street waste pickers was 2 p.m. By the time the average LWP start their day (7 a.m.), 87 per cent of the street waste pickers are already at work. By lunchtime, a third of the street waste pickers have finished for the day. Many finish only later, and by 5 p.m., 98 per cent of the street waste pickers are done.

This plausibly reflect the greater competition for a more limited quantity of waste among the street collectors as opposed to a more regular and certain supply of waste on the landfill sites in the Free State.

3.5.6 To whom do the waste pickers sell the waste and what is the process involved in doing so?

The overwhelming majority (403 out of 410) of the LWPs sell their waste to people from various BBCs. Only eight sell to private individuals as well. The street waste pickers were even more homogenous in terms of the selling point. All 52 sell the waste to a BBC with only one person selling to a private individual as well.

This observation confirms the valuable role of the BBCs in creating formal jobs and informal income-generating opportunities for the poor and unemployable (Viljoen et al., 2012).

A further interesting point emanating from the data is an almost even split between LWPs who sell their waste to only one BBC (51.2 per cent) and those who make use of more than one BBC (48 per cent). This is in contrast to the street waste pickers. They sell mostly only to one BBC with 85 per cent of the respondents who indicated one BBC only.

Interestingly in the case of 397 (97 per cent) of the respondents, the waste is being collected from the LWPs by representatives of the BBCs. In only eight cases (2 per cent) is the LWP responsible for delivery to the BBC.

Annexure 1 contain the detailed answers as to how often transport is needed for waste products (q42). Seventeen percent said that they require transport on a daily basis. The same percentage need transport on a weekly basis, and a further 12 per cent require transport once a month.

The longest period between the deliveries of the waste was 3 months. These findings also correspond well to the correlating question as to how long the waste was being stored. Table 20 represents the answers to this question.

Table 20: Length of time that waste was stored by LWPs in the Free State, 2012

Reported length of storage time	Frequency	Percentage of respondents	Valid cumulative percentage
1 -2 Week	1	0.28	0.28
1 Day	56	15.95	16.24
1 Month	62	17.66	33.90
1 Week	63	17.95	51.85
1-2 Weeks	3	0.85	52.71
2 Days	13	3.70	56.41
2 Months	15	4.27	60.68
2 Weeks	85	24.22	84.90
2-3 Days	13	3.70	88.60
2-3 Months	2	0.57	89.17
2-3 Weeks	2	0.57	89.74
3 Days	2	0.57	90.31
3 Months	9	2.56	92.88
3 Weeks	10	2.85	95.73
7 Days	1	0.28	96.01
Month	1	0.28	96.30
Monthly	1	0.28	96.58
Once a month	1	0.28	96.87
Varies	1	0.28	97.15
Week	6	1.71	98.86
month	1	0.28	99.15
not stored	3	0.85	100.00
Total	**351**	**100**	

Source: Survey data

The answers provided correlates well with the time between deliveries with one day, one week and once a month proving to be the most frequent answers.

3.5.7 Do waste pickers collect waste for personal use?

No less than 344 (85 per cent) of the LWPs indeed collect items among the waste for personal use. This is mostly in the form of clothes, shoes, cell phones, household utensils and, in a few cases, TVs and microwave ovens. The corresponding figure for the street waste pickers is 65 per cent. The type of product collected for own use is virtually the same with a bigger emphasis on clothing and shoes in the case of the street waste pickers.

3.6 The consumption/expenditure patterns of waste pickers in the Free State

In order to form a more nuanced picture of the daily lives of the waste pickers, respondents were asked to indicate all the items that they and/or their dependents buy. The results of the bigger sample (LWPs) are presented in Table 21 in descending order.

Table 21: Consumable items bought by LWPs and/or their dependents in the Free State, 2012

Product /Item	Frequency	Percentage of respondents who buy the particular item
Maize meal	406	99
Cleaning materials (soap & washing powder)	397	96.8
Vegetables	383	93.4
Bread	371	90.5
Milk	371	90.5
Other food	370	90.2
Meat	364	88.8
Clothing	328	80
Fish	300	73.2
Shoes	299	72.9
Blankets	270	65.9
Cigarettes, tobacco, snuff or other items for smoking	258	62.9
Other energy	241	58.8
Paraffin /petrol /diesel	199	48.5
Taxi	196	47.8
Alcoholic beverages like beer, wine & spirits	145	35.4
Medical expenses	95	23.2
Shelter/room/house/place to sleep	95	23.2
Other transport	16	3.9
Coal	12	2.9

Source: Survey data

The table does not bring any surprises to the analysis. Food, cleaning materials and clothing are the items on which the vast majority of the LWPs spent money. Smoking was also an important item with almost two thirds of the respondents having that on their shopping list. Just over one third also consumed alcohol with medical expenses and shelter being the lowest on the list.

The respondents were also asked to list any other expenses that they have. This question was answered by 249 of the respondents. The most pertinent items that came to the fore were expenses for church (13.6 per cent of the sub-sample), funeral plan (10 per cent), burial society (6.43 per cent) and school fees (4.4 per cent). An important side issue was the question as to who pays for the school fees of the other waste pickers who have children at school?

An analysis of the 52 street waste pickers reveals virtually the same pattern of expenditure. The typical basket of the participants in this informal economic activity did not differ from what is generally experienced in the informal economy.

Given the vulnerable position of the waste pickers, it is also important to track their access to basic needs. This was the focus of the next section of the study.

3.6.1 Waste pickers' access to basic needs in the Free State

3.6.1.1 Where do waste pickers in the Free State sleep?

As is the case in many other informal economic activities, the people involved in waste picking lead harsh lives where they are frequently exposed to the elements. This raises the question as to the nature of the individual circumstances and level of access to basic needs of these people. Respondents were therefore asked to describe where they sleep at night, and the responses of the LWPs and the street waste pickers can be seen in Table 22 and Table 23 respectively.

Table 22: Type of dwelling where LWPs sleep at night in the Free State, 2012

Type of dwelling	Frequency	Percentage of respondents (%)	Valid cumulative percentage
On the street	1	0.25	0.25
Backyard shack	24	5.89	6.13
Shack	193	47.30	53.43
Hostel/shelter	2	0.49	53.92
House (bricks/reeds etc)	188	46.08	100.00
Total	**408**	**100**	

Source: Survey data

Table 23: Type of dwelling where street waste pickers sleep at night in the Free State, 2012

Type of dwelling	Frequency	Percentage of respondents (%)	Valid cumulative percentage
On the street	2	3.85	3.85
Backyard shack	6	11.54	15.38
Shack	16	30.77	46.15
Hostel/shelter	2	3.85	50.00
House (bricks/reeds etc)	26	50.00	100.00
Total	**52**	**100**	

Source: Survey data

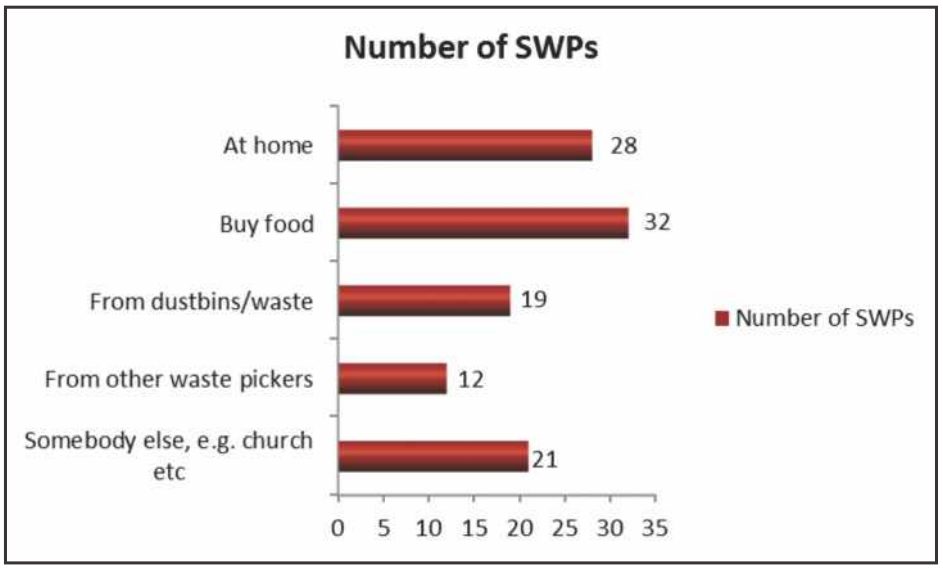
The type of dwelling of the LWPs seems, in general, to be of slightly better quality and comfort than that of the typical street waste picker in the Free State. The position of street waste pickers in the Free State contrasts sharply with the situation of street waste pickers elsewhere in the country. Schenck and Blaauw (2011b), in their study of street waste pickers, found that as many as 69 per cent of street waste pickers in Pretoria slept "on the streets". Only 1 of the more than 400 LWPs and 2 of the 52 street waste pickers interviewed in the Free State shared the same plight.

A significant 46.08 per cent of the LWPs slept in a residence built with bricks, reeds and wood. The situation is unfortunately not as good for many of their counterparts. The majority took shelter in some form of a shack (cumulative 53.10 per cent). Other sources of lodging were hostels or shelters (0.49 per cent). The percentages differ slightly, but the street waste pickers in the Free State had more or less the same type of accommodation as the LWPs (see Table 23).

3.6.1.2 Food security of waste pickers in the Free State

Literature suggests that members of deprived households often miss out on regular meals, and the quality of their food varies (Collins et al., 2009:29). It is therefore important to determine where the LWPs get the food that they eat. This was probed by a particular question in the survey. The results are presented in Figure 22 and Figure 23 for the street waste pickers and the LWPs respectively.

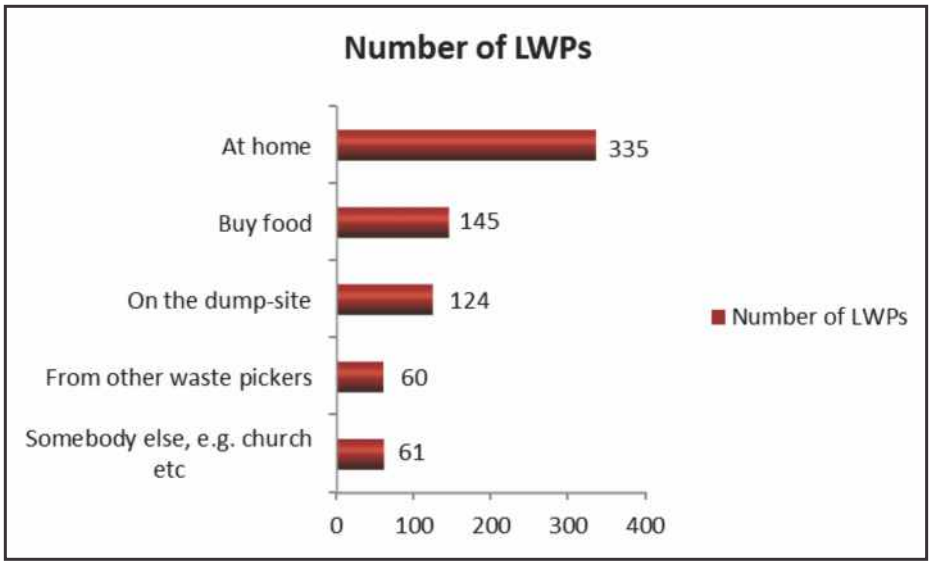
Figure 22: Source of food for street waste pickers in the Free State, 2012



Source: Survey data

Whereas most street waste pickers sometimes ate at home and sometimes bought food, most LWPs ate at home. This may be explained by the fact that the street waste pickers started much earlier in the morning and were therefore not able to eat breakfast at home. Again these subtle differences should form the basis of an in-depth qualitative study.

Figure 23: Source of food for LWPs in the Free State, 2012



Source: Survey data

Given the fact that many of the LWPs slept in a brick or reed house, it came as little surprise that 335 said that they ate at home. Of the LWPs, 145 also suggested that they bought food to eat daily while a further 124 maintained that they obtained food from the landfill site itself. Other waste pickers or churches provided food in the case of only 60 of the respondents.

The researched also followed up on the details of other individuals and church groups. Various churches played an important role with 42 of the LWPs saying that they received food form the church. The set of data shows that, in towns like Odendaalsrus and Allanridge, churches provided food to the waste pickers. A few mentioned that their family provided them with food, two mentioned the social/welfare worker and a further three mentioned the school feeding scheme as an alternative food source.

The issue of food security was probed further by asking whether they had access to food while collecting waste. The following themes emerged from the answers.

Table 24: LWPs' access to food while collecting waste in the Free State, 2012

Access to food	Frequency	Percentage of respondents (%)	Valid cumulative percentage
Bought from vendor at the gate	42	10.2	10.2
From the Spaza/tuck shop	43	10.5	20.7
From the dumpsite	28	6.8	27.5
Bring own food	1	0.2	27.7
Pick and Pay	1	0.2	27.9
Church	9	2.2	30.1
No access	286	69.8	
Total	**410**	**100**	**100**

Source: Survey data

The above information correlates well with the preceding graph. Almost 70 per cent of respondents indicated that they do not have any access to food while collecting waste. These LWPs fall in the category of those that eats at home and not while they are busy collecting waste on the landfill sites.

3.6.1.3 Waste pickers' access to other basic services in the Free State

It is imperative to investigate the level of access of especially the LWPs to other basic services and amenities while they are collecting waste (as they are mostly active in one area for a long period of time). The first aspect under scrutiny is the access to drinking water. Table 25 shows the results.

Table 25: LWPs' access to drinking water while collecting waste in the Free State, 2012

Access to drinking water	Frequency	Percentage of respondents (%)	Valid cumulative percentage
Municipality/office	96	23.4	23.4
Vendor at gate	32	7.8	31.2
Sewerage plant	23	5.6	36.8
At gate	117	28.5	65.3
At co-op	4	1.0	66.3
Bring my own	1	0.2	66.5
No access to water	137	33.4	
Total	**410**	**100**	**100**

Source: Survey data

Almost two thirds of the research population had some kind of access to drinking water while collecting waste at the landfill sites. It remains a concern that 33.4 per cent had no access to drinking water during this process. Street waste pickers almost without exception used the toilet facilities at the BBC or at garages. The same applies for access to drinking water.

This is in contrast to the LWPs. A major concern is that, with the exception of one LWP (at the Odendaalsrus dump site), all the other respondents said that they did not have access to toilet facilities while collecting waste. This was echoed in the sentiment of concern expressed by the LWPs in terms of what they did not like about their waste-picking activity.

The same waste picker at the Odendaalsrus dumpsite also said that he had a place to wash himself at the office. Apart from him, only one other LWP had a place to wash while collecting waste, namely at the gate of the dumpsite in Bloemfontein North. The other more than 400 LWPs had no such luxury.

The last section of the study focussed on the relationships of the waste pickers as this emerged as an important aspect in the literature review.

3.7 Relationships of the waste pickers

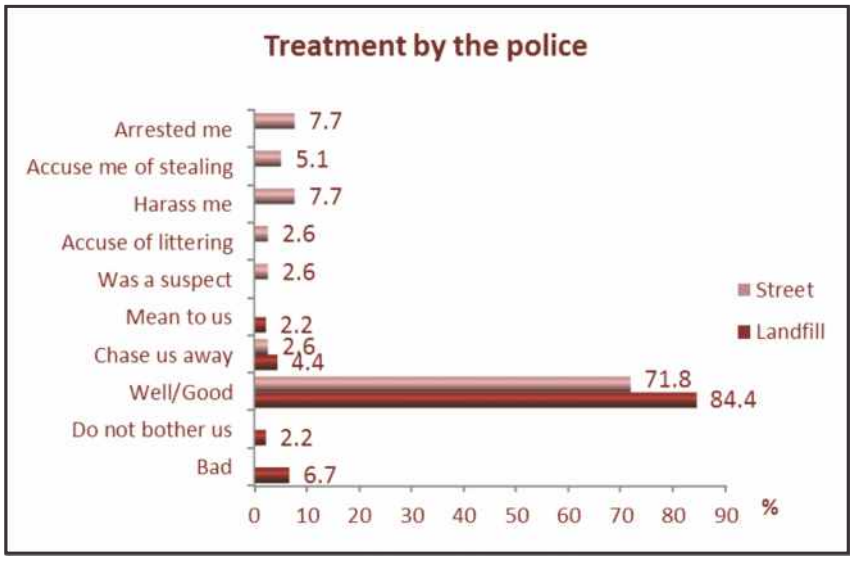
3.7.1 Relationship with the local municipality or other organisations

It seems that the waste pickers do not receive much support and assistance from the local municipality or other organisations. Only one street waste picker claimed to be getting support from an organisation called SIFE who provided him with free transport. Only six landfill waste pickers claimed that they did receive support from the municipality. Two respondents claimed that the municipality provided storage space, two claimed that the municipality took their waste to storage facilities, and one each claimed that the municipality cleaned the site and gave them free water.

3.7.2 Relationship with the police

Figure 24 shows the results of the respondents regarding the treatment they receive from the police. For the majority (84.8 per cent of landfill and 71.8 per cent of street waste pickers), the police treated them well. There were very few complaints of harassment by the police, which is similar to the findings in other studies in South Africa where only a few street waste pickers reported incidents of harassment by the police (McLean, 2000b; Benson & Vanqa-Mgijima, 2010). Other negative responses were mainly raised by a few street waste pickers. Apart from harassment, the main complaints were related to criminal activities. About 15.4 per cent of the street waste pickers were either arrested, were accused of stealing or were a suspect in criminal activities.

Figure 24: Treatment of the waste pickers in the Free State by the police, 2012



Source: Survey data

3.7.3 Relationship with the public

The results related to the treatment the waste pickers received from the public also indicate a positive relationship between them and the public. These positive figures were recorded for 75.4 per cent of landfill and 71.5 per cent of street waste pickers. More street waste pickers (24.5 per cent) than landfill waste pickers (1.2 per cent) claimed that they were not treated well by the public. This is understandable as the street waste pickers have more direct contact with the public on the street than those on the landfill sites. The negative responses are supported by a study in Mitchells Plain (Langenhoven & Dyssel 2007) who also report that some homeowners experienced the street waste pickers as a nuisance.

Table 26: Treatment of the waste pickers by the public in the Free State, 2012

Type of treatment	Landfill		Street	
	N	%	N	%
Positive responses				
Friendly	1	0.4		
Good/well	193	72.3	31	63.3
Very good/very well	5	1.9	1	2.04
Greet us			1	2.04
No problems	1	0.4		
Nice			1	2.04
Well, give us things from their home			1	2.04
Fair	1	0.4		
	201	**75.4**	**35**	**71.5**
Negative responses				
Not well, harass me			1	2.04
Chase me away			6	12.3
Laugh at us, ridiculed us			1	2.04
Not well	2	0.8	3	6.12
Falsely accuse me of making a mess			1	2.04
Not much respect	1	0.4		
	3	**1.2**	**12**	**24.5**
Neutral/indifferent responses				
Ignore us	2	0.8		
Neutral	1	0.4	1	2.04
No contact/interaction	21	7.9		
Some well, some bad	36	13.5	1	2.04
	60	**22.6**	**2**	**4.1**
Other responses				
Question not understood	1	0.4		
Not applicable	2	0.8		
	3	**1.2**		

Source: Survey data

3.7.4 Relationship with BBCs

The treatment that waste pickers receive from the buyers of waste (BBCs) was also reported to be well to very well as summarised by Table 27.

Table 27: Treatment by BBCs of waste pickers in the Free State, 2012

Type of treatment	Landfill		Street	
	N	%	N	%
Positive responses				
Respectful	6	1.49		
Reasonable			1	2.04
Friendly	5	1.2		
Friendly and respectful	1	0.3		
Well/good	362	89.6	44	89.8
Not bad	2	0.5		
We like them			1	2.04
Well, sometimes give us bread			1	2.04
	376	**93.09**	**47**	**93.88**
Negative responses				
Not well	4	0.99		
Sometimes bad	3	0.74		
Sometimes rude	1	0.25		
Rude	1	0.25		
Treat us like dirt	1	0.25		
Well butt feels cheated	2	0.5		
Bad	1	0.25		
Wants to hit me			1	2.04
Bad	2	0.5		
Bad pay short	1	0.3		
Feels I am cheated	3	0.7	1	2.04
Abuses us	1	0.3	1	2.04
Not honest with payment	1	0.3		
	21	**5.33**	**3**	**6.12**
Neutral/indifferent responses				
Sometimes good, sometimes bad	1	0.25		
Do not know	5	1.2		
	6	**1.45**		

Source: Survey data

The percentage of positive responses far outweighed the negative responses as the majority of both the landfill waste pickers (93.4 per cent) and the street waste pickers (93.9 per cent) experienced the treatment from the BBCs as positive. This finding is supported by most studies on waste pickers that conclude that the waste pickers and BBCs have a good working relationship and that the waste pickers are treated well by the people from the BBCs. This is not a surprising result as the success of the BBCs depends on the support of the waste pickers (Schenck & Blaauw 2011a; Langenhoven & Dyssel 2007; Viljoen et al., 2012). Only a few individuals felt that they were not treated well.

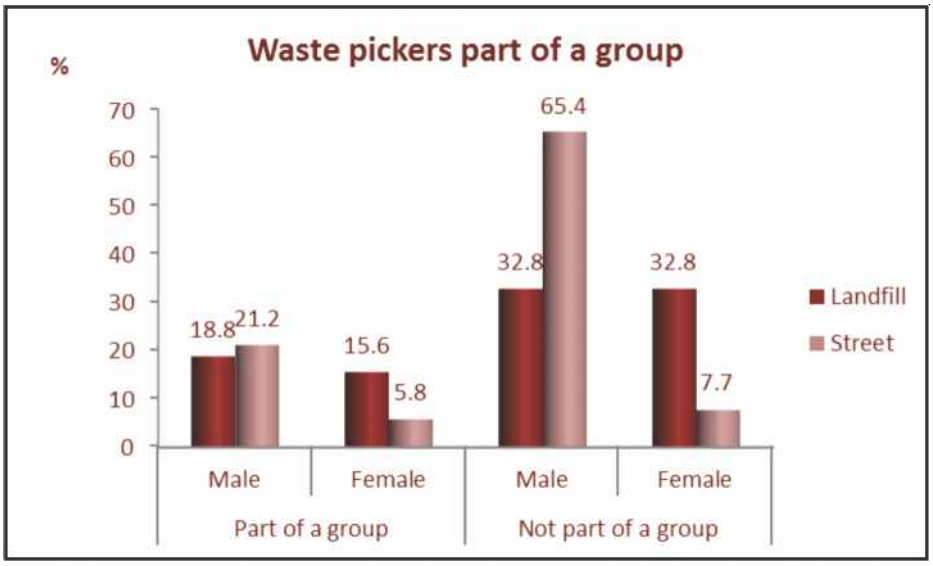
The BBCs provided some support to the waste pickers although the relationship was predominantly business-like (Viljoen et al., 2012). Two BBC provided street waste pickers with meals. One sometimes gave money as donations to waste pickers. Two BBCs provided clothing to some, six helped with bags, and three assisted with trolleys. One BBC in Bloemfontein provided meals, clothing, bags and blankets for the children who collect waste for a living (Viljoen et al., 2012). One BBC reported that they safe-kept some of the waste pickers' money for them, but this was not general practice. Only 54 per cent of the thirteen BBCs provided waste pickers that visited their sites with toilet facilities, and 62 per cent provided them with drinking water. There is therefore a need to provide these facilities to the waste pickers. One of the reasons for BBCs to provide support to the waste pickers is to obtain a competitive advantage over the other BBCs (Viljoen et al., 2012). Sixty two per cent of the BBCs can assist street waste pickers with transport if they had large volumes of waste to sell. Most of the BBCs have trucks that visit the landfill sites to buy waste from the landfill waste pickers.

3.7.5 Relationship with other waste pickers

Most of the waste pickers indicated that they worked on their own and not as part of a group. Only 34.4 per cent of the landfill and 27 per cent of the street waste pickers worked in a group as indicated byFigure 25.

Of the 34.4 per cent on the landfill waste pickers who worked in a group, 18.8 per cent were male and the remaining 15.6 per cent were female. Amongst the street waste pickers, more males tended to work in a group than females. More landfill waste pickers tended to work in a group than street waste pickers.

Figure 25: Waste pickers in the Free State working as part of a group, 2012



Source: Survey data

The waste pickers who do work in a group support one another in various ways as summarised inFigure 26.

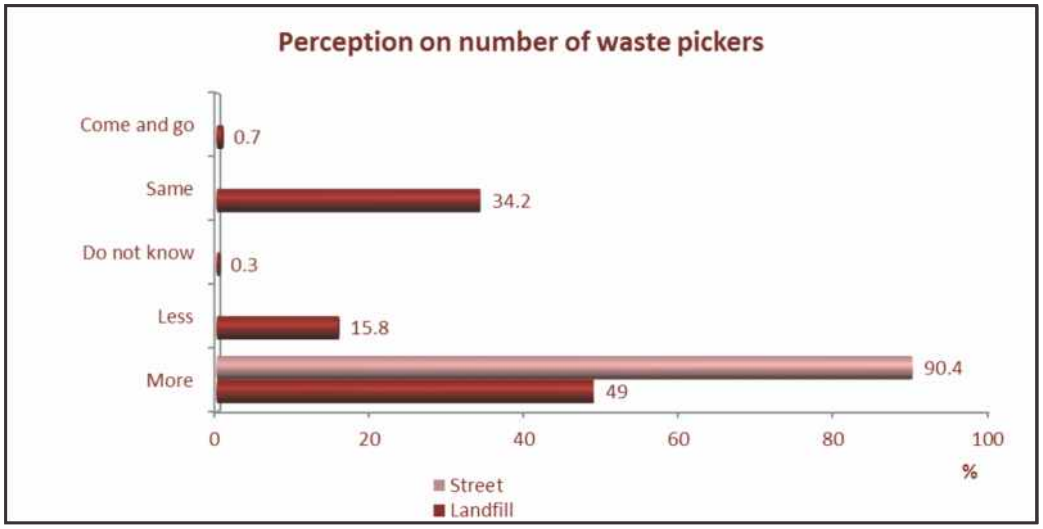
Figure 26: Ways in which the waste pickers, who work together, support/help each other, 2012

Source: Survey data

The support that waste pickers mostly received from working in a group was support with the carrying and loading of their waste. It is clear from the results that the waste pickers who worked as part of a group did so informally. In a question whether they would have liked to be more organised, more than half of the street waste pickers (55.9 per cent) indicated that they would indeed have like to be more organised. This is in contrast to only 24.8 per cent of the waste pickers on the landfill sites who were positive about cooperation.

In a question to the street waste pickers on whether they have observed more or less waste pickers since they have started collecting waste, 90.4 per cent of the street waste pickers indicated that they observed more waste pickers. Only 49 per cent of the landfill waste pickers indicated that there were more waste pickers on the landfill sites as illustrated in Figure 27. This increases the competition amongst the street waste pickers and the limited available waste, which may have a negative impact on their income earning possibilities.

Figure 27: Perceptions amongst waste pickers on the increase in waste pickers, 2012



Source: Survey data

3.8 Health and injury risks

Waste pickers are exposed to serious health and injury risks, which are listed in Table 28. The five most frequent health and injury risks reported by the landfill waste pickers were broken glass which causes them to cut themselves, the inhalation of dust and the bad smell on the landfill sites which causes sinus and other chest-related illnesses, chemicals and hospital and medical waste which cause a serious health risk to the waste pickers. Dangerous situations and accidents by the vehicles and bulldozers on the landfill sites were reported by 42 waste pickers. Another 7 reported that there are no safety rules on the landfill sites. In a study by Chvatal (2010) in the Western Cape, safety and security were one of the main reasons why the municipalities or companies responsible for the landfill sites did not want to allow people on the landfill sites as people have been injured and even killed and then the municipality or company could be hold responsible.

Table 28: Health and injury risks for landfill waste pickers in the Free State, 2012

Health and injury risks	Landfill	Street
	Frequency	
Broken glass	69	8
Dust	50	1
Chemicals	50	
Bad smell	46	1
Hospital and medical waste	43	1
Vehicles/bulldozers/earthmoving	42	1
Sharp objects	42	1
Smoke	41	
Rotten/toxic/hazardous material	24	
Nails	15	
Animal carcasses	14	
Fire	12	
Sunburn/heat	10	3
Dangerous fumes	10	1
Poison	8	
No safety rules	7	
Army explosives/ammunition	4	
Attacks/stealing from criminals	3	3
Snakes	4	
Germs	4	4
Dangerous/toxic substances (Acid)	3	
Bacteria,	3	
Stench	3	
Aerosol cans/gas explode in the fires	2	1
Noise	1	
Insects	1	
Unhygienic circumstances	1	1
Heavy bags		2
Poisonous food		1

Source: Survey data

The hospital and medical waste, safety rules and security, as well as the presence of army explosives and ammunition are matters of concern that should be addressed as a matter of urgency. The most frequent health and injury risk reported by street waste pickers was broken glass. Compared to landfill waste pickers, the street waste pickers are exposed to fewer health and injury risks.

The landfill waste pickers that suffered a serious injury or health problem that prevented them from working for some time in the last year amounted to 143 of the 397 respondents (36 per cent). Their injuries or health problems that prevented them from picking waste is shown in Table 29..

Table 29: Injuries and health problems of the waste pickers in the Free State in last year, 2012

Injury and health problem	Landfill	Street
Nail injury	9	
Chest infection/pain	25	
Back injuries/pain	4	
Allergy	2	
Asthma	2	2
Lung problems	5	
Cuts	53	3
Broke arm/leg/finger	4	
Vehicle injury	10	
Sick due to spoiled food	1	
TB	14	
Insect bites	1	
Burnt	2	
Body pain	1	
Skin infection/disease	2	
Foot injury	3	
Needle injuries	3	
Injured being attacked		
Sunburn/sunstroke	1	2
Injuries by sharp objects	5	
Stomach pain	1	
Not specified	4	1
Knife wound robbery		1
TOTAL	**152**	**8**

Source: Survey data

The most frequent injuries and health problems reported were injuries from cuts, chest-related illnesses including TB and vehicle injuries. Only eight street waste pickers had suffered a serious injury or health problem. These were mostly injuries where they have cut themselves with broken glass or sharp objects.

The period of time for which the waste pickers were not able to work is summarised in Table 30. It indicates that 77 (76.4 per cent) of the landfill waste pickers suffered serious injuries or illnesses as they were unable to pick waste for a period of a week or longer. Only three street waste pickers responded to this question. Two of them could not work for one to two days, and one who suffered from a knife wound, sustained during a robbery, could not work for a month. It therefore seems that the waste pickers on the landfill sites are more prone to more serious health and injury risks.

Table 30: Period for which the waste pickers in the Free State could not work due to injuries or health problems, 2012

Days not able to work due to injury				
	Landfill		Street	
	N	%	N	%
1-2 days	11	10.9	2	66.7
3 Days	5	5		
4 Days	4	4		
5 Days	3	3		
Few days	1	1		
1 Week	19	18.8		
2 Weeks	22	21.8		
3 Weeks	7	6.9		
4 Weeks	8	7.9	1	33.3
6 -9 Weeks	1	1		
2 Months	6	6		
3 Months	4	4		
5 Months	1	1		
6 Months	2	2		
8 Months	1	1		
9 months	1	1		
11 Months	1	1		
1 Year	2	2		
18 months	1	1		
3-4 years	1	1		
	101	**100**	**3**	**100**

Source: Survey data

The main causes of serious injuries or illnesses that kept the landfill waste pickers from working for periods of a week and longer are summarised in Table 31.

Table 31: Main causes of serious injuries and illnesses that kept waste pickers out of work for long periods of time

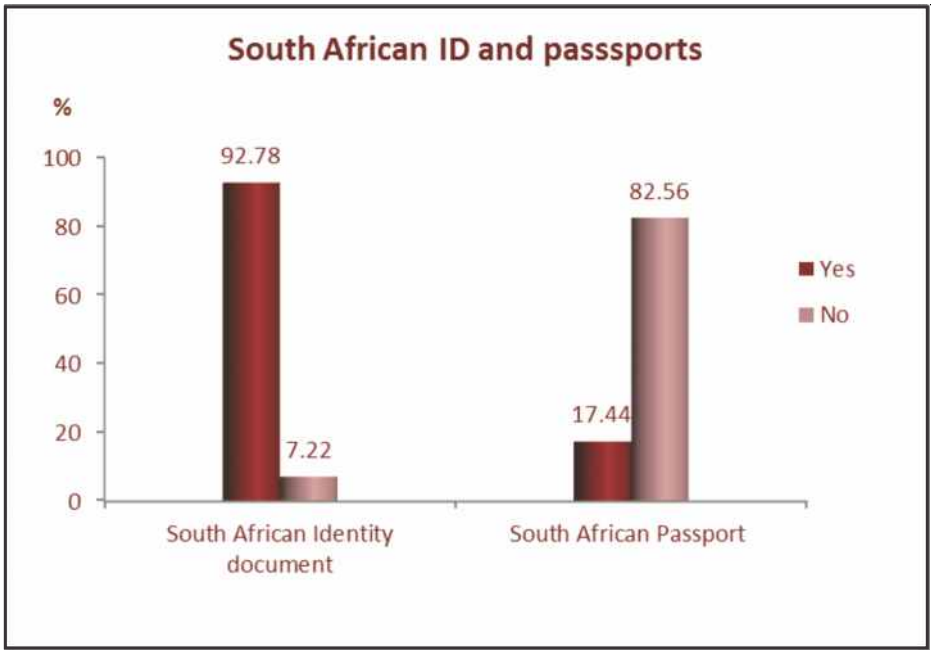
	Vehicle-related accidents	Bulldozer-related accidents	Chest- and TB-related illnesses	Attacks	Cuts	Sharp objects (nails)	Fractures	Burns	Total
1 week			**3**		9	5	1		18
2 weeks	4	1	8		6	3			22
3 weeks	1		2		2			1	6
1 month	1		2	1	3	1		1	9
6 weeks					1				1
2 months	1		1		2	2			6
9 weeks			2						2
3 months	1		2				1		4
5 months						1			1
6 months			1						1
8 months			1						1
11 months	1		1						2
1 year	1		1						2
18 months	1								1
3-4 years		1							1
Total									77

Source: Survey data

It is clear that the most frequently reported injury and health risks are indeed the risks that prevent waster pickers from doing their work for very long periods of time. These results again highlight the seriousness of injuries related to vehicles, bulldozers, cuts and sharp objects as well as the chest-related illnesses.

In a question on whether the landfill waste pickers are in possession of a South African identity document or South African passport, 92.8 per cent indicated that they have a South African identity document, which points to the fact that they are South African citizens and can benefit from social grants such as child-support grants and old-age pension, if they qualify for it. Very few have a South African passport, which supports the data that only a few waste pickers' family live in neighbouring countries.

Figure 28: Percentage of waste pickers who are in possession of a South African identity document and a South African passport, 2012



Source: Survey data

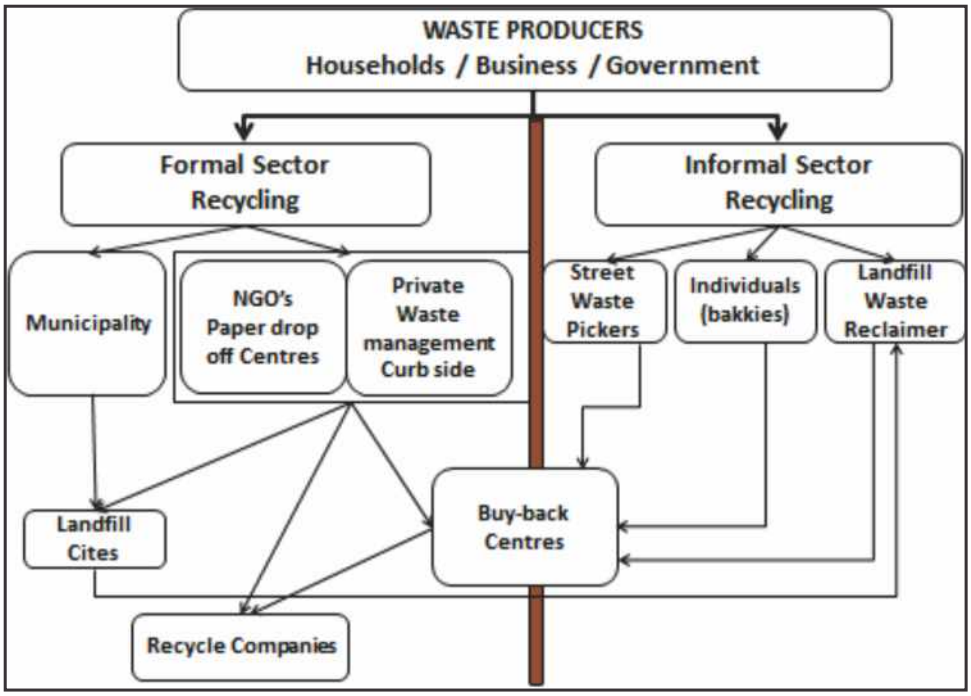
The next section contains the main findings and conclusions.

4. ANALYSIS AND INTERPRETATION OF FINDINGS – THE BUY-BACK CENTRES

"… it is hard work".
"…competition is tough" (Comments by two BBC owners)

Buy-back centres play a crucial role in the recycling industry. They are the link between the informal waste pickers and the formal recycling companies as they buy the waste from the waste pickers and sell it to the recycling companies as Figure 29 illustrates.

Figure 29: Links between the formal and informal recycling activities.



Source: Viljoen, et al., 2012 and adjusted from DEA, undated

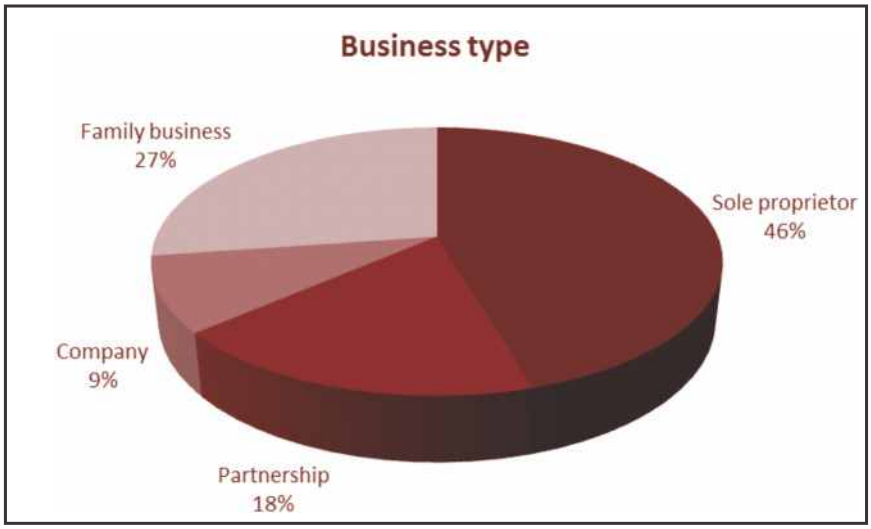
This report covers the results from the interviews with 13 BBCs of which three were in Welkom, one in Hennenman, seven in Mangaung and two in Vanderbijlpark. To give a true reflection of the BBCs in the three municipalities covered by the study, the data will be based on the BBCs that are located within the Free State boundaries, namely those in Welkom and Hennenman (Matjhabeng Municipality) and Bloemfontein (Mangaung Municipality). Results from the two BBCs in Vanderbijlpark will be added where appropriate. No BBCs could be found in Sasolburg (Metsimaholo Municipality). The waste pickers sell their waste to the BBCs in Vanderbijlpark, which falls within the boundaries of Gauteng province.

A quantitative survey with qualitative questions was conducted by the research team. The reason for using the mixed-method design was to collect as much data and information as possible from the BBCs (Creswell & Plano Clark, 2011). Information on the location of BBCs were not readily available, and the research team had to search for BBCs. Information on the location of BBCs were obtained from an internet search, telephone directories, the waste pickers, referral by other BBCs and own observations. The population was not known, and therefore, snowball sampling was used. We interviewed all the BBCs that we could find or were referred to except for those that buy only scrap metal. The BBCs were very cooperative and eager to share their information. For the purpose of the study, the information obtained from the BBCs are kept anonymous. Fifty-five per cent of the respondents interviewed were employees who manage the BBCs, and 45 per cent of respondents were owners of BBCs.

4.1 Business structure of the BBCs

Most of the BBCs in the Free State (46 per cent) are sole proprietor businesses, which correspond with the findings in a study by Viljoen et al. (2012) in Pretoria and Bloemfontein. There is one company, two partnerships and three family businesses as indicated by Figure 30.

Figure 30: Type of business structure of BBCs in the Free State, 2012



Source: Survey data

These BBCs are all entrepreneurial efforts in which the businesses have been built from humble beginnings. Some of them did receive support from big recycling companies if they delivered to the particular company. In such cases, they are then not allowed to deliver to other competing companies and thus have less bargaining power.

4.2 Number of employees

BBCs also employ significant numbers of people. Table 32 shows that the total number of on-site employees working for the ten BBCs who responded to this question amounted to 199 people, which gives an average number of 20 workers per BBC in the Free State. This average is a little higher than the 18.4 in Pretoria and the same as the average number of workers at the BBCs in Mangaung (excluding Hennenman and Welkom) (Viljoen et al., 2012).

Table 32: Total, average, minimum and maximum number of on-site employees

	Total n=10	Minimum	Maximum	Average
Total	199	11	30	20

Source: Survey data

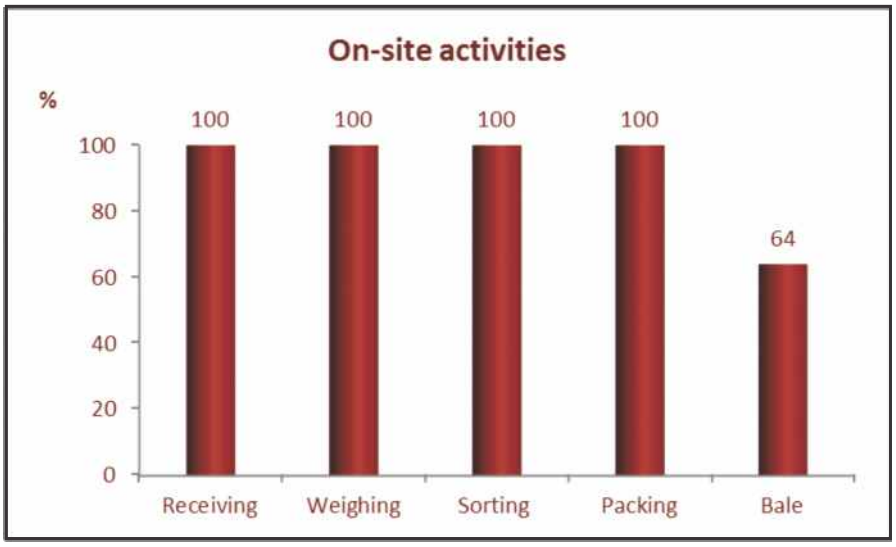
Six (60 per cent) of the BBCs employed between 22 and 30 workers, and the remaining four (40 per cent) employed between eleven and thirteen workers. In terms of number of employees, there were six large BBCs with four smaller BBCs. The six largest BBCs employed on average 25 workers per site and the smaller BBCs on average 12 workers per site. If the results of the two BBCs in Vanderbijlpark are added, the total number of employees working at the twelve BBCs in the Free State amounts to 277 workers, which gives an average of 23 jobs per BBC. It was interesting to find that, in the study by Sobuce (2012), the waste collectors were reported to deliver their waste to one of the BBCs in Kokstad and referred to themselves as "working for" the BBC, although at closer investigation, they were paid for the waste collected in a similar fashion as the waste pickers in the Free State. In Kokstad, they thus identified with a particular BBC.

4.3 Main on-site activities of BBCs

The following activities take place as part of the standard on-site activities of BBCs:

- The main activities on all BBC sites are pay-outs and sorting, packing and weighing the waste. The main activity of the BBCs is to collect and buy waste to be able to sell the waste to the recycling companies. Some of the larger BBCs also have baling machines with which they can bale the waste. Some of the BBCs have a contractual relationship with a recycling company who has provided the BBC with a baling machine. With these facilities, the BBCs add more value to the waste, which ensures higher prices to them. The price that BBCs receive for their waste depends on the quantity and quality of the waste they supply (Plastic Federation of South Africa, 2010:5; Viljoen et al., 2012). The smaller BBCs who do not have baling machines sell their waste to larger BBCs who have baling facilities as the recycling companies do not accept waste that is not baled to certain specifications.

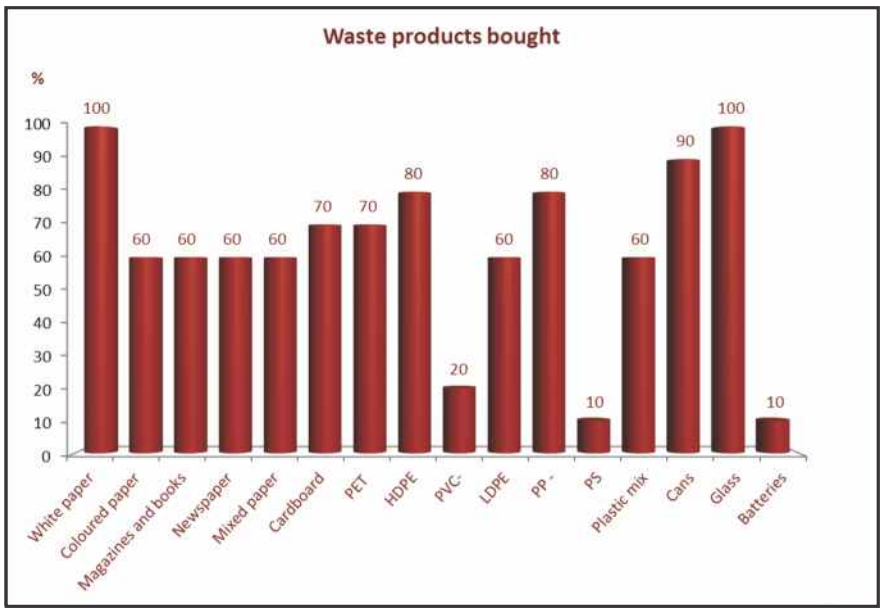
Figure 31: Main activities at the BBCs, 2012



Source: Survey data

Not all BBCs buy all waste products. They are selective in what products they buy.

Figure 32: The number of BBCs in the Free State who buy different types of waste products



Source: Survey data

It is clear that most BBCs buys white paper, glass and cans. Most other waste products are bought by six or more BBCs, which are more than half the BBCs. It is clear that PS, PVC and batteries are not highly demanded by BBCs.

Table 33: Mean, minimum and maximum prices that BBCs in the Free State pay for waste products, 2012

Waste product	N	Mean	Minimum	Maximum	Standard deviation
White paper	10	**0.85**	0.5	1	0.1581139
Coloured paper	5	0.52	0.2	0.9	0.3271085
Magazines and books	6	0.19	0.05	0.4	0.1200694
Newspapers	6	0.19	0.05	0.4	0.1200694
Mixed papers	5	0.23	0.05	0.5	0.1643168
Cardboard	7	0.29	0.1	0.6	0.1625687
PET	7	**1.26**	0.9	1.9	0.3505098
HDPE	8	0.76	0.5	0.9	0.1407886
PVC	2	0.57	0.2	1	0.5656854
LDPE	6	0.67	0.4	1	0.242212
PP	6	0.75	0.5	1	0.242899
Plastic mix	5	0.68	0.4	0.9	0.2167948
Cans	7	0.34	0.2	0.5	0.09759
Glass	10	0.22	0.1	0.4	0.0973253

Source: Survey data

From Table 33, it is clear that the prices differ between the BBCs. This is an attempt to compete for the waste from the waste pickers. These prices are subject to the price that BBCs receive for the waste from the larger BBCs or recycling companies and their own cost structures and bargaining power. These prices are the minimum prices paid by the different BBCs, and waste pickers can negotiate higher prices for larger volumes and higher-quality waste.

The recyclable waste product with the highest minimum, maximum and average price per kilogram is PET, followed by white paper. This corresponds with the findings in a study amongst the BBCs in Bloemfontein. The price of white paper is much lower than in Pretoria (Viljoen et al., 2012). White paper has the highest minimum, maximum and average price per kilogram in Pretoria (Viljoen et al., 2012). Despite the high price of PET, only seven BBCs in the Free State buys PET from the waste pickers whereas all of the BBCs who responded to this question buy white paper. The prices per kilogram for cans and glass is very low, but all of the BBCs buy glass, and eight of them buy cans.

The BBCs in Vanderbijlpark also buy from the landfill sites in the Free State. The average price paid for white paper, PET, cans, magazines, HDPE and mixed plastic is a little higher than what the BBCs in the Free State pay for the waste. In contrast, the average price paid for cardboard, newspaper, glass, PP and LDPE is slightly lower than that paid by the BBCs in the Free State.

The owners of the BBCs were asked about the factors that influenced the price structure of the BBCs. These factors also play a role in the prices paid to the waste pickers. The following aspects were mentioned:

- Prices differ in order to compete for the waste from waste pickers.
- Prices are subject to the BBCs' cost structures and bargaining power with the larger BBCs or recycling companies to which deliver their waste.
- In the study by Viljoen et al. (2012), the prices offered by the BBCs to the waste pickers in Bloemfontein were reported to be much lower than those in Pretoria due to the distance from the big recycling companies. Transport cost plays the biggest role in the price that BBCs are able to pay to the waste pickers.
- The BBCs also revealed that they pay more to the waste pickers on the landfill sites due to the volume of waste they can deliver or collect. The street waste pickers, who only collect a volume that they are able to carry on a trolley, receive a lower price. The volume of waste the BBC can deliver to the recycling companies also determines the price they receive.
- Supply and demand factors also play a role. The demand for the end product impacts on the demand for the recycled item from which the end product is made.
- Some periods are busier than other periods, and during these times, the waste pickers can earn more. For example, the BBCs indicated that December has been identified as the busiest time of the year. There is more paper available as businesses tend to clean up their offices. More boxes are also available due to the festive season and the increase in shopping, and more PET is available as waste due to the warm weather. The BBCs also indicated that they find a trend amongst the waste pickers to collect less waste the week after they have received their grants/pensions. This is not supported by empirical research but merely an observation. In winter, less waste is collected due to the extreme cold weather that may present itself in the Free State.
- The prices are dictated by buyers of waste products, e.g. larger BBCs and recycling companies.
- Prices are also dictated by the number of recycling companies that buy waste from the BBCs.
- If one company closes, the demand decreases with what that company would have taken up from the BBCs, which causes an oversupply of waste products that influence the prices thereof.
- The BBC who burnt down stated that: "…we cannot collect from the landfill sites, as we do not have enough space to store the waste. We struggle to keep up with our waste management activities"
- The physical location of the BBC is important. BBCs should be close enough and accessible to the informal waste collectors. For a BBC to be viable, it should be close to an industrial and commercial hub where sufficient quantities of recyclables, such as packaging waste, can be obtained (DEA, n.d.:16).

The fact that a BBC buys a particular product is not an indication of the profitability of the product. A BBC would sometimes buy less-profitable products just to ensure that the waste pickers sell their waste to the particular BBC. Figure 33 shows the most profitable waste products for BBCs in the Free State.

Figure 33: Most profitable waste products for BBCs in the Free State, 2012

Source: Survey data

White paper was ranked as the most profitable waste product for five BBCs followed by PET which was ranked as most profitable for four BBCs. These two products are therefore the most sought after waste products, and this is reflected in the prices paid for them. Six of the BBCs claim that the prices change on an annual basis whereas others claim that they change daily. The BBCs whose prices change very often are those that are exporting their waste products, like PET, and that deal in aluminium, copper and other metals.

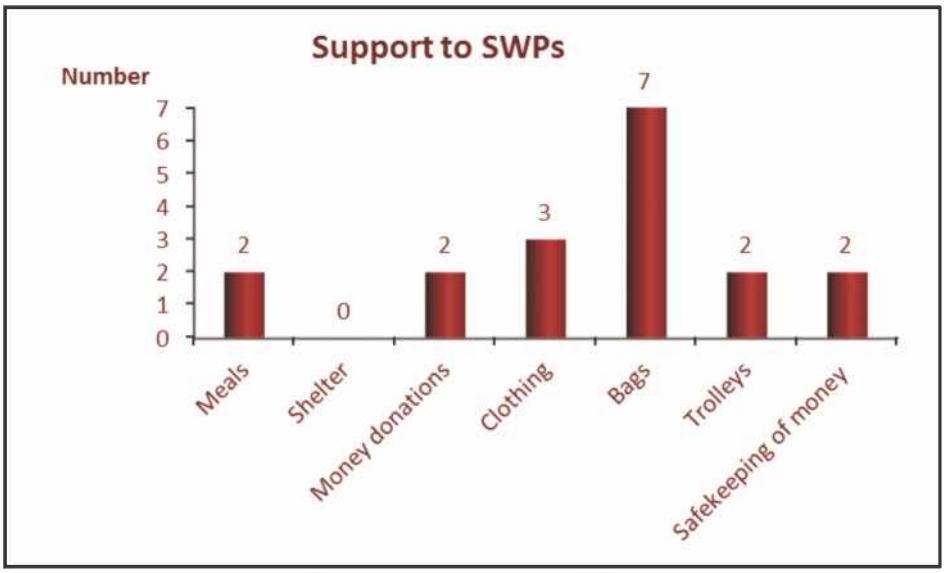
Prices change because of supply and demand factors which determine the prices. The prices are dictated by the buyers of the waste products, namely larger BBCs and recycling companies (e.g. Sappi, Mondi, Consol, Nampak) as well as the number of recycling companies that take up the waste from the BBCs. If one company closes due to fire, for example, the demand decreases with what that company would have taken up from the BBCs and that causes an oversupply of waste products that influence the prices thereof.

The same happens when the number of BBCs decreases. The BBC who burnt down in Welkom had to temporarily relocate to other premises. The owner stated that they "…cannot collect from the landfill sites, as we do not have enough space to store the waste. We struggle to keep up with our waste management activities". The prices are therefore very sensitive to demand and supply factors. In order to increase the income-earning opportunities in the waste system, it is therefore important not only to look at the supply of waste but also to stimulate the demand thereof. Without the demand for waste products, waste products will not have value.

4.4 Support to waste pickers

The BBCs were asked what support they offered to the waste pickers, and the following information emerged.

Figure 34: Support to waste pickers.



Source: Survey data

Although the relationship between the BBCs and the waste pickers seemed predominantly business-like (Viljoen et al., 2012), some of the BBCs provided some additional support or services to the waste pickers. Two BBCs provided street waste pickers with meals. One BBC in Bloemfontein also gave sandwiches, clothing, bags and blankets to the children who collect waste for a living (Viljoen et al., 2012). Two BBCs sometimes gives money as donations to waste pickers. Three BBCs provided clothing, seven helped with bags, and two assisted with trolleys. One BBC in Bloemfontein provided meals, clothing, bags and blankets for the children who collect waste for a living (Viljoen et al., 2012). Two BBCs reported that they kept safe some of the waste pickers' money for them, but this seemed not to be general practice.

Seventy three per cent (eight) of the eleven BBCs in the Free State allowed the waste pickers that visited their site to use their toilet facilities, and 91 per cent of BBCs provided them with access to drinking water. One BBC provided the waste pickers with washing facilities, and one has a tuck shop. In contrast to the street waste pickers in Pretoria who slept on the street, most of the waste pickers in the Free State slept at a home where they had access to washing facilities. The report on the waste pickers indicated that there was a need for these facilities when they worked on the streets and on the landfill sites during day time. On the street or on the dumpsite, they did not have access to toilets and water. There is therefore a need to provide these facilities to the waste pickers. One of the main reasons why BBCs provided this additional support to the waste pickers was to attain a competitive advantage over other BBCs (Viljoen et al., 2012).

Nine or 82 per cent of the BBCs have bakkies (pick-ups) with which they assisted the street waste pickers if they had a large quantity of waste that they had to transport to the BBC. Five BBCs indicated they picked up the waste for free, and two charged the waste pickers between R20 and R30 for the transport. Most BBCs collected waste from the landfill sites. None of the BBCs in the Free State indicated that they lent the waste pickers money.

One BBC indicated that waste pickers received loyalty cards which earned them a bonus at the end of each month.

4.5 The relationship between buy-back centres and recycling companies

Most BBCs indicated that they were agents of recycling companies and supplied their waste directly to them. Other smaller BBCs sold their waste to larger BBCs who would be able to bale the waste as most recycling companies do not buy waste that has not been baled to specification.

The recycling companies or large BBCs either collected the waste products from the BBCs, or the BBCs had to deliver it to them. If the BBCs delivered to the recycling companies, they had to bear the transport cost, but in turn, they received a better price for the waste than what would have been the case if the recycling company had to collect the waste.

Transport costs were reported as one of the largest expenses for the BBCs, but it was difficult to estimate the average cost for a BBC as only five BBCs revealed the size of their transport bill. The amount ranged between R20 000 and R100 000 per month depending on the size of the BBC and where they delivered the recyclables.

4.6 Products not recyclable

The next question tried to determine whether there were products which might be recyclable but which had no demand. Tetrapak, tyres and polystyrene were identified as recyclable products without demand from recycling companies.

SECTION D - REPORT: VALIDATION WORKSHOPS' INPUT

1. INTRODUCTION AND PURPOSE OF THE WORKSHOPS

The draft report on the research on street and landfill waste pickers was submitted on 13 August 2012. The validation workshops were held on 6 September 2012 in Bloemfontein and 7 September 2012 in Welkom.

The purpose of the workshops was to:

- present the findings of research conducted on the landfill and street waste pickers, the BBCs and the broader waste system in the three (two) municipalities;
- validate the findings with regards to whether they correctly reflect the information, knowledge and opinions that were provided to the researchers; and
- discuss what needs to be done in order further to develop the waste recycling sector and to establish the building blocks for business development and employment creation in the sector (short and long-term strategies)

This section of the report would not have been possible without the valuable input of the stakeholders who attend the workshop. The complete list of stakeholders for the two workshops is given in Annexure 3.

Mr Jens Dyring Christensen, Chief Technical Advisor, opened the workshops and referred delegates to the overview of the Free State SME Development Initiative included in the workshop pack. This introduction was followed by presenting a summary of the research reports.

The research report was presented in three presentations. The first presentation was the overview of the socio-economic conditions of the landfill and street waste pickers in Mangaung, Matjhabeng and Metsimaholo (presented by Prof. Derick Blaauw). The second presentation focussed on the importance and role of the buy-back centres in the waste management system (presented by Mrs Kotie Viljoen). The third presentation addressed the broader waste management system in the mentioned areas (presented by Prof. Rinie Schenck).

After each presentation, time was allocated for clarification and some additional observations. Participants were given the opportunity to provide general feedback and comment on the overall accuracy of the research findings. The following three questions formed the basis of the deliberations and the feedback that was provided after roundtable discussions. The three questions posed the groups were:

Question 1
Do the results accurately reflect the information you provided during the fieldwork?

Question 2
Are their important aspects and issues with regards to landfill sites and street waste pickers, buy-back centres and stakeholder meetings in the respected areas which have not been addressed and are missing from the findings?

Question 3
What are the activities that have to be set up further to develop the waste recycling sector in terms of (a) business development, (b) employment creation and (c) improvement of the socio economic situation of waste pickers?

2. FEEDBACK

The information obtained from the delegates was collated and is presented below in the order of the questions posed to the delegates.

Question 1
Overall, the delegates in both workshops expressed appreciation for the comprehensive and in-depth nature of the results and were satisfied with the reliability of the data of the report.

Question 2
The delegates suggested that the following aspects were missing from the report:

- In Bloemfontein, the waste pickers received training in the handling and management of waste and health and occupational safety on the two landfill sites. This was not mentioned by the respondents to the fieldworkers.
- A delegate expressed a less positive experience of the relationship between waste pickers and the BBCs. According to her anecdotal observations, 50% of the waste pickers expressed dissatisfaction with the BBCs.
- No reference was made to scrap-metal dealers, e-waste and the recycling of tyres.
- The results reflected the possibility of migration of street waste picking to waste picking on the landfill sites. Delegates felt that this possibility should have been investigated in detail in the report.
- The report also did not mention the existing initiatives to organise landfill waste pickers, particularly in Mangaung.
- Explicit recommendations were not made in the presentation on ways and means of protecting the waste pickers from injuries.
- Information is needed on the hawkers with transport who bought the waste from the waste pickers. They are another "middle man" and add another price level which creates less income for the waste pickers.
- The landfill sites belong to the municipalities, and the researchers should have interrogated them more.
- More attention should have been given to the regulation of access of the waste pickers and the BBCs by the municipalities.
- More information is needed on instances where the waste pickers have been grouped and formed businesses.
- Information is needed on how the waste pickers control and manage themselves.

Question 3
The following suggestions were made to develop the recycling sector. It will be presented in themes forthcoming from the round table discussions.

Theme 1: Development of businesses
The development of small business by the waste pickers was proposed, and in particular, the development of cooperatives was suggested. This includes the buying of baling machines and the development of infrastructure to be able to function as cooperatives. The cooperatives should be able to deliver in bigger bulk to BBCs and to negotiate better prices or be able to deliver directly to the recycling companies. Another suggestion was to develop from the waste products that can be sold

Theme 2: Training and development
Regarding training and development, many aspects were mentioned.

- Develop awareness at household level to separate at source.
- Separation at source should also be done by businesses.
- Supply households with clear bags for separating the dry waste from the wet waste.
- The training and development or capacity building of waste pickers as well as all involved in the waste management system were emphasised.
- Sensitise, educate and incentivise waste recycling among all parties.
- Training and education are needed to improve the human capital of the waste pickers.

Other aspects mentioned were:

- "Train and develop the waste pickers into fully-fledged business people."
- "All the members of the cooperatives should be trained to be able to manage the cooperative."
- "The waste pickers should be educated on how the waste system works."

The development of eco clubs amongst the youth, elderly people, at schools, etc. were suggested to make people aware of waste and waste management

Theme 3: Access to waste
To enable waste pickers to access waste easier and faster, separation at source was proposed. If the waste picker can pick up the clear bag without scratching through the waste bins, he/she can move faster and access waste easier. The development of material recovery facilities (MRFs) where waste can be separated before going to the landfill sites was also proposed.

Theme 4: Basic facilities
Provide basic facilities like access to running water, ablution facilities and protective clothing.

Theme 5: Waste management strategy and working together
The development of an integrated strategic waste management plan where all stakeholders can work together was emphasised. The creation of a stakeholders forum was also suggested. Skills development and inter-sectoral partnerships should be created. Government departments and other stakeholders should not work in silos.

Theme 6: Increase the demand for waste and economic development
It was proposed to develop recycling plants to enhance the demand for waste in the Free State. Further suggestions concerned the development of new end products which would use products that are not recycled at the moment, e.g. polystyrene and tyres. This development will increase the demand for waste. Other suggestions include:

- Open more BBCs to increase the demand for waste.
- Enhance collaboration between BBCs to reduce transport costs.
- Create a platform which can support small businesses.

Reference was made to the responsibility of the LED section of the municipalities who should create this platform for economic and social development.

Theme 7: Participatory processes
A platform for the waste pickers should be created. They should be part of the decisions made about them.

Theme 8: Formalisation and regulation of waste pickers
Under this theme, a few aspects were mentioned which include the registration of waste pickers (in groups or as individuals) to be able to know how many of them are on the landfill sites. It also included recommendations that the municipalities should employ the waste pickers on the streets and on the landfill sites: "Put them on the payroll of the municipality." It was suggested that the challenges on the landfill sites as well as the uncontrollable access of waste pickers and BBCs on the landfill site should be addressed. ("How many feet do you want on the landfill site?") The lack of education of the waste pickers is the biggest stumbling block when attempting to formalise them.

The problems the BBCs experience in obtaining access to the landfill sites should be addressed, e.g. people being mugged and attacked. Landfill sites need to be managed regarding gangsterism and racketeering. The question was raised whether all landfill sites function within the legal requirements, e.g. are the landfill sites managed according to the legal requirements? A suggestion was made that waste pickers should be allocated wards in which they can work and collect waste.

Theme 9: Other
A suggestion was made that awareness should be raised to deliver products that can be recycled, e.g. Mr Hardy made the participants aware that plastic water bottles are recyclable, but the fact that there is glue on the label causes it not to be recyclable.

SECTION E - CONCLUSIONS AND RECOMMENDATIONS

1. INTRODUCTION

This section will firstly provide a summary of the main findings and conclusions of the overall study. We then propose two theoretical frameworks against which to discuss the recommendations flowing from the fieldwork. After briefly discussing the frameworks, the recommendations will be presented within that frame of reference.

2. SUMMARY OF MAIN FINDINGS AND CONCLUSIONS

The basic demographic information forthcoming from the study revealed some expected and unexpected results. It was expected that this informal labour-market activity is dominated by males. The results show that this is the case among the street waste pickers. However, among the LWPs, there is a much more equal gender distribution. The racial composition of this informal labour market reflects the racial composition of the broader informal economy in South Africa. It is principally black and coloured members of the population who engage in waste picking in the Free State. There is a clear correlation between the language that is mostly spoken by the respondents and their racial distribution.

The vast majority of the waste pickers in the Free State were born in South Africa, and mostly in the Free State. A small percentage was born in Lesotho. The street waste pickers are generally older than what is found in other informal activities such as day labouring. The time that street waste pickers and LWPs were engaged in waste picking differs significantly. On average, the LWPs have been in this field for twice as long as the street waste pickers (6 years as opposed to 2.5 years). The reason for this should be investigated further.

The situation in terms of the access to basic services is of a concern. The accommodation situation also confirms the marginalised nature of this activity. Half of the respondents live in more permanent structures such as brick houses. The rest are mostly in some form of shack. Other sources of lodging include hostels, the open veldt and backyard rooms.

The study reveals a number of socio-economic aspects that should be considered in any intervention or policy planning decision concerning the working conditions and environment of the waste pickers. These include limiting factors that inhibit the waste pickers' chances of finding alternative employment in the formal sector. The results show that the majority of landfill as well as the street waste pickers never had a formal job before. Those that did have some form of formal job had it for limited periods of time and were mainly employed in the lower-skill sectors of the formal-employment sector.

One of the driving forces that limit the access of waste pickers to formal-sector jobs and higher-level informal-sector jobs is the low literacy levels amongst the waste pickers. The literacy rate amongst the street waste pickers is even lower than that of the landfill waste pickers. This is mainly due to the low levels of education and their limited language proficiency. Their low level of education is mainly related to poverty or limited financial resources. Other reasons include personal and family challenges and responsibilities.

Most waste pickers are currently looking for a full time job. Those who are not currently looking for a full time job are mainly waste pickers on the landfill sites who claimed to be happy being a waste picker and earned enough money picking waste. This follows from the fact that landfill waste pickers earn higher average incomes than that of street waste pickers.

The large differences in the average incomes earned by all waste pickers for a good and a bad day further highlights their vulnerability in terms of a frequent and sustainable income. The large difference between the average incomes earned by male and female landfill waste pickers shows that females are more vulnerable and less able to support their relatives and families with their income. This is problematic if they are the sole provider of income. There is only a slight difference between the average income of males and females amongst the street waste pickers.

Many landfill waste pickers also receive income from other sources such as child grants, old age pensions and disability grants. Fewer street waste pickers indicated that they receive additional income which includes child support grants. Where the landfill waste pickers have on average three children, the street waste pickers have two. Even with these additional sources of income, the waste pickers' income is not enough to support the average number of dependents, namely 4 people for landfill waste pickers and 3 dependents for street waste pickers.

Other factors that influence the income earned are the ease of access to high-quality waste, the increase in the numbers of waste pickers competing for the same amounts of waste, weather conditions, prices received for the waste, the size of the landfill sites and the distance from the buy-back centres. The latter dictates the period for which the waste has to be stored and consequently also the period that lapses between the earning of income by the waste pickers.

Although the income-earning potential of the waste pickers can be increased by working in groups, most waste pickers prefer not to work as part of a group. More landfill than street waste pickers and more male than female waste pickers indicated that they worked in a group. These groups are informal and mostly assist each other in carrying and loading waste and for friendship purposes. They do not work together in terms of sharing their income.

Injury and illnesses directly related to their waste-picking activities can also influence their income levels. Landfill waste pickers have a higher risk to suffer serious injuries and illnesses which prevent them from working for long periods of time. The most serious causes are cuts and wounds from glass and sharp objects, vehicle-related accidents and accidents involving the bulldozers and other earth-moving equipment on the landfill sites. Chest and TB-related illnesses are also frequent and in some cases serious. Better management of the landfill sites by municipalities, such as better access control, safety measures and regulations and better facilities are some of the measures that can limit or prevent these risks. The presence of medical waste and ammunition and explosives on landfill sites should also receive attention. Street waste pickers mostly suffer from cuts and wounds from glass and sharp objects and illnesses due to the handling of dirty waste, poisonous foods, heavy bags and bad weather.

Relationships with the police and public also impact on the income levels of especially the street waste pickers who have more contact with these parties since they are operating on the streets. The overall relationship is good, but individual cases of harassment, arrests and accusations of being involved in criminal activities, true or false, prevent the waste pickers from doing their job.

Although the relationship between the BBCs and waste pickers are business related, the BBCs generally treat the waste pickers very well. This follows from the fact that they are interdependent on each other. The waste pickers depend on the BBCs to buy their waste and the BBCs on the waste pickers to provide them with waste.

There is strong competition amongst the BBCs to ensure that they receive enough high-quality waste from the waste pickers. This competition is reflected in the good treatment, the price differences in especially the higher-quality waste products and the additional support they provide, such as meals, clothing, money donations, bags, trolleys and help with transport.

Apart from their contribution to increasing the recycling of waste, BBCs create jobs within their businesses as well as for the waste pickers. The importance of the BBCs' facilitating role in the recycling potential of these informal-sector participants can be confirmed (Viljoen et al., 2012). Without the BBCs, the waste pickers cannot work for an income, even if it is only a subsistence income. For this reason, BBCs should be included in all decision-making processes. They are as important as the waste pickers, recycling companies and government structures.

Overall, it is of the utmost importance to take the subtle differences in each location into account in terms of any possible policy intervention. The interrelationships between the waste pickers and other role players in the recycling industry are a complex one. A one size fits all type of intervention is bound to be met with resistance and is unlikely to produce the desired results.

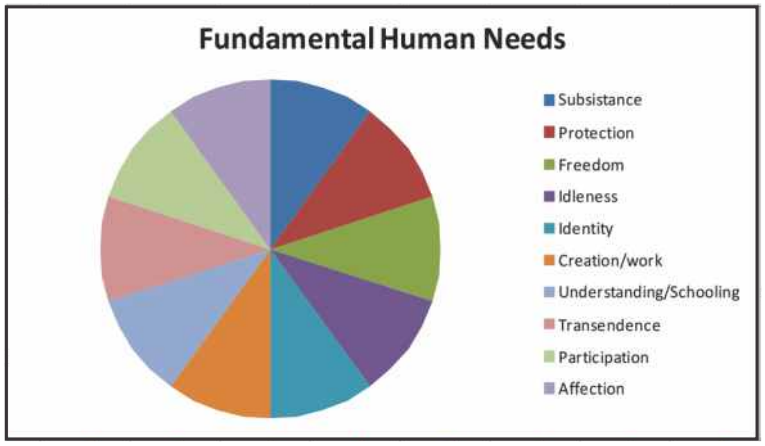
3. CONCEPTUAL FRAMEWORK FOR THE DISCUSSION OF THE RECOMMENDATIONS

Two frameworks will be discussed against which recommendations will be made.

3.1 Human-scale development

Manfred Max-Neef (1991) focused on holistic thinking regarding development and change. Max-Neef articulated a human-scale development approach that views one aspect of growth, e.g. economic growth, on its own as insufficient to alleviate poverty because poverty entails more than an economic condition (Schenck, Nel & Louw, 2010). The human-scale development approach is holistic and comprehensive and is based on meeting as many fundamental human needs (FHNs) as possible when policies, programmes and projects are planned. According to Max-Neef, all human needs are interrelated and interactive and should be understood as a system. They are also finite, few and classifiable. The ten FHNs identified by Max-Neef can be illustrated in the figure 35.

Figure 35: Max-Neef's (1991) fundamental human needs model



Source: Hope & Timmel, 1995

Max-Neef's (1991) FHNs require that no aspect in life can be seen in isolation, e.g. poor health can be related to economics and politics. Furthermore, Max-Neef made us aware of the fact that there is a difference between a "need" and a "satisfier". Food and shelter are actually not needs but satisfiers of the FHNs for subsistence while education, study, training, skills development are the satisfiers for the need to understand. Similarly, health care can be the satisfiers for protection.

3.2 David Korten's (1990) framework: Four responses to poverty

Secondly, David Korten's (1990) framework that identifies four responses to poverty is regarded as important when considering any policy options which include the waste pickers. This model is presented in Table 34.

Table 34: Four responses to poverty

Response	Relief and welfare	Small scale self-reliant efforts	Sustainable systems	Global efforts
Change process	Functional change	Functional change	Structural change	Structural change

Source: Korten, 1990

Korten (1990) identified four responses to poverty, namely relief and welfare; small scale, self-reliant and local efforts; development of sustainable systems and global efforts. They will be discussed briefly.

- Relief and welfare entails the provision of direct service delivery to meet the immediate needs or shortages experienced by people, e.g. health care, food, and basic amenities. These services are essential and often assist mobilizing people.

- The second type of response is small scale self-reliant efforts which are based on the belief that people need skills, capacities, motivation and initiatives. This results in small scale, self-reliant local efforts like income-generating projects for people to sustain themselves. These efforts attempt to build capacity, empower people and stimulate self-reliant local action. This development response is based on the assumption that the people involved have the potential for self- advancement.

- The third type of response to poverty is referred to as the development of sustainable systems, and it views poverty as a failure of various systems. These efforts focus beyond the local community and attempt to effect changes in specific policies and institutions. The underlying theoretical assumption is that poverty is sustained by structures that centralize the control of resources, keep essential services from the poor and maintain systems of exploitation, et cetera. Changing the situation entails enabling people to make structures more responsive to people.

- The last type of response is referred to as global efforts, and it seeks to facilitate global action which focuses on coalitions and networks and the use of the mass media in support of social transformation. International movements like the International Labour organisation (ILO), WIEGO (Women in Informal Employment, Globalizing and Organizing) and “Inclusive cities” are such global efforts that attempt to bring about awareness and change for the waste pickers. The objective, according to Korten (1990), is to energise a critical mass of independent, decentralized initiatives in support of a social vision.

A thematic description of the interviews and observations will be described and then summarized against the conceptual framework.

4. RECOMMENDATIONS

Webster (2010) regards the South African high unemployment rate as a public issue and not merely a personal difficulty for every person who is unemployed. Unemployment not only harms individuals but also households and communities Attempts to deal with these matters should therefore take place on all levels ranging from macro level policy to micro-level interventions.

A further point emphasised by Chvatal (2010) is that any country who decides to create a more formalized, integrated and sustainable waste-recycling system cannot do so without taking into account the formal and informal ways that currently exist. The millions of people who depend on recyclables for their bread and butter have acquired years, if not generations, of waste recycling know-how, practices and experience that should be valued and built upon rather than discarded. Any projects or processes planned should be an open and inclusive process. All stakeholders should participate. This includes in particular the waste pickers and BBCs to voice their own concerns and aspirations. Part of the process of inclusion should involve the clarification of the perceptions (and in some instances prejudices) of the various role players. Transparency of the levels of interest of the various role players will enhance the development of the waste system.

The following section reflects the recommendations pertaining to each of the responses in terms of the Korten (1990) model.

Relief and welfare actions

Many relief and welfare actions can be considered and were also suggested by the participants during the verification workshop for the waste pickers. These suggestions were also aligned with the practical recommendations made by Chvatal (2010) to enhance and facilitate the work of the waste pickers:

- regular medical check-ups and training in health issues in waste collection; the Mangaung Metropolitan Municipality has, for example, already embarked on such initiatives where training on health and safety issues is provided to the waste pickers by external stakeholders;
- sheltered space for sorting and storing waste;
- assisting access to protective clothing like gumboots, gloves, iron sticks, masks and bags;
- access to basic amenities such as proper ablution facilities, water and drinking water in other words, decent working conditions; and
- creation of a safer and more manageable environment through proper fencing around the landfill sites (but the challenge of the fences getting stolen as soon as they are erected is a real and significant one); buy-in of the waste pickers in this matter is of importance.

Small-scale, self-reliant processes

What is clear from the study is the power, sense of entrepreneurship, skills, resilience and knowledge the waste pickers displayed. These characteristics should be acknowledged, respected and strengthened. The voices of the waste pickers should be heard. Waste pickers should be empowered focusing on, amongst other things, technical training in waste collection, identity building, leadership skills, literacy training and participation in the decision-making processes, in other words, capability development.

Some waste pickers want to work for themselves as they want to be independent. Some, in particular women, mentioned that they would like to work collectively. This is confirmed by the empirical results. The following actions may enhance the waste pickers' self reliance:

- Register the waste pickers and provide identity cards. Providing identity cards can be a landmark for recognition and prevent crime and unwanted people on the landfill sites. This includes the possible regulation of numbers on the landfill sites as it will ensure that each waste picker can access an amount of waste that makes his or her effort worthwhile. It will also provide recognition and prevent crime and unwanted people on the landfill sites.

- Assisting the waste pickers to access waste more easily and effectively is critical. Separation at source is regarded as the best way of making recyclable waste accessible to waste pickers so that they do not need to delve into and sort the waste from the dustbins or dumpsites. Establishing MRFs where the waste can be sorted before it goes to the landfill site is another suggestion:

"You divert the waste to them, they can take out of the waste and then the rest goes back into the landfill. That way you have actually separated them completely from the risks of moving equipment and health risks and all weather conditions" (landfill manager in Chvatal, 2010:75).

- Occupants of landfill sites expressed the desire to obtain easier access to the waste, e.g. thinking of ways to allow the waste pickers to pre-sort the waste before it is dumped into the landfill sites or using a forklift to loosen the waste for easier access. Suggestions of conveyer belts on landfill sites were made, as well as giving the waste pickers the opportunity to take out the recyclable waste before it is covered by the tractors. For the street waste pickers, this includes sorting at source where the dry waste can be put in clear bags and be picked without scratching for recyclables. It can also include the development of proper trolleys – based on the waste pickers' knowledge and skills.

- Training and obtaining a variety of skills will assist with the development of the waste pickers as people while at the same time not underestimating what they already know and the competencies they already have. The following suggestions were made in this regard:

    - training on what and how to collect waste, to sort, etc.;
    - technical training;
    - enhancing literacy;
    - business skills; and
    - knowledge of the cost structures in the waste system.

- Small-scale projects can be facilitated based on the waste pickers' needs to develop, e.g. small businesses, cooperatives and self-help groups.

The critical factor, in either offering relief and/or facilitating self-reliant processes, is to do it in such a manner that the FHN of the waste pickers is addressed holistically.

Sustainable structural change processes

Medina (2000) and Samson (2010) propose investigating facilitative policies and changed attitudes to enhance the context within which the waste pickers function. This includes policies supporting and recognising salvaging activities such as allowing them on the landfill sites, supporting cooperatives, the contracting out of services for the collection of recyclables and the creation of public-private partnerships between local authorities and the waste pickers (Visser & Theron, 2009; Dhakai, 2012). According to the GTZ (2010), the above is only possible if there is an appreciation for, an attitude change and the political will to integrate the waste pickers (Chvatal, 2010). Medina (2007) further argues that our perception of waste picking should be regarded as an adaptive response to poverty and a resource to cities.

As a developmental state, the South African government should take more of an interventionist role that seeks to establish favourable policies and legislation that will actively promote higher rates of economic growth and social inclusion as well as remove barriers to the mobility and upliftment of its people.

The responses to poverty under this section include a critical reflection on the legislation and policies in order to establish if they are facilitative and inclusive in nature.

If we consider that an estimated 95% of the total of waste produced in South Africa is disposed on landfill sites and that, according to 2006 figures, 2.8 million tons of waste are land filled each year (Chvatal, 2010), good management and strategic planning need to be in place for proper recycling. This includes the role played by waste pickers. The lack of proper management was mentioned as one of the major challenges in the waste system. Strategic and structural changes are needed and should be monitored constantly. Some specific suggestions emanating from the validation workshops include:

- Separation at source to access waste easier should be implemented not only for the waste pickers to access waste but also to prevent unnecessary waste flowing to the landfill sites.
- Separation at source must be encouraged through awareness raising of households in residential areas of the importance of sorting waste and could be accompanied with incentives by local municipalities.
- Training of waste managers was regarded as critical during the stakeholder meetings.
- The demand for waste should be increased to enhance the retrieval of recyclable material through, for instance, the establishment of recycling companies in the Free State,
- The development of more end products from waste or the creation of develop opportunities for as yet un-recycled recyclables.
- Waste-collection activities in townships and informal settlements should be increased.
- The sharing of different successful and less successful projects and models can add value to the development of a shared vision for all municipalities.

Broadening provincial efforts to the national level

Networks and links should be established with national efforts regarding waste management. The recycled waste converting industry in South Africa - i.e. the manufacturers of packaging materials from recycled waste - led by the Packaging Council of South Africa (PACSA) and the Recovery Action Group (TAG) should be involved in supporting local initiatives and in working closely with local municipalities to get waste recycling initiatives right. The RAG and PACSA can share knowledge on best-practice models in other developing and developed countries

5. CONCLUDING REMARKS

Despite the challenges and obstacles, goodwill, creative thinking and innovative solutions were discovered in this study. The key will be to harness this in an effective and sustainable manner. This includes global connections, good inclusive and facilitative policies, structural changes, strategic planning and management by local government and including all stakeholders including the waste pickers.

The important role of the BBCs should not be underestimated. They provide the link between the waste pickers and the rest of the waste system without which the waste pickers will not be able to earn an income.

The results of this study validate and confirm the fact that waste pickers are an extremely vulnerable group in the informal economy in the Free State and in South Africa as a whole. They face obstacles in terms of the insider-outsider model even within the informal economy as a result of their low level of accumulated human capital. Any non-participatory policy or structural or functional intervention that is not well thought through – and which does not include the waste pickers - will have severe and long-term consequences marginalising this vulnerable group even further. This places a major responsibility on role players and stakeholders in both the public and private sector.

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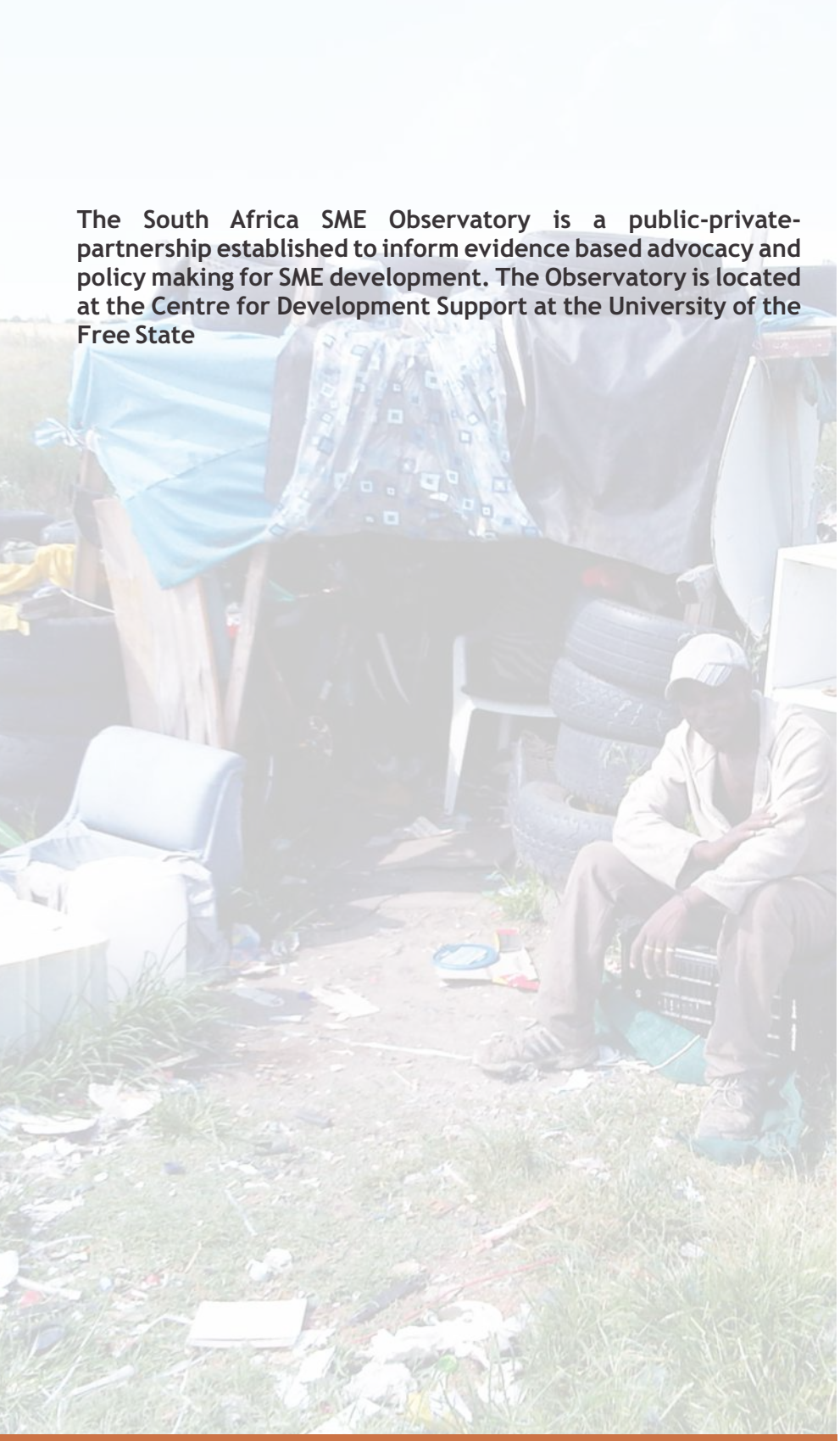
The South Africa SME Observatory is a public-private-partnership established to inform evidence based advocacy and policy making for SME development. The Observatory is located at the Centre for Development Support at the University of the Free State



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The Free State SME Development Initiative is a partnership between the Department for Economic Development, Tourism and Environmental Affairs (Detea) and the International Labour Organization (ILO) and is funded by the Flanders International Cooperation Agency (FICA).

FICA