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The Waste Pickers of Durban: A case study of three buyback centres

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Unless stated specifically to the contrary in this text, this thesis is my own original work

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Abstract

The informal sector in South Africa has experienced phenomenal growth since the end of Apartheid, and in Durban this has been no different. Due to the growth in unemployment, many have turned to the informal sector in order to find a way to survive and meet basic needs. Waste picking is one area of the informal economy where there is relative ease of entry, as limited start up capital is needed to go into business.

This research sought to gain a better understanding of the waste pickers operating in Durban, their socio-economic characteristics, earnings, and their working conditions. The research also aimed to determine the linkages between informal recycling and the formal recycling industries, as well as the relationship between waste pickers and the local authorities.

Three different buyback centres for recyclable material were chosen in order to gain access to waste pickers, and 20 questionnaires were conducted at each of these centres. Due to a lack of information as to the total population of waste pickers in Durban, this sample cannot be considered representative of all waste pickers in Durban. Rather, it presented a benchmark against which future larger studies can be measured.

It was found that the waste pickers were fairly evenly divided according to gender, and that education levels were generally low with a large portion of the sample never having gone to school. Nearly all the waste pickers fell into the economically active population of 16-65, and most had migrated to Durban in search of a job.

The majority of the waste pickers worked at least a standard working week, if not longer. Metal and cardboard were found to be the items of choice for collection. Nearly all the waste pickers transported their material by hand or by trolley.

The study determined that waste picking cannot be considered a form of transitional employment. While the majority of the sample clearly expressed a wish to move to a different job, nearly all the respondents had been involved in waste picking for a year

or longer. It is also an occupation entered into not by choice, but in order to survive. It is clearly a last resort for many of the individuals involved. The waste pickers in this study were found to earn, on average, very little.

The differences in gender noted in this study were also startling. The men were found to have better means of transportation of materials (such as trolleys). Men were found to support smaller households, and earn more than the women, and more women were found to be living in very poor households than men.

The relationship between the waste pickers and the local authorities was found to be a fairly indifferent one, and the waste pickers appeared to have limited contact with government officials.

Considering the links between formal recycling and waste picking, this study supports the Marxist view of the informal economy, finding that the waste pickers in this study were clearly linked to the formal sector, and that their activities were subordinate to and dependent on the formal sector recycling companies.

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Chapter 1: Introduction

1.1. Background to the Study

Durban, South Africa is a city of stark differences. Years of repressive rule under colonialism and later under Apartheid afforded white South Africans economic opportunities, at the expense of other racial groups. In addition to this, the separate policies put in place by the government manifested themselves in the cityscape, as different race groups were allocated segregated areas within the city, and forced to live there. Apartheid ended in 1994, when the new democratically elected government came to power. This gave many South Africans hope that the inequalities, both in terms of race as well as income distribution, would be addressed. However, the neo-liberal economic policies adopted by the new government, as well as the shift towards participation in the global economy, has resulted in high unemployment, poverty, and growing inequality.

Against a backdrop of high unemployment, the phenomenal growth that has been experienced in the informal sector since democracy is expected. Lund and Skinner point out that while 'Apartheid legislation limited the range of goods that could be sold, blocked the formation of companies by black people, and set up an array of bureaucratic processes that discouraged the registration of small-scale economic activity' (2003: 3), with the end of apartheid these problems have been overcome. However, changing legislation, coupled with the high unemployment rate have aided the recent growth experienced within the informal sector, and currently it is estimated that 'between 25% and 30% of South Africans who are presently working, operate in the informal economy' (Lund and Skinner, 2003: 3). In Durban, it is estimated that 'only 1 in 3 economically active people in Durban are employed in the formal sector' (Durban Unicity's Economic Development Department in Lund and Skinner, 2003: 5). While the informal sector is clearly an important source of livelihood for many individuals, there appears to be little understanding of the people involved in this sector, their particular life circumstances, and the links between their work and the formal sector (Skinner, 2006: 125).

Recycling is an industry that is growing at a rapid pace, due to diminishing environmental resources. In the context of many third world countries, a lively informal sector has sprung up around this industry. In some countries, it is multi-layered and material passes through many hands before finally reaching the formal sector recycling companies (see, for example, Van Beukering et al, 1996, Hayami et al, 2006). At the bottom of the informal recycling hierarchy are the waste pickers. These individuals have limited equipment and capital, and sort through waste in order to extract recyclable material. Some of these individuals operate on landfill sites, while others roam the city scavenging for material.

Waste picking is one activity in the informal sector where there is a relative ease of entry. While street trading is the most common informal activity in Durban (Lund and Skinner, 2003: 4), it also requires a fair amount of start up capital, as well as access to a trading space and basic services. With waste picking, no start up capital, equipment, or space is needed. Waste pickers can start collecting materials at any time, and can then take them to one of the buyback centres managed by Durban Solid Waste, or to one of the numerous scrap dealers in order to exchange the material for money. All that is really needed is knowledge of where to take material to be exchanged. Considering the ease of entry into this sector, one would expect it to be a refuge for those desperate for money to survive, and those living in a situation of extreme poverty and hardship, unable to find work in any other sector. Waste pickers form the bottom of the informal recycling hierarchy, which will be elaborated on in chapter 3.

This study is motivated by a desire to understand the socio-economic situation of waste pickers in Durban, and to shed some light on a group of people who are often marginalised and looked down upon by society because of the nature of their work.

Academic conversation on the informal recycling industry has tended to focus on the organisational structure and the linkages to the formal sector (see, for example, Birkbeck, 1979, Van Beukering et al, 1996, Hayami et al, 2006). However, as the natural environment has become a greater concern in recent years, some of the literature has pointed to the environmental benefit of waste picking, and the informal recycling industry in general. The socio-economic situation and the life

circumstances of the waste pickers has also been elaborated on, however, only three studies could be found that relate specifically to waste picking in Durban. DeKock (1986a and 1986b) conducted research into a group of waste pickers operating on a landfill site in Durban, and McLean (2000a and 2000b) firstly looked at a group of 20 waste pickers selling back material to a buyback centre in Durban, and secondly at a group of waste pickers scavenging in the Glenwood area of Durban. All of these studies elaborated on the socio-economic circumstances of the waste pickers. These studies present a useful benchmark against which to compare the current study. However, this research will not only consider the socio-economic characteristics of the collectors, but will also discuss the links between the formal and informal recycling industries.

1.2. The key questions that will be addressed in this research

The general aim of this research is to gain a more accurate understanding of those participating in waste picking in Durban. This has been done by conducting interviews at three different buyback centres within Durban. While there are a total of 6 buyback centres in Durban that are run by Durban Solid Waste, as well as many private recycling companies that buy waste from those involved in informal recycling, three of these were chosen as locations for this study. Interviews were conducted at each of these locations.

The research addresses a number of different issues within informal recycling. Firstly, as already stated, the research aims to determine the socio-economic characteristics of the waste pickers. This includes elaborating on trends such as education levels amongst collectors, gender, age, and home language. This facilitates a greater understanding of the types of people who participate in waste picking.

The research also aims to analyze the working conditions of the waste pickers, and the process of waste picking. It was also an objective to understand the types of materials picked, the time these individuals spend working, how they transport the recyclable goods around, the areas in which they collect material, as well as the problems that they encounter in their particular line of work.

Attention is also be paid to the levels of earnings of these individuals in order to determine whether waste picking can be considered a viable livelihood strategy. This either proves or disproves the contention that waste pickers live in a state of poverty and are vulnerable. This research gives an indication as to the amount of money made from waste picking, and other sources of income of those involved in waste picking.

The relationship between waste pickers and other interest groups is discussed. Specifically, the way in which the waste pickers view the local authorities is elaborated on. The research also aims to determine ways in which the local authorities can better support the informal recycling sector in general, and the way in which they can intervene and aid the activity of waste picking.

Finally, the research also focuses on determining the relationship between formal sector recycling and waste picking. Academic conversation has suggested that waste pickers are nothing more than disguised wage workers (See, for example, Birkbeck, 1979 and Wilson, 1998) for formal recycling companies, but they do not get the security of a stable wage and other benefits that come with formal employment. This research explores this idea further, and elaborates on the relationship between formal sector recycling and waste picking.

1.3. Outline of the Content

This dissertation has been divided into 6 chapters. Chapter 1 offers an introduction to the topic, as well as the need for a study of this kind. The specific aims and questions to be addressed in this research have been elaborated on, while an indication has been given concerning the academic conversation surrounding this topic.

Chapter 2 discusses the literature informing this study. The chapter is divided into 4 separate parts. Firstly, environmental sustainability and recycling are discussed; thereafter, Urban Solid Waste Management is focused on, and the developing world as well as South African context. Thirdly, the urban informal sector is elaborated on.

Theoretical approaches to the informal sector, as well as the informal sector in South Africa and Durban is discussed, as informal recycling falls within the urban informal sector. Fourthly, the concept of urban poverty and vulnerability is given attention, as waste pickers are generally viewed as a poor and marginalised group, so a greater understanding of these issues is vital.

Chapter 3 focuses on literature relating specifically to the informal recycling sector and this is discussed in detail. The organisational structure of the informal recycling sector, the characteristics of the waste pickers, and attitudes towards informal sector recycling are expanded upon.

Chapter 4 outlines the methodology used in this research. The design of the research, the study areas, as well as the research tools used is discussed. The fieldwork is elaborated on, as well as the way in which the data was analysed.

Chapter 5 presents the results of the questionnaire conducted with the informal recyclers, as well as a discussion of the findings. The chapter is divided into 6 parts. Firstly, the socio-economic characteristics of the waste pickers are elaborated on. Thereafter, their working conditions are discussed in detail. Following this, their earnings are focused on, and waste picking as a viable livelihood strategy is discussed. The relationship between the waste pickers and the municipality is then elaborated on, followed by the linkages between the waste pickers and the formal recycling industry. Thereafter, the results of this study will be related to the theory and conceptual approaches relating to the informal sector.

Chapter 6 concludes this thesis, and sums up the main findings of this research. Where possible, suggestions and recommendations as to how the municipality can better support the informal recycling sector are given. The overall findings of this research are contrasted with the literature.

Chapter 2: Urban Waste Management and the Informal Sector

2.1. Introduction

This chapter provides an overview of the literature that informs, and can be applied to this study. Initially, the idea of recycling is explained and it is shown how this activity fits into the broader context of environmental sustainability. Issues of waste management and the importance of recycling as an environmentally friendly activity are elaborated on. The literature relating to the informal sector is then discussed, and a background to the operations of the urban informal sector in developing countries is offered, as informal collecting and recycling falls within this sector. Attention is paid to theory relating to the urban informal sector. Each of these bodies of literature is discussed in turn, and related to this particular study.

2.2. Environmental Sustainability and Recycling

In recent years, the issues of a growing world population, and diminishing natural resources has led to increased concern over the quality of our natural environment. The increased pressure that development has put on our planet has led to the adoption of the notion of sustainable development as a way in which the environment can be protected, without impacting upon economic growth. Sustainable development can be defined as development that 'meets the needs of the present without compromising the ability of future generations to meet their own needs' (Brundlandt commission in Platt et al 1994: 10). Reference is made to both the concept of inter-generational equity (considering future generations), as well as intra-generational equity (equality within a generation).

The idea of sustainability has also been applied to the urban context. The increase in environmental consciousness has led to an increase in the levels of recycling worldwide, to slow the rate of resource use. According to Platt, et al. (1994), there are two different types of urban sustainability. The first considers conservation, and 'protection and restoration of the remaining biological phenomena and processes within the community itself' (1994: 10), and the second is concerned with limiting the environmental impact of the region on the surrounding land, water and atmospheric

resources. Recycling falls into the second type of urban sustainability, as does energy conservation and more efficient transportation.

Recycling can be defined as 'the process undertaken in the recovery and re-use of materials which no longer have any value to the original owner and which would have been disposed of' (Parkin, 1995: 5). This is not to be confused with waste minimization, which is defined as 'any activity that is undertaken to prevent or reduce the volume and/or environmental impact of waste that is generated, treated, stored or disposed of (DEAT, 1999a in DEAT, 2005: 10). If one considers the value of recyclable materials, 'the general rule is: the further upstream [in the waste process], the better' (Bartone 1986: 39 in Rogerson 2001: 250).

Van Beukering et al point out that the industry surrounding recycling is different in the 1st and 3rd world environments. While waste prevention may be an appropriate strategy for countries with high consumption levels, a waste reduction strategy will not be that applicable to developing countries, where excessive consumption is not that much of an issue (Van Beukering et al 1996: 2).

The types of recycling strategies and the motivation behind recycling also differ between the developing and developed world. While environmental concern is the primary driver of the recycling industry in many cities in the developed world, in the developing world one often finds 'an informal sector that exists in parallel with the formal waste collection authorities' (Van Beukering et al 1996: 2). According to Furedy, the distinction between formal and informal recycling activities is what officials recognise as a part of the solid waste management system, as 'parallel activities that are usually regarded as undesirable and often, illegal' (Furedy, 1990 in Tevera, 1994: 22). One World Bank official described the informal recycling industry as 'a fact of life' (Bartone, 1986: 38 in Rogerson, 2001: 247) in much of the developing world. The sector is guided by market forces and supports many individuals trying to etch out a living in the cities. As Wilson et al argue, 'The degree to which a particular material is recycled [in the informal recycling sector] depends on income levels, the existence of local and national markets, need for secondary raw materials, levels of financial and regulatory governmental intervention, prices of

virgin materials, international trade in secondary raw materials and relevant treaties' (2006: 5).

2.3. Urban Waste management

2.3.1. The Developing World Context

Urban waste management is important to consider, as it ultimately determines the environment in which recycling, and more specifically informal recycling, exists. Cities generate large amounts of waste that need to be dealt with. In developing countries, the pace of urbanisation is rapid and this leads to cities demanding more resources, and ultimately generating more waste. Solid waste management systems in developing countries 'are often poorly run and operate to low standards. They can be unreliable, provide inadequate coverage and may conflict with other urban services' (Wilson et al, 2006: 2). This is generally caused by a lack of funds and capacity. Because of this, it is estimated that only 50% of waste generated in cities in developing countries is collected by the local authorities (Cointreau, 1991 in Van Beukering et al, 1996: 2). This has opened a gap for 'legions of men, women, and children who make a living from the recovery, sorting and selling of retrievable items of solid waste' (Beall, 1997: 70 in Rogerson, 2001: 247).

Baud et al (2001) argue that urban solid waste management in developing countries is concerned with two main things. Firstly, public sector reform of the municipal waste management system (which could come in the form of privitisation, or public / private partnerships), and secondly, 'concern for sustainable development in the urban context' (Baud et al, 2001: 3). They identify four different key players in the context of urban solid waste management in developing countries: the public sector; the private sector, made up of 'large and small registered enterprises carrying out collection, transport, disposal and recycling' (Baud et al, 2001: 5); the informal sector, made up of 'waste pickers, itinerant buyers, traders in waste materials and non-registered small-scale enterprises' (Baud et al, 2001: 5); and local community and its representatives, made up of non-governmental organizations, and community based organizations. NGOs and CBOs can be classified further into two different groups, namely, those who are socially orientated, whose 'primary concern is the

humane one of the welfare/empowerment of informal waste workers' (Furedy, 1997: 144), or those who are environmentally orientated, whose 'primary concern is to make an impact on nuisances and hazards of poor waste management through community cooperation, which may entail the organization of waste recovery and recycling' (Furedy, 1997: 144).

These different actors interrelate to form the solid waste management environment within the majority of developing countries. However, 'little attention is given to the potential of small-scale, private operators and community-based organizations (CBO's) removing solid waste informally from residential areas. Local authorities prefer to link up with formal enterprises' (Baud et al, 2001: 4). Informal enterprises, while sometimes acknowledged, are often not included in policy.

A number of general trends in the solid waste management systems in developing countries have been identified. Furedy (1997) identified eight different trends. They are as follows:

- Waste picking, or informal collection has increased
- Direct buying of recyclables in certain countries has decreased, thus so have habits of separating at the source.
- technical changes in waste collection has inhibited informal recovery and increased picking at landfills
- Conventional approaches to solid waste management have become unsustainable in many developing countries, resulting in an inability of authorities to cope.
- Internationally, waste reduction and recycling are now accepted as 'bedrock principles in all waste management' (Furedy, 1997: 143).
- The public are now more aware of the health risks of poor waste management.
- 'There are attempts to coordinate official, private and community-based activities in urban services to increase access for basic needs' (Furedy, 1997: 143).
- Issues of waste management increasingly are the focus of the international environmental agenda.

While all of these trends may not apply to every developing country, they generally point out the environment in which solid waste management policy is formulated in a developing world context.

Improving solid waste management in developing countries is vital in order to achieve sustainability. Solid waste management systems need to address both intergenerational equity and intra-generational equity in order to be effective. Baud et al (2001) argue that intergenerational equity can be improved through minimizing waste produced, maximizing reuse and recycling, and disposing of the remaining waste in a controlled fashion so as 'not to exceed the absorption capacity of local sinks' (2001: 5). This view is supported by Tevera (1994), who asserts that 'Waste recycling activities are also justified on both economic and environmental grounds because they help save resources, protect the environment, and contribute to sustainable development' (1994: 24).

From the point of view of intra-generational equity, effective solid waste management can have an impact on this. According to Baud et al management systems need to consider 'meeting human needs [and] several economic, social and public health goals need to be included' (2001: 5). Allowing informal collectors to make a living contributes to intra-generational equity. Wilson, et al support this view, arguing that 'over the last 20 years, there has been growing recognition of the economic, social and environmental benefits of the informal sector in waste management' (2006: 9).

Solid waste management clearly has an environmental impact, as discussed above, as well as a social impact. The social impact is evident if one considers the hundreds of thousands of informal sector waste workers around the world whose livelihoods are intrinsically linked to waste disposal, collection, and policy. Thus, it can be argued that what is needed in the developing world context is an integrated approach, which incorporates both social and environmental goals. Furedy described this as 'an emerging movement for reform of conventional approaches to municipal solid waste management in Southern cities' (1997: 142). This integrated approach must include both conventional as well as informal activities, it should have 'among its primary aims, waste reduction and the facilitation of recycling' (Furedy, 1997: 143). In addition to this, the integrated approach calls for a variety of stakeholders to

have a say in the formulation of policy, and a compromise between the goals of social welfare, waste reduction and recovery, and effective waste management with minimum handling.

Of particular interest to this study is the trend of a growing number of informal collectors in developing world cities. This view is supported by Wilson et al, who point out that 'Insufficient collection, uncontrolled street collection points and improper disposal in open dumps allow refuse to be readily available for informal waste recycling through scavenging/waste picking' (Wilson et al, 2006: 2). Although waste picking is a reality in many cities in the developing world, there appears to be reluctance on the part of local authorities to deal directly with the informal recycling sector. Baud et al found that 'local authorities work together with large enterprises and non-governmental organizations (NGOs), but refuse to deal directly with the informal trade and recycling enterprises which cover large fractions of waste' (Baud et al, 2001: 3).

2.3.2. Urban Solid Waste Management and Recycling in South Africa and Durban

In line with global trends, recycling has increasingly become a concern in solid waste management in South Africa. This section will first outline the policy and legislation pertaining to waste management in South Africa, as well as general trends in recycling and waste in the country as a whole. Thereafter, particular attention will be paid to solid waste management and policy in Durban. Recycling in Durban will also be elaborated on.

2.3.2.1. Legislation

Prior to 1994, the only legislation that made mention of recycling was the Environmental Conservation Act 73 of 1989. Part vi, section 24 which gives regulations regarding waste management. Sub-section d and e state that the minister may make regulations with regard to waste management concerning:

'd) The reduction of waste by:

i) modifications in the design and marketing of products

ii) modifications in the manufacturing process

iii) the use of alternative products

e) The utilization of waste by way of recovery, re-use or processing of waste' (Government press, 1989).

After the change in government in 1994, a host of new legislation was passed. The National Environmental Management Act (NEMA) was passed in 1998, and this legislation made considerable mention of the concept of sustainable development. Section 2 of the act contains the principles behind the legislation, and sub-section 3 states that 'development must be socially, environmentally and economically sustainable' (Government Press, 1998). Sub-section 4(a) states that:

> *4(a) 'Sustainable development requires the consideration of all relevant factors including the following:*
>
> *iv) that waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a reasonable manner; (Government Press, 1998)*

This legislation makes a more direct reference to recycling, and sets it within the broader goal of sustainable development.

In March 2000, the white paper on integrated pollution and waste management for South Africa was published in the government gazette. The white paper made direct reference to the need to establish a culture of recycling and waste minimization in South Africa. One of the objectives of the policy was 'To set targets to minimise waste generation and pollution at source and promote a hierarchy of waste management practices, namely reduction of waste at source, reuse and recycling with safe disposal as the last resort' (Government press, 2000: 18). An acknowledgement of the lack of legislation and policy pertaining to recycling was made in the white paper. It points out that in South Africa there is 'a general lack of commitment to recycling. There is no legislation, policy or waste management culture that promotes resource recovery or makes it financially viable' (Government press, 2000: 24).

The white paper, and general discussion that it generated, resulted in the Draft National Waste Management Bill. The bill states the importance of including recycling in waste management strategies. Specifically, Part 5 of Chapter 3 of this bill focuses on recovery, re-use, and recycling of waste. It includes 3 different sub-sections. Subsection 1 states that recycling must benefit the environment, and the process must not use more natural resources than disposal. Subsection 2 outlines the powers of the minister with regard to recycling. It states that:

> *(2) The Minister may, by notice in the Gazette, require any person or category of persons to –*
>
> *i. provide for the recovery, re-use or recycling of products or components of a product manufactured or imported by that person; or*
>
> *ii. a product to include a determined percentage of recycled material in a product that is produced, imported or manufactured by that person or category of persons. (Government Press, 2006).*

Subsection 3 outlines gives powers to local municipalities, stating that the municipality may enforce recycling on any person making use of the municipal collection service.

This bill is currently up for comment, and will possibly be passed in the near future. Thus, while the recycling business in South Africa may not change initially, the legislation gives power to local authorities as well as national government to set the climate regarding this activity, if they choose.

In addition to this, the department of environmental affairs and tourism has had success in getting the key players in the waste management sector to reach collective decisions on the way forward for recycling in South Africa. The first National Waste Summit was held at Polokwane, to 'address the challenges facing waste management in South Africa' (DEAT, 2005: 2). The need to reduce, reuse and recycle was recognised at this convention. The goal emerging from this summit was 'to reduce waste generation and disposal by 50% and 25% respectively by 2012 and develop a plan for zero waste by 2022' (DEAT, 2005: 3).

The Polokwane declaration, a statement of political intent, resulted from this summit. This declaration outlines the commitments of government, civil society and the business community to sustainable waste management (DEAT, 2005: 3). Recycling will form a significant part of this strategy, if the goals of the Polokwane declaration are to be realized. An objective of the declaration is to grow the recycling industry by 30% by 2012 (DEAT, 2005: 9).

2.3.2.2. Recycling Environment in South Africa

The legislation and policy pertaining to recycling in South Africa has been discussed in detail above. However, recycling in South Africa has historically been, and continues to be, dominated by the private sector. In addition to this, the motivation behind recycling is generally an economic, rather than environmental concern (McLean, 1998: 1).

The South African government has recognized that in order to create better habitats, partnerships with communities, non-government organizations, and other key stakeholders need to be considered (Jones, 2003) . The idea that different groups can be useful in managing living environments can be applied to informal recycling. Waste pickers perform a role in waste minimization, despite the fact that they are given little or no recognition for this by local government.

South Africa generates a substantial amount of waste, and there is significant scope for an increase in recycling. The following table shows the waste generation figures for South Africa as a whole, per province:

Table 2.1: Waste Generation in South Africa	
Province	**Tonnes of Waste received at Landfill / annum**
Eastern Cape	571,000
Free State	782,000
Gauteng	4,297,000
KwaZulu-Natal	1,811,000
Mpumalanga	481,000
Northern Cape	262,000
Northern Province (Limpopo)	153,000
North West	354,000
Western Cape	1,487,000
TOTAL	**10,198,000**

Source: DWAF 2001a in DEAT 2005:23

The provinces containing larger urban nodes clearly generate more waste. What is important to note, however, is that certain provinces may have more effective waste collection, resulting in more waste entering the landfills. Therefore one must be cautious in equating these figures with waste generation.

A detailed breakdown of the national waste stream is very limited (DEAT, 2005: 24). At present, DEAT is considering conducting research into this as it will give a more accurate view of which sectors of the recycling industry can be targeted for growth.

DEAT point out that in South Africa, the government has been largely absent from the recycling industry (DEAT, 2005: 15), instead leaving the job up to private recycling companies and economic forces. However, many local authorities have 'established voluntary drop-off facilities and buy-back centres to encourage and stimulate post-consumer recycling' (DEAT, 2005: 15). While there have been kerbside recycling schemes implemented, these have been few and far between.

As has already been stated, recycling in South Africa is primarily driven by economic forces. The supply and demand for various materials therefore influences the price paid, and accounts for the amount of that particular material recycled. At present, significant amounts of five materials are recycled in South Africa. The recycling

statistics for each of these materials, apart from scrap metal, are shown in the table below.

Table 2.2: Recycling statistics for South Africa						
Waste	**Percentage of waste recycled**					
	1990	**1992**	**1994**	**1996**	**1998**	**2004**
Paper	29.0	28.4	38.0	38.0	38.0	52.0
Cans	21.0	26.3	29.9	51.0	67.0	85.0
Plastics	11.0	14.8	17.0	17.0	12.0	14.0
Glass	14.0	22.4	19.4	17.6	20.8	22.0

Source: DEAT 2000a, 2004b in DEAT 2005: 15

As is evident, cans are the most recycled material in South Africa. However, what is illustrated in the table, is that there is significant scope to increase recycling activities. Each of the materials listed in the table, as well as metal, will now be discussed in turn.

Paper and Cardboard

Undoubtedly, the recycling of waste paper and cardboard is a relatively well established sector compared to other recyclables. According to the paper recycling association of South Africa, 2 144 000 metric tons of paper was consumed in South Africa in 2006. Of this, 1 647 000 metric tons is recoverable. The following recycling rates are found in this sector:

Table 2.3: Paper Recycling Rates in South Africa	
Recoverable paper as % of Paper consumption	43.6%
Recovered paper used in Paper Produced in SA	35.7%
Recovered Paper as % of recoverable paper	56.8%

Source: Paper recycling association of South Africa, 2007.

These figures show the recycling rates for both paper and cardboard in 2006. If one compares this to the 1993 figure in table 2.2, it is clear that paper and cardboard recycling has increased by some 4.1% in the last 13 years. In 2006, the paper recycling industry formally employed some 12 600 people, and had a capital

investment of R230 million (Paper Recycling Association of South Africa, 2007). Furthermore, the industry has taken the lead in innovation. For example, Sappi Fine Paper has recently launched Typek Recycled, which is a new type of office paper, with 50% recycled content (Paper Print, 2006).

Four main companies (Mondi, Sappi, Nampak and Swazi Paper) dominate the trade in waste paper (DEAT, 2005: 24). The majority of waste paper is sourced locally, however, 'Depending on the demand and supply situation, waste paper may be imported to supplement local waste paper' (DEAT 2005: 24). Reasons for this may include the lack of waste paper available locally, or cheap waste paper available on international markets. There is a fair degree of volatility in the price of waste paper and cardboard in local markets due to these economic forces. According to DEAT, 'Sustainable market for recycled materials could be created though government policies for the procurement of recycled products' (DEAT, 2005: 26), suggesting that the largest factor hindering increased recycling rates in this sector are economic.

Cans

The recycling of beverage cans has been probably the most successful recycling initiative in South Africa. The major player in the can recycling industry is Collect-a-Can. This non-profit organization was started in 1976, and was re-launched as a private company in 1993. Collect-a-Can is a joint venture between Nampak and Mittal Steel South Africa (Collect-a-Can, 2007). Collect-a-Can recovers material from all over South Africa, as well as other countries in Southern Africa.

Collect-a-Can estimates that a total of approximately 3 billion beverage cans are consumed in Southern Africa each year, and 66% of these cans are recycled (Collect-a-Can, 2007). These figures are much greater if one considers just South Africa, where the can recycling rate was estimated to be between 80 and 90% for 2004 (DEAT 2005a in DEAT 2005: 26). In addition to this, the can recycling industry creates jobs for an estimated 37 000 people, 82% of whom are informal recyclers, and has reduced cans to 1% of litter (Collect-a-Can, 2007). The success of this initiative is illustrated by the fact that in terms of international recovery rates, the region now ranks in the top five in the world for can recycling (DEAT, 2005: 26).

Collect-a-Can has been extremely successful due to a number of reasons. However, part of this success can be linked to its innovative collection system. Collect-a-can also subsidise the collection system (DEAT 2005: 26), and an incentive is paid to deliver the material directly to their branches (Collect-a-Can, 2007). The limited number of players in the can recycling sector has meant that the price for cans has enjoyed more stability than other recyclable goods. The price is fixed for a period of about 18 months (DEAT 2005: 26).

Metal

Scrap metal is one of the more lucrative materials to recycle; however, prices differ substantially according to the type of metal recovered. This category is split broadly into ferrous metals, which are metals that contain iron, and non-ferrous metals, such as aluminum, copper and zinc. Typically, this material is sold to commercial dealers such as the Reclamation Group. According to DEAT, 'A company such as the Reclamation Group recovers approximately 3,000,000 tonnes per annum of ferrous metals and 93,000 tonnes per annum of non-ferrous metal' (DEAT 2005: 27).

One of the major problems faced by this industry is the fact that, due to the higher prices paid for scrap metal, this sub-sector has experienced 'a high incidence of trading stolen materials' (DEAT 2005: 27). For example, Telkom spends millions each year replacing stolen copper wire.

Plastics

According to the Plastics Federation of South Africa, South Africa consumes a total of 1 100 000 tonnes of plastic polymers in a year, while the local recycled material consumption is estimated at 150 000 tonnes a year (Plastics Federation of South Africa, 2007). This indicates a recovery rate of 13.6%. This figure is verified by table 2.2 on page 27, which estimated the recovery rate of plastics in South Africa to be around 14%.

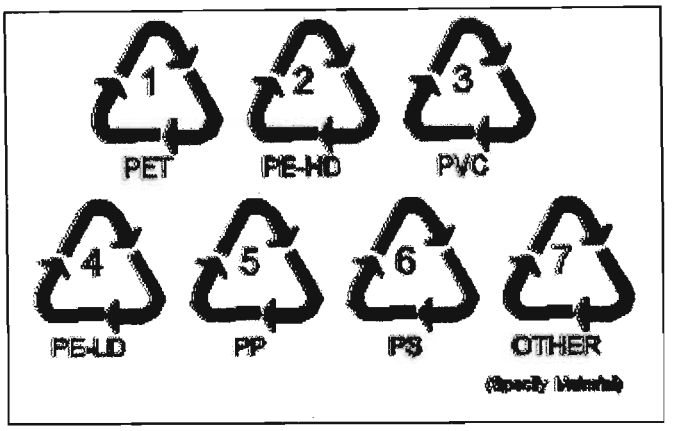
There are approximately 850 companies specializing in plastics conversion, and the majority of these are small companies. In total, there are approximately 30 000 people employed in plastics conversion in South Africa (Plastics Federation of South Africa, 2007).

Plastics recycling requires more care compared to other recyclables. This is due to the fact that the different types of plastics need to be sorted for the recycling process. The plastics federation of South Africa has divided the different types of plastics into 7 different categories (Plastics Federation of South Africa, 2007). They describe these as follows:

- Low density and linear low density polyethylene (PE-LD and PE-LLD) - A thin, usually transparent packaging film. Examples include fresh and frozen vegetable bags, and soft squeezable bottles.
- High density polyethylene (PE-HD) – This substance is mostly used for the manufacture of strong, non-transparent bottles (such as household cleaning agents). It is also used for the manufacturing of plastic buckets and basins.
- Polypropylene (PP) – materials such as coca-cola bottle caps, and firmer forms of packaging are made from this.
- Polystyrene (PS) – This includes the white foam substance, used for packaging. It also includes disposable containers and cutlery.
- Poly(vinyl chloride) (PVC) – This material is easily recyclable, and is usually a clear plastic. Examples include fruit juice bottles, and cooking oil bottles.
- Poly(ethylene terephthalate) (PET) – The coca-cola type bottle is made from this.
- Other – Plastics that do not fit into the categories above are grouped together. These mostly include engineering type plastics (Plastics Federation of South Africa, 2007).

In order to simplify the recycling process, and to ensure that the plastics are properly separated, a system of identification is increasingly being used in South Africa. The different symbols show the type of plastic. The logo is printed on the article in the manufacturing process. Figure 2.1. shows these different logos.

Figure 2.1: Plastics Identification System



Source: Plastics Federation of South Africa, 2007

The plastics federation has been extremely successful in encouraging plastics recycling in South Africa. Plastics recycling is in the forefront internationally (DEAT, 2005: 29), and if one compares the recovery rate of 14%, 'This percentage figure is 5 times higher than the 1995 figure in the USA and Europe' (Plastics Federation of South Africa, 2007). The Plastics federation launched the Enviromark initiative in 1997, which aims to encourage environmental responsibility in the industry, as well as encourage recycling, reduce littering, and educate the public about plastics (DEAT, 2005: 29). Converters are allowed to use the Enviromark logo, in exchange for a fee per ton converted. This money is then used to fund various projects. According to DEAT, 'Approximately 80% of the plastic packaging industries are currently contributing to this programme' (DEAT, 2005: 29). A similar programme, focusing on the recycling of PET bottles has also been started (PET Plastics Recycling South Africa, 2007).

Although this industry is well organized, it is sensitive to price changes (Steyn and Dlamini, 2000 in DEAT, 2005: 29), which has a direct effect on informal recyclers collecting plastic. One of the other major problems encountered in plastics recycling is the quality of material recycled, and 'rising labour and services costs are forcing recyclers to become more selective regarding the quality and type of materials being recycled' (DEAT, 2005: 30). These factors can create an uncertain environment for the informal recycler.

Glass

Glass recycling in South Africa has been less successful than other materials, due to the fact that this is dominated by the glass recycling association (McLean, 1998: 4), which is a joint initiative between Nampak and Consol glass. Currently, the glass packaging industry produces sales of approximately 730 000 tonnes per annum, and of this '105 000 tonnes (14%) is recovered and recycled' (Consol Glass, 2007). However, this figure includes only the amount recycled by these two companies. The total recycling rate for 2004, as indicated in table 2.2 was 22%. This figure compares poorly with other countries, such as Britain (which recycles 45%), and the Netherlands and Australia which recycle 91% and 50% respectively (National Drive, 2006).

Glass recycling can either involve the collection of bottles for reuse, cullet (crushed glass), or broken glass (DEAT, 2005: 28). In 1999, 6.9% of recycled glass was collected by informal recyclers. According to the Department of Environmental Affairs and Tourism, 'The maximum amount of cullet that can be recycled at the current levels of production is 175,000 Tonnes' (DEAT, 2005: 28). In 2002, there were a total of 143 agents in South Africa collecting glass (DEAT, 2005: 28).

One of the major problems with glass recycling is the fact that the industry is run under monopoly conditions. The glass recycling association (Nampak and Consol glass), has by far the largest share of the market, and allegations of price fixing have been made. According to the competition commission of South Africa, a complaint has been laid against Consol Glass and Nampak for alleged collusion and price fixing in the glass recycling market (Competition Complaints Commission of South Africa, 2004).

Other problems with glass recycling occur in the collection phase. Glass needs to be separated according to colour, and if there is contamination the whole load is rejected (DEAT, 2005: 28). In addition to this, profit margins are not particularly high in glass recycling (DEAT, 2005: 28), and large volumes need to be collected to make it economically feasible. However, the national glass recycling association have apparently 'set its sights on driving glass recycling levels up from the current 20% to 50% a year over the next five years (National Drive, 2006).

Other materials

Other materials are also experiencing a growth in recycling. Materials such as electronic waste, building rubble, tyres, textiles and organic waste can all be recycled. Recently, Hewlett Packard has launched a return and recycle programme, which has resulted in 6000 ink toner cartridges being recycled in 18 months (Ink Cartridges Collected, 2006: 21). The government is also aiming to encourage the recycling of tyres to a greater extent, by putting in place regulations for this sector (The Road to Tyre Recovery, 2006: 26).

Despite these initiatives, at present the industry and market in these materials is not as established as in the previous 5 materials mentioned. Generally, informal collectors do not collect these materials due to the fact that most recycling centres do not buy them. If some of these materials are collected, they are primarily for re-use.

2.3.2.3. Durban Solid waste policy

At present, Durban has six operational landfill sites. Four of these are general waste sites, while 2 are 'low hazard co-disposal sites' (eThekwini Municipality, 2007). In addition to these, there are transfer sites as well as 15 garden refuse disposal sites located around the city (eThekwini Municipality, 2007). One of the major issues facing most large metropolitan areas, is diminishing landfill space. One way in which to save landfill space is to increase the rate of recycling.

According to a report prepared by the Durban Municipality, In excess of 1.8 million tonnes of waste was generated in 1996 in the Durban metropolitan area. Of this, 1.2 million tonnes is general or low hazard waste (Cities Environmental Report on the Internet, 1999), the type of waste that could contain recyclable material.

A detailed waste analysis has not yet been conducted in eThekwini. However, the eThekwini Integrated Waste Management Plan (2004) estimates that the total waste landfilled in eThekwini composed of the following:

Table 2.4: Waste Generation in eThekwini	
Waste Type	**% of Total**
Solid waste	42.7
Garden Refuse	9.5
Building Rubble	4.0
Mixed Loads	1.4
Whole Tyres	0.1
Munitech Contracts	3.1
cover material	25.4
condemned foods	0.1
Mondi Pulp	1.1
Special waste general	0.2
PSW Collection	3.1
Low Hazardous	9.3
Total	**100.0**

Adapted from the eThekwini Integrated Waste Management Plan, 2004: 2-26

Although the table above does not give a detailed breakdown of recyclable material in the waste, it does give an indication as to how much domestic waste, and therefore possibly recyclable material is in the waste stream. According to the figures mentioned above, over 40% of the waste stream is classified as general solid waste. In addition to this, some of the other categories present potential for recycling. These include the used tyres, and building rubble. What the table proves is that there is definitely scope to increase recycling in eThekwini.

Parkin (1995) performed a waste stream analysis at the Bisasar Road landfill site. He classified the waste into a variety of different categories, as shown in the table below.

Table 2.5: eThekwini Waste Stream Analysis, 1994	
Waste Type	**% of total waste**
Paper	18.9
Metal	4.6
Plastic	10.7
Glass	4.1
Textiles / Rubber / Leather / Wood	2.5
Vegetable	51.4
Other	7.8
Total	**100.0**

Adapted from Parkin, 1995: 101

Parkin found that the waste paper content in the waste stream was low compared with other countries, and he asserted that this was due to the 'extremely well organized, large informal collection system operating [in Durban] which removes vast quantities of paper and cardboard before event entering the formal waste stream' (Parkin, 1995: 102). Parkin concluded that there was still considerable scope to increase recycling in Durban, as the analysis of the waste stream pointed to the fact that many recyclable materials were being landfilled (Parkin, 1995: 104).

In order to increase recycling, the eThekwini municipality has attempted a number of initiatives. One such initiative has been education. Durban solid waste department has set up a waste minimization and recycling office, which focuses on the education of schools and community groups with regards to recycling. The office also aims to make information about recycling available to the general public (eThekwini Municipality, 2007).

Furthermore, the eThekwini municipality has made an effort to promote recycling through the establishment of a number of buyback centres. These centres cater largely for informal recyclers, as people can walk in with waste and exchange it at market related prices for money. According to a representative at the waste minimisation and recycling office, as of March 2006, the eThekwini municipality managed a total of six buyback centres. In these cases, the municipality provided the

space for the facility as well as start up capital, for the site manager. Each centre specifies which materials they collect. In total, these buyback centres collect approximately 468 tonnes of recyclables in a month (email from the waste minimisation and recycling office of Durban Solid Waste, March 2006).

In addition to these buyback centres, the municipality also operate a number of community drop off points. These sites offer communities an opportunity to separate their waste, and drop it off in provided bins. They differ from buyback centres in that no financial incentive is offered. As of March 2006, the municipality managed a total of 17 community drop off sites. Sites tend to differ as to which materials they collect. In total, these drop off points collect approximately 156 tonnes of recyclables in a month (email from the waste minimisation and recycling office of Durban Solid Waste, March 2006).

While community drop off points and buyback centres represent a large amount of the total material recycled in Durban, it is important to remember that the private sector also accounts for large volumes of recyclable material. Businesses, as well as informal collectors may sell back their recyclable material to companies such as the Reclamation Group and other private companies. The above should therefore not serve as an indication as to the total amount recycled in Durban.

2.4. The urban informal sector

2.4.1. Defining the Urban Informal Sector

The informal recycling industry touched on above exists within a large sector of the urban economy known as the informal sector. Defining this sector has been the subject of much debate, and tends to differ according to countries, as well as school of thought. Statistics South Africa defines the informal sector as follows:

> *'The informal sector consists of those businesses that are not registered in any way. They are generally small in nature and are seldom run from business premises. Instead, they are run from homes, street pavements or other informal arrangements' (stats SA, 2004: xxvii in Skinner, 2006: 127).*

Portes, Castells and Benton (1989) argue that the informal sector is 'a common sense notion' (1989: 11), and 'a process of income-generation characterized by one central feature: it is unregulated by institutions of society, in a legal and social environment in which similar activities are regulated' (1989: 12). As Bernabe points out, there is 'no consensus over what constitutes the informal sector worldwide' (2002: 5), and according to Bromley (1990), 'From its very origins in the early 1970s, the concept of the informal sector has been beset by definitional problems' (1990: 335).

The term "informal sector" first appeared in the 1970s. This was a time of crisis in development theory, as many of the accelerated growth strategies put forward had failed. Increased population growth as well as rural to urban migration led to the rapid increase of the urban population in many third world countries. Employment creation was exceeded by the growth in the labour force. What became evident was that people were not 'unemployed' in the narrow sense. Rather, they were 'engaged in a multitude of small–scale unregistered, unmeasured and largely unregulated "informal" activities' (Bernabe, 2002: 7). As May and Stavrou point out, 'once it was accepted that there existed a group of urban dwellers who were unemployed, poverty stricken and politically docile and whose existence was not temporary, analysts began to investigate their lifestyle more closely to see how this group survived' (May and Stavrou, 1989: 2). Theorists attempted to explain the phenomenon of the informal sector, and this ultimately led to different conceptual approaches.

2.4.1.1. Economic Dualism

This school of thought sees the economy as being divided into two distinct sectors, namely the formal sector and the informal sector. Each is seen to have different characteristics, and function under different conditions. The informal sector was viewed as 'autonomous and an economy in its own right' (Bromley, 1990: 336). The earlier definitions relating to the informal sector subscribed to this line of thought.

One of the earliest definitions of the informal sector subscribed to this view. Hart, who conducted research into Informal income opportunities in Accra, Ghana argued

that 'the distinction between formal and informal income opportunities is based essentially on that between wage-earning and self-employment' (Hart, 1973: 68). Commenting on Keith Hart's definition, Bromley notes that, 'For Hart, informal income opportunities were ways for the poor to get by when neither corporations nor the government could provide sufficient employment for the expanding population' (Bromley, 1990: 335). One of the criticisms of Hart's definition is that it precludes 'the possibility of workers being employed by informal sector operators' (Davies, 1979: 88 in De Kock, 1987: 10).

The international labour organization (ILO) also expanded on the dualist interpretation of the informal sector, in their 1972 Kenya Report. The ILO theorists 'suggested there existed a marginal, poor, "informal" sector of the urban economy, which produced goods and created employment and income for the poorest of the poor' (ILO 1972 in Bernabe 2002: 7). According to the ILO, the informal sector could be defined using seven distinct criteria (Bromley, 1990: 336). These criteria were as follows:

- *ease of entry*
- *Reliance on indigenous resources*
- *Family ownership of enterprises*
- *Small scale of operation*
- *Labour intensive and adapted technology*
- *Skills acquired outside the formal school system*
- *Unregulated and competitive markets (ILO, 1972 in De Kock, 1987: 11).*

The ILO saw 'small-scale industrial, handicraft, and repair establishments as the core of the informal sector and the priority for government support' (Bromley, 1990: 336). Bernabe points out that while Hart (1973) defines the informal sector in terms of the individual, focusing on wage-earnings for the formal sector employee, and self-employment for those in the informal sector, the ILO definition focuses on units or enterprises (Bernabe, 2002: 7), and describes means of production.

Some scholars argued that this dualistic interpretation of the informal sector is informed by western experience. According to Gerry, 'The 1930s' depression in

Western economies had supported the contention that the persistence of a small, apparently independent sphere of the economy provided two essential components for future growth' (Gerry, 1987: 107). Thus, those who are involved in the informal economy are seen as people who are structurally unemployed, and the informal sector thus provides work for these individuals. Secondly, it is believed that once the economy in question does take off, the informal sector will provide 'a launch pad for would-be entrepreneurs' (Gerry, 1987: 107). This influenced the policies of those following the dualism school of thought.

Those who took a dualistic position on the informal economy argue for policies to support the urban informal sector, which is seen as an important tool for poverty alleviation. While certain policy approaches have been put in place for the formal sector, those taking a dualist position argue that different policies need to be put in place for the informal sector. Government deregulation (in the form of abolishing policies that discriminated against small enterprises) is encouraged combined with government intervention in areas such as training, access to credit, and marketing (Gerry, 1987: 109). The ILO's position is essentially reformist, and is 'aimed at achieving income transfers to benefit the poor, without prejudicing too much of the pre-existing capitalist basis for economic growth' (Gerry, 1987: 109).

Although the Hart definition and the ILO approach are the most common dualist definitions, others offer alternative interpretations. For example, PREALC, the ILO's World Employment Programme in Latin America sees the informal sector as 'a marginal unprotected sector of the economy in which people survive' (Bernabe, 2002: 8). The PREALC definition focuses on income and employment rather than units (such as in the case of the ILO definition). Other dualist approaches have defined the informal sector '*vis a vis* "state protection"' (Bernabe, 2002: 8). These dualist interpretations argue that while formal sector activities have the benefit of government support in terms of import protection and access to credit, those working in the informal sector have to survive entirely on their own.

2.4.1.2. Criticisms of Economic Dualism

Early work on the informal sector almost entirely centres around ideas of economic dualism, however, this has been criticized by some. As Bromley argues, the approach of economic dualism leads to the classification of all activities into either the formal sector or the informal sector, causing 'a great lack of clarity as to what else exists apart from these two sectors and how to classify anything that does not fit into the definition' (Bromley, 1978b in De Kock, 1987: 12). The debate surrounding economic dualism focuses on classification, and draws attention away from the more important issue of identifying the underlying causes that result in the informal sector. As Gerry pointed out, the dualistic discourse 'avoids any discussion of the economic structure as a whole and the conditions underlying the relations between characteristically different production processes co-existing in the urban national and international economy' (Gerry, 1978: 1149 in De Kock, 1987: 13). Thus, many scholars then turned their attention to explaining the phenomenon of the informal sector, rather than classifying and defining it.

A Marxist critique of the informal sector debate emerged in the 1970s. Marxists argue that formal and informal sector activities are not separate and independent, but rather 'parts of one overall capitalist system in which informal activities are subordinate to, and dependent on, the formal sector' (Bernabe, 2002: 9). This school of thought points to an explanation of the existence of the informal sector, as well as rejecting previous definitions. As Gerry points out, 'they saw the economic activities of the nonwaged urban poor as constituting a subordinate petty commodity form of production coexisting with a dominant capitalist mode of production' (Gerry, 1987: 112). The existence of these petty commodity producers (or those involved in the "informal sector") benefits capital in two ways. Firstly, their presence means that there is a large supply of labour eager to enter into formal sector employment. This puts downward pressure on urban wage levels, keeping them low and enabling capital to benefit. Secondly, capital also benefits from the cheap goods and services available in the informal sector.

Marxists argue that those employed in the so-called 'informal sector' are little more than 'disguised wage workers indirectly exploited in particular through the subcontracting system' (Gerry, 1987: 112). In many cases, capital would not be able to function without the goods and services of these petty commodity producers.

Capital thus gains the benefits of these services and goods from petty commodity producers without offering the benefits and protection of formal employment. According to Marxists, the state facilitates this relationship between petty commodity production and capital, as well as perpetuates poverty. They argue that 'the poverty found in the informal sector [is] due to its relations with capitalist production and distribution and with a state that furnished conditions propitious for capital accumulation' (Gerry, 1987: 111). Thus, government policies aimed at supporting the informal sector are believed to transform both the small proprietor and his or her co-workers into disguised wage workers serving the interests of capitalist growth (Gerry, 1987: 113).

This view was promoted by Birkbeck (1979), who conducted a study into the informal recycling sector in Cali, Columbia. Birkbeck found that garbage pickers worked for the recycling factories, but were not employed by them. The garbage pickers were responsible for large amounts of waste paper, but remained poor because of the economic forces in operation. Birkbeck noted that 'rather than view the picker as a vagrant who should really be working in a factory, we should see him as a worker who is part of an industrial system' (Birkbeck, 1979: 161). Birkbeck also pointed out that the garbage picker was involved in the occupation for survival reasons, due to the lack of economic opportunities available to him or her (Birkbeck, 1979: 161).

This Marxist view of the informal sector is also supported by Wilson, who looked at three different groups of informal workers: street vendors, brick makers, and garbage pickers. She found that they are not 'part of a traditional sector divorced from the modern sector...Rather, they retail products manufactured in the formal capitalist sector (in the case of street vendors) or provide inputs consumed by that sector (in the case of garbage pickers and brick makers)' (Wilson, 1998: 114). These activities are 'intimately connected to the capitalist system and facilitate the generation of greater profits within that system' (Wilson, 1998: 114). Ultimately, she concludes that the workers in the groups she studied are directly and indirectly used by capitalist firms, and the workers subsidize the capitalist system as a whole (Wilson, 1998: 114).

Within the Marxist framework, scholars have considered the relationship between the capital and petty commodity producers. As Bromley notes, most scholars have rejected the concept of dualism and have adopted a 'dominance – dependence type formulation' (Bromley, 1990: 336) where the informal and formal sector are seen to be interdependent. Portes, Castells and Benton suggest that there are at least three different types of informal activities. These activities vary in their linkages to the formal economy, as well as in their dependence on it. The first are subsistence activities, which are 'required for sheer survival' (Portes et al, 1989: 300). Secondly, there are those activities that interlock and are subordinate to formal sector activities, and thirdly, there are those activities that 'offer potential for autonomous growth' (Portes et al, 1989: 300). An example of this would be a situation where 'one begins to work informally in order to learn a profession' (Capecchi, 1989: 211).

Bromley and Gerry also expand on the idea of an informal to formal continuum of employment. They suggest that casual, or "informal" work, could be grouped into four different categories (Bromley and Gerry, 1979). Short-term wage work describes a situation in which an individual is 'paid and contracted by the day, week, month or season' (1979: 5). Thus, while the worker is contracted by law, the worker receives none of the benefits afforded to formal wage workers. Secondly, there are those who operate as disguised wage workers. This group is distinguished by the fact that 'a firm, or group of firms regularly and directly appropriates part of the product of a person's work without that person legally being an employee of the firm or group of firms' (Bromley and Gerry, 1979: 6). The third category of casual work is dependent work. In this situation, 'the worker is not in wage-work or in disguised wage work but is dependent upon one or more large enterprises. The dependence can be in the form of credit, supply of material, equipment, or premises' (Bromley and Gerry, 1979: 6). Bromley and Gerry offer the example of a taxi driver, who rents a vehicle in order to run his business (Bromley and Gerry, 1979: 6). The last type of casual work identified by Bromley and Gerry is true self-employment. In this case, 'a person works independently, obtaining an income without engaging in wage-working, disguised wage-working, or dependent working' (Bromley and Gerry, 1979: 6). A characteristic of true self employment is having a choice of suppliers, and owning the means of production.

The idea of an informal-formal economy continuum is supported by Lund and Skinner (2003). They point out that there is no clear line separating informal and formal economic activities, and 'there are few informal operators who are not linked (either by supply of inputs or demand for goods or services) into the formal economy' (2003: 2). Skinner (2006) suggests that 'There is increasing consensus in development literature that rather than viewing informal activities as part of a separate sector they should be viewed as part of the entire economy which has formal and informal ends' (2006: 128). Lund and Skinner also point out that since the late 80s, there has been a trend to consider sectors within the informal economy, and an emphasis has been placed on approaching the informal economy on an industry-by-industry basis (Lund and Skinner, 2003: 3, Skinner, 2006: 128)

Portes, Castells and Benton (1989), and Bromley and Gerry (1979) argue that there are linkages between the formal and informal sectors, and the extent of dependence on the formal economy differs according to the type of casual work done. The idea of a continuum of work from informal to formal contradicts the dualist model, which proposes that the formal and informal spheres of the economy are separate. However, others argue that the concept of dualism does not 'necessarily deny the presence of interdependence' (Sethuraman, 1981 in Bernabe, 2002: 10), and that the concept of dualism provides a way in which to classify activities, but these activities need not be viewed as independent.

2.4.2. The Causes of the Informal Sector

While some have sought to define, and explain the informal sector conceptually, others have turned their attention to the underlying causes which result in the informal economy. It appears that these arguments can roughly be grouped into two categories: those who believe that the informal sector is a result of poverty, or arises out of a need for individuals to survive; and those who believe that the informal economy is a result of heavy state bureaucracy and excess regulation (Bernabe, 2002: 11).

A common idea, put forward by those arguing for reformist policies, and emanating from the dualist school of thought, is that the informal economy is a result of the

economic restructuring that took place in the 1970s (Portes, Castells, Benton 1989: 27). People were left with little or no job prospects in the formal sector, and the informal sector became an area in which this large group of "unemployed" people sought refuge. Poverty and desperation is what drove people to find employment opportunities in the informal sector.

Marxists argue that the informal sector is a result of petty commodity producers being forced into the informal sector due to lack of opportunities in the formal sector. As discussed in section 2.4.1.2, Marxists argue that informal workers are kept in their position by capital and the state and that those involved in the informal sector are not there by choice. Poverty and a need to survive, caused by capital, is thus the main cause of the informal sector.

Portes, Castells, and Benton point out that unionization can also be held partly responsible for the extent of the informal sector (1989: 28). A powerful union means that a large group of unemployed people will have less of an impact on the urban wage rate, and despite the fact that labour supply is high, there will be little downward pressure on the wage rate. This is the case in South Africa, where labour is organized and as a result unit labour costs are high compared to countries at a similar stage of development. This, in turn, has discouraged investment in labour intensive industries, resulting in a high unemployment rate and a growing informal sector.

The above arguments, although emanating from different schools of thought and conceptual angles, both argue that 'activities are undertaken as an alternative to open unemployment since, in the absence of social security benefits, individuals cannot afford to be unemployed' (Souza and Tokman, 1976: 355-356 in Bernabe, 2002: 11). This view is supported by the PREALC approach discussed above, which stresses the survivalist nature of the informal sector.

While many argue that poverty and a need to survive is ultimately responsible for the informal sector, others point out that the informal sector may be nothing more than a response to a bureaucratic and over regulatory state. This legalist view is put forward by Hernando De Soto, who argues that underdevelopment and the informal sector

was a result of a mercantilist system, which the government abuses to its own advantage. As Bromley explains, Desoto argues that 'informality is...a mass response to mindless, pompous bureaucracy and to the manipulations of the economic system by vested interest groups' (Bromley, 1990: 331). Informal sector workers are argued to have shown 'tremendous initiative and entrepreneurial dynamism by finding "informal" means of production and reproduction...that fall outside the governments "planned", "regulated," and "managed" economy' (Bromley, 1990: 330 – 331).

Those agreeing with this legalist view argue for policies embracing the informal sector, and viewing it rather as a path to development. De Soto and his followers point out that what is needed is 'deregulation, decriminalization, and accelerated legalization' (Bromley, 1990: 332). Commenting on development in Peru, De Soto points out that capitalism is not the problem, but rather the absence of it (De Soto, 1986 in Tsoeu, 2003: 22). The 'free market' is essentially blocked by bureaucratic processes and red tape, resulting in informal sector workers turning their backs on this process, exercising their own power, and ignoring a legal system that is unreasonable.

Other examples of how state policy and regulation can affect the informal sector are put forward by Portes, Castells, and Benton (1989). They suggest that the growth of the informal economy could be somewhat attributed to 'the state's regulation of the economy, both in terms of taxes and social legislation' (1989: 28). This is slightly different from De Soto's idea, as rather than growing out of excessive bureaucracy, growth in the informal sector can be at least partially attributed to firms wishing to escape the welfare state. Another reason for growth in the informal economy put forward by Portes, Castells, and Benton is the increase in international competition. As cheaper goods flood local markets, local firms cannot compete at the legislated wage rate. They must decide either to 'close down their plants or move them underground' (Portes et al, 1989: 28).

However, it is likely that the informal economy cannot be explained by one factor alone. Rather, the informal economy is likely to be caused by a combination of the above factors. In addition to this, there has been an acknowledgement in recent

years, of the need to consider the informal economy sectorally (Skinner, 2006: 128). For example, factors causing informality in the textile industry may be different to the factors causing the informal recycling industry. In addition to this, Gerry points out that policies and interest in the informal sector have 'tended to wax and wane according to the cycle of boom and slump in the national and international economy alike' (1987: 100). Gerry argues that it is necessary to understand the historical context and the trends in development theory in order to understand the approaches towards the informal sector.

2.4.3. Gender in Informal Sector

Gender relations within the informal economy deserve special mention, as they are often unequal, exploitative, and have been given little attention in the literature. According to Wilson, 'Although many studies of the informal economy tend to be gender-blind, being male or female affects one's movements, possibilities, and career trajectories in the informal sector' (1998: 105).

Women can be involved in the informal economy either independently, or as workers in a family business or other business. However, 'Women heads of household, abandoned, separated, or widowed, more often depend on their informal sector work for the majority of household income' (Wilson, 1998: 105). Therefore, these individuals are less likely to be involved independently in the informal sector, and are more likely to be reliant on it for survival.

Women involved independently in the informal sector face many obstacles. Skinner (2006) conducted a study of those working in the informal economy in Durban. She found that women were less likely to employ others, with 76 percent of the one person enterprises interviewed owned by women (2006: 133). Overall, Skinner found that 'men were more likely to employ others, are better off and have more assets, all of which facilitates accessing services' (2006: 145). This lack of assets and contacts was also confirmed by Wilson, who found that 'women who work independently of their husbands are disadvantaged in setting up micro enterprises such as sewing workshops or street vending stalls by their lesser access to capital and to the skills

needed for buying and marketing' (Rakowski, 1987; Lycette and White, 1988 in Wilson, 1998: 105).

While women who operate independently in the informal sector may be exploited, those who work in a family business may also face exploitation. Wilson offers an example of women working in the informal sector in Mexico. She points out that gender ideology in Mexico prescribes that it is shameful for a wife to work, as her husband should be able to support her, and secondly, it undermines the ability of the male household head to control their wives movements (1998: 115). 'To maintain the appearance of males' fulfilling their ideal roles as head of household, both women and men may consciously hide women's labour contributions to the family economy' (Melhus, 1993 in Wilson, 1998: 115). Women are therefore exploited further, as their contribution to the economy is not recognized, and this practice reinforces the view of women as the subordinate sex, dependent on males for their survival.

There has been an attempt on the part of some non-governmental organizations (NGO's) to create organizations that support women within the informal sector, and give them a voice. One such example is the Self-employed Women's Union (SEWU) that was started in Durban in the mid 1990's. In 1995, SEWU met for a workshop to discuss the place of women within the informal sector. The workshop showed the subordinate position of women within the informal sector, confirming that women can mainly be found in the lower-income selling activities. Participants pointed out that 'once one kind of trading activity becomes more profitable, we find men taking over that type of activity' (SEWU, 1995: 12).

The workshop also touched on the issue of organization within the urban informal sector. Although there are many organizations that can be found, these do not tend to draw a distinction between workers and employers. Therefore, these organizations 'tend to represent in practice the interests of the most powerful entrepreneurs at the upper end of their particular sector' (SEWU, 1995: 13). For example, the African Council of Hawkers and Informal Businesses is a membership based organization that supposedly makes certain products and services available to their constituencies, at a price. There is no legal control over the body ensuring that they operate in a fair manner. Furthermore, the organization has an 80% women

membership, and an 100% male leadership (SEWU, 1995: 14). The lack of representation of women, as well as the fact that the most powerful individuals involved in the informal sector are disproportionally represented, further points to the inferior status of women in this sector, as well as society as a whole.

2.4.4. Informal sector in South Africa

Informal recycling falls within the informal economy as a whole. It is therefore important to have an understanding of how the informal sector functions in South Africa, the policy approaches towards it, and the historical context in which it developed.

Apartheid had a significant effect on the development of the informal economy in South Africa. According to Lund and Skinner, 'Apartheid legislation limited the range of goods that could be sold, blocked the formation of companies by black people, and set up an array of bureaucratic processes that discouraged the registration of small-scale economic activity' (2003: 3). This legacy still remains today. Due to apartheid, as well as a relatively strong formal sector, the informal sector in South Africa is less prominent than in other developing countries (Lund and Skinner, 2003: 3). In November 2003, 'President Thabo Mbeki introduced the idea of there being a "first and "second" economy in South Africa' (Skinner, 2006: 125). This "second economy", as defined by the government is 'mainly informal, marginalized, unskilled economy, populated by the unemployed and those unemployable in the formal sector' (ANC Today, 2003 in Skinner, 2006: 125). It appears, from these statements, that the South African government views the lack of skills as the main cause of unemployment, and the reason that individuals enter this sector.

While many positive changes have been made since South Africa became a democracy, unemployment, one of the major contributors to poverty, has increased. One of the areas in which there has actually been a growth in employment has been the informal sector (Skinner, 2006: 125, McLean 2000b: 10). However, the size of this sector is difficult to estimate. Recent research suggests that 'between 25% and 30% of South Africans who are presently working, operate in the informal economy' (Devey et al, 2003a in Lund and Skinner, 2003: 3). The inequality in the informal

sector with regards to gender has also been researched, and the 2001 Labour Force Survey found that there are more women working in the informal sector than in the formal sector (StatsSA 2001b in Lund and Skinner, 2003: 4). While men still dominate in both the informal and formal sectors, the gender disparity in the informal sector is not as large as in the formal sector (2001 labour force survey in Lund and Skinner, 2003: 3). Statistics South Africa has also found that the wholesale and retail sectors dominate the informal sector in South Africa (Stats SA in Lund and Skinner, 2006: 4), with 'just over half of all informal workers located in this sector' (Lund and Skinner, 2003: 4). The informal economy is said to contribute 'between 8-12 percent to gross domestic product' (Budlender, Buwembo, Chobokoane and Shabalala in Skinner, 2006: 127). This is clearly a substantial amount and has fuelled a renewed interest in the informal sector on the part of government.

The informal sector in South Africa falls under the jurisdiction of different government departments. At a national level, the Department of Trade and Industry is responsible for 'growing small businesses, including informal enterprises' (Skinner, 2006: 126), while the Department of Labour is responsible for providing training services to both formal and informal enterprises. Local government also has an important role to play in 'shaping the environment that those working in the informal economy operate' (Skinner, 2006: 126).

While the government has an influence on the regulatory environment surrounding informal work, many other factors influence the investment climate for the informal economy. Lund and Skinner (2003), elaborate on these. The regulatory environment has an impact on informal sector work. The regulatory environment includes legislation, taxes, and registration and licensing. While labour legislation has little effect on informal sector work, municipal by-laws can have a significant impact on the informal economy, by designating where people are allowed to trade. While many people believe that the "decision" to operate informally is motivated by tax evasion, Lund and Skinner point out that '90.6% of those working in the informal economy reported monthly earnings of R2500 or below' (Lund and Skinner, 2003: 8), This is well below the tax threshold. With regards to registration and licensing, Lund and Skinner argue that the process is complicated and costly, and is even more difficult if one is foreign (Lund and Skinner, 2003:10). They also suggest that the

informal economy is affected by the institutional environment. They stress the importance of including the informal sector in the decision making process.

While the regulatory and institutional environments have a huge impact on the ability of the informal sector to function, the access to services and infrastructure are important factors affecting growth in the informal economy. Lund and Skinner elaborate on the different services offered to informal sector workers, including access to training, markets, and financial services and insurance. They point out that while the department of labour has been tasked with providing training to workers, this has not reached significantly into the informal sector (Lund and Skinner, 2003: 13). Although the informal sector is involved in the local economy, 'There is no evidence to indicate that any of those working in the informal economy in South Africa are successfully accessing international markets' (2003: 16), and access to finance and insurance in the informal sector, a factor critical to business growth, is still underdeveloped (2003: 18). Infrastructure requirements are similar in both the formal and informal economies, 'They both need secure space...which comes with a known and reliably delivered set of services (lighting, water, toilets, garbage removal, security, storage)' (2003: 20). Sites range from a complete set of services, to none whatsoever.

Another huge factor impacting on the informal sector is crime. This factor not only has an impact on shaping the business environment in the informal sector, but also impacts on the formal sector, as well as each and every South African. Lund points out that 'in a survey of over 500 traders operating in Durban 41% of women traders and 33% of men traders reported that theft and criminal violence was the biggest obstacle faced by their business' (Lund, 1998: 31 in Lund and Skinner, 2003: 21).

While some of these factors influencing the informal sector do not have that much of an effect on the informal recycling sector, it is important to point out the contextual position of the informal economy in South Africa as a whole, so as to gain an understanding of the conditions under which it functions.

2.4.5. Informal Sector in Durban

While section 2.4.4 above elaborated on the informal sector in South Africa, it is important to consider how the sector functions in Durban, the area in which this current study is located. Historically, the development of the informal sector has been hampered by apartheid legislation, and the "move on laws" which prohibited street traders from occupying one spot for longer than half an hour (Lund and Skinner, 2003: 6). These laws were relaxed towards the end of apartheid, and now street trading and other informal activities are very much a part of the urban landscape in Durban. In 1996, when the new South African constitution came into effect, local government were given 'a new range of tasks, one of which was the promotion of local economic development' (Lund and Skinner, 2003: 4). The informal sector, clearly a sector providing employment to many, had therefore to be considered and accommodated by local government.

According to current estimates, 'only one in three economically active people in Durban are employed in the formal sector' (Durban Unicity's Economic Development Department in Lund and Skinner, 2003: 5). The informal sector therefore provides a livelihood for many individuals in Durban. Skinner (2006) conducted a survey on informal economy workers in Durban. She conducted 507 interviews, and gathered information as to the socio-economic characteristics of the participants, as well as their working conditions.

Skinner found that 'Six in ten informal enterprises reported earning R1000 or less' (Skinner, 2006: 135). Very few of the businesses interviewed earned more than R5000 a month. Considering household income, just over one in ten respondents reported that they were living in households with an income of between R5001 and R10000 a month. Nearly a third claimed to be living in households with a monthly income of between R2001 and R5000, while 'One in four respondents reported living in very poor households – living in households whose totally monthly income is between zero and R1000' (Skinner, 2006: 129). According to Potgieter, (2002: 61) the Household subsistence level for Durban for September 2001 was R1914.97 (Potgieter, 2002: 61 in Skinner, 2006: 129). Over half the respondents in Skinner's survey lived in households with incomes below this level. Informal workers in Durban were found to have 'large numbers of people dependent on their income' (Skinner, 2006: 129). Skinner found that in 40% of cases the interviewee was the only income

earner in the house, and in 45% of cases there was just one other income earner in the house (Skinner, 2006: 129).

The survey confirmed that 'the informal economy absorbs the unemployed and those who have been retrenched' (Skinner, 2006: 130), and it was also found that the skills that were gained in formal sector work were not necessarily being used in the informal sector. In addition to this, the research found that only 26% of the businesses surveyed were established before 1990 (Skinner, 2006: 130), pointing to the growth of the informal sector after apartheid restrictions were abolished (Skinner, 2006: 130).

Skinner's survey also pointed to linkages between the formal and informal sectors, and found that backward linkages into the formal economy were stronger than forward linkages. Backward linkages into the formal economy were found to exist in the form of informal workers relying on formal establishments for supplies and raw materials. Six in every ten enterprise owners identified medium to large enterprises as a source for supplies. Forward linkages into the formal economy were found to be less strong than this. 'Only 26 respondents (5%) said they sold to other informal enterprises. Fifteen enterprise owners (3%) reported that they sold to formal enterprises and only 11 owners (2%) said they sold to middlemen or agents' (Skinner, 2006: 133).

Skinner's survey also touched on the working environment of the people interviewed, as well as their ability to access services and support. She found that 'Over half - 56 percent – of the enterprise owners interviewed, reported that they had one or more person working with them' (Skinner, 2006: 133). In terms of access to business support, Skinner found that few informal sector workers had been able to access this. Of those interviewed, only 4% had been able to obtain a bank loan, while 14% had attempted to get credit (Skinner, 2006: 138). Among reasons for not getting loans, 'collateral requirements, complicated procedures and banks not being interested in this kind of business' (2006: 138) were given. Lack of access to training was also pointed out in this survey, as 88% of respondents indicated that they had never received help through training or any other assistance programme (Skinner, 2006: 139). However, '57 percent of respondents report[ed] lack of funds and credit

as a major problem' (Skinner, 2006: 140), while only 14% identified lack of training as a problem.

Crime was also indicated to be a factor effecting informal sector workers, with 16% of those interviewed reporting that their business had been a victim of crime in 2001 (Skinner, 2006: 134). However, 'it appears as if crime was not as big an issue in the informal economy in Durban as it was in the formal economy' (Skinner, 2006: 134).

The research surrounding the informal sector in Durban appears to focus predominately on street trading, as this is the main informal activity in the city. While the above study did not appear to include those involved in the informal recycling industry, the findings are a useful comparison against which this study can be measured.

2.5. Urban Poverty and vulnerability

The informal sector and those working informally in Durban have been elaborated on above in section 2.4.5. As stated, many of the individuals operating in this sector are not there by choice, and make barely enough to survive. The majority of this group of people thus live in a state of poverty and can therefore be considered vulnerable. Discussing urban poverty is therefore crucial in terms of understanding their living circumstances.

Poverty has been defined in a number of different ways, but is commonly defined as the 'inability of individuals, households, or entire communities to command sufficient resources to satisfy a socially acceptable minimum standard of living' (May, 1998 in McIntosh, 2004: 3). It is a concept that is often defined in quantitative terms (for example, the World Bank classifies those who survive on less than 1 US dollar a day, poor). However, poverty means more than simply a lack of resources in monetary terms. New techniques to define poverty have highlighted 'how the poor define poverty in multidimensional ways that encompass self-respect, autonomy, access to land, and so on, rather than income alone' (McIlwaine, 2003: 114). This is amplified by lack of choices, and marginalization from society. Rakodi argues that 'key features of poverty are a high degree of exposure and susceptibility to the risk of

crises, stress, and shocks, and little capacity to recover quickly from them' (Rakodi, 2002: 14)

Research has generally confirmed the relationship between being poor and working in the informal economy (See, for example, Skinner 2006 and McLean 2000b). As Skinner (2006) points out, 'Supporting those in the informal economy thus becomes an important poverty alleviation task' (2006: 146). Many studies conducted into the informal recycling industry confirm these findings. Wilson et al describe the garbage pickers as the 'poorest of the urban poor' (2006: 27). Tevera (1994), and Medina (2001) both point out that while poverty is an important reason for waste picking, it is not the only one. Resource scarcity can also drive the informal recycling industry.

Those involved in the informal recycling industry are not only poor; they are also vulnerable to specific risks. While poverty considers the material conditions and access to resources by an individual, vulnerability broadens this to include a number of other factors that impact on an individual's life. Walters states that 'urban vulnerability can not only be defined by material conditions: definitions must be broadened to include issues of powerlessness, voicelessness, unemployment, capacity and access to resources' (Walters, 2002: 2), while McLean notes that vulnerability suggests that 'an individual, a household or a community is at risk, being unable to plan or cope in times of crisis' (McLean 2000b: 10). Vulnerability is also influenced by the prevailing social, economic, environmental, and political conditions (McLean 2000b: 10). Wilson et al point to the lack of choice for individuals who are vulnerable, suggesting that this hampers them from entering more conventional occupations (Wilson et al, 2006: 7).

Although informal recycling can help those involved reduce their vulnerability, through providing an income, it also increases their vulnerability by subjecting them to risks. Rouse (2006) conducted a study into waste pickers at the Jam Chakro site in Karachi, and found that the waste was heavily soiled and carried a high risk of infection by the time it arrived at the landfill. The informal recyclers were therefore subjected to a health risk, adding to their vulnerability. Walters (2002) conducted a study into the waste pickers working at the Bisasar Road landfill site in Durban, and found that the pickers were exposed to a number of risks. These include the

possibility of landslides, the risk of being run over by a compactor or other vehicle, and the possibility of being cut by sharp objects on the landfill (Strachan, pers comm., 08-09-99 in Walters, 2002). However, the pickers on the landfill claim these risks are of little consequence, possibly because 'pickers are afraid to admit to some of the dangers since this may give DSW [Durban Solid Waste] cause to refuse them access to the site' (Walters, 2002: 8) and 'because these are accepted as the day to day hazards that can be avoided if one is careful' (respondent, 6-03-2000 in Walters, 2002: 8). This suggests that the pickers suffer further vulnerability, as they lack job security and are concerned that they may be not allowed on to the landfill to work.

2.6. Conclusion

This chapter has outlined some of the literature informing this study. Understanding environmental sustainability and urban waste management in the developing world context is vital, as the informal recycling industry is a part of this system, and ultimately adds to environmental sustainability, helping to reduce the ecological footprint of the city in question. Similarly, understanding solid waste management and the recycling environment in South Africa and specifically in Durban is necessary as this also forms the environment in which informal recycling occurs. The literature surrounding the origins, causes, and conceptual approaches towards the informal sector provides a theoretical lens through which the results of this study may be viewed. Informal recycling is an informal activity, and therefore an understanding of this theory is necessary. Many studies about the informal sector, and the informal recycling sector have shown the participants in these fields to be poor. An understanding of the literature relating to urban poverty and vulnerability is therefore necessary.

While the literature presented in this chapter has provided information as to the environment in which informal recycling exists, it has not focussed specifically on the informal recycling industry. This is discussed in detail in the next chapter.

Chapter 3: The Informal Recycling Industry

3.1. Introduction

In many countries, an informal recycling industry runs parallel with the formal waste collection system. The sector is extremely important in a number of developing countries, where 'the informal sector...directly provides a waste collection service in areas where there is no formal municipal system in place' (Wilson et al, 2006: 3). Informal recycling has been defined as 'the activity involved in the collection and disposal of culturally-defined waste materials, whether the activity be done directly for subsistence (food, clothing, and artefacts), for exchange, for sale, or for wages – or, as is sometimes the case, for some combination of these' (Blincow, 1986: 97 in Tevera, 1994: 22)

Research into the informal recycling industry originally focused on 'how the urban poor were eking a living at the periphery of the formal economy' (Tevera, 1994: 21), as well as the relationship between informal collectors and the formal recycling companies (see for example, Birkbeck, 1979). More recently, attention has turned to the social aspects of informal collecting, and the characteristics of the participants in this line of work. In this chapter, attention will be paid to literature relating to the different aspects of informal collection, ranging from the organizational structure of informal collection systems, to the socio-economic characteristics of the garbage pickers. Literature which discusses the working environment of the pickers, as well as government policy and attitudes towards informal collection will also be given attention.

3.2. Organisational Structure

The word "informal" is somewhat misleading, as research into informal recycling has found the industry to be highly organized, both between collectors, as well as between informal collectors and formal recycling companies (Van Beukering, 1996, Hayami et al, 2006). As Rogerson points out, 'Scavengers present only one element in the numbers of entrepreneurs that link to waste management...[and there]...exists a recognizable recycling chain beginning from the urban household or the small

urban factory, running through networks of informal scavengers to groups of "middlemen", in terms of dealers and buyers, who in turn sell to more formalized recycling operations' (Rogerson, 2001: 249). Understanding the linkages within the informal recycling industry, as well as between the formal and informal recycling industries is important, as 'the way the informal recycling activities are organized has important consequences for income generation, working conditions and social status' (Wilson et al, 2006: 4). The organization of the industry thus has an effect on the economic characteristics, and working environments of the participants.

3.2.1. Types of informal collectors

Wilson et al note that in cities where informal collection runs parallel with formal collection, four main categories of informal recyclers exist. The extent to which these different categories are represented will differ according to location 'depending on where and how material recovery takes place' (Wilson et al, 2006: 2), however, Wilson et al argue that generally the following four categories of collectors can be found:

1. Itinerant waste buyers: These are 'waste collectors who often go from door to door, collecting sorted dry recyclable materials from households' (2006: 2). They then buy the material and transport it to a recycling shop or buyback centre.
2. Street waste picking: These individuals sort to recover 'secondary raw materials...from mixed waste thrown on the streets or from communal bins before collection' (2006: 2)
3. Municipal waste collection crew: 'Secondary raw materials are recovered from vehicles transporting MSW to disposal sites' (2006: 2).
4. Waste picking from dumps: 'Waste pickers/scavengers sort through wastes prior to being covered....This is often associated with communities that live in shacks, built from waste construction materials, on or near the dump' (2006: 2).

Using this framework presented by Wilson et al (2006), each category of informal collector is elaborated on, and examples used to demonstrate how each group adds to informal recycling as a whole. Thereafter, organizational structures within the

informal recycling industry are elaborated on. Following this, the linkages between formal sector recycling and informal recycling are then discussed.

Itinerant waste buyers are considered to be higher up in the informal recycling industry than waste pickers. Extensive research has been done on the well organized informal recycling sector in India. Van Beukering et al (1996) found that this group of door to door buyers were slightly better off than the waste pickers, who sort through waste for recyclables. Hayami et al point out that waste collectors and itinerant waste buyers form the bottom of the informal recycling hierarchy, as 'both earn their livelihood by selling collected waste to higher level traders' (Hayami et al, 2006: 42). The main distinguishing characteristic between itinerant waste buyers and waste pickers, is the access to capital. Itinerant waste buyers need capital to purchase waste. In addition to this, itinerant waste buyers were found to collect larger volumes of waste, and thus have different transportation methods to the waste pickers (Hayami et al, 2006: 48). Hayami et al also found this group to be slightly better off financially than the waste pickers.

Street waste pickers make up a large portion of informal recyclers in Durban. Their work consists of those going through waste in public areas to extract recyclable material. Often, this is done on waste collection days, before the municipal service collects the waste. Generally, this group of people scavenge in particular areas, close to buyback centres that are known to them. Occasionally, a picker may have an agreement with a business or factory to collect their waste material. Pickers differ from itinerant buyers in that they do not pay for the recyclable material which they collect.

Some extraction of recyclable materials occur while waste is being transported. The municipal waste collection crew may extract material in order to supplement their income. According to Wilson et al, this practice is widespread in a number of countries such as Mexico, Columbia, Thailand, and the Philippines (Wilson et al, 2006: 2).

Waste picking off landfills is very popular in developing countries around the world. While most of the time the authorities or management of the landfill view picking in a

negative light, at many dump sites it is tolerated. However, this group are often at odds with the authorities, and this makes for a precarious and insecure working environment (see, for example, Walters, 2002, and De Kock, 1987).

Rouse conducted a study into waste picking at the Jam Chakro site in Karachi, and found that waste pickers operate in a highly organized manner. The informal landlord, known as a vadera, 'lets plots of land of the landfill site to individual waste pickers for around Rs 50/month. Waste pickers then pay truck drivers around Rs. 50/truck to dump waste on their particular plot' (Rouse, 2006: 4). The pickers then burn the waste and extract the recyclable material (metal). This is then taken back to workers homes where the 'women and children sort them into different categories.' (Rouse, 2006: 5).

3.2.2. Organisational structure within informal collection

As already pointed out, in most countries the informal recycling industry is highly organised and there is a clear hierarchy in place. This hierarchy cannot be ignored by policy makers and government officials who wish to intervene in this sector. Furedy points out that the government funded "cash for trash" project in Manila, the Philippians, attempted to buy-pass the traditional junk dealers, and the project failed for this reason (Furedy, 1997: 148). In a study conducted on the informal sector and waste paper recovery in Bombay, Van Beukering et al (1996) found that the participants were well organised and that the links with the formal sector were well established. They found that in Bombay, there appears to be a definite hierarchy through which the collection of waste paper works. Bottom of the scale are the waste pickers. This is followed by the Itinerant waste buyers (IBWs). The waste collected by these two groups then goes to a buyer, who buys the waste from them, accumulates it, and sells it to a wholesaler (Van Beukering et al, 1996). The main difference between the wholesaler and the buyer is that the wholesaler specialises in one material, and deals in much larger volumes than the buyer. The wholesaler then deals directly with the recycling company. Each particular segment of this process has its own issues and organisational characteristics, some of which have been discussed above. The informal recycling industry was found to have a similar organizational structure in Delhi, according to a study done by Hayami et al (2006).

Baud et al (2001) conducted research into partnerships in solid waste management in various locations. They found that in Chennai (Madras), India, relations exist between waste pickers, itinerant buyers, and dealers. The main driving force behind this partnership is profit. According to Baud et al, 'Waste pickers collect materials, which they sell to dealers. The pickers also receive other benefits (free medical treatment), gunny bags, and gifts in kind or cash' (Baud et al, 2001: 7). Dealers were also found to foster a relationship with itinerant waste buyers.

This also represents a way in which an individual can move up in the informal recycling industry, and progress from a picker, to a itinerant waste buyer, to a buyer and so on. Both the study done by Van Beukering et al (1996), as well as the study conducted by Hayami et al (2006) found that income and education levels increased as one progressed up the hierarchy. Studies have also proved that as one moves up the hierarchy in the informal recycling industry, the participants increase in status, and are generally more established in the business (Van Beukering et al 1996).

However, while the study conducted by Van Beukering et al (1996) in Bombay suggests that it is possible to progress to better positions within the informal recycling industry, the study conducted by Hayami et al (2006) suggests that this is extremely difficult for the waste pickers working in Delhi.

Some scholars have also pointed to a lack of organization within the informal recycling industry. Tevera conducted research into informal collectors working on a dump in Gaborone. He found scavenging activities at the dump to be unsystematic, with significant aspects of activities being at 'the level of disorganization and the numerous fights for waste' (Tevera, 1994: 28). As Wilson et al point out, 'As a general rule, the less organized the informal recycling sector is, the less the people involved are capable of adding value to the secondary raw materials they collect, and the more vulnerable they are to exploitation from intermediate dealers' (Wilson et al, 2006: 4). Rogerson supports this finding, pointing out that in Africa 'the majority of informal sector resource entrepreneurs are poorly organized and often exist in highly exploitative arrangements in relation to both middlemen and recycling companies' (Rogerson, 2001: 254). As material moves up the informal recycling

hierarchy, the greater value it possesses. It is clear that those at the bottom of the informal recycling hierarchy are poor.

A possible way in which to decrease the exploitation of waste pickers would be to form a type of organisation. McLean conducted research into the informal recycling industry in Durban, and asked a question of the waste pickers as to whether they were in favour of starting some kind of organization. The majority of the collectors said that they didn't want an organization, because they couldn't trust each other. Theft of materials between collectors is found to be common. However, some believed 'an association would give them a voice, which would ultimately be advantageous to all collectors' (McLean, 2000b: 19).

3.2.3. Informal / formal sector linkages

Informal recycling is intricately linked to the formal recycling sector. The formal recycling sector has the means to convert the material back to a useable product, and thus is almost entirely responsible for the demand in recyclable material. The linkages between informal recycling and formal recycling are therefore not only present, but in most cases they are necessary to keep the informal recycling sector functioning. The informal recycling industry is thus largely dependent on the formal recycling industry, however, it is less clear as to how dependent the formal recycling industry is on material from informal collection. This will differ according to location.

Backward linkages into the formal economy are common in the informal recycling industry. Some collectors rely on particular factories or shops to get recyclable material, for example cardboard, and the majority of these places let the collectors take their recyclable material for free. However, McLean documented one instance where a waste picker working in the Durban CBD was 'allowed access to the cardboard of a storekeeper, only after she had swept the pavement outside the shop' (McLean, 2000b: 6). In some cases, the collector becomes an itinerant waste buyer, and purchases the waste for a fee (Hayami et al, 2006). This indicates a backward linkage into the formal economy. However, many collectors do not buy waste, and therefore backward linkages into the formal economy are relatively weak.

Forward linkages into the formal economy are common. Nearly all informally collected recyclable material reaches a formal sector recycling firm, and the literature confirms this (see Hayami, 2006, McLean 2000b, Rouse, 2006, DeKock, 1986). However, there is some evidence to suggest forward linkages into the informal sector in some places. Tevera, in a study of garbage pickers working on a landfill in Gaborone, found that 'unlike the situation elsewhere in third world cities, where dump scavenging activities are an important source of materials for the formal recycling industry, in Gaborone only 2-10% of the weight of the recovered material went to recycling companies while the remainder was used by waste pickers or went to the informal sector' (Tevera, 1994: 29).

The extent to which the formal recycling sector relies on the informal recycling sector differs according to location. Chris Birkbeck conducted one of the first pieces of research into waste pickers in Cali, Columbia. He argued that the pickers are responsible for large quantities of waste paper that is used for recycling, but they will remain poor because of the economic forces in operation. 'Rather than view the picker as a vagrant who should really be working in a factory, we should see him as a worker who is part of an industrial system' (Birkbeck, 1979: 161). In essence, Birkbeck points out that the pickers work for the factories, but are not employed by them. They are disguised wage workers, who are needed by the factories.

This study is particularly focussed on street waste pickers, as opposed to other groups within the informal recycling industry. The remainder of the literature presented in this chapter therefore relates specifically to this group of people.

3.3. Characteristics of the waste pickers

3.3.1. Gender

The waste pickers form the lowest rung on the informal recycling industry ladder (see Van Beukering 1996, and De Kock, 1986). However, it is unclear as to which gender is dominant in this activity. Hayami et al (2006) found that most pickers were male with large families to support. Other studies that report more male pickers than females include Medina (2001 and 1998), and Birkbeck (1979). McLean (2000b),

who conducted a study into waste pickers working on the streets of Durban, found that 75 percent of the collectors that she interviewed were male.

However, other studies suggest that waste picking is dominated by women. Walters conducted a study into the waste pickers operating on the Bisasar Road landfill site in Durban. She found that most of the waste pickers were women; however, they were not represented properly in consultations with landfill managers (Walters, 2002: 9). Tevera, who also conducted a study into dump site waste pickers in Gaborone, found that 'as many as 61.3% of the waste pickers interviewed were women' (Tevera, 1994: 25). Medina, in a study on the informal recycling industry in Laredo and Nuevo Laredo, found that although the men working on the landfill site outnumbered women, this was only marginal. Medina suggests the greater proportion of women working in dumpsite scavenging could be due to the fact that they do not have to move around large distances to collect material, and because of this they can bring their children with them to work (Medina, 1998: 115). This may be a reason why waste picking on landfills appears to have a greater proportion of women participants than street waste picking.

3.3.2. Age

The average age of a participant in waste picking differs according to the different studies conducted. According to McLean, the majority of the participants interviewed in her study conducted in Durban, were between the ages of 31 and 60 years of age (McLean, 2000b). However, in the case of the Bombay waste paper industry, a number of pickers were found to be children, with 18% of respondents found to be 15 years or younger (Van Beukering et al 1996: 13). The high levels of involvement of children is confirmed by Rogerson (2001: 248), and Birkbeck (1979: 167), while Wilson et al point out that 'Family organized activities are common in dump scavenging and in situations where waste collection is provided by the informal sector' (2006: 4). Tevera, in his study conducted on a garbage dump in Gaborone, found that '57.3% of all the waste pickers were in the 20-40 years age group while as many as 18.7% were 19 years old or younger' (Tevera, 1994: 25).

3.3.3. Education

The majority of studies reveal that education levels are low amongst waste pickers and informal collectors. As Rouse points out, 'most are uneducated and do not have, and may not be able to afford to gain, skills necessary for other jobs' (Rouse, 2006: 6). These findings are supported by Birkbeck (1979), Tevera (1994), and Medina (1998). As one moves up the informal recycling hierarchy, the education levels and status of the average participant have been found to increase (See Hayami, 2006, Van Beukering, 1996).

3.3.4. Dependents

The majority of studies suggest that waste pickers support others with their income, or in some cases add to the family income. Hayami et al (2006) found that the majority of pickers support large families, while McLean (2000b) found that 80% of the collectors interviewed have dependents. These findings are also supported by Walters who points out that 'often it is only temporary work and garbage picking that must feed, clothe and educate families of between 2 and 10 people' (Walters, 2002: 6). Tevera found that 'The number of dependents varied from 1 to 9 although the 1 to 4 category dominated with 48% of the total...Only 18.7% of the pickers mentioned that they did not have any dependents' (Tevera, 1994: 26).

3.3.5. Migration

Waste picking is a sector that appears to be dominated by migrants and newcomers to cities. Hayami et al (2006) and Van Beukering (1996) found that the itinerant collectors, and waste pickers, were mostly migrants from rural areas. These findings were further validated by a study done by McLean (2000a) in Durban. McLean interviewed a number of collectors operating in Durban, and selling their recycled materials to a buy-back centre located in the central business district. Only one of the 20 collectors interviewed was from Durban originally. In another study done by McLean, in which collectors operating in the Berea / Glenwood area of Durban were interviewed, it was found that over 80 percent of the collectors interviewed were from rural areas (McLean 2000b: 12). The prevalence of migrants in this area of work has

also been confirmed by a number of other studies (see Rouse, 2006, Wilson et al, 2006, and Medina 1998 and 2001).

3.3.6. Transitional employment

The relative ease of entry into this sector of the informal economy suggests that it is a place for those desperate for employment, and may well serve as a type of transitional employment, before the waste picker finds a better job (see Birkbeck 1979, Rogerson, 2001). However, 'whilst it is clear that people can and do move into and out of garbage collection...there are also those people who work in garbage picking for long periods of time' (Birkbeck, 1979: 169). McLean found that 'most collectors (55%) had been involved in collection activities for 1-2 years...All intimated that they had originally come to Durban in search of employment, which had not been forthcoming' (McLean, 2000b: 13). Medina found that the number of years spent in the industry depended on the type of picker. He found that dumpsite scavengers had been collecting for 4.6 years on average, and street waste pickers for 3.9 years on average (Medina, 1998: 114). Medina also found that 56.3% of the dumpsite pickers, and 100% of the street waste pickers had previous work experience (Medina, 1998: 14). He concludes that 'street scavenging constitutes a source of extra income, a transitional activity, and when the [waste pickers] discover that it is not lucrative, they switch to some other pursuit' (Medina, 1998: 116). In contrast to these studies, Tevera found that 'dump scavenging in Gaborone is a survivalist activity that is perused mainly by seasoned urban dwellers' (Tevera, 1994: 27).

3.4. Working Conditions

3.4.1. Hours worked

The time that waste pickers spend working differs according to the different studies. McLean found that the majority of the Durban collectors who she interviewed 'spent either five (weekdays), six or seven days collecting' (McLean, 2000b: 14), and earnings increased according to days worked.

Hours worked can be very different for those waste pickers operating on dump sites, as this group of people are often dependent on when the authorities allow them access, and when the municipal collection vehicles arrive (see Tevera, 1994, and Walters, 2002). However, DeKock, in a study conducted on waste pickers operating on a landfill in Durban, where the pickers were less regulated, found that the majority of the waste pickers she interviewed (71%) worked between 7 and 10 hours a day (DeKock, 1986a: 124).

3.4.2. Problems faced

Waste pickers are faced with very difficult working conditions. The majority of studies show that this group is often at odds with the local authorities and the police (See, for example, Rouse, 2006, Medina, 1998, and Rogerson, 2001). In Durban, during the study conducted by De Kock (1986 and 1987), the apartheid legislation was still in operation, which insisted that black people in the cities have a pass stating that they worked in the city, and for whom they worked. The waste pickers were often harassed as they did not have this necessary documentation. In a more recent study, McLean found that waste pickers in Durban feel that they are not recognized, and that they consider themselves somehow 'frowned upon by local authorities' (McLean, 2000a: 4).

The literature suggests that harassment from the local authorities affects both genders. However, in Bombay, Van Beukering et al (1996) found that it was only the male informal collectors who reported being harassed by the police. In contrast to this, Eerd suggests that 'female scavengers in particular may be considered easy sexual targets' (Eerd, 1996 in Wilson et al, 2006: 7).

Waste pickers operating on municipal dump sites have been found to be even more at odds with the local authorities than waste pickers operating on the streets, and are often faced with the constant threat of being prohibited from picking (see, for example, Walters, 2002). This may suggest why Tevera found that none of the waste pickers operating on the Gaborone dump whom he interviewed wanted scavenging activities to be formalized (Tevera, 1994: 29). Tevera suggests that 'recovery should

be allowed to continue but under regulated conditions' (Tevera, 1994: 31), where pickers are confined to certain areas and issued with protective clothing.

One of the greatest risks to which waste pickers are exposed on a daily basis, is a risk to their health, and a number of studies have pointed this out (see, for example, Medina, 1998 and Tevera, 1994). This health risk is increased by the lack of protective clothing and proper equipment. According to Wilson et al, 'Studies have shown that respiratory and dermatological problems, eye infections and low life expectancy are common' (Wilson et al, 2006: 7). However, other studies have shown that waste pickers may have better health than unemployed people living in the same settlement. It could be argued that 'working with waste may be less detrimental to health than not having a financial means to survive' (Wilson et al, 2006: 8).

Informal collection and waste picking has been shown in some cases not only to pose a health risk to the participants in this industry, but also to public health in general. In a study on the habitats for mosquito larva in solid waste containers, Mazine et al (1996) found that the informal recycling industry has an impact on this. Some home owners were found to leave recyclable material aside for an informal collector, who in some cases did not return for some months. Consequently, the material is stored for the collector, and in the process becomes a larval container habitat for mosquitoes. In some cases, the informal collector stores materials in their backyards or in adjacent lots until they have enough to sell, 'a practice that provides habitats not only to mosquitoes but also rodents, cockroaches and scorpions' (Mazine et al, 1996: 12).

In addition to dealing with health risks, and harassment by the police and authorities, waste pickers often find themselves at odds with home owners, as well as stigmatized by the general public. Many waste pickers search through domestic waste left on the street for collection by the authorities, and occasionally home owners object to this. McLean reported that only one of the collectors that she interviewed had been chased by a property owner (McLean, 2000b: 19), and Mazine et al found that two of the home owners who they interviewed accused waste pickers of going through their domestic waste, and in the process spreading the contents 'all over in front of their houses' (Mazine et al, 1996: 9).

A further problem faced by waste pickers is conflict with other waste pickers. McLean found that nearly every collector whom she interviewed indicated that they had had goods stolen in the past by another collector (McLean, 2000b: 19). The fierce competition for material is intensified between pickers who operate on landfill sites. Tevera alluded to this, commenting that 'it was common to see men, boys and women pushing one another violently as they scrambled for waste' (Tevera, 1994: 28) on the Gaborone dump. A large portion (48%) of the pickers that he interviewed mentioned that 'they wanted the Gaborone city council to impose law and order at the dump' (Tevera, 1994: 29). Walters, in a study on the pickers operating at the Bisasar Road Landfill site in Durban found that many pickers faced the threat of violence from other pickers, and were intimidated on a regular basis (Walters, 2002).

A range of other difficulties are also faced by waste pickers on a regular basis. Often, pickers have to travel long distances to get to centres where they can sell their material, and often they have to take the price offered at the nearest buyback centre, irrespective of whether or not they are being exploited. The situation can be even worse for dumpsite scavengers, who are often visited by only one middleman who buys the recyclable material and transports it to town. This problem is elaborated on by Medina, who found that, 'Dumpsite scavengers face a monopsonistic market (market where only one buyer exists, as opposed to a monopoly, where there is only one seller), and thus get lower prices than in the competitive market in town' (Medina, 1998: 115). Medina found that the price offered by middlemen buying material at the dumpsite was 25% lower than the prices offered in town. In addition to this, waste pickers are also very much at the mercy of the elements, as rain or bad weather can affect their work, thereby reducing their income (Rouse, 2006: 6).

3.4.3. Material transportation

Means of transportation has a direct effect on the amount of recyclable material that can be collected, and is thus directly linked to the income potential of a waste picker. The majority of waste pickers are forced to carry their material to a buyback centre by hand. In a study on can collectors operating in Nuevo Laredo, Mexico and Laredo, Texas, Medina found that 'most street collectors must roam through several

neighbourhoods on foot, carrying a sack or a plastic bag containing the cans' (Medina, 1998: 116). Some collectors have access to a trolley, or cart, which enables them to collect more material and to move around with greater ease. McLean found that 'Trolley-owners earned more despite working fewer days, and needed to operate in one area only' (McLean, 2000b: 15). Other collectors sell to a middleman who will pick up the material from them. This is often the situation in dump scavenging (See De Kock, 1987, and Wilson, 1998). However, McLean (2000b) found that a portion of her sample operated in Durban's central business district, and sold their material to a paper agent with a vehicle.

Some studies point to gender inequality in terms of access to transportation of materials. Commenting on a study she conducted on the garbage pickers operating on a landfill in Mexicali, Wilson found that, 'most families employed in the dump own pick-up trucks. Women heads of household do not, nor do women who work at the dump while their husbands work elsewhere' (Wilson, 1998: 109). These women are forced to sell to middlemen, at a lower price. McLean (2000b) found that the majority of trolley owners interviewed were men, while the women were more likely to transport the recyclable material on their head.

3.4.4. Areas for collection

While Dumpsite waste pickers clearly operate in one particular location, street waste pickers have to walk various areas to look for recyclable material. Birkbeck found that 'the garbage picker recuperates mainly from domestic waste and secondarily from some commercial establishments and the occasional small-scale industry' (Birkbeck, 1979: 166). Medina found that the commercial / downtown areas of Laredo (Texas), and Nuevo Laredo (Mexico) were particularly active areas for scavenging, probably due to the vast numbers of people who pass through these areas (Medina, 1998: 114). Most of the street scavengers interviewed were found to follow a particular route every day (Medina, 1998: 116).

McLean interviewed a number of street scavengers operating in the Durban suburb of Glenwood. She found that the garbage pickers were not territorial, and '90% indicated that collecting was done on a "first-come-first-served" basis' (McLean,

2000b: 19). The remainder (10%) had an "understanding" with a store keeper who kept their recyclable material aside for them. McLean also pointed out that 'for seven (35%) of collectors, Glenwood was their first collection area; they had not collected elsewhere' (McLean, 2000b: 14).

3.4.5. Items Picked

Items picked by the informal collectors appear to be anything perceived to be of value, and as Mazine et al point out, there are 'differing community perceptions as to what constitutes refuse' (Mazine et al, 1996: 1). Waste pickers are out to maximise their earnings, and 'potential profit margin is the main selection criteria for targeting materials, although this also depends on accessibility, convenience, ease of transporting and handling' (Wilson et al, 2006: 5). Common items picked and sold to recyclers include glass, scrap metal, plastic, paper, and cardboard. Metal has the highest value of these items, and pickers occasionally burn waste to extract the metal (see Rouse, 2006 and Van Beukering 1996). However, this has a negative impact on the environment as it results in air pollution.

Other items have also been documented in the literature as being scavenged by informal collectors. Bones, textiles, and discarded reusable items are such examples (Medina, 2001, Wilson 1998). Tevera (1994) found that many of the waste pickers operating on a landfill in Gaborone were extracting foodstuffs and other reusable items. Some of the foodstuffs were then resold, or consumed by the pickers and their families (Tevera, 1994: 28). In Indonesia, waste pickers have been found to collect asphalt drums, which are then recycled into kerosene stoves (Bubel 1990 in Rogerson 2001: 251).

Items that are recovered by South African informal collectors appear to be in line with international trends. Cardboard, newspaper and other paper, cans, glass, plastics, and scrap metals were all found to be collected (McLean 2000b, 2000a, Walters, 2002). In her study on the informal collectors operating in the Glenwood area of Durban, McLean found that cardboard was the most popular item collected, and that women generally collected all forms of paper. Scrap metal was also found to be a popular item collected, with nearly all the males interviewed collecting this

item (McLean, 2000b). McLean also pointed out that of the people she interviewed, 'not a single collector recovered plastic or glass' (McLean, 2000b: 17). The reasons given for this include the low selling price for these materials (50%); the scarcity of these commodities (30%); or the collectors were 'unaware that these materials could be traded (15%)' (McLean, 2000b: 17). In addition to traded recyclable material, other items of perceived value, such as clothing and household goods were also found to be collected, and sixteen (80%) of the collectors interviewed indicated that they removed food from domestic refuse bags (McLean, 2000b: 18). Those that collected only one type of recyclable material were also found to earn considerably less than those collecting at least two commodities (McLean, 2000b: 17)

A clear gender divide in terms of types of materials collected exists amongst Durban waste pickers. Men appear to have access to trolleys which enables them to collect more lucrative items such as scrap metal. As McLean argues, items collected could be linked to transport (McLean, 2000b: 23).

3.5. Earnings, Poverty and vulnerability

All studies agreed that waste pickers earn very little (see for example De Kock 1986, Van Beukering 1996, McLean 2000a and 2000b, Rouse, 2006). In the study conducted in Delhi, Hayami et al found that waste pickers earn below the minimum wage, while itinerant waste buyers earn slightly above the minimum wage (Hayami et al 2006: 49). However, the majority of these people had a number of dependents to support. If one considers the households that these waste pickers are supporting, it is clear that poverty prevails. Hayami et al found that 'using one US dollar in purchasing power parity (PPP) as a poverty line, 17 per cent of the pickers were found to be poor' (Hayami et al, 2006: 51). However, according to the poverty line set by the Indian Planning Commission (which uses estimates between $1 and $2 PPP a day), 88 % of the pickers were found to be poor.

Wilson et al point to the lack of choice offered to waste pickers, stating that 'Informal waste recycling is carried out by poor and marginalized social groups who resort to scavenging/waste picking for income generation and some even for everyday survival' (Wilson et al, 2006: 2). The majority of studies point out that 'If alternative

employment opportunities and associated wages were higher, scavenging would be less financially attractive' (Porter, 2002 in Wilson et al, 2006: 6). Not only are wages in waste picking generally low, but they are variable. This puts the picker under constant stress, and denies him or her assurance of a stable income.

There has also been research into whether or not informal recycling is a supplementary form of income, or the sole source of income for participants. It appears that the literature is divided on this point. Medina conducted a study into scavenging in America, and found that 'scavenging constitutes a source of cash for disabled or old individuals with low incomes' (Medina, 2001: 236), and it supplements other incomes. However, the USA is a country where the unemployment rate is low, and so are poverty levels. Waste pickers have access to other economic opportunities, as opposed to waste pickers in less developed countries.

Garbage picking in developing countries is often the sole source of income for a household. Walters found that 90% of the waste pickers that she interviewed who were operating on the Bisasar Road landfill site in Durban had no other sources of income (Walters, 2002: 6). She concluded that there was a 'Strong reliance on garbage picking not only as a supplement to other earnings, but as the sole source of income' (2002: 6). This finding is supported by others (see DeKock, 1986 and Medina, 1998).

In contrast to this, Tevera (1994) found that the majority of the pickers that he interviewed operating on a landfill site in Gaborone, used waste picking as a way in which to supplement their income, rather than their sole source of income. 'Scavenging activities bring earnings that are a small fraction of the wages earned by unskilled people in the city, such as housemaids and gardeners' (Tevera, 1994: 27). The majority of the scavenging taking place on this landfill was not for recyclable materials to sell, but rather for reusable items. About a third of the waste pickers interviewed indicated that they derived no income from scavenging, and this group 'primarily scavenged for 'edible foods and usable household items' (Tevera, 1994: 27).

While there is general consensus that the income earned by garbage pickers is low, some studies suggest that garbage pickers are not in complete abject poverty. Medina found that waste pickers working on a dumpsite on the Mexican / US border earned '225% the minimum wage that formal sector employees and factory workers earn[ed]' (Medina, 1998: 115). Street waste pickers operating on the border were found only to earn 64% of the minimum wage, substantially less than dumpsite pickers. However, the majority of the street waste pickers were using garbage picking to supplement their income. Itinerant waste buyers operating in Nuevo Laredo and Laredo were found to earn in one day what minimum wage employees make in a week (Medina, 1998: 116).

Wilson, who did a study in 1989-1990 on the garbage pickers operating on a landfill in Mexicali, found that garbage pickers need not be the poorest of the poor. She gave the example of a Mexicali family who work on the landfill three to four days a week for 7 to 8 hours daily, and gather 3 tons of cardboard in a week. They were able to earn 'more than three times as much as two formal-sector workers could earn working six days a week for minimum wage. They did not have benefits, however, of medical insurance or pension plans' (Wilson, 1998: 110).

Birkbeck (1979) also found that the waste pickers interviewed earned reasonably - on a par with the governments minimum wage. However, they were denied the benefits of formal employment, for example, social security and medical insurance. In addition they were under the psychological stress of a variable income, and unstable working conditions. As McLean points out, fluctuating prices have a profound effect on waste pickers and 'a decrease of a few cents per kilogram has an incredible impact on the lives of many thousands of collectors and their dependents' (McLean, 1998: 4).

A major factor affecting the income earned by informal collectors is the price paid for recyclable material. Due to the fact that a large quantity of material needs to be collected in order to earn a reasonable amount, transporting this material becomes an issue. Often, collectors are forced to sell to the agent who is closest to them, irrespective of the price offered. The variations in price between agents can also be

large. McLean found that one agent operating in the Congella area of Durban was 'paying 8-10c more per kilogram than other agents' (McLean, 2000b: 16).

Some studies have gathered information as to the living conditions of waste pickers. McLean found that many collectors lived in informal shelters, and earned barely enough to cover their food and accommodation (McLean, 2000b: 20). Rouse points out that an aspect of the poverty faced by informal collectors is their lack of access to assets. Poor housing is one aspect of this, low saving and a lack of access to credit is another (Rouse, 2006: 6).

There also appear to be relationships between aspects of the waste pickers' working conditions and their earnings. Both the study by De Kock (1986 and 1987) and Van Beukering (1996) showed that there was little correlation between hours worked, and earnings made, as well age and earnings. De Kock (1986 and 1987) also found that there was no correlation between education level, gender, and earnings. Both studies found that experience in garbage picking has no impact on earnings. Picking has also been revealed to be a survival strategy. Collectors engage in this type of activity to meet basic needs. It is also believed that waste pickers perceive their occupation to be a temporary activity.

3.6. The benefit of informal recycling

The studies done on the informal recycling sector have proved that this sector is beneficial to the city, as it has the twofold impact of significantly reducing waste, and providing a livelihood for the marginalised of society (Hayami et al, 2006). In some places, the informal recycling industry is responsible for the recycling of large amounts of waste. Rogerson gives some examples of this, stating that, 'for urban Indonesia, it has been suggested that the activities of informal pickers and scavengers are responsible for reducing refuse quantities by roughly one-third' (Rogerson, 2001: 249), and 'In west African research it has been estimated that as much as 10 percent of domestic wastes are recovered from an already poor solid waste stream' (Rogerson, 2001: 250). However, the informal recycling sector in Durban seems to do less in terms of reducing the amount of waste landfilled, and

'According to DSW calculations picking amassed to less than 0.6% of the total amount of waste coming in' (Strachan pers comm., 08-09-99 in Walters, 2002: 8).

A major benefit of the informal recycling industry is that it provides a livelihood for many of the urban poor. In comparison with other sectors within the informal economy, there is relative ease of entry. For example, '5000 informal entrepreneurs are involved in scavenging from Calcutta's main garbage dump, 25000 people obtained a livelihood from the wastes of Malina's Smokey Mountain and a further 60000 are dependent upon these wastes for securing their basic needs' (Furedy 1989, in Rogerson 2001: 248). The informal recycling industry in Karachi 'provides employment for more than 55000 families' (URC, 2001 in Rouse, 2006: 2).

However, the extent to which the informal recycling industry provides a livelihood for people and accounts for recycling differs according to location. Tevera estimated that only about 5% of the solid waste deposited at the official dump in Gaborone is 'consumed or used by the waste pickers' (Tevera, 1994: 29), while only 'about 150 to 200 people are almost permanently involved in waste scavenging at the city's only official dump. The figure increases to 400 to 600 if the irregular waste pickers...are included' (Tevera, 1994: 25). This is far fewer people than those working on the Jam Chakro waste site in Karachi (Rouse, 2006: 5), or on Malina'a Smokey mountain (Rouse, 2006: 2)

In addition to the obvious environmental and poverty alleviation aspects of waste picking, local government can also gain much from the informal recycling industry. In countries where solid waste collection is under resourced, informal collection can aid the municipality by reducing the volumes that need to be collected and landfilled. These economic benefits are achieved at no direct cost to tax payers (Wilson et al, 2006: 6). Medina (1998), in his study on informal collection in the cities of Laredo and Nuevo Laredo, estimate that collectors are saving the cities approximately $2750 each month. Medina points out that only 85% of the waste generated in Nuevo Laredo, Mexico, is collected. Informal collection operates in areas that are not served by the municipality and 'collectors charge a fee for picking up the residents' garbage which they transport in horse carts' (Medina, 1998: 111). In research done on the informal collectors of Durban, McLean (2000a and 2000b) found that this

group of people were not aware of the importance of their work from an environmental point of view, but did concede that their work resulted in a cleaner city.

In addition to the above benefits of informal collection, the formal recycling industry clearly benefits from informal recycling. Informal recycling provides 'a steady, reliable supply of secondary raw materials for local manufacturing industry which can replace more expensive imported raw materials. This also stimulates the manufacture of low-cost, affordable products made from recycled materials' (Wilson et al, 2006: 6).

Those taking a Marxist approach to the field of informal recycling argue that garbage pickers are in fact disguised wage workers for large capitalist recycling companies, who benefit from a supply of recyclable material from a group to which, Marxists argue, they afford no benefits or security. This view of the informal economy has been discussed in detail in section 2.4.1.2.

3.7. Attitudes towards informal recycling

The response of various groups to the informal recycling industry is interesting, and deserves mention as the way in which waste pickers are viewed by society and government ultimately has an effect on the environment in which they work. Local authorities often view the informal recycling sector as 'backward, unhygienic and generally incompatible with a modern waste management system' (Wilson et al, 2006: 2). Response by local authorities to informal recycling can range from 'repression and benign tolerance to, in a small number of cases, the promotion of informal waste recycling' (Furedy 1992b in Rogerson 2001: 250).

There are some examples of government supporting and acknowledging the informal recycling sector. According to Furedy, in Indonesia there has been an acknowledgment of the work that waste pickers do, and the Indonesian president at the time (President Suharto) referred to them as 'a self-reliant brigade who deserve public respect and should not be treated as tramps' (Suharto in Furedy, 1997: 150). In addition to the support from national government, the mayor of Surabaya was also 'dedicated to understanding the street people of the city and able to influence public

attitudes' (Furedy, 1997: 151). A project called "Mitra Pasukan Kuning" (friends of the yellow troupe) was founded. This was 'a loose association of waste pickers that had 7110 registered members by 1991' (Furedy, 1997: 151). The main objective of this programme was to improve the lives of the waste pickers. Volunteers worked with the association to issue identity cards, organize picking areas, prevent police harassment, and facilitate greater access to social services such as health care (Furedy, 1997: 151). Some of the members of the friends of the yellow troupe formed a cooperative savings society, with the help of a local businessman (Furedy, 1997: 151).

Baud et al (2001) analysed partnerships in solid waste management in three different third world cities. They found that in most cases 'the local authorities work together with large enterprises and non-governmental organizations (NGOs), but refuse to deal directly with the informal trade and recycling enterprises which cover large fractions of waste' (Baud et al, 2001: 3). However, they point out that there are some examples of positive government interaction with the informal recycling sector. A partnership between large-scale enterprises, the local authorities, and small-scale enterprises was identified in Manila, the Philippians. A private company was employed to design new landfills, and the informal dealers and itinerant buyers were 'encouraged to organize co-operatives for collection, street sweeping, and recycling' (Baud et al, 2001: 6). Baud et al also pointed to a partnership between local authorities, NGOs, and waste pickers in Madras, India. The local council gave four NGOs funds to set a programme where street children were recruited to clean and maintain streets. They were paid wages, and their income was increased by selling recyclable material (Baud et al, 2001: 7).

Another example of local government supporting the informal recycling sector can be found in Curitiba, Brazil. In addition to encouraging household separation of recyclable material at the source (Rabinovitch, 1992: 68), the government has also implemented a successful "purchase of garbage" programme. In poorer areas of Curitiba, residents are encouraged to sell their bags of garbage in exchange for bus tickets and food (Rabinovitch, 1992: 68).

While there are a few examples of government promotion and encouragement in informal recycling, this is rarely the case. Often, local authorities try to repress informal recycling and waste picking. However, in some cases the government opts to tolerate the sector, and ignore the work that it does. This often occurs in places where waste picking is already an established practice. Tevera (1994) offers an example of this. Waste pickers who operate at the Gaborone landfill site have unrestricted entry, and there are no regulations with which the waste pickers have to comply (Tevera, 1994: 25). The local authority 'tolerates dump waste pickers but is quite unsympathetic towards them' (Tevera, 1994: 30), furthermore, they view the waste pickers as something of an embarrassment. The Gaborone authorities realised that 'repressing scavenging activities without providing alternative employment opportunities would be a futile exercise' (Tevera, 1994: 30). This attitude has been echoed in other parts of the world.

Another example of tolerance, versus repression or promotion of the informal recycling industry, is offered by Walters, who conducted research into waste picking on the Bisasar Road landfill site in Durban. In 1994, controlled picking was introduced, which marked the 'beginning of attempts to phase waste picking out or at least control and regulate picking' (Walters, 2002: 5). In the beginning pickers had access to a designated area of the landfill most of the day, but this was no longer allowed after July 1999, due to accidents and disorderly behaviour on the part of the pickers. 'At present pickers can only pick from a transfer site within the landfill. Pickers are allowed onto the site once landfill operations have ceased' (Walters, 2002: 5). While waste picking is considered undesirable at Bisasar road, it is still tolerated. Conflict exists between the landfill management and the waste pickers, and waste picking itself is a contravention of the landfill permit (Walters, 2002: 5). The practice of waste picking is tolerated to a certain degree, but the long term view of the landfill managers is that waste picking should be phased out.

Repression of waste picking activities is common, and 'in most third world cities waste pickers usually are a source of embarrassment to officials who often attempt to stop their activities when overseas delegations are visiting' (Tevera, 1994: 22). Other reasons for the repression of waste picking could be the view on the part of authorities that it is problematic for public health. In Africa, there are few examples

of support for this sector because of, 'policy intervention or of attempts to integrate informal waste recovery into a national solid waste management system' (Rogerson, 2001: 254).

Repression of informal recycling is not only common in third world cities. Governments in first world cities can also be hostile to waste picking activities. Medina (2001) discusses the problem of individuals who steal the recyclable material that households leave out for the local authorities to collect, in cities where there is a curbside collection scheme. 'The thieves, known as paper poachers, steal the newspapers placed at curbside before being picked up by city crews' (Medina, 2001: 234), and cost the city millions of dollars. Because of this, '220 cities and 33 counties in Southern California have recycling programmes with anti-scavenging provisions' (Lacey, 1994 in Medina, 2001: 234).

Another example of repression of informal recycling on the part of the local authorities is the way in which the waste pickers operating at Jam Chakro landfill in Karachi are treated. Rouse (2006) conducted research into waste picking at this landfill site. Within weeks of the landfill site opening, it had been taken over by waste pickers. One man 'designated himself as an informal landlord' (Rouse, 2006: 4), and he rents out plots of land on the landfill to individual pickers. The privately owned trucks bring the waste to the landfill, and although they are supposed to dump the waste in areas designated by the local authority, waste pickers pay the truck drivers to dump the waste on their particular plot (Rouse, 2006: 4). The waste is so contaminated that the waste pickers are only able to extract the recyclable material (glass and metal) by burning the waste. However, this has degraded the air quality (Rouse, 2006: 4). This has an effect on the waste pickers and there families, who live in informal housing on the landfill, as well as the residents from nearby settlements, who are complain about the air quality (Rouse, 2006: 7).

The local authorities are in constant conflict with the waste pickers living and working at Jam Chakro. As one municipal official commented, 'by appearance and conditions these people are very poor, but they are not the poor...Even if you offered them your job, they would refuse. It is in their habit and in their nature to pick waste. They also like living in slums' (Municipal official in Rouse, 2006: 6). The local authorities would

like to see the end of waste picking at Jam Chakro, and they have tried in the past to take steps in that direction. The authorities have attempted to evict people, but the pickers turned violent (Rouse, 2006: 7). The authorities then tried to extinguish the burning waste, but again the pickers turned violent (Rouse, 2006: 7). The authorities then attempted to block the trucks from dumping waste on the pickers' plots, but this was unsuccessful. The police were also brought in to stop the payoffs to truck drivers, and to ensure that trucks transport the waste to designated areas. However, the police were eventually withdrawn because they were found to be receiving payoffs from the informal landlord as well as the truck drivers (Rouse, 2006: 8).

Medina (1998) conducted research into the scavengers operating on the US / Mexican border in Laredo (US) and Nuevo Laredo (Mexico). He found that the attitudes of the two local authorities towards informal recycling differed greatly. The US officials consider the scavengers to be 'part of the cityscape' (Medina, 1998: 113), and their activities are tolerated even though there is no formal agreement in place (Medina, 1998: 113). In contrast, the Mexican officials are far more hostile towards the waste pickers and 'Nuevo Laredo ordinances prohibit scavenging on the street and impose fines' (Medina, 1998: 113). This has resulted in the waste pickers being forced to operate late at night, or early in the morning in order to avoid police harassment (Medina, 1998: 113). The main reason for the ban on street waste picking is because the city doesn't want to give tourists a 'bad impression' (Medina, 1998: 113).

While the attitudes of local authorities towards waste picking are generally fairly negative, these attitudes can change, and can either become more supportive or more restrictive. An example of this is offered by Medina, who points out that in the late 19th century in New York, America, waste pickers were paid to go through waste to extract material, and they also got to keep what they extracted (Medina, 2001: 232). The attitude of the authorities changed in 1878, when the city halted payments to the waste pickers, but still allowed them to pick for nothing. From 1882 onwards the waste pickers were made to pay for the privilege of going through waste (Medina, 2001: 232). The above example illustrates changing attitudes on the part of the local authority. Originally, the local authority clearly welcomed waste picking

and saw the benefits of the work. However, this attitude changed, as did the policies towards waste picking.

Non-Governmental Organisations (NGOs) have done positive work with the informal recycling industry. It has received attention, due to its benefits, both in reducing poverty, as well as being an environmentally friendly activity. Furedy (1997) discusses one of these examples, of Manila in the Philippians. An NGO set up a recycling project in Metro Manila, and attempted to incorporate the local junk dealers. Attention was paid to the hierarchy and organisation of the informal recycling sector. The focus of the project was on 'gaining cooperation of neighbourhood waste dealers in employing door-to-door buyers (eco-aides)' (Furedy, 1997: 148). The eco-aides were given identification cards, and the project also attempted to mobilize 'the support of households for separation and sale; and aiding the dealers in technical and business development' (Furedy, 1997: 148). The project grew to incorporate 25000 households, and employed 200 eco-aides. No support has come from the local authorities in this project (Furedy, 1997: 149). Besides driving the project, the NGO also aids in organising routes and territories for the collectors (Baud et al, 2001).

Another example of NGO work in the field of informal recycling is discussed by Rogerson (2001). The Self-employed Women's Association in Ahmedabad, India, have assisted women in this trade. The union has focussed on aiding the women in developing alternative skills 'in waste gathering and sorting and dealing with clean waste paper rather than merely picking up scraps' (Furedy 1990 in Rogerson, 2001: 252). Baud et al (2001) also points out that a significant relationship exists between waste pickers and a community based organisation (CBO) operating in Chennai (Madras), India. The CBO made sure the community waste containers were maintained, and waste pickers were employed to keep the streets clean. They were issued with protective equipment and paid a salary. The households in the area paid a minimum amount for this service (Baud et al, 2001).

The attitude of the private sector and the general public also has an impact on the environment in which informal recyclers work. There are some examples of a positive relationship between informal recyclers and the public. McLean points out

that some of the storekeepers in the areas in which the informal recyclers whom she interviewed operate already separate out the items of value for the collectors (McLean, 2000b: 18). Mazine et al found that many of the residents interviewed in a community in Marilia, Brazil, had positive impressions of the informal collectors operating in the area. Many knew them by name, and saved material of value for them (Mazine et al, 1996: 9).

The attitude of both local government and NGOs has a significant impact on the environment in which informal recyclers work. As Wilson et al point out, 'Perhaps the greatest challenge is to shift the perception and attitudes, particularly of local officials and also of the general public, towards those involved in informal waste recycling' (Wilson et al, 2006: 9). Creating organisations of pickers, increasing door to door collection, encouraging household separation of waste, and working with the informal recycling sector rather than against it is needed. McLean found that many of the pickers whom she interviewed would have welcomed some recognition of their work by government, and 'a number of collectors (55%) believed that this recognition might result in some form of assistance or sponsorship, such as the provision of a trolley' (McLean, 2000b: 19). The private sector can also aid or hinder the work of informal collectors, by either separating out their recyclable material for collectors, or denying them access to their waste.

3.8. Conclusion

This section has elaborated on the informal recycling in detail. The organisational structure, and the different interest groups within the informal recycling industry have been given attention. As this study is concerned with street waste pickers, the socio-economic characteristics of this group have been discussed. In addition to this, the literature relating to the working environment and earnings of those involved in waste picking has been given attention, as has the interactions between waste pickers and various interest groups such as the local authorities and NGOs.

This literature will be useful, as it will be compared against the outcomes of the current study. The methodology followed is discussed in detail in the next chapter, and the findings of this study are presented in chapter 5.

Chapter 4: Research Methodology

4.1. Introduction

This chapter elaborates on the research process undertaken in this study. Firstly, the design of the study is discussed, as well as the different buyback centres chosen for the research. Following this, the tools used to carry out the research, as well as the sampling plan is expanded on. The fieldwork that has been conducted, and the way in which the data has been collected and analysed will then be reported on.

4.2. Research Design

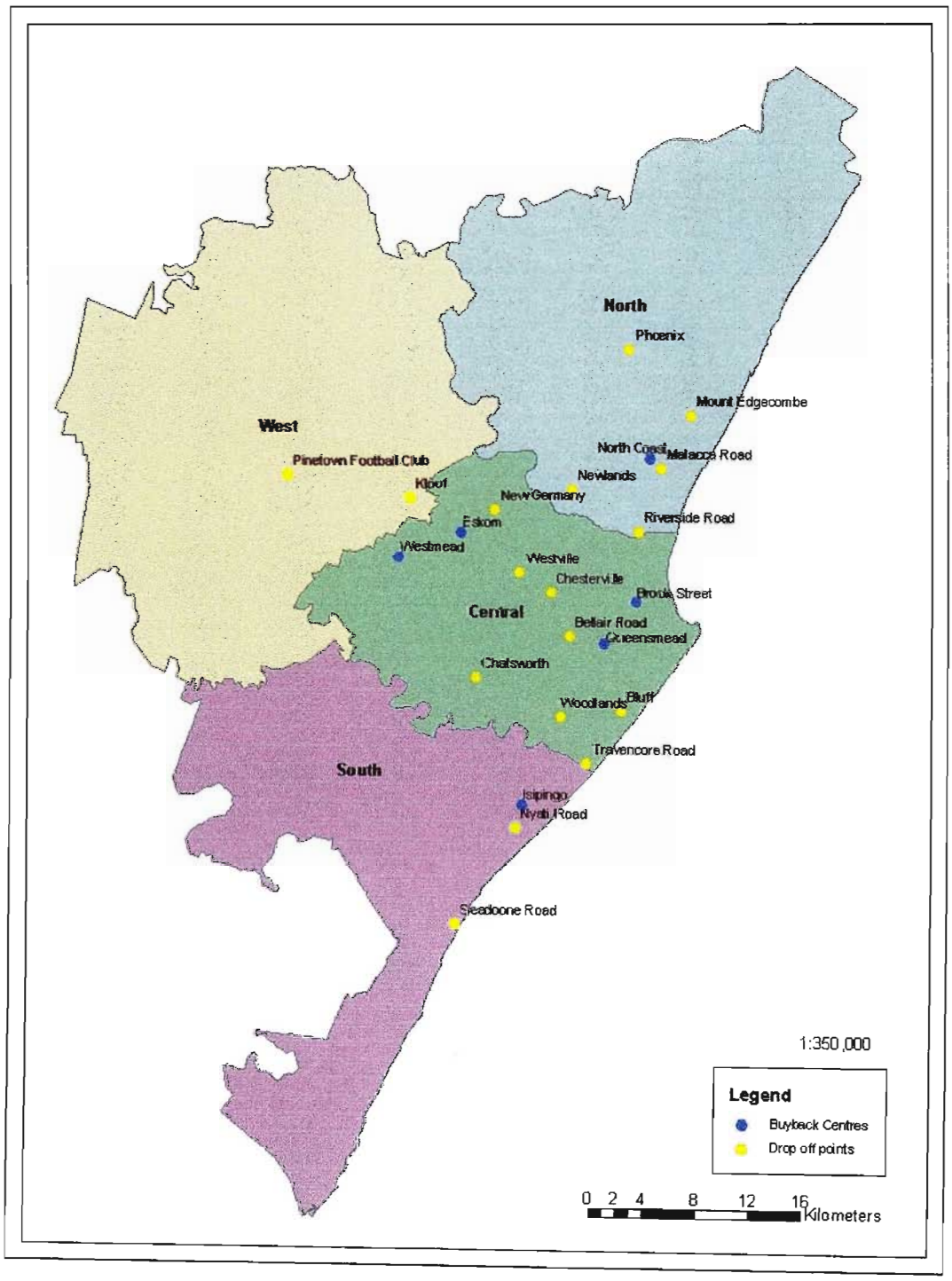
The overall aim of this research is to gain a more accurate understanding of those involved in waste picking in Durban. The research aims to elaborate on the socio-economic characteristics of Durban waste pickers, as well as their working conditions. The earnings of the waste pickers is also be analysed in order to determine whether or not these individuals live in a state of poverty. In addition to this, attention is paid to the relationship between waste pickers and other groups, such as the general public and the local municipality. The links between the waste pickers and the formal sector recycling companies is also be analysed. The research was therefore designed with the broad aim to gain a better understanding of the informal recycling industry, and the waste pickers participating in this study. This study aims to be an in-depth analysis or case study of one particular sector of informal recycling, which is waste picking.

In order to address these questions, waste pickers were interviewed, and have supplied information about their lives, and work. In order to gain access to the waste pickers, the various buyback centres in Durban have been considered, as informal collectors are most likely to be found in these places, selling back material.

Contact was made with the eThekwini Municipality in Durban, and they provided information about the various buyback centres that the municipality manages. In total, there are 23 buyback / community drop off centres under municipal

management. Of these 23 centres, 6 buyback material, while the remaining 17 are community drop off points. The location of these is shown in the figure 4.1 below

Figure 4.1. Buyback Centres and drop off points in eThekwini



At a community drop off point, large bins are provided for people to drop off material. The site is usually not manned, and no financial compensation is given for material.

The buyback centres managed by the municipality generally cater for the informal recycling industry. The land that these buyback centres operate on is government owned, and Durban Solid Waste provides some assets in order to set the business up, as well as employs staff to man the site. Informal collectors bring their material to the site, where it is weighed and exchanged for cash. The buyback centre employees then sort the material, and wait for the private sector recycling companies to collect it.

However, an informal collector is not only limited to these 6 buyback centres when it comes to a place to exchange material. There are many private recycling companies that will buyback waste directly from informal sector recyclers and waste pickers. Companies such as the Reclamation Group, and Mondi allow people to bring in material. In most cases, they will have a section of their business premises dedicated to buying back material.

The places that buy back material are located in very different areas. Some are located in commercial areas, such as the central business district in Durban, or the commercial district in Isipingo, while others are located in industrial areas. Due to the large number of possible locations that could be used to gain access to waste pickers, it has been necessary to limit the study and focus it. It was therefore decided that this research should be a case study, which looks at waste pickers selling back material at three different buyback centres in Durban. It is important to note that this is not a study of the different buyback centres, but rather the buyback centres were used because it was the best way to gain access to waste pickers operating in nearby areas. As already mentioned, contact was made with the Waste Minimisation and Recycling office of Durban Solid Waste, and they provided information on the buyback centres and drop off points that they manage, as well as information on private recycling companies in Durban. They also gave their permission for interviews to be conducted at the buyback centres that they manage.

Initially, only one buyback centre (Brook Street) was chosen for the study. However, the fieldwork revealed that while the buyback centre dealt with relatively large quantities of recyclable material everyday, it had a core group of waste pickers who worked and sold back material on a daily basis. These regular waste pickers were all interviewed, and the sample was too small to be of significance. The study was therefore extended, and waste pickers selling material at two other buyback centres were then interviewed. These two buyback centres were Eskom Buyback Centre (managed by the municipality), and Reclamation, a private recycling company with a branch in Phoenix.

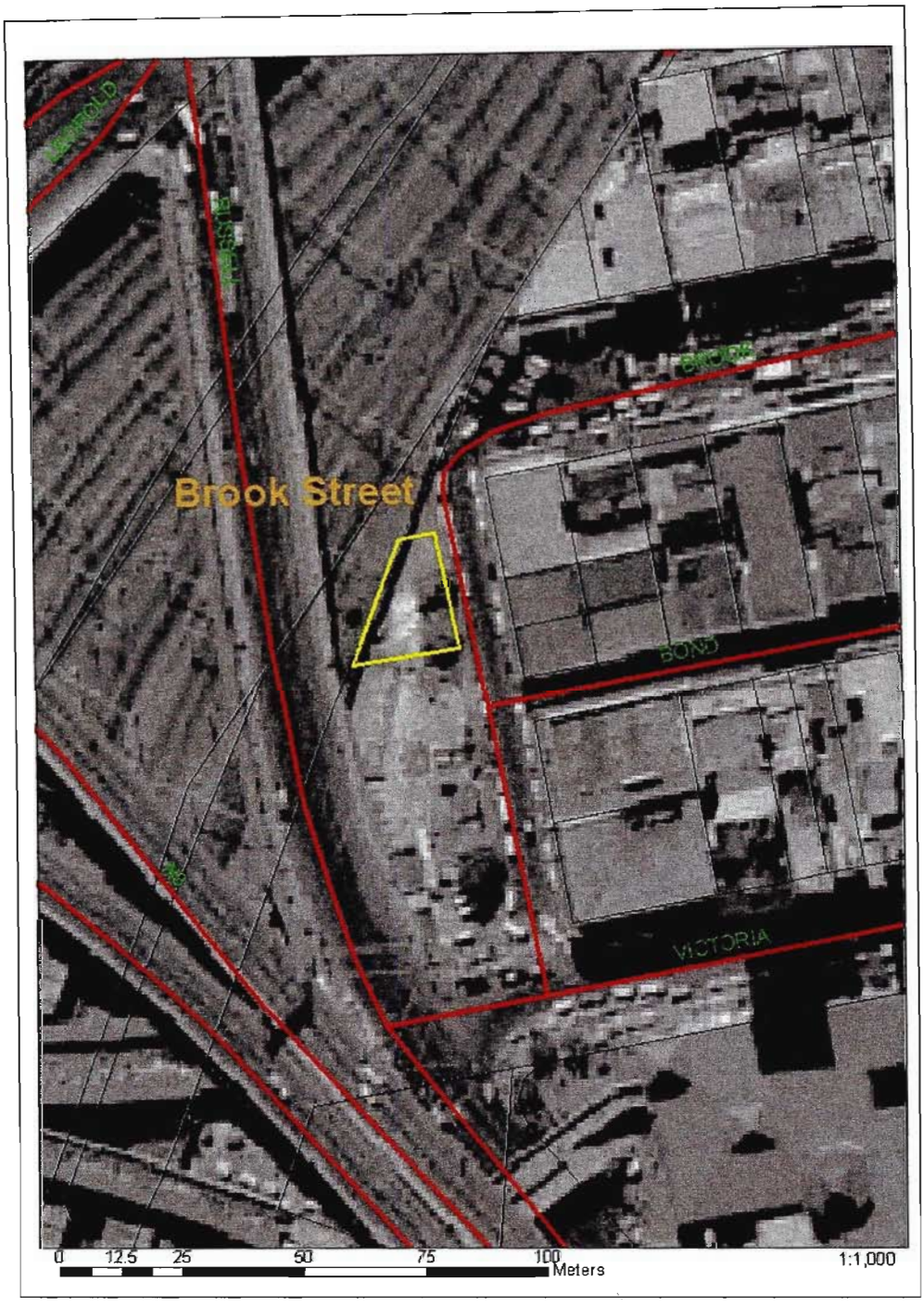
4.3. The Study Area

The following three buyback centres were chosen as locations for this study. Each will be discussed in turn.

4.3.1. Brook Street Buyback Centre

Brook Street Buyback Centre is located in the central business district in Durban, in the Warwick Junction area. The area in which it is located has an array of formal shops, as well as informal traders selling goods on the pavement. There is a taxi rank located near the buyback centre, and the area is very busy during the day with many people passing through. Figure 4.2 shows the location of Brook Street Buyback Centre.

Figure 4.2. Location of the Brook Street Buyback Centre



The land is owned by the eThekwini municipality and the Inner City Management Team (iTrump), as well as the Department of City Health and Business Support are project partners. The centre is managed by the Waste Minimisation and Recycling

office of Durban Solid Waste. The management has officially employed two individuals to run the buyback centre, although, there are occasionally other individuals helping with the sorting of material. However, it is unclear as to who pays these individuals, and whether they work for cash, kind, or for free.

In addition to staffing the buyback centre, the Durban Solid Waste also provides the buyback centre with necessary equipment, including an office container, a scale, two Mondi trolleys, containers for material, as well as signage for the centre. In total, the buyback centre covers an area of approximately 350 square-metres. The buyback centre has been in operation since 2000, and collects a monthly volume of approximately 25 tonnes of all types of recyclables. A private recycling company (Lindisiwe Recyclers) collects the metal, while the cardboard is collected by Mondi.

The buyback centre deals in a number of different materials, including cardboard, paper, metal and cans. However, the two most common materials sold back to the buyback centre are metal and cardboard. The price offered for cardboard at the time of research (September 2006) was 10c a Kg, while the price for metal differed according to the type. These are as follows:

- Copper – R20 a Kg
- Stainless Steel – R9 a Kg
- Aluminium – R7 a Kg
- Other metal – R0.75 a Kg

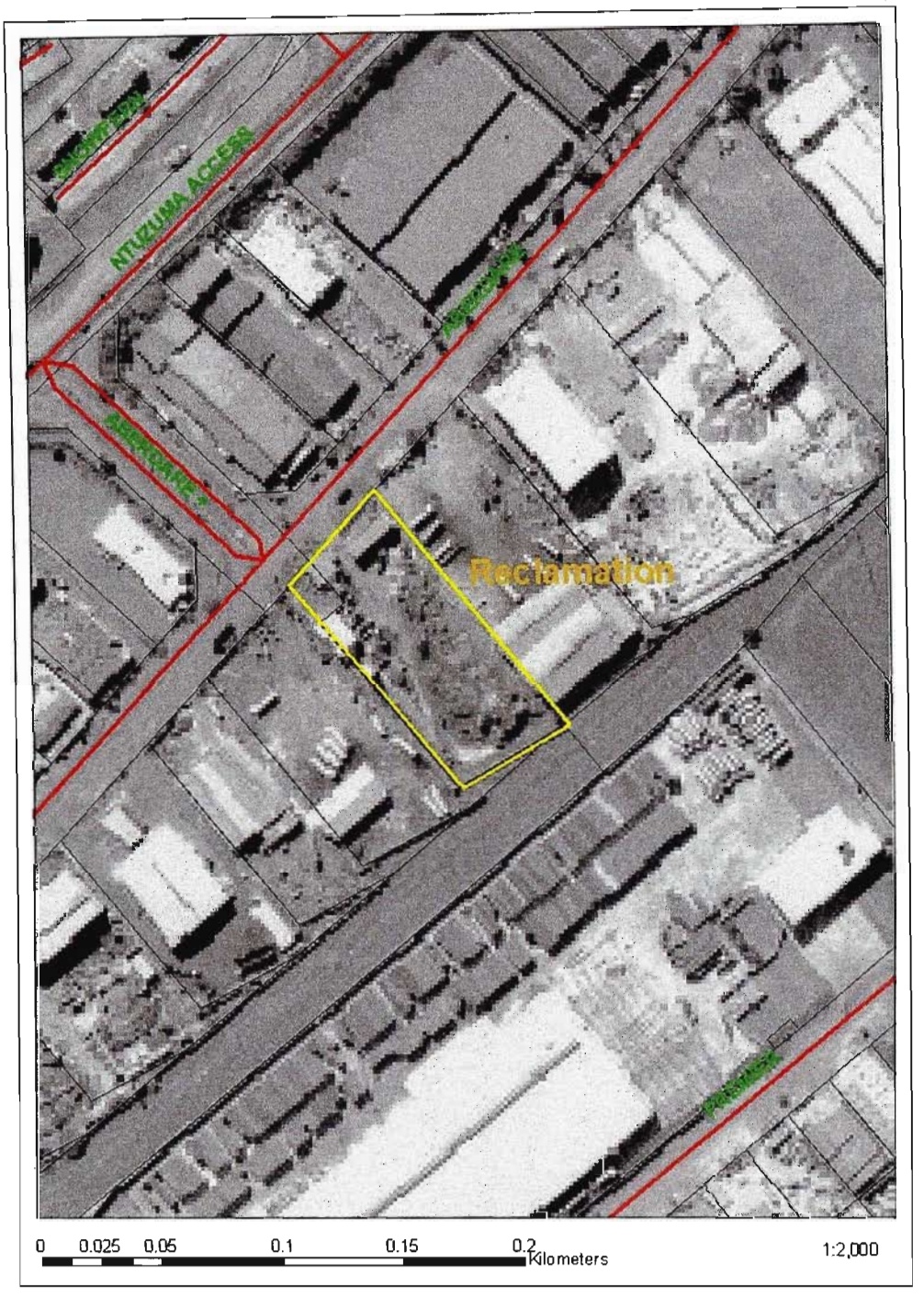
Clearly, the type of metal collected will have a great effect on the earning potential of informal collectors.

Research at the Brook Street Buyback Centre was conducted in September 2006, and the buyback centre was closed towards the end of the year. The reasons for this are not known. At present the land still remains vacant.

4.3.2. The Reclamation Group

The Reclamation Group is a large private recycling company, with branches all over South Africa. The group has over 60 facilities, and employs in excess of 2500 employees (Reclamation Group, 2007b). In KwaZulu-Natal the Reclamation Group has a total of 18 branches. The company deals mostly with larger formal companies selling back waste, however, they do buy material from the informal sector. The Phoenix branch was chosen as a study area, as a representative from Reclamation said that this has a large number of waste pickers selling back material, and there are specific facilities for this. The location of the Reclamation branch in Phoenix is shown in figure 4.3 below.

Figure 4.3. Location Reclamation in Phoenix



Reclamation in Phoenix is a large operation. In addition to catering for waste pickers, the centre collects material from other informal collectors, as well as formal sector companies. At the entrance there is a weighbridge for those transporting material by

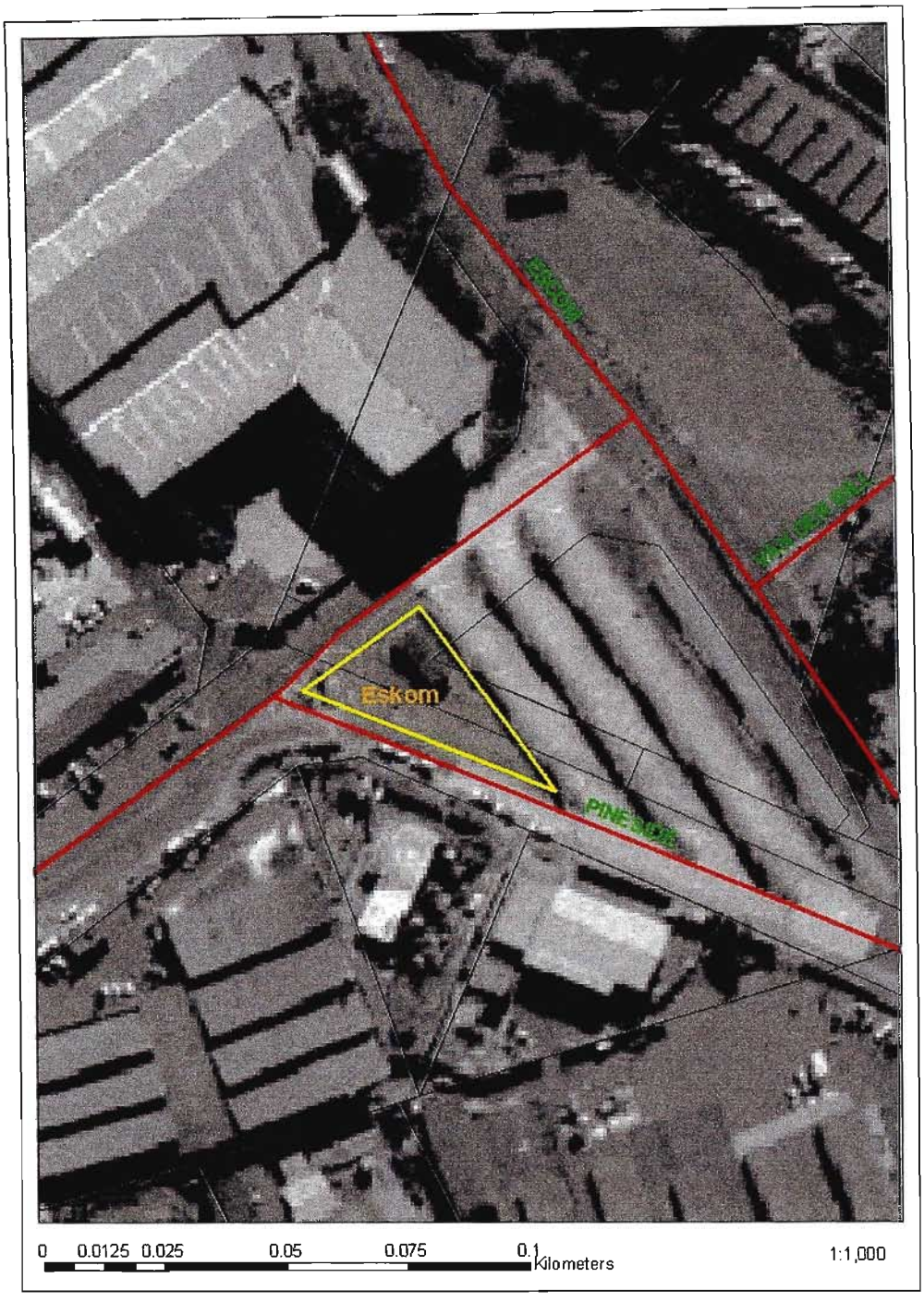
motor vehicle. There is also another section for waste pickers, who bring in their material either by hand or trolley, and get it weighed on a large scale. The company employs a number of people to sort the waste and work at the recycling centre. This is generally a much larger establishment than either of the municipality managed buyback centres, and there is far more activity in terms of people dropping off material.

Reclamation deals with a range of recyclable material, including glass, rubber, scrap metal, plastic, paper, and cardboard (Reclamation Group, 2007b). However, the common items sold back by waste pickers are cardboard and scrap metal. The price for cardboard is only 10c a Kg. According to a Reclamation representative, the price had just been dropped at the time of research (February 2007) due to an oversupply of scrap cardboard.

4.3.3. Eskom Buyback Centre

Eskom buyback centre is also managed by the Waste Minimisation and Recycling office of Durban Solid Waste, but unlike Brook Street the buyback centre is located in a light industrial area, and is surrounded by factories. The project has been running since the end of 2004, and has also received sponsorship from the Department of Environmental Affairs and Tourism. Three individuals have been employed by management to run the buyback centre. Figure 4.4 below shows the location of Eskom Road Buyback centre.

Figure 4.4. Location of Eskom Buyback Centre



The land on which Eskom Road Buyback centre is located is owned by Durban Transport. The buyback centre covers approximately 600 square-metres, occupying part of what used to be a bus rank. The buyback centre has a building in which an office is located, and in addition to this it is equipped with containers for material, a

scale, and signage boards. According to Durban Solid Waste, the Eskom Road Buyback centre was opened at the end of 2004, and collects a monthly volume of approximately 35 tons of recyclables.

The Buyback Centre collects a number of different materials, including cans, plastic, glass, cardboard and paper. They do not collect scrap metal because according to the manager, this requires a permit. Plastic appears to be the material that the buyback centre trades in the most. At the time of research (February 2007) the buyback centre offered 15c a Kg for cardboard and paper. The price paid for plastic differs according to the type of plastic, however, most waste pickers did not have the time to sort the plastic. Most are therefore paid a general rate of R1 a Kg. According to the manager at Eskom, the price paid for glass is the rate set by the glass recycling company, at 20c a Kg.

The Eskom buyback centre operates in a very different way from the Brook Street buyback centre. While Brook Street caters almost exclusively for waste pickers, Eskom deals mainly with people further up the informal recycling hierarchy, including itinerant buyers, middlemen, and those with businesses in waste removal. The centre deals almost entirely in plastic, and employs between 15 and 20 informal workers each day to sort the plastic. The centre appears to be more of a transfer point. As collectors drop off material, it is sorted and stacked, and then taken away by another buyer, or a hired truck which then takes it to a formal recycling company.

4.4. Research Tools Used

A structured questionnaire was used to interview a number of waste pickers in order to gain information about their lives, and their work. The researcher also gained insight into the informal recycling industry through observation.

The questionnaire (see appendix 1) was conducted with the waste pickers at each of the buyback centres discussed above. It was designed to be as brief as possible, because 'if too many questions are asked, the respondent tends to become tired or bored, with the result that those questions appearing towards the end of the questionnaire are either left unanswered or answered without much care' (Behr,

1988: 157). The questionnaire was generally introspective in design, and asked waste pickers information about their lives as well as their attitudes and opinions about certain issues.

The questionnaire was semi-structured in nature, and had a range of open ended and closed ended questions. Both of these types of questions have definite advantages and disadvantages. Closed ended questions make the information collected easy to deal with from a statistical and analytic point of view, but also could have the effect of limiting the respondent (Behr, 1988: 157). The opposite can be said of open ended questions.

A total of 32 questions were asked, and it was anticipated to take approximately 10 minutes of a respondents' time to answer. Waste pickers are essentially in business for themselves, so it was seen as unreasonable to ask for more of their time, considering this could have an impact on income. According to Behr, 'the questionnaire should start with simple factual questions which can be answered without much difficulty. Complex or awkward questions should come towards the end' (Behr, 1988: 157). This advice was followed in the design of this questionnaire. The questions towards the beginning of the questionnaire were generally close ended, or required short answers. Questions that looked for attitudes and opinions were towards the end of the questionnaire. Care was taken to ensure that the questions were as unambiguous as possible.

The advantages of using a questionnaire as a research tool are many. Firstly, they can be administered to a large number of people, and the way in which the information must be analysed is generally clear (Bertram, 2003: 84). It also 'enables the researcher to standardize the questions asked and to control the amount of information that respondents will supply' (Bertram, 2003: 85).

However, there are also some disadvantages and restrictions to using a questionnaire that need to be noted. Firstly, there is the problem of a non-response. This results in bias in the data collected, and the researcher must be aware that those refusing to participate can negatively affect the validity of the study. The researcher must therefore consider how the findings would have differed, had more

people responded (Behr, 1988: 162). 'Generally speaking, a response rate of less than 70% lacks validity' (Behr, 1988: 162).

In addition to the serious problem of non-response, there are other disadvantages to using a questionnaire, which arise from the actual interview process. As Bertram points out, 'respondents may not understand the questions asked or may give the answer that he or she thinks the researcher wants to hear' (Bertram, 2003: 85).

In the case of this particular research, language appeared to be a barrier, with most of the respondents not being first language English speakers. This was anticipated by the researcher prior to fieldwork. In order to overcome this problem, an interpreter / research assistant was employed to help in the fieldwork. The research assistant has a background in interviewing people for questionnaires, and is fluent in English, IsiZulu and able to communicate in IsiXhosa.

4.5. Sampling

In order to determine a representative sample of waste pickers, one has to consider the entire population of waste pickers in Durban. As Cohen and Manion point out, 'the researcher must obtain the minimum sample size that will accurately represent the population under survey' (Cohen and Manion in Behr, 1988: 13). In this case, the researcher would have had to have details as to the number of waste pickers operating in the Durban area, or the waste picking population of Durban. This information is unavailable, as research into the informal recycling industry in Durban is limited.

While there is no information available as to the overall number of waste pickers operating in Durban, there is information available on where waste pickers take their collected material to exchange it for money. As discussed above, there are a total of 6 buyback centres run by the municipality, as well as many others run by private sector companies. Initially, it was decided to choose only one buyback centre (Brook Street) and use it as a case study. However, it soon became clear that there are not enough waste pickers selling material to the buyback centre, and while 20 questionnaires were completed, this was hardly enough to perform a statistical

analysis on. It was therefore decided to choose two other buyback centres, and to conduct 20 questionnaires at each of these, resulting in a total sample of 60 questionnaires. The three buyback centres chosen have been discussed in detail above. They were selected because of their differences: Brook Street is located in a busy commercial area, Eskom is in an industrial area, while Reclamation is a private recycling company.

As mentioned above, a sample of 20 questionnaires were completed at each buyback centre. The sampling method used was incidental sampling. In both of the cases of Brook Street and Eskom, nearly the entire population of waste pickers selling back material at these locations were interviewed. Reclamation was far busier, and therefore the proportion of the population of waste pickers using Reclamation interviewed is unclear.

Due to the lack of knowledge, both of the waste picking population of Durban, and the population selling back material at each buyback centre, sampling in this study has been very difficult. This study can therefore not be considered to be representative of waste pickers operating in Durban as a whole, but must rather be viewed as three separate case studies. In the analysis, the results for the entire sample of 60 will be elaborated on, and the results from each buyback centre compared. Thus, this research can be used as a benchmark against which future, larger studies can be measured.

4.6. Fieldwork

4.6.1. The Pilot Study

In order to test that the questionnaire would elicit valid results and was unambiguous, a pilot study was carried out. This was conducted at the Brook Street Buyback Centre in early September 2006. The questionnaire was found to work fairly well, and the response rate was also high as the waste pickers seemed happy to give up their time to answer the questions. Not one waste picker declined being interviewed.

A total of 5 pilot questionnaires were completed. The pilot questionnaire was found to take on average about 10 minutes to complete, and consisted of a total of 28 questions. An interpreter / research assistance was present at all times during the fieldwork. She is fluent is both English and IsiZulu, and is also able to communicate in IsiXhosa.

A number of issues arose from the pilot study, which made it possible to determine which questions needed rephrasing, and what needed to be added. It was found that some important socio-economic questions had been left out in the pilot questionnaire, such as age and home language. A further two questions were added, the first asking that if the respondent collected more than one type of material which material he or she collected the most of, and the second (Question 32 – See Appendix 1) asked about what the municipality could do to improve the working conditions of the waste pickers.

A number of questions were also rephrased to facilitate clarity. For example, instead of asking how many people live in the household, this was rephrased to ask how many people the respondent supported financially. This question aimed to gain an understanding of how many individuals survived off the income from waste picking. Similarly, a question that previously read 'Apart form collecting recyclable materials, do you do any other work to get money?' was replaced with a question that asked whether the respondent got money from any other sources. This was done because grants, pensions and government support also provide additional income to the household. A question asking the about other sources of income, and how much they amounted to was also included.

A number of other questions were also expanded to be clearer. For example, instead of asking the waste picker why they collect scrap, the question was rephrased to ask the respondent why they collected scrap instead of doing other types of work. The aim of this was to determine the extent to which waste pickers were in the line of work by choice, and whether other opportunities were available to them. A question asking the waste picker why they used a particular buyback centre, rather than elsewhere was also included. This will help in considering informal and formal sector linkages.

4.6.2. The Data Collection

The data collection commenced on the completion of the pilot study, in mid September 2006. At this stage, it was still anticipated that 60 questionnaires would be completed at Brook Street, and the study would focus entirely on this buyback centre.

After a week administering questionnaires at the buyback centre, it was clear that a sample of 60 questionnaires was not feasible. Nearly all of the 20 questionnaires completed at Brook Street were done so in the first two days of fieldwork. After this, the majority of waste pickers selling back waste to Brook Street regularly had been interviewed, and it was clear that a sample of 60 was unrealistic. It as therefore decided, as explained above, to choose two other buyback centres and to complete 20 questionnaires at each of them. The response rate at Brook Street was 100%, with not one waste picker refusing to be interviewed.

In February 2007 it was decided to use the Eskom Buyback Centre as another location in which to gain access to waste pickers. However, a similar problem to the Brook Street Buyback Centre was experienced, as the buyback centre had a small group of waste pickers who regularly dropped off material. In total, a week was spent at the Eskom buyback centre. Due to the fact that the researcher was finding it difficult to complete a sample of 20, the manager of the buyback centre offered his knowledge of waste picking in the area. One afternoon, during the week that was spent at Eskom, the manager took the researcher around the industrial area of New Germany. He introduced the researcher to a number of waste pickers operating in the area, who sometimes sell waste back to Eskom. These waste pickers, however, also sometimes rely on a middleman to transport their material to the buyback centre. Again, the response rate was high, with every picker consenting to an interview.

The Reclamation Group was approached last, as this is a private company, and permission was needed to conduct the questionnaires. Once this was acquired research commenced. The data was gathered in February 2007. In contrast to the

other two study areas, Reclamation has a large number of waste pickers selling back waste at a constant rate. There was no shortage of people to interview, and therefore it only took 2 days to gather the necessary sample. The response rate was slightly lower at Reclamation, with one waste picker refusing to be interviewed, because he was in a hurry. Due to the high number of waste pickers using the Reclamation Group to drop off waste, a much smaller part of this population was sampled in this study. While it can be assumed through spending a week at Brook Street and Eskom respectively that a large portion, if not all, of the population using these two buyback centres was interviewed, the same cannot be said for Reclamation. As no information exists as to the number of waste pickers selling material to Reclamation on a regular basis, it is impossible to say what portion of the population who use this buyback centre was sampled. One can only assume, that due to the fact that it took a relatively short amount of time to collect the sample of 20, and based on how busy the buyback centre was at the time of research, that only a fraction of the population has been captured in this sample of 20.

4.7. Data Analysis

The quantitative data gathered from the questionnaire went through a process of post coding (for open-ended questions), data punching, and analysis. The majority of the questions were analyzed to determine percentage profiles of responses. Where appropriate, a more detailed statistical analysis was performed. Some cross tabulations were done. For example, it was of interest to see if there was a correlation between earnings, and different variables, such as gender, age, and education levels. Overall, the data was analyzed to determine the demographic and economic profile of a typical participant in the industry. Questions relating to attitudes and opinions were post coded, and then responses were grouped and reported on.

4.8. Conclusion

This chapter has discussed the design of this research, as well as the three buyback centres used as study areas. The way in which these centres operate, and the conditions at each have been touched upon. The main research tool used in this study was a questionnaire, both with open ended and closed ended questions. After

the pilot study, a total sample of 60 questionnaires were administered at the three different buyback centres.

The data has been analysed in detail in chapter 5, in order to describe the socio-economic characteristics of the waste pickers, as well as their working conditions, earnings, relationship with the municipality, and links with the formal sector.

Chapter 5: Results and Discussion

5.1. Introduction

In this chapter, the results of this study will be elaborated on and discussed in detail. Findings relating to each buyback centre, as well as the sample as a whole will be reported, and in each case, these results will be related back to the relevant literature. Firstly, the socio-economic characteristics of the waste pickers interviewed will be discussed. Thereafter, the working environment and working conditions of the waste pickers will be focussed on in greater detail. An analysis of the earnings of the waste pickers will then be presented, followed by a discussion of the waste pickers' relationship with the local authorities, and the formal sector.

5.2. Socio-economic characteristics of the waste pickers

5.2.1. Gender

The entire sample was generally quite evenly divided according to gender, with 57% of the sample being male, and 43% of the sample being female. However, the divide in gender appeared to be quite great at the different buyback centres. Seventy five percent of the waste pickers interviewed at Eskom were women, while 85% of the people interviewed at the Reclamation Group were men. Brook Street had a more even breakdown according to gender, with 60% of the sample being male, and the remaining 40% being female.

This gender difference at the different buyback centres could be due to the types of materials that were sold back at these different locations. At Eskom, plastics and cardboard were mainly dealt with, while at Reclamation the majority of the waste pickers were selling back metal. It appeared that more men were involved in metal collection than women, who tended to specialize in plastics or cardboard.

There is no consensus in the literature as to which gender dominates waste picking. Some studies, such as Birkbeck (1979), Hayami (2006), and Medina (2001), found the profession to be dominated by men, while other studies, such as Tevera (1994),

and Walters (2002), found women to dominate. McLean (2000b), in a study conducted in Durban, found that three quarters of the waste pickers she interviewed were male. While this study showed that men outnumbered women, it was not by a large margin.

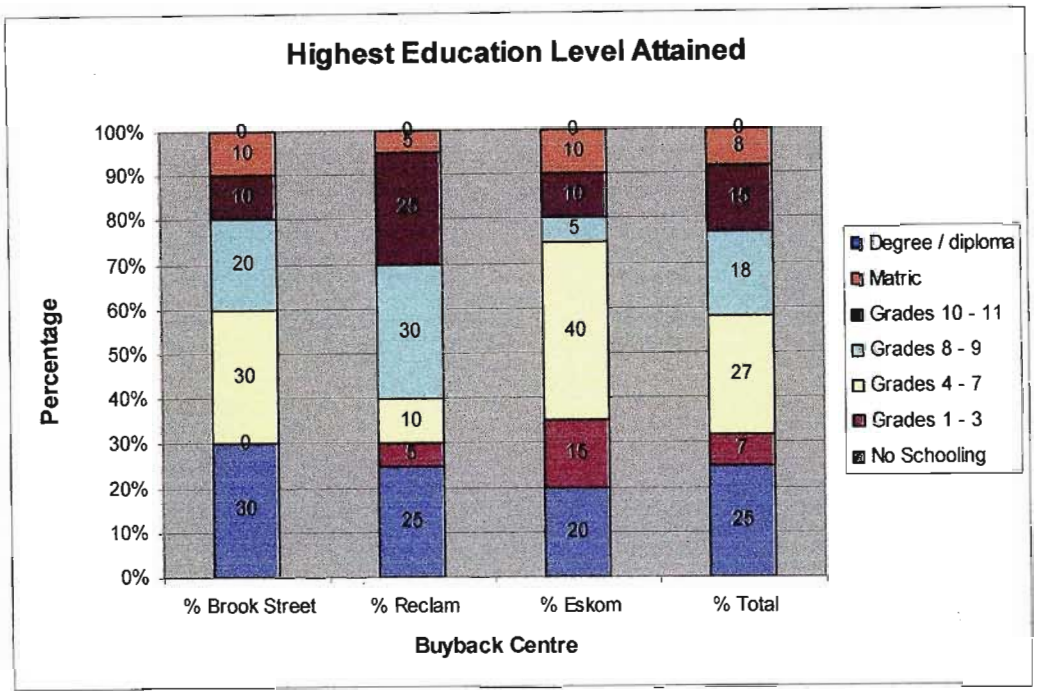
5.2.2. Race

Nearly the entire sample was black (95%), with the remaining 5% being of Indian decent. The large representation of black people in the sample is an indication of historic disadvantages.

5.2.3. Education Levels

Respondents were asked to state their highest level of education, and apart form one individual who said she was attending night school, none of those interviewed were still in the education system. Overall, a quarter of the respondents indicated that they had never been to school, while about a third (34%) reported that they had completed primary school education. Another third (33%) claimed to have some high school education, while 8% reported that they had completed their matric, this was the maximum education level reported to have been achieved. None of the respondents had gone on to study further. The average education level reached by the waste pickers was found to be some primary school education, grade 4 to grade 7. The graph below shows the education levels at each particular buyback centre.

Figure 5.1



If one considers the education levels at each different buyback centre, a pattern emerges. The Eskom buyback centre reported the fewest number of participants with a high school education, with only 25% of the sample reporting that they had more than a primary school education. The average education level reached by the waste pickers selling back material to Eskom was the same as for the entire sample (Grade 4 to Grade 7), and on average collectors had completed the latter years of primary school and nothing further.

Brook Street had a slightly higher average education, but the sample was more evenly spread over the various categories compared to Eskom, and therefore had a larger standard deviation compared with Eskom. About a third of the sample (30%) had received no schooling whatsoever, while another 30% had between grades 4 and 7. The remainder had some high school education, or a matric.

The Reclamation group, on the other hand, reported the highest number of respondents with a high school education. Sixty percent of the respondents indicated that they had attended high school. The sample also revealed that the average education level achieved by these respondents was slightly higher than the average

for the entire sample. A reason for this difference in education levels is linked to gender. A significant proportion of the respondents at the Reclamation group (85%) were men, while 75% of the respondents at the Eskom Buyback centre were women.

In order to determine the relationship between gender and the level of education of respondents, a cross tabulation was done. Table 5.1 below shows the relationship between gender and education levels. Each table entry gives a percentage of the total sample.

Table 5.1: Relationship between gender and education levels (Percentage)

	Male	Female	Total
No Schooling	13	12	25
Grades 1 - 3	2	5	7
Grades 4 - 7	12	15	27
Grades 8 - 9	12	7	18
Grades 10 - 11	12	3	15
Matric	7	2	8
Total	**57**	**43**	**100**

While the relationship does not appear to be particularly obvious, it is clear that there are a greater number of men that are better educated. The mean education level for men was also found to be higher than for women.

The findings of this study are supported by the literature on waste pickers, which have generally found that waste pickers have low education levels (See Birkbeck, 1979, Tevera, 1994, and Medina, 1998). The unequal level of education between men and women is also to be expected, considering the position of women in society. It is also interesting to note that the difference in education levels between women and men are not great for the lower levels, it is only from grade 8 onwards (high school) that the men begin to clearly dominate in each category. This indicates that perhaps the women in this study were not given the opportunity to study further.

5.2.4. Home Language

Over half the respondents (57%) indicated that they spoke isiZulu at home, while 23% said that their home language is Xhosa. Thirteen percent said that they speak Sesotho at home, while only one respondent, who was from Tanzania, said that his

first language was Swahili. Another 3 respondents (5% of the sample) said that English was their home language.

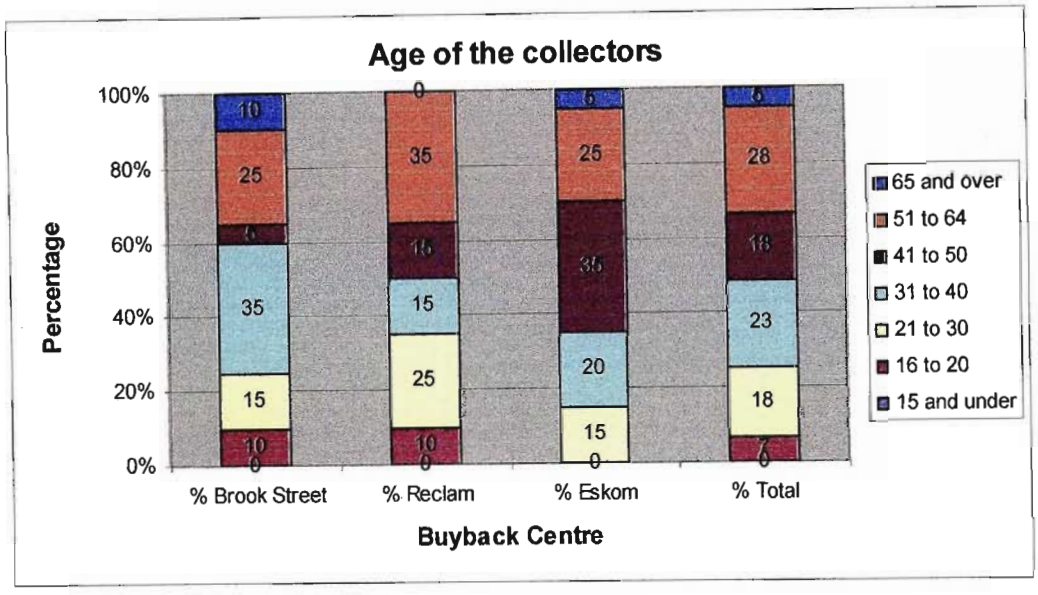
The individual buyback centres were generally in line with the above trends, although a higher proportion of Sesotho speaking people were found at the Eskom Buyback centre (35% of those interviewed at Eskom).

The high number of IsiZulu speaking people can be expected, as it is the main language in the province in which Durban is located. It is also most spoken language in South Africa (Statistics South Africa, 2001). Similarly, it is also not surprising that there are a large number of Xhosa speaking people (23% of the total sample) operating as informal recyclers. Many of these individuals would have come from rural areas in the Eastern Cape to seek job opportunities in Durban. Xhosa is also the second most spoken language in South Africa (Statistics South Africa, 2001).

5.2.5. Age

The average age of the total sample was 42 years of age. The oldest participant was 85 years old, and the youngest 17. The range in age was therefore 68 years. The mode, or most common response was 52 years of age, whilst the sample had a median of 41.5 years. If one considers the economically active population (those between the ages of 16 and 65 years), 95% of the sample fell in this group, whilst five percent of the sample were over the age of 65. Only 7% of the waste pickers fell in the 16 to 20 age category, while the category with the most number of respondents (28%) was the 51 to 64 age group. The standard deviation in age was 14.6. Figure 5.2 below shows the different age categories of respondents.

Figure 5.2.



At Brook Street the average age of the waste pickers was slightly higher than the sample as a whole. The most common age reported (mode) was 32 years, while the sample had a median of 36.5 years, both less than the sample as a whole. Brook Street also reported a higher proportion of the sample falling outside the economically active population, with 10% of the sample being 65 years or older. Interestingly, the age category with the highest proportion of respondents was the 31 to 40 year old category. Thirty-five percent of waste pickers fell into this age group. The standard deviation of the Brook Street sample was therefore higher than for the sample as a whole, and was equal to 17.6. The waste pickers interviewed at Brook Street were more varied in age, compared to the sample as a whole.

At Eskom the average age of the waste pickers was higher than the sample as a whole, at 44.2 years. The sample had a range of 39 years, much smaller than the waste pickers at Brook Street, who were found to have an age range of 65 years. The mode, or most common response, was the same as for the entire sample, at 52 years. However, the median was higher in the case of Eskom at 44 years, compared to the entire sample. Nearly the entire sample (95%) fell into the economically active category. The waste pickers interviewed at Eskom were generally much closer in age, with 60% of the sample falling within the ages of 41 to 60 years old. As can be

expected, the standard deviation in age was lower than at Brook Street as well as for the sample as a whole, at 10.9.

At Reclamation, the average age (39.1 years) of the collectors was lower than at the other buyback centres, and the sample as a whole. The oldest waste picker interviewed was 60 years, whist the youngest was 17 years of age. The range in age was therefore 43 years. The most common response was again, 52 years, while the median of the sample was 40 years, close to the median for the sample as a whole. All waste pickers fell in the economically active age group (16 to 65). The largest age group represented was the 51 to 64 age group, with 35% of the respondents falling into this category. The standard deviation for the Reclamation sample was 14.6, exactly the same as for the sample as a whole.

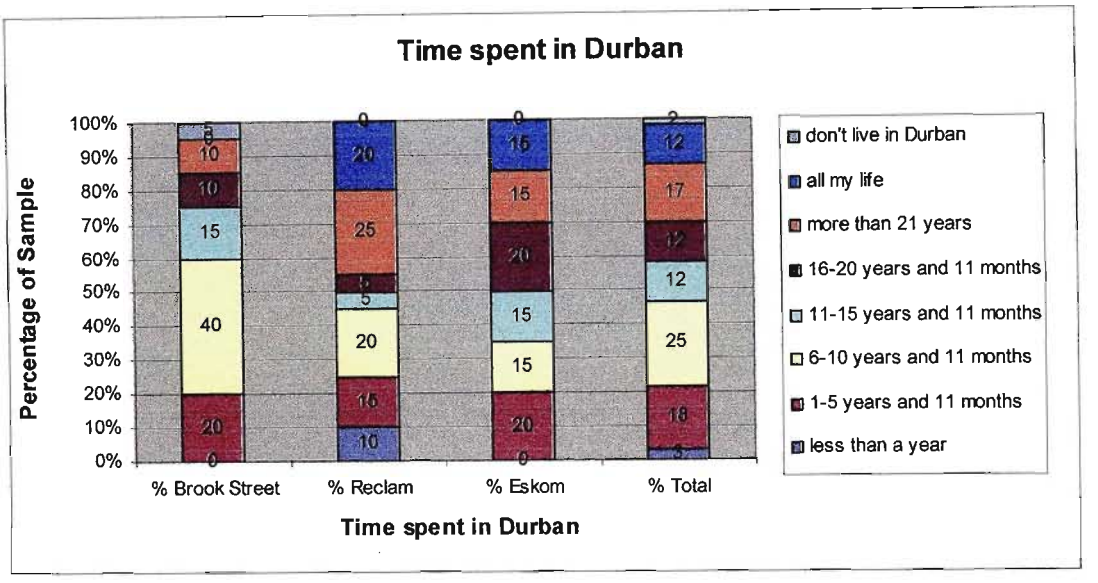
It is of interest that so many people who are clearly able bodied, willing and able to work, and within the economically active population are engaging in waste picking. This suggests that either these individuals are choosing waste picking as a job, or that they are forced to resort to waste picking due to lack of other employment opportunities. The average age of waste pickers differs according to location; however, McLean (2000b) in her study conducted in Durban found that the majority of the waste pickers she interviewed were between the ages of 31 and 60. This study supports these findings.

5.2.6. Migration

Waste picking is noted in the literature as being an activity that is dominated by newcomers to the city. In order to ascertain whether or not this study had similar findings, respondents were asked how long they had lived in Durban. The answers ranged from 2 months, to one respondent who had lived in Durban a total of 57 years, his whole life. Twelve percent of the sample indicated that they had lived in Durban their entire lives, while the remaining 88% had moved to Durban at some point. Considering those that had moved to Durban at some point, the most common response was that respondents had been in the city for 7 years, while the median was 10 years. On average, those that had moved to Durban had been in the city for 12 years and 6 months, and responses ranged from having moved to Durban 2

months ago, to 42 years ago. The sample (excluding those that were born in Durban) had a standard deviation of 10.3. If one groups the time spent living in Durban into categories, it is clear that over 75% of the collectors interviewed have lived in Durban for longer than 5 years. Only 3% of the total sample indicated that they had been in Durban less than a year. This is shown in figure 5.3 below.

Figure 5.3



At Brook Street, not one of the respondents said that they had been born in Durban, all had migrated to the city. However, one respondent, when asked how long he had lived in Durban, replied that he did not live in Durban. This was due to the fact that he travelled long distances to get to the city, and would travel home to a nearby rural area regularly. He was therefore omitted from the analysis. Of the remaining 19 respondents, the most common response as to how long they had been living in the city was the same as for the sample as a whole, at 7 years, while the average time spent living in Durban was 9 years and 11 months, lower than that of the entire sample. The standard deviation was much lower than for the entire sample, at 6.3, as was the range of responses. If one groups time spent in Durban into categories, 40% of the sample said that they had been in Durban for 6 to 10 years. Eighty percent of the sample indicated that they had been in Durban longer than 5 years, while all of the respondents had been in Durban longer than a year.

At Eskom, 3 out of the 20 waste pickers interviewed (15%) indicated that they were born in Durban. Of those that had migrated to Durban, the most common response was that they had been in the city for 10 years. On average, the waste pickers that had migrated to Durban had been in the city for 14 years and 3 months, significantly more than the average for the entire sample. The respondent that had been in Durban the shortest amount of time indicated that he had only lived in Durban 2 years, while the maximum time lived in Durban for those that had migrated here was 33 years. The standard deviation considering time spent in Durban for those that had moved here was 9.8, marginally lower that of the entire sample. If one groups time lived in Durban, the groups with the highest number of respondents were those that had been in Durban between a year and 5 years and 11 months (20%), and those that had been in Durban 16 to 20 years and 11 months (20%). Eighty percent of the sample indicated that they had been in Durban longer than 5 years, while all of the respondents had been in Durban longer than a year.

If one looks at the responses from the Reclamation Group, 20% indicated that they had lived in Durban their entire lives. Of those that had migrated to the city, the most common number of years spent in Durban were 7, with 15% pointing out that they had been in Durban for this length of time. Those that had migrated to the city had been in Durban for an average of 13 years and 8 months, higher than the average for the entire sample. Reponses ranged from having been in Durban for 2 months, to having migrated here 42 years ago. The standard deviation for those that had migrated to Durban was 14, higher than the standard deviation for the entire sample, indicating that the time spent in Durban varied to a greater extent between the waste pickers at this buyback centre. Twenty five percent of the total sample indicated that they had migrated to Durban more than 21 years ago. However, 25% of the total sample also indicated that they had been in Durban for less than 5 years and 11 months, while 10% indicated that they had been in Durban for less than a year. Between the buyback centres, it appears that collectors operating at the Reclamation group had the highest number of new entrants to the city, and the highest number of collectors (20%) who have lived in Durban all their lives.

According to the literature, waste picking is an occupation that is often dominated by migrants and new comers to the city (see, for example, Hayami et al, 2006, Van

Beukering, 1996, McLean, 2000a). The ease of entry to the field of work, and the fact that few skills are needed means that those without the connections to seek other forms of employment can fall back on waste picking. This study confirms the presence of migrants in waste picking, and supports the findings of other studies of waste pickers in Durban (see McLean 2000a and 2000b). Overall, 88% of the waste pickers were migrants, a high proportion. Nearly all (97%) had been in the city for more than a year, and most (75%) had been in Durban for longer than 5 years. However, although there is a high presence of migrants, they cannot really be considered as newcomers to the city, as nearly all of them had been in Durban longer than a year.

When asked why they moved to Durban, an overwhelming number of those who had migrated to the city indicated that they had come to find employment. Sixty nine percent of those that had migrated to Durban said that they had come to Durban to find a job. Other responses all constituted under 10% of the sample. Six percent said that they had come to Durban to escape the political violence of the late 1980s / early 1990s, while another 6% indicated that they had lost their parents and needed to find work because of this. Some respondents (4% of the migrants) reported that they had come to Durban to study, while another 4% had met a girlfriend or partner and followed them to Durban. Four percent indicated that they had an opportunity for a job, and had come to Durban to take up this work. Table 5.2 below shows the reasons for migrating to Durban.

Table 5.2: Reasons for migrating to Durban (% of migrants)

Reason	% Brook Street	% Reclam	% Eskom	% Total
To find a job / to support myself / job opportunities	53	69	88	69
Left because of political violence	16	0	0	6
I lost my parents, so I had to find a job	16	0	0	6
To work	11	0	0	4
To study	5	6	0	4
Its closer to where I was born	0	6	0	2
I lost my husband, so I had to find a job	0	6	0	2
Met a girlfriend from Durban	0	6	6	4
I lost my husband, so I moved back to my family	0	6	0	2
personal problems	0	0	6	2
Total Migrants	**100**	**100**	**100**	**100**

In line with the trends of the complete sample, the majority of the migrants operating at Brook Street (53%) indicated that they had come to Durban to seek employment. Sixteen percent said that they had come to Durban to escape political violence, while another 16 % indicated that they needed to find work as one of their parents had died. Two migrants (11%) said they came to Durban to work, while 1 migrant (5%) indicated that she had come to Durban to study.

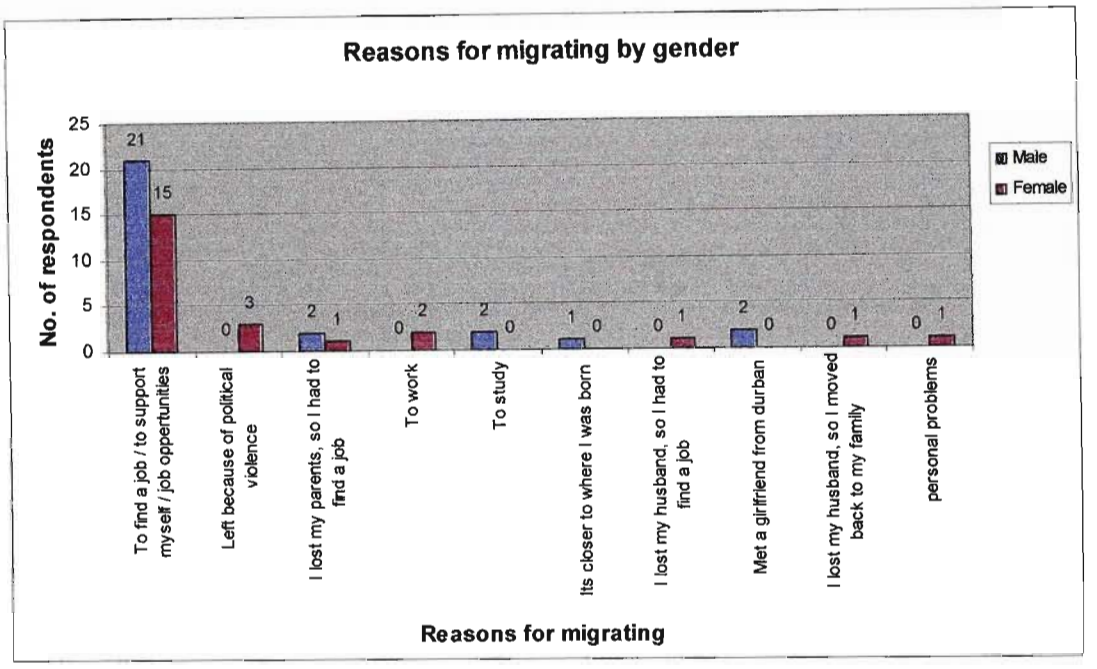
At Eskom, an overwhelming number of migrants (88%) indicated that they had come to Durban in search of a job. The remainder of the migrants had either moved to Durban because of a girlfriend (1 migrant – 6%), or because of personal problems (1 migrant – 6%).

The Reclamation Group results showed a greater variety of responses, with only 69% of the migrants indicating that they had moved to Durban to seek employment. The remainder had either met a girlfriend from Durban (6%), moved closer to their birthplace (6%), or had lost their husband so they had to either find a job, or return to their family (12%).

The need for employment in order to meet basic needs was clearly the motivating factor behind the majority of the migrants moving to the city. It is of interest how many people came to Durban, probably to find a job, due to the death of a parent or partner. In total, 10% of the migrants indicated that loss of a family member was a factor in their move to Durban.

It is interesting to consider gender, and the reasons for moving to Durban, and figure 5.4 shows this. There appears to be little relationship between the two factors, although it is interesting to note that 100% of those indicating that they moved to Durban due to the loss of a spouse were women, possibly indicating their dependence on a male breadwinner.

Figure 5.4



It was also interesting to consider which areas the waste pickers migrated from. It was found that all of the migrant waste pickers were from either KwaZulu-Natal (57%) or the Eastern Cape (31%), while one individual was from Tanzania (2%), and five others (10%) from Lesotho.

At Brook Street, a greater proportion of the migrants were from KwaZulu-Natal, compared to the sample as a whole. Seventy four percent of the migrants were from elsewhere in KwaZulu-Natal, 16% were from the Eastern Cape, while 11% were from Tanzania and Lesotho.

At Eskom, a higher portion of the sample was from the Eastern Cape (30%), and Lesotho (24%). Only 47% of the migrants operating at Eskom were from elsewhere in KwaZulu-Natal.

Reclamation had a higher proportion of migrants from the Eastern Cape, with 50% of the migrants indicating that they were from this province originally. The other 50% indicated that they were from elsewhere in KwaZulu-Natal.

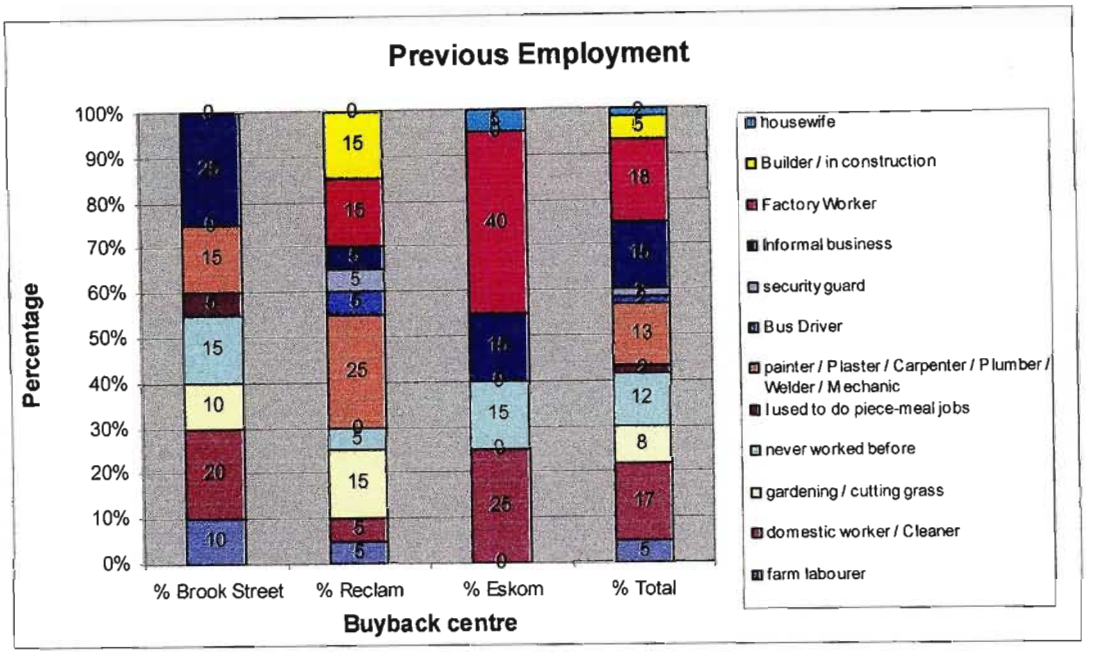
These results can be expected, as the majority of respondents came from either KwaZulu-Natal, or the Eastern Cape. The Eastern Cape is relatively close to KwaZulu-Natal, and there are fewer employment opportunities within that province. This is a possible reason as to why migrants chose Durban, one of the largest cities in South Africa, to migrate to. Lesotho is also relatively close by, bordering northern KwaZulu-Natal. Durban probably would have been the closest large city in which to seek employment opportunities. While there was no specific question asking migrants whether they came from urban or rural areas, this was determined during the fieldwork. The majority of the migrants came from rural areas. This finding is supported by the literature on waste picking, where it is widely reported that rural migrants can be found in this type of work (See McLean 2000a and 2000b, Hayami et al, 2006, and Van Beukering, 1996).

5.3. Employment Analysis

5.3.1. Previous Employment

When asked what their previous type of employment was, only 12% of the total sample replied that they had never worked before. A portion of the sample (18%) indicated that they had worked previously in a factory, or in an industrial environment. Seventeen percent of the collectors responded that they had previously worked as domestic workers or cleaners, while 15% indicated that they had worked previously in the informal sector either owning their own business, or working for somebody else with an informal business. Examples given included selling fruit and vegetables, working in an informal butchery, or running a Spaza Shop or Tuckshop. Thirteen percent of the sample pointed out that they had previously been involved in a trade. Examples given included painting, welding, plastering, carpentry, plumbing, or mechanics. Figure 5.5 shows the breakdown in previous employment types for each buyback centre, as well as for the sample as a whole.

Figure 5.5



The prevalent previous types of employment differed according to the different buyback centres. At the Eskom Buyback centre, a large portion of those interviewed (25%) indicated that they had previously worked as a domestic worker, or cleaner, while 40% said that they had previously been working at a factory. Fifteen percent indicated that they had never worked before, and 15% also pointed out that they had previously worked in an informal business.

At Reclamation, only 5% of those interviewed pointed out that they had never worked before. The most common previous job was trade activities, such as plumbing, carpentry, welding or painting, with 25% indicating that they had previously worked in that field. Other jobs that respondents claimed to have had previously included working as a bus driver (5%), a security guard (5%), a farm labourer (5%), a domestic worker (5%), or in an informal business (5%). Other jobs such as gardening or cutting grass, working in construction, and working in a factory were more common, with 15% of the sample indicating that they had been involved in each activity respectively.

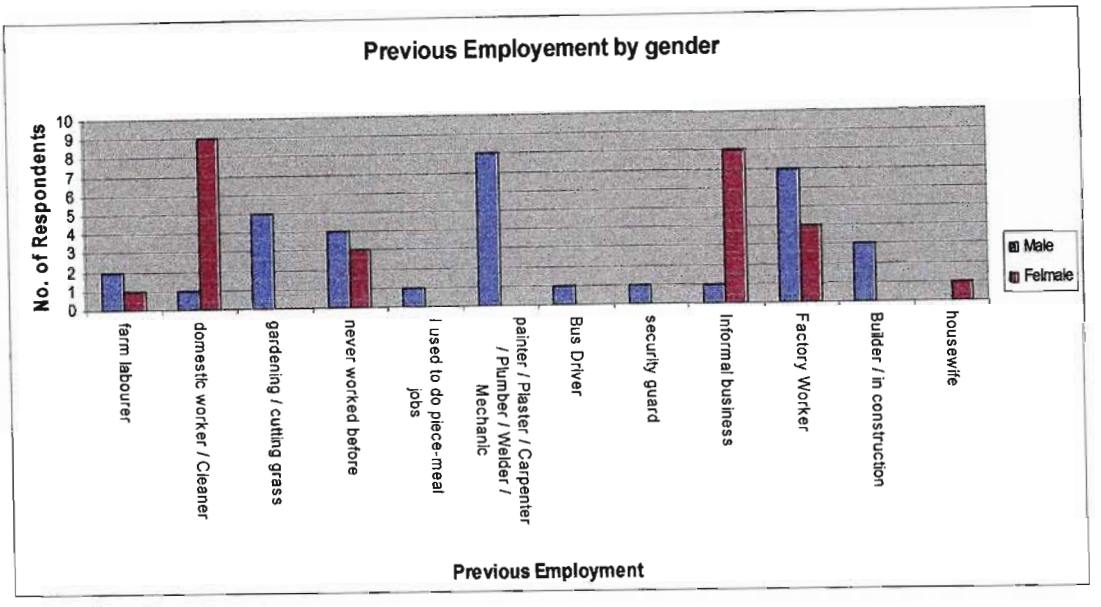
At the Brook Street buyback centre, 15% of the sample indicated that they had never worked before, while 20% of the sample said that they had previously been involved

in Domestic work or cleaning. Twenty five percent of the sample indicated that they had previously been involved in an informal business. Fifteen percent pointed out that they had previously been involved in trade activities, such as painting, welding, carpentry, plumbing, or plastering. Two respondents (10%) said that they had previously been working as a farm labourer, while another 10% said that they had previously worked as a gardener or grass cutter.

In one compares the previous types of employment across the buyback centres, it is interesting that the Reclamation group has the lowest number of people that have never worked before, compared to both Eskom and Brook Street. The types of activities that collectors at Reclamation had previously been involved in were also more diverse. There also appears to be a relationship between the areas in which the buyback centres are situated, and the waste pickers' previous type of employment. A large portion of the sample at Brook Street (25%) said that they had previously been involved in an informal business, while 40% of those operating at Eskom indicated that they had previously been working in a factory. This is probably linked to the type of economic activities found around the buyback centres. Brook Street was located in an area where informal trading and other informal activities are prevalent, while Eskom is located in a light industrial area, surrounded mostly by factories.

Considering gender and previous types of employment, it is clear that this sample represents the status quo. The relationship between gender and previous employment type is shown in figure 5.6 below. Jobs that have traditionally been male dominated, such as jobs in different trades like welding, plumbing and plastering, were found to be entirely male dominated in this study. The only exception to this recorded was factory work, where 36% of those recorded as previously working in this field were women. A high proportion of those working in informal businesses previously (89%) were women, and other areas of work where women previously were found included domestic work, farm labourers, and being a housewife. As is evident, the previous work opportunities of men show a greater variety of types of work. One could argue that these results confirm that women with few skills have less job opportunities open to them compared to men.

Figure 5.6



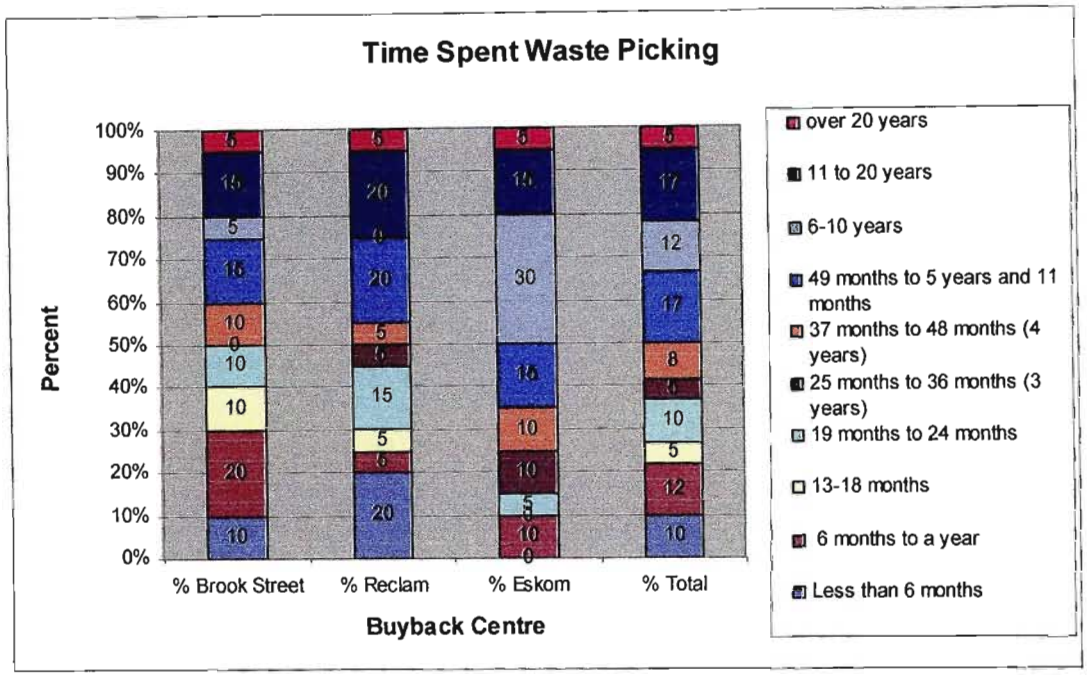
The results of this study confirm that skills gained in the formal sector are not being used in the informal sector. Only one respondent claimed to have been previously employed in the recycling field. This particular individual said that he had worked at the Reclamation Group branch in another town (Matatile), but was now working as a waste picker in Durban. This is similar to the findings of Skinner, who interviewed informal sector workers in Durban's central business district, and found that the skills learnt in the formal sector were not necessarily being used in the informal sector (Skinner, 2006: 130).

5.3.2. Transitional employment

In order to determine whether waste picking is indeed a transitional form of employment, which individuals enter into until a better work opportunity comes up, it was necessary to ask the waste pickers interviewed how long they had been collecting scrap. Responses ranged from 1 day to 40 years, and the average time spent in waste picking was 6 years and 7 months. The answer given most often (mode) was 5 years, and the median was also 5 years. If one groups the results into categories, 22% of the respondents indicated that they had been working as a waste picker for a year or less. The two categories with the most number of respondents was the between 4 and 6 years category, and the 11 to 20 years category, both of

which constituted 17% of the sample each. Twenty four percent of the total sample had been collecting waste for 6 years or more. Figure 5.7 shows the time spent waste picking for each buyback centre, as well as for the sample as a whole.

Figure 5.7



Considering each individual buyback centre, at Brook Street responses to time spent working in waste picking ranged from 1 day to 21 years. The average time spent waste picking was 5 years, 1 year and 7 months lower than that of the entire sample. The most common response (mode) was 1 year while the median was 3 years. Grouping the responses, it is clear that the largest number of collectors (20%) had been operating for 6 months to a year. Thirty percent indicating that they had been collecting scrap for a year or less, while 40% of the sample had been collecting waste for 6 years or more.

At Eskom, the average time spent waste picking was 7 years and 11 months, 1 year and 3 months more than the average for the entire sample. Responses ranged from 6 months to 40 years working in waste picking, a greater range than that of Brook Street, and similar to that of the entire sample. The largest number of waste pickers (30%) had been working in waste picking for 6 to 10 years. Only 10% of the sample

had been collecting waste for a year or less, significantly less than those at Brook Street, as well as a smaller proportion compared to the sample as a whole. Half the sample had been collecting waste for 6 years or more.

At Reclamation, time spent waste picking ranged from 1 month to 34 years. The average time spent waste picking was 6 years and 11 months, slightly higher than the total sample. The mode and median were the same as for the entire sample, both being equal to 5 years. Grouping the responses showed that there was generally a difference between waste pickers in terms of time spent collecting. Twenty percent each said that they had been in waste picking for less than six months, between four and six years, and 11 to 20 years respectively. Twenty five percent of respondents at Reclamation indicated that they had been collecting for a year or less, a higher proportion than the other buyback centres as well as the sample as a whole. A quarter of the sample indicated that they had been collecting waste for six years or more.

Waste picking was generally found to be an established career for many of the respondents. Overall, 24% of the sample had been collecting waste for 6 years or more, while only 22% had been collecting waste for a year or less. Judging on the type of work, and the ease of entry into waste picking, one would expect it to be a transitional form of employment, where people find refuge before better employment opportunities present themselves (See Birkbeck, 1979, Rogerson, 2001). However, studies have shown time spent in waste picking to differ according to location. McLean found that most of the waste pickers she interviewed had been collecting for 1 to 2 years, while Medina (1998) concluded that the number of years spent waste picking depended on the picker. The results of this study show that waste picking cannot really be considered a transitional activity, as the average time spent in the industry was found to be over 6 years. However, the lack of other opportunities may be the factor that has led to people spending so long in this line of work. The lack of choice to switch to something better could be the reason that so many people have stayed waste picking for so long.

It is also of interest that waste pickers operating at Brook Street had been working in the field on average significantly less time than those operating at Eskom. This could

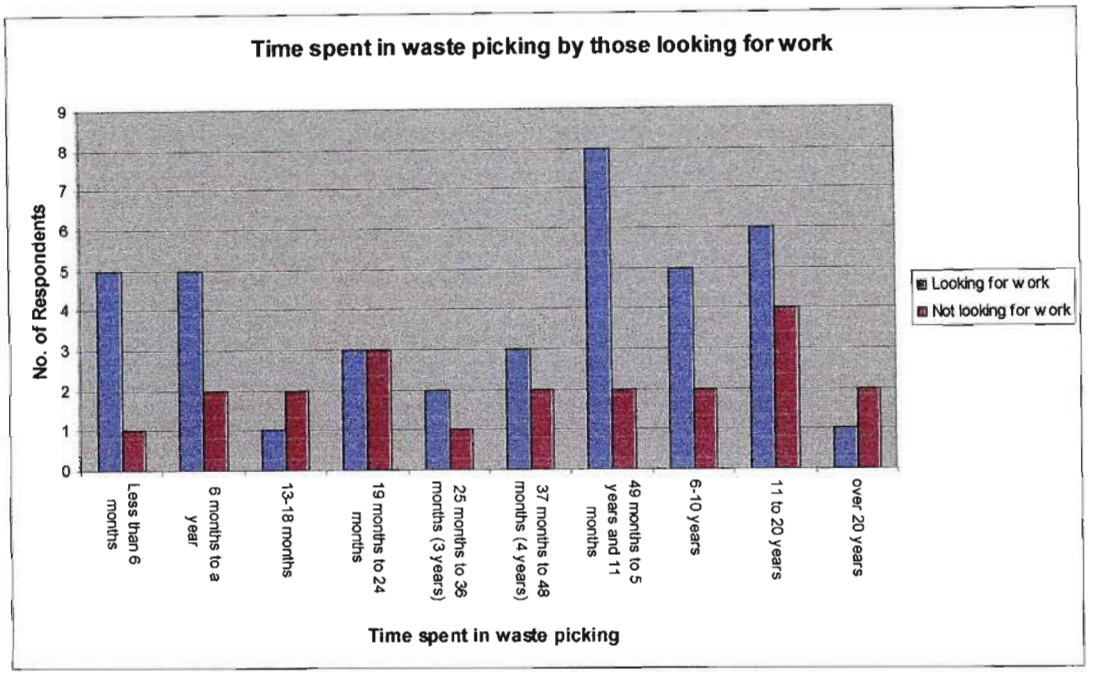
perhaps be explained by the location of the different buyback centres. Eskom was situated in a quiet industrial area, and many of the pickers operating at this location had arrangements with local factories for their waste. This gave these individuals a greater sense of security, as they knew that they would be receiving material, and in some cases they would be able to estimate how much they were receiving. However, Brook Street was located in the CBD of Durban, and many of the waste pickers operating at this centre relied solely on street scavenging for material. These waste pickers had no security as to the amount of material they would receive, or if they would have a regular supply. This may have had an impact on people staying longer at Eskom, compared to Brook Street.

In order to indicate whether or not respondents were looking to move out of waste picking, respondents were asked whether or not they were looking for other work. Sixty five percent of the total sample indicated that they were still looking for other work, while 35% were not looking.

Considering each buyback centre, the majority of the waste pickers at Reclamation (85%), and most of the pickers at Eskom (65%) were still looking for work. Only Brook Street had a higher portion of respondents indicating that they were no longer looking for work. Here, just under half of the respondents (45%) indicated that they were still looking for work.

One would expect there to be a relationship between the amount of time spent waste picking, and whether or not the individual would be looking for work. It was assumed that people who had been in the industry a relatively short time would be looking for work, and when they found this not to be forthcoming job search would cease and waste picking would be accepted as the only way in which to make a living. The relationship between these two variables was explored, and the results are shown in figure 5.8.

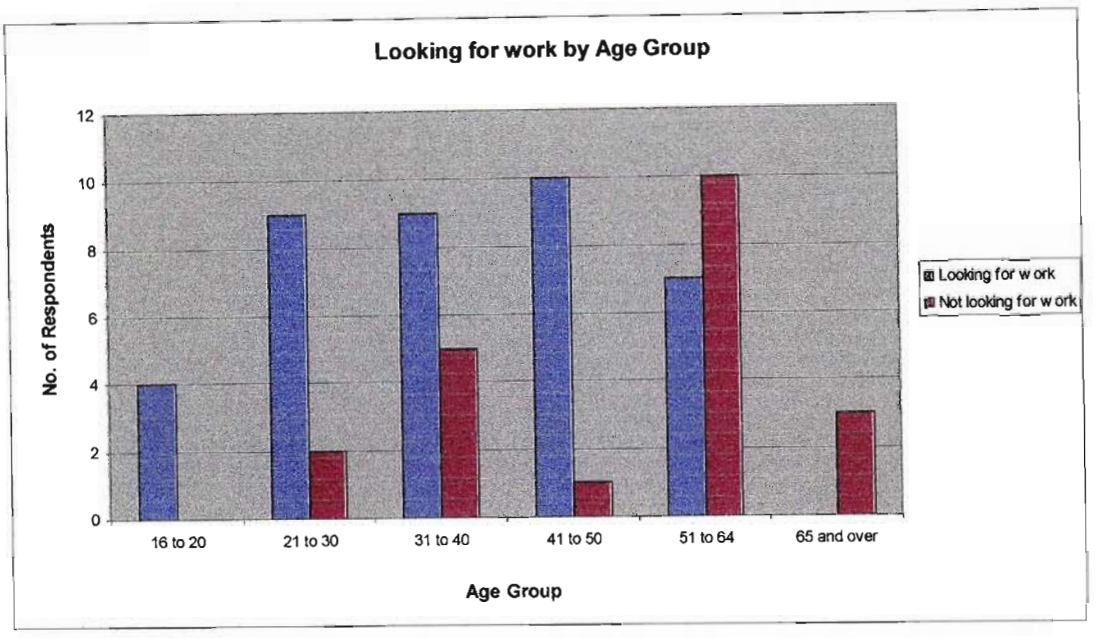
Figure 5.8



The graph shows that while those that have been in the industry for less than a year are mostly looking for work, as are those that have been in the industry for 4 to 5 years. There appears to be little in the way of a relationship between these two variables. Of the waste pickers that have been in the field longer than 10 years, about half of them have not given up searching for a different job.

One would also expect that younger waste pickers would be more likely to be looking for other employment. With their whole lives ahead of them, it was assumed that the younger waste pickers would be seeking new opportunities, while one would expect older waste pickers to be less attractive from an employment point of view. This relationship between age and those seeking work was confirmed. Figure 5.9 shows this relationship.

Figure 5.9



The relationship between the two variables is clearly shown in the graph. Nearly all the waste pickers under the age of 30 are looking for work, while the majority of the waste pickers above the age of 50 are not looking for a job.

The relationship between gender and those looking for work was also of interest. The results showed that the majority of those looking for work were male. Eighty two percent of the males were looking for work, as opposed to only 42% of the females. The reason for this could be because the men in the sample are relatively younger than the women.

Those that were looking for work were asked what kind of work they were looking for. A large portion of those looking for work (31%) indicated that they would take any available job, while 8% said they were looking for any better job than waste picking. Thirteen percent of those looking for work were looking for employment in painting, and none of the other jobs mentioned constituted more than 10% of those looking for work. However, the majority of the jobs mentioned by the waste pickers looking for work were in the construction or building industry. This is shown in table 5.3.

Table 5.3: Jobs sought after (Percentage of those seeking work)				
	% Brook Street	% Reclam	% Eskom	% Total
Any available job	44	24	31	31
painting	22	12	8	13
welding	11	6	0	5
any available and permanent job	11	0	0	3
Any better job	11	6	8	8
plumbing	0	12	0	5
cleaning	0	6	8	5
A job in local government	0	6	0	3
Technical or factory work	0	6	15	8
Plastering	0	0	0	0
something in the building industry / construction	0	12	0	5
Carpentry	0	6	0	3
domestic work	0	6	0	3
Office work	0	0	8	3
Driver	0	0	15	5
Nursing	0	0	8	3
Total	100	100	100	100

At Brook Street, the respondents that were looking for work were not particularly concerned with the type of work. Forty four percent were looking for any available job, 11% were looking for any available and permanent job, and another 11% were looking for any better job. The only jobs mentioned as being particularly sought after was painting (22%), and welding (11%).

At Eskom, 31% of those seeking a job were looking for any available job, while 8% were looking for any better job. Some were seeking technical or factory work (15%), while others were looking for work as a driver (15%). Other sought after jobs included nursing (8%), office work (8%), cleaning (8%), and painting (8%).

Reclamation had the largest number of respondents seeking after specific types of work. Only 24% indicated that they would take any available job, while 6% indicated that they would be prepared to take any better job. Twelve percent were seeking anything in the building and construction industry, while 12% respectively were seeking jobs in plumbing and painting.

It has already been established that many of the waste pickers already have skills in different areas, based on previous employment experience. In order to investigate

whether waste pickers were looking for jobs in their areas of expertise, the relationship between previous employment and employment sought was analysed.

It was determined that the majority of the waste pickers were looking for work in their previous area of employment. For example, all of those that are seeking a job in the construction industry had experience in this sector. Two thirds of those looking for factory work had worked previously in this area, while the remaining third of those seeking factory work had experience in gardening. Generally, respondents were looking for work in the field that they had previously been involved in. However, there were some exceptions to this. For example, none of those with previous experience in domestic work were looking for work in this field, instead, all of those that were looking for domestic work had experience as farm labourers. These results further emphasise that waste picking is a job that many are not involved in out of choice. Generally, those looking for employment would prefer to be involved in their previous line of work, as opposed to waste picking.

While the type of employment sought by waste pickers points to the fact that these individuals enter into waste picking out of a need to survive, it was also necessary to ask them why they collected scrap as opposed to doing other types of work. This will aid in determining whether or not the people engaging in waste picking are choosing this as a job, or are involved in it in order to survive and meet basic needs. Table 5.4 shows the responses for each buyback centre, as well as the sample as a whole.

A large proportion of the sample (65%) said that they were involved in waste picking because there were no other jobs available, or it was the only thing that they could do to get money. While there were a number of other responses, as illustrated by the table, the majority of these do not suggest that the respondents are in waste picking out of choice. Responses such as "I am too old to get another job", or "I am crippled so nobody is going to employ me" do not suggest that the waste picker is in this occupation by choice. One picker even said that waste picking was an alternative to criminal activity as a means to make money. If one groups those responses that indicate that the waste picker is not in this line of work by choice (highlighted in yellow in the table), 84% of the waste pickers fall into this category.

Table 5.4: Reasons for collecting scrap				
	% Brook Street	% Reclam	% Eskom	% Total
There are no other jobs available / I haven't found another job / Only way to get money	65	55	75	65
there are no jobs available for foreigners	5	0	0	2
I am used to doing this kind of work	5	0	0	2
There is money to be made in this	5	5	0	3
I'm too old to get another job	10	0	0	3
I don't have an ID	5	0	0	2
I can do it in my spare time	5	0	0	2
It is easier for me because I have a car	0	5	0	2
I am not properly educated, so it is the only job I can get	0	10	0	3
I have no money to start a business	0	5	0	2
Only thing I can do to get money	0	10	0	3
I can get money from something free	0	5	0	2
To keep me occupied	0	5	0	2
I am unwell / crippled so nobody is going to employ me	0	0	5	2
It is quick money - you don't have to wait the whole month	0	0	10	3
I don't want to steal - only other way to avoid starvation	0	0	5	2
A friend suggested I collect scrap	0	0	5	2
Total	**100**	**100**	**100**	**100**

If one considers each buyback centre, Brook Street was basically in line with the complete sample, with 65% of the sample indicating that they were in waste picking because they could not find another job. Ten percent indicated that they were too old to get another job, while 5% pointed out that there were no jobs available to foreigners, forcing this respondent to go into waste picking. Five percent said that they had no ID, which meant that getting employment would be difficult. Altogether, 85% of the respondents indicated that they were not in waste picking out of choice. Fifteen percent gave more positive responses, indicating that they were in waste picking because of a variety of reasons, including "I am used to this kind of work" (5%), "there is money to be made in this" (5%), and "I can do it in my spare time" (5%).

At Eskom a larger proportion of the sample (75%) indicated that they were in waste picking because there were no other available jobs. One individual indicated that they were unwell or crippled, so nobody would employ them (5%), while another respondent indicated that they picked so that they had money, and didn't have to steal (5%). As with Brook Street, 85% of the waste pickers interviewed were clearly

not in the field of work out of choice. Other responses were more positive, with 10% of the sample indicating that they were in waste picking because of the quick money, as pickers are paid as soon as they exchange material. One respondent (5%) said that they were in waste picking because a friend suggested they collect scrap.

At Reclamation, 55% of the sample indicated that they were in waste picking because there were no other jobs available. However, many other responses pointed to the fact that waste pickers were not in this line of work out of choice. Ten percent of the sample indicated that they were not educated, so they could not get another job, while another 10% said it was the only thing they could do to get money. Five percent said that they were in waste picking because they had no money to start a business. Altogether, 80% of the sample at Reclamation was not in waste picking by choice. Others gave different responses, which indicated possible choice of job. These included responses such as "there is money to be made in this", "it is easy for me because I have access to a car", "I can get money from something free", and "it keeps me occupied". All of these responses constituted 5% each of the total sample.

While some responses clearly indicate that the waste picker is not in this line of work by choice, other responses are positive about the work. However, this does not necessarily mean that these waste pickers chose this type of work. It could mean that they have accepted it as part of their existence, and have chosen to be positive about it.

The literature on waste picking suggests that waste picking provides work for those desperate for employment, who cannot find work in the formal sector of the economy. These individuals do not have capital or assets to start a business, either formal or informal. As Wilson et al point out, 'Inability to enter more conventional occupations and the resulting absence of real choice needs to be recognized' (Wilson et al, 2006: 7). This study confirms this, showing that the majority of the waste pickers interviewed were in this type of work because there were no better jobs available to them. Waste picking is a means to survive for the majority of the individuals interviewed.

5.3.3. Time spent working

Respondents were asked how many days they spent collecting scrap. One respondent replied that he did not know as it was his first day working, and this respondent was therefore omitted from the analysis, resulting in a total sample of 59 respondents. The average number of days per week spent collecting scrap was 5.5, or 5 and a half days. The most common response was 5 days, and the median was also 5 days. Responses ranged from 7 days collecting scrap, to only 2 days. The standard deviation of the sample was low, at 1.1. The grouped responses are shown in table 5.5. As is clear, nearly half (42%) indicated that they worked 5 days a week.

Table 5.5: Number of days spent working

No. of Days a week	% Brook Street	% Reclam	% Eskom	% Total
1	0	0	0	0
2	0	5	0	2
3	11	5	0	5
4	0	5	0	2
5	16	40	70	42
6	74	20	0	31
7	0	25	30	19
Total	**100**	**100**	**100**	**100**

Considering each buyback centre, responses at Brook Street ranged from 6 days spent working, to three days. On average, respondents spent 5.5 days working, exactly the same as the results for the entire sample. The mode and median of the Brook street sample was slightly higher than that of the sample as a whole, at 6 for both. The sample at Brook Street was clustered to a greater extent around the mean, compared to the sample as a whole. The standard deviation was therefore lower than the entire sample, at 1.0. Looking at the way in which the responses can be grouped, 74% indicated that they work for 6 days a week, significantly more than the sample as a whole.

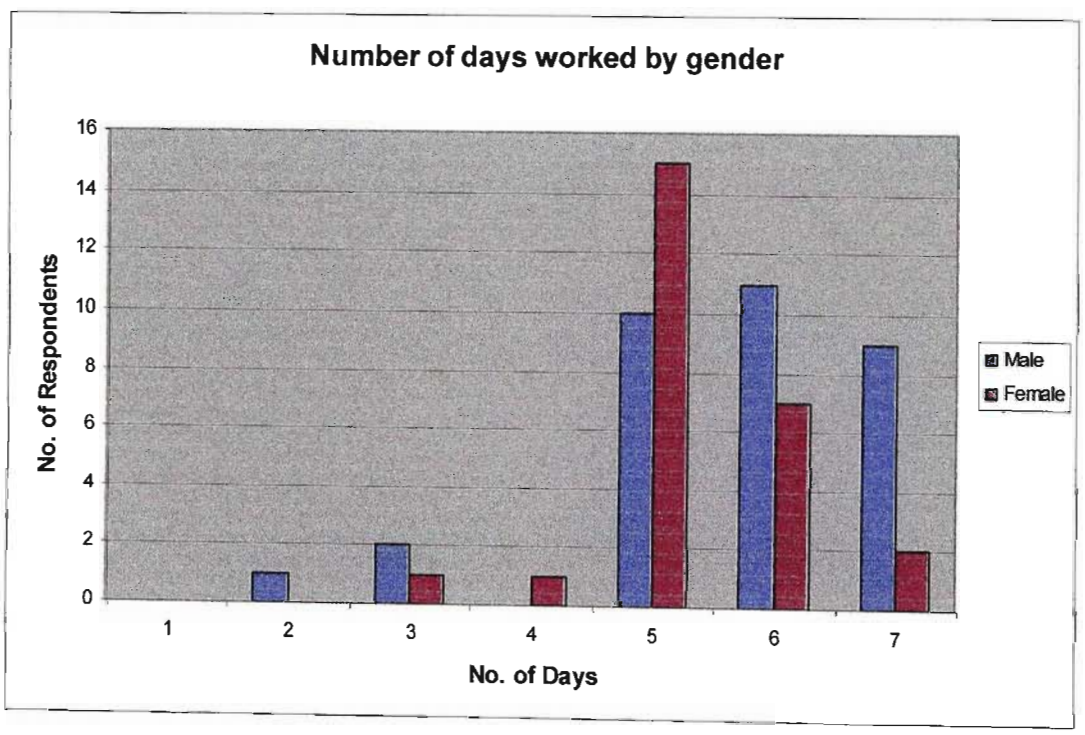
At Eskom, the responses were far less varied, and responses were either 5 days spent working, or 7 days spent working. The average number of days spent working for those selling material to Eskom was 5.6, slightly higher than the sample as a whole. The most frequent response was the same as for the sample as a whole, at 5 days a week. The median was also the same as for the sample as a whole, at 5

days. The standard deviation of the sample at Eskom was lower than that of the sample as a whole, at 0.9. Overall, 70% of the sample worked for 5 days, while 30% indicated that they worked for 7 days a week.

The respondents at Reclamation showed greater variety in the number of days spent working. Responses ranged from 2 days to 7 days, and the average number of days spent working was 5.4, slightly lower than the sample as a whole. Both the mode and median were the same as the sample as a whole, at 5. As can be expected, the standard deviation was higher than that for the sample as a whole, at 1.4. If one groups the responses, it is clear that far fewer individuals (only 40%) chose to work a 5 day week.

Looking at the relationship between gender and the number of days worked per week, it appears that there was a greater variety in the types of responses from males, compared to females. This is shown in figure 5.10 below. The majority of the women worked around 3 to six days, while the men appear to either work around 2 to 3 days, or from 6 to 7 days.

Figure 5.10



It is clear that the majority of the waste pickers worked a normal working week in terms of the number of days spent working (mode = 5). These finding are supported by McLean, who found that the majority of the waste pickers she interviewed worked for either 5, 6, or 7 days collecting. However, it is important to also consider the hours worked per day.

Respondents were asked how many hours a day, on average, they worked. Only one respondent said that he did not know how many hours a day he worked, as it was his first day working. He was therefore omitted from the sample, resulting in a total sample of 59 respondents. The average number of hours worked per day by waste pickers was 7.9 hours, close to a complete working day of 8 hours. Reponses ranged from those that spent 2 hours a day working, to those that worked for 13 hours. The most common response was an 8 hour working day, and the median was also 8 hours. The standard deviation of the sample was 2.6. If one groups the responses, 17% of the sample indicated that they worked for 8 hours a day, while 15% said they worked for 10 hours. Fourteen percent said that they worked for 9 hours a day. Nearly half the sample (46%) indicated that they worked more than 8 hours a day, more than a standard working day.

At Brook Street the individual who pointed out it was his first day working was omitted from the analysis for how many hours worked per day. For the remainder, the average number of hours worked per day was 7.6, slightly less than the sample as a whole. Responses ranged from 2 hours work per day, to 12 hours per day. The most common response for number of hours worked per day was 11, significantly higher than the average for the sample. The median was closer to the average, at 8 hours. The standard deviation was therefore higher than for the sample as a whole, at 3.2. Grouping the responses, a large portion (21%) indicated that they worked for 11 hours a day, while 16% each indicated that they worked for 10 hours or 8 hours respectively. Overall, 42% of the sample indicated that they worked more than an 8 hour day, slightly less than for the sample as a whole.

Considering Eskom, responses ranged from those that worked a 5 hour day, to those that worked 11 hours a day. On average, waste pickers operating at Eskom worked for 8.6 hours, significantly more than the average for the sample as a whole.

The most common response to how many hours worked per day was 8 hours or 9 hours, while the median was 9 hours. Both the median and mode were relatively close to the average indicating a low standard deviation. The standard deviation was found to be 1.6, significantly lower than for the sample as a whole. Grouping the responses, 25% indicated that they worked for 9 hours a day, while another 25% indicated they worked for 8 hours a day. Twenty percent of the sample said that they worked for 10 hours a day, while 60% indicated that they worked for longer than 8 hours a day, significantly higher than for the sample as a whole.

At Reclamation, on average the waste pickers reported working for 7.4 hours a day, slightly lower than for the sample as a whole. The most common response was surprisingly high, at 9 hours, while the median was closer to the average, at 7.25 hours. The maximum number of hours worked was 13, while the minimum was 3. The standard deviation of the Reclamation sample was slightly higher than for the sample as a whole, at 2.7. Grouping the responses, 15% of the sample indicated that they worked for 9 hours a day, while 10% each indicated that they worked for 3 hours, 5 hours, 6 hours, 7 hours, 8 hours, and 10 hours respectively. Overall, only 35% of those working at Reclamation indicated that thy worked more than an 8 hour day, less than that of the entire sample as well the other buyback centres.

Overall, it appears that the waste pickers operating at Eskom worked the hardest, averaging higher than the other buyback centres for both the number of days worked, as well as the hours worked per day. Waste pickers operating at Reclamation were found, on average to work the least amount of days per week and hours per day compared to the other buyback centres.

When one compares the number of days worked per week to the number of hours worked per day, there appears to be no relationship between these variables. Some of those working less than 3 days a week worked for between 11 and 13 hours a week, while some only worked for 6.5 hours a day.

What these results prove is that in general, waste pickers clearly work long hours, many of them putting in more than a standard working day, and some working up to thirteen hours to collect material. Waste pickers, essentially are in business for

themselves and are not bound by specific working hours. However, waste pickers operating on dump sites in contrast are often dependent on when the authorities will allow them to pick (see Walters, 2002, and Tevera, 1994). For street waste pickers, such as the participants in this study, these constraints are not in place.

5.3.4. Materials collected

Respondents were asked if they collected any of the following types of material: Paper, cardboard, plastics, glass, cans, or metal. These are the main materials recycled in South Africa. For the sample as a whole, it was found that the item most popular for collection was metal. Sixty seven percent of respondents indicated that they collected metal, which is not surprising considering it is the commodity that fetches the greatest price for recycling. Sixty two percent of the sample indicated that they collected cardboard, while only 37% said that they collected plastics. Cans and paper fetched 17% and 18% respectively, while only 8% of the total sample indicated that they collected glass. Fifty two percent of the sample indicated that they only focussed on one material, while 23% said that they collected two materials. Three percent indicated that they collected three materials, while 21% collected 4 or more materials.

Waste pickers were also asked to indicate, in cases where they collected more than one material, which material they collected the most of. This allowed the researcher to determine which material the waste picker focussed on. Overall, 52% of the entire sample focussed on metal as the main material for collection, while 40% focussed on cardboard. Seven percent collected the mostly plastics, while only 2% collected primarily paper.

At Brook Street, collectors seemed to specialise in two materials. Sixty five percent of the sample indicated that they collected cardboard, while 60% said that they collected metal. Not one waste picker collected plastics, glass, or cans, but 5% indicated that they collected paper. Most waste pickers at Brook Street (70%) focussed on collecting one material, while 30% collected two types of materials. Overall, waste pickers at Brook Street tended to focus their efforts on metal (50% of

the sample), or cardboard (45% of the sample). Five percent of the sample chose to collect primarily paper.

The results at Eskom showed that these waste pickers focussed on a variety of different materials, compared to Brook Street. Plastic was the most common material collected, with 95% of the sample indicating that they collected this. Ninety percent of the sample also claimed to collect cardboard, while 40% and 45% collected paper and metal respectively. Thirty percent collected cans, and only 20% said that they collect glass. Waste pickers at Eskom were more eager to collect a greater range of materials, with only 15% indicating that they collected one type of material. Thirty percent collected two types of recyclables, while 5% collected three types. Half of the sample (50%) collected four or more types of materials. Cardboard appeared to be the material of choice for collection, with 70% of the sample indicating that they collected the most of this. Twenty percent chose to focus on plastics, while 10% collected primarily metal.

At Reclamation, metal collection dominated, with 95% of the sample collecting this. Other materials were less dominant, with only 30% collecting cardboard, 25% collecting cans, and 15% collecting plastics. Only 5% of the sample indicated that they collected glass, and 5% said they collected paper. Most of the waste pickers at reclamation (70%) chose to collect one type of material. Looking at the material that waste pickers chose to focus on, 95% of the sample collected the mostly metal, while only 5% indicated that they focussed on cardboard.

In terms of the types of materials collected, these results are not surprising, and are confirmed by previous studies (see McLean 2000a and 2000b, Walters, 2002). McLean (2000b) found that the most popular items collected by waste pickers operating in the Glenwood area of Durban were scrap metal and cardboard, the same two commodities that were found to be popular in this study. However, McLean also found that not one of the waste pickers that she interviewed collected plastics or glass. This study covered a greater number of buyback centres, which traded in a greater variety of materials. This accounts for the greater range in types of materials collected. Had it not been for Eskom, and the fact that this buyback centre specialises in plastics, figures for plastic collection would have also been low.

At each of the buyback centres in this study, one or two commodities clearly dominated.

There appeared to be a relationship between the type of material collected and gender. Figure 5.11 shows the number of individuals of each gender specialising in each commodity. As is clear, it appears that while the women tended to specialise in cardboard, the men focussed on metal. Women also dominated in plastics collection, and a few of them also collected metal as their main material. Only one man concentrated most of his efforts on paper collection.

Figure 5.11

Respondents were also asked if they collected any other material, apart from paper, cardboard, plastics, glass, cans, or metal, nearly all the respondents (95%) said that they did not collect anything else, while one respondent (2%) indicated that he collected stones, and 2 respondents (3%) said that they collected bottles, probably for reuse rather than recycling. The individual collecting stones in addition to recyclables was operating at Reclamation, while those collecting bottles were operating at Eskom.

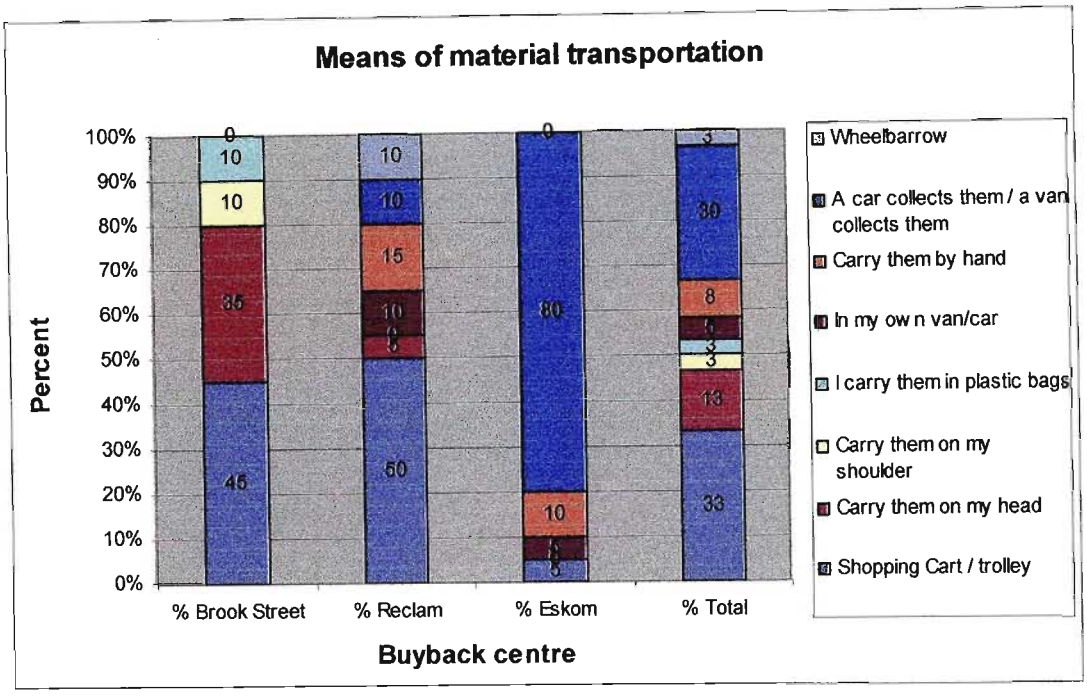
The literature suggests that items picked are anything of perceived value. While there were not many responses for other items picked, it is logical to assume that if a picker came across an item of value, it would not be passed up. Pickers are rational

economic actors, and if they come across an item that can be used or sold, it is likely that they will take it. However, the waste pickers in this study were rather commenting on items that they collected regularly, rather than items that they came across occasionally.

5.3.5. Material transportation

In waste picking, the volume of material collected determines the waste pickers' income. Intrinsically linked to this, is the means of transportation available to the waste picker to move volumes of material. A more convenient form of transportation for material will allow the waste picker to cover a wider area, and to collect greater volumes of material. This will give the waste picker the potential to earn a greater income. Respondents were asked how they usually transported the material they collected to the buyback centre. About a third of the sample (33%) indicated that they used a shopping cart, or a trolley of some description, while 30% had their material collected by a middleman with a van, truck, or car. These individuals were operating in New Germany, near Eskom buyback centre. Thirteen percent of the sample carried the material on their heads to the buyback centre, while 8% carried the material by hand. Five percent of the waste pickers interviewed had their own car or van to transport the materials. All other responses constituted less than 5% of the total sample. The different responses for each buyback centre, as well as the sample as a whole are shown in figure 5.12.

Figure 5.12



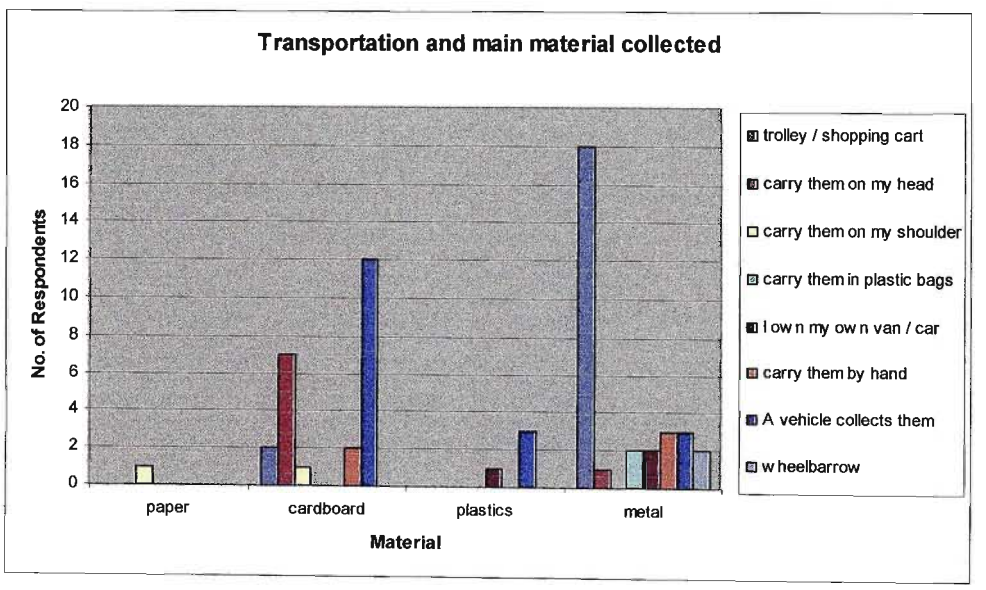
Looking at each individual buyback centre, it is clear that different forms of transportation dominated at different places. At Brook Street, nearly half the sample (45%) indicated that they used a shopping cart or trolley to transport material to the buyback centre. Thirty five percent of the sample said that they carry the material on their heads, while 10% carried the material on their shoulder. The remaining 10% carried the material in plastic bags.

At Eskom, nearly all the collectors interviewed usually had their materials fetched by a middleman with a truck. As mentioned in chapter 4, in order to achieve a full sample of 20 waste pickers for this area, the manager of the buyback centre introduced the researcher to a number of waste pickers operating in the area, who sometimes sell waste back to Eskom. However, these individuals usually relied on a middleman with a vehicle to pick up the material and take it to Eskom for them. This accounts for the large number of individuals (80%) at this buyback centre indicating that they rely on a vehicle to collect their material. Ten percent of the sample indicated that they carry the material by hand to Eskom, while 5% said that they carry the material on their head. An additional 5% said that they used a shopping cart or trolley to transport their material.

At Reclamation, half the sample (50%) said that they used a shopping cart or trolley to transport their materials. Fifteen percent indicated that they carry their materials by hand, while 10% used a wheelbarrow. Another 10% relied on a car or van to collect their material (these individuals travelled in the car with their materials and the driver to Reclamation). Ten percent of the sample were lucky enough to own their own car or vehicle, which they used to transport their material, while 5% carried the material on their heads to the buyback centre.

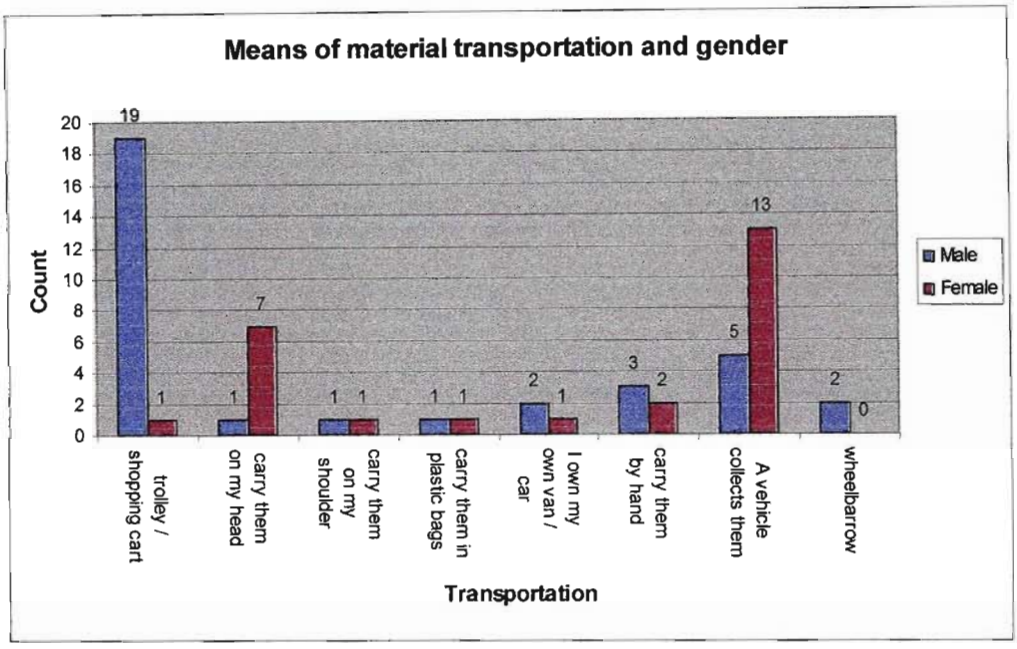
The means of transportation were analysed quite carefully, as this determines not only how much material a waste picker can collect, but also what types of material can be collected. Cardboard can be transported on ones head, as it is flat and relatively easy to manage. Other materials need to be collected either by hand, or in a vehicle or trolley of some description. Metal, in particular, would be difficult to carry by hand. Figure 5.13 shows the transportation types according to the main material collected. As is evident, the majority of those collecting metal do so with a trolley, while those specialising in cardboard tended to transport the material on their head, or by hand.

Figure 5.13



There also appears to be a relationship between the means of transportation and gender. Figure 5.14 shows the number of respondents using each form of transportation. As is clear, 19 men (56% of all men in the sample) have access to a trolley or cart, as opposed to only one woman (4% of all females in the sample). Figure 5.14 shows that more women in the sample relied on a van or car to collect their material, or they carried the material on their heads.

Figure 5.14



The transportation of materials in this study appears to be in agreement with the literature, where it is widely reported that waste pickers carry their material by hand to the buyback centre (see Medina, 1998: 116). McLean (2000b) found that some of the waste pickers she interviewed operating in the Durban area had access to a trolley, while some waste pickers sold back their material to a middleman with a truck. The means of transportation documented in this study are in agreement with this.

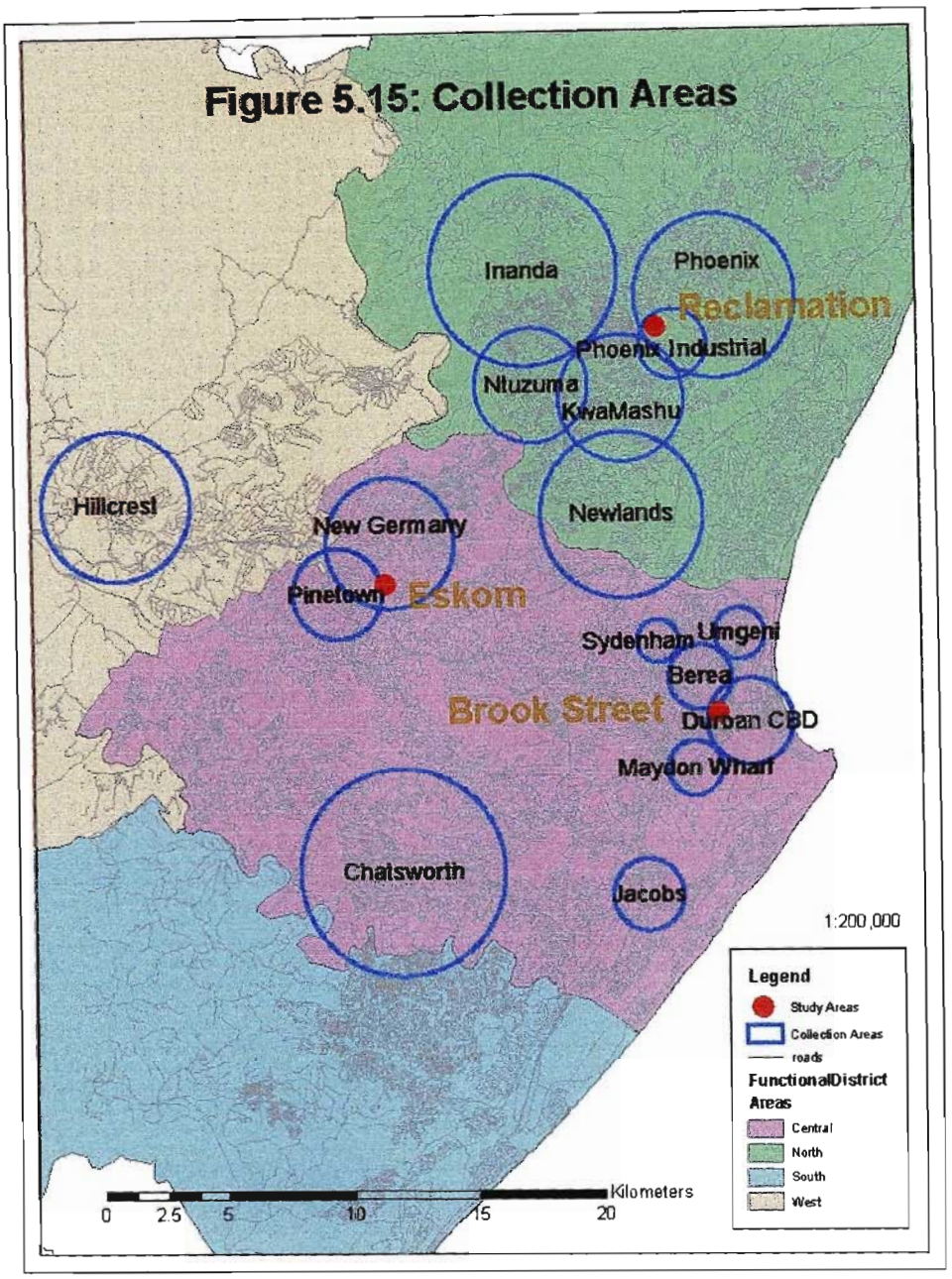
A clear divide in material transportation according to gender has also been pointed to. The literature, however, suggests that this is common in waste picking (See Wilson, 1998 and McLean, 2000b). McLean (2000b) found that men were far more

likely to have access to a trolley to transport their material, while women were more likely to carry material on their heads.

The idea that a waste picker can move up in the informal recycling hierarchy is linked to their means of transportation. Reclamation (2007a), suggest that a waste picker can with time, improve their means of transportation, and expand their business. In order to test this theory, the relationship between the time spent waste picking and the means of material transportation was explored. Waste pickers who had been in the business longer would be expected to have better means of material transportation. However, this was found not to be the case. There was little relationship found between these two variables. Those owning their own vehicle were found to be involved in waste picking on average for 2.6 years, while those owning a trolley or cart were found to be involved in waste picking for 6.5 years on average. The highest number of trolley owners was found amongst those operating for 11 to 20 years, and those operating for less than 6 months. In short, there was no relationship between transportation and time spent in waste picking. Clearly, the waste pickers in this study have not been able to improve their transportation with time. This is more than likely due to the fact that earnings are low, and there is probably little disposable income left to save in order to buy a trolley or a car.

5.3.6. Collection Areas

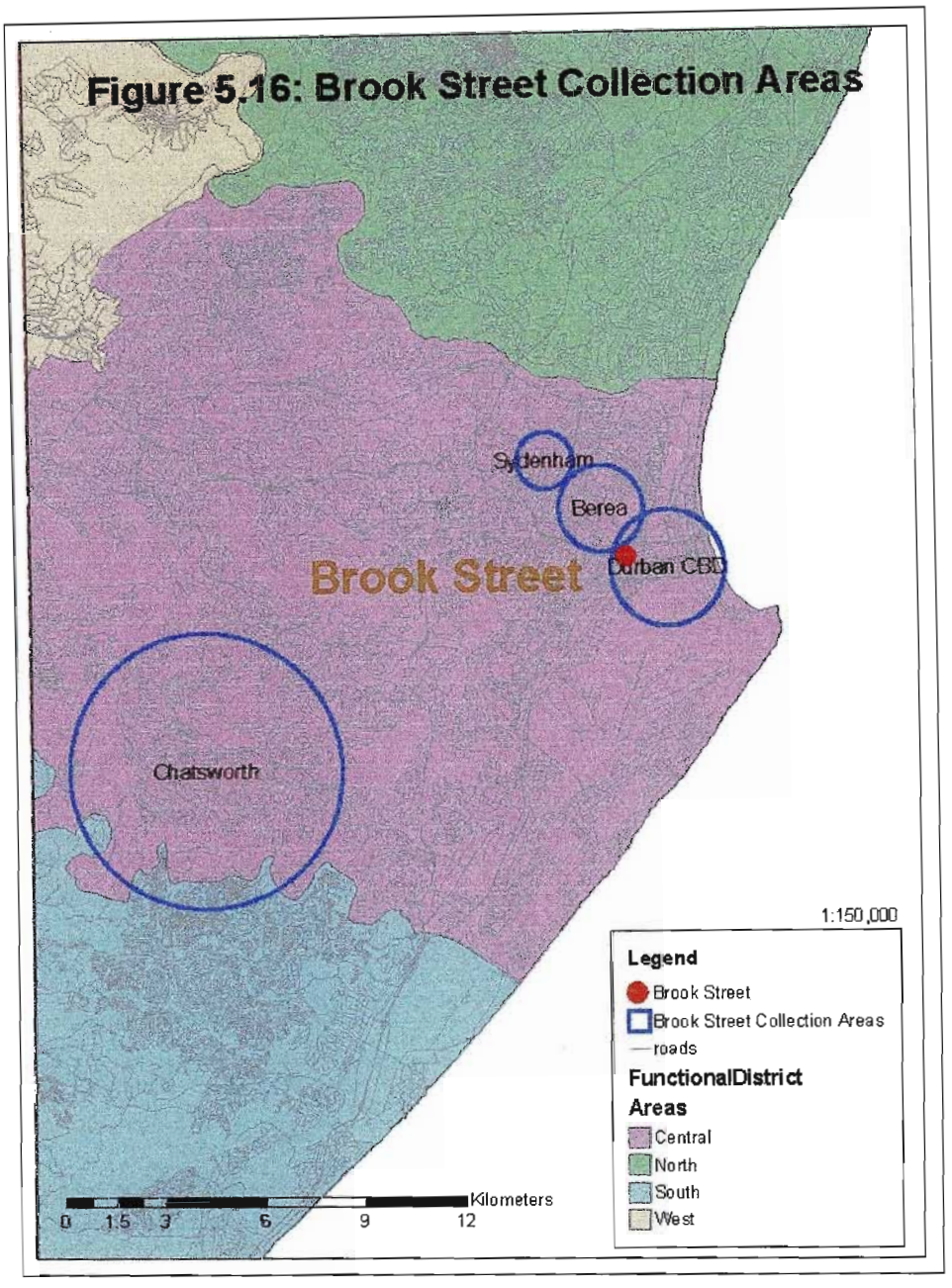
Respondents were asked in which areas they usually collect material. This was done in order to gain a sense of how far the waste pickers travelled for material, as well as whether the waste pickers were territorial. The areas reported by the waste pickers are shown in the figure 5.15.



Analysing this question was difficult as it was only possible to get a vague sense of where the waste pickers collect material. More accurate data could have been gathered through handing the waste pickers a map and asking them to point out the areas where they went for material. However, this would have significantly lengthened the interview, and may have resulted in confusion. It was therefore decided to ask the waste pickers a more general question about where they collect

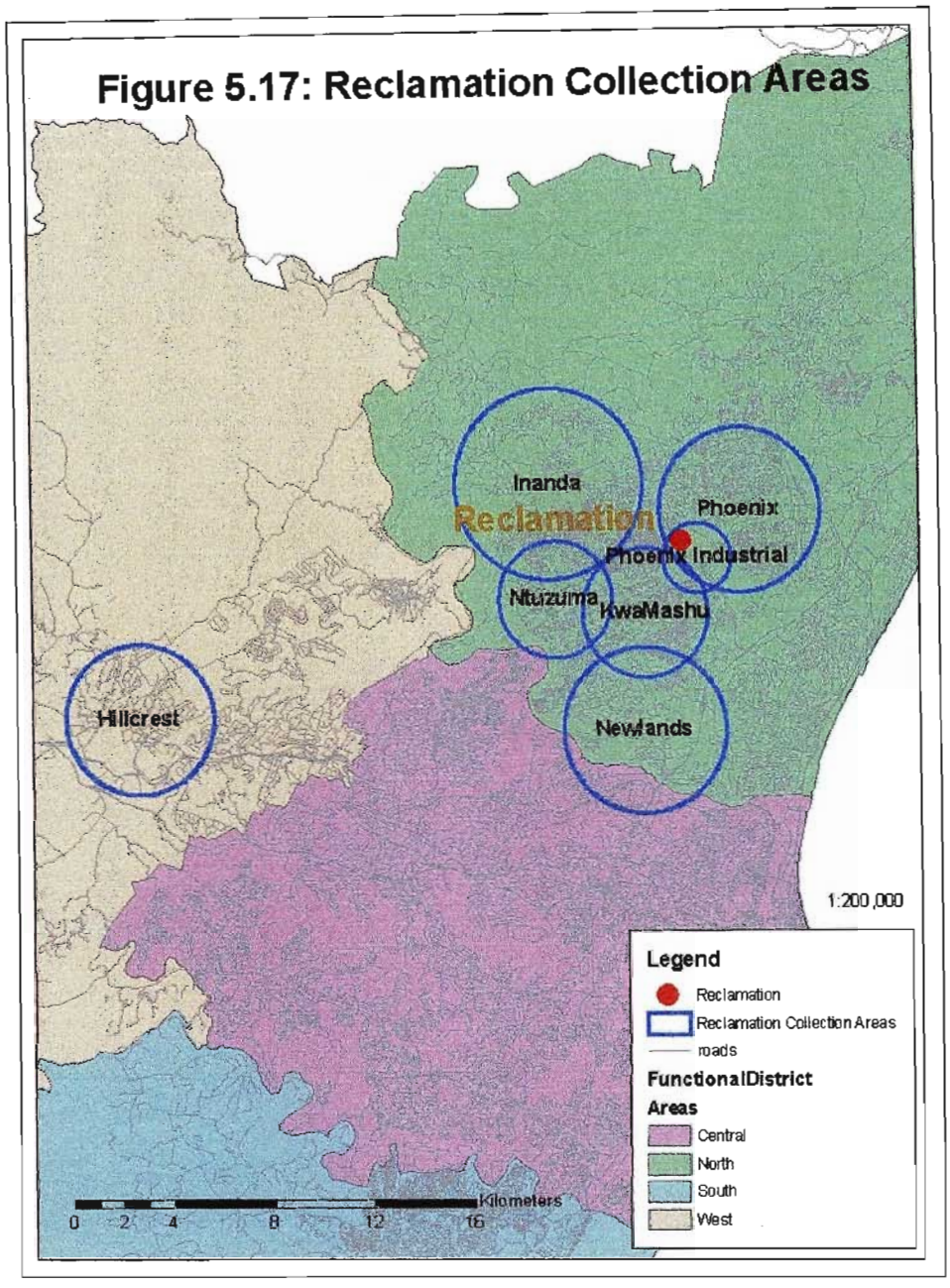
material, in order to gain a sense of this. The negative aspect of this was that mapping the responses was difficult, due to the generalised answers. The circles indicated on the map above are there to give a rough indication of where the areas reported are, and what size they are. What is clear from the above figure, is that the collection areas reported by the waste pickers were generally clustered around each buyback centre. However, there were some exceptions to this trend.

Figure 5.16 shows the collection areas reported by waste pickers operating at Brook Street. The buyback centre is located in the CBD, and it is therefore not surprising that a large percentage of the sample (80%) indicated that they mainly collected materials in this area. However, one waste picker (5%) reported that the Berea was his main collection area, while another (5%) said that he collected material mainly from Sydenham. These areas are primarily residential, and are located outside the CBD. One respondent (5%) reported collecting material in Chatsworth. This area is very far from Brook Street, and this would mean that the waste pickers would have to walk extremely long distances with material in order to reach the centre. It is not surprising that this individual chose to drop off his material at Brook Street because it was the only buyback centre that he knew of. It is also likely that, as this waste picker was operating on foot, he collected material on his way from Chatsworth to Brook Street. Chatsworth was probably not the only area in which he collected material. Five percent of the Brook Street sample (1 respondent) said that he collected material around where he lived, but did not specify where that was.



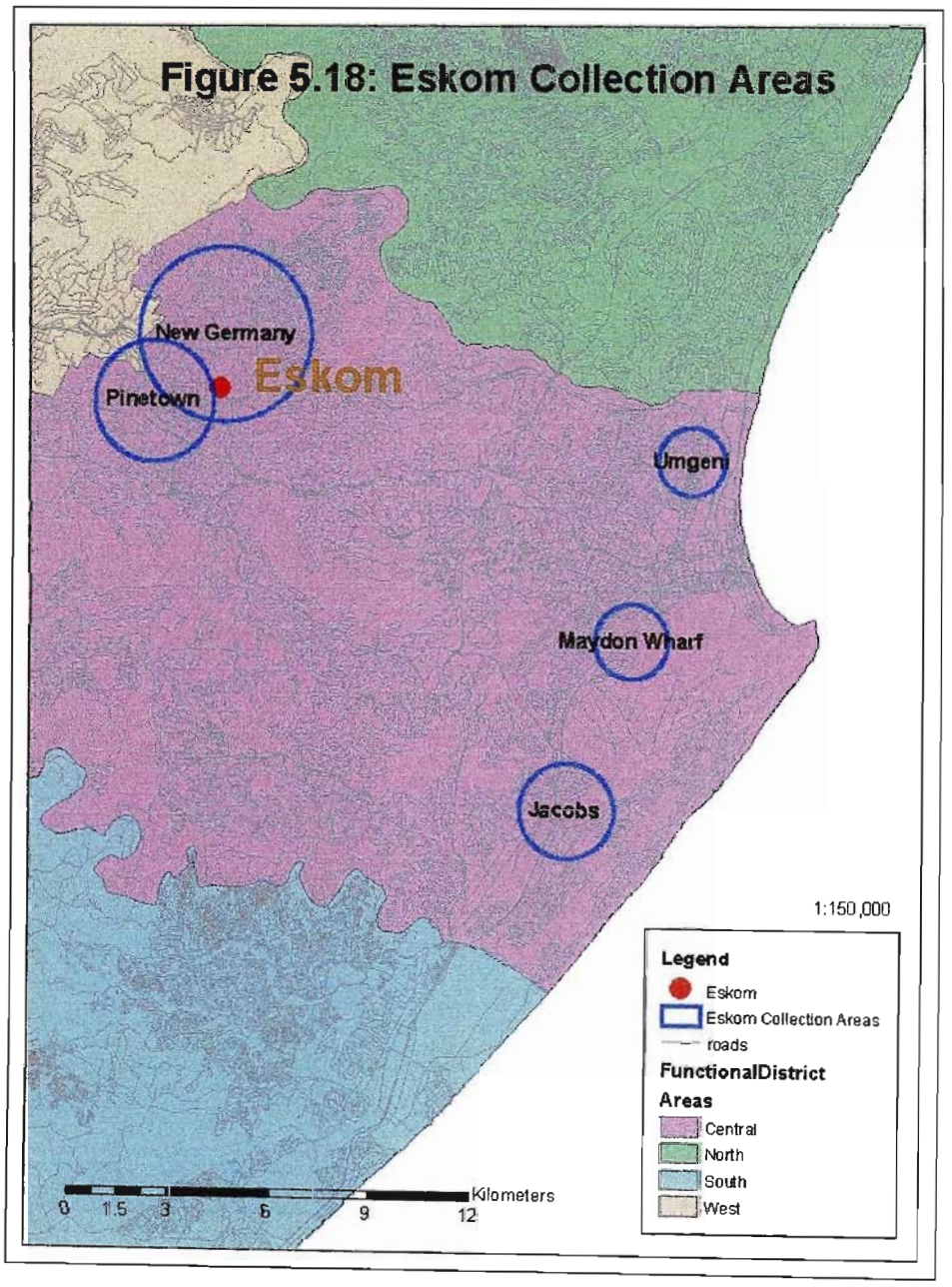
At the Reclamation Group, the majority of the collectors (85%) indicated that they collected material from the areas surrounding the buyback centre, including Inanda, Ntuzuma, Phoenix, Phoenix Industrial, KwaMashu, and Newlands. One respondent (5%) indicated going as far as Hillcrest for material, although this individual had his material picked up by a car. Two respondents said that they collected material from around where they live, but did not specify where that was. The collection areas

reported by those selling back material at Reclamation are shown in the figure 5.17 below.



At Eskom, nearly all the waste pickers (75%) reported collecting materials around New Germany and Pinetown, close to where the buyback centre was located, as there main collection area. Two respondents (10%) said that they collected at Maydon Wharf, while another 2 respondents (10%) said that they primarily collected

material in Jacobs. One respondent (5%) mentioned that they collect material in the Umgeni area of central Durban. Of the individuals collecting at Maydon Wharf, one had his own car, while the other had a trolley to transport the material. The individuals collecting in Jacobs both had the material fetched by a van or a car, as did the respondent collecting scrap in Umgeni. The collection areas reported by waste pickers operating at Eskom can be seen in figure 5.18 below.



The results above give a sense of the areas in which the waste pickers operate. In general, one can say that the waste pickers collected material in the areas surrounding the buyback centres. Where a waste picker was collecting in an area far from the buyback centre in question, generally the waste picker was not transporting the material by hand.

5.3.7. Problems encountered

Respondents were asked what problems, if any, they experience in their line of work. About a third of the sample (30%) said that they had no problems with waste picking whatsoever. Of those that mentioned that they had problems with waste picking, the most common problem reported was that people do not give waste pickers permission to take scrap out of their garbage (26%). Others cited problems with the police (12%) as their main problem, while some pointed out that the variable supply of materials and income (10%) was a problem. The other responses all accounted for less than 10% each of the complete sample. Table 5.6 shows the percentage of those mentioning a problem, for each response.

Table 5.6: Problems with waste picking (% of those mentioning a problem)

	% Brook Street	% Reclam	% Eskom	% Total
Some cardboards have poisonous substances	9	0	0	2
other pickers Steal our cardboard	0	0	9	2
People look down on us	9	0	9	5
Supply of materials varies / variable income	9	10	9	10
Police give us trouble	18	10	0	10
Get injured from carrying the materials	9	0	0	2
The price paid for materials is too low	18	0	0	5
Materials are too heavy to carry	9	0	0	2
Problems with the taxis when we push our carts on the road	9	0	0	2
People do not give us permission to take scrap out of their garbage	9	35	27	26
Snakes / animals / Dogs	0	15	0	7
police think the metal is stolen	0	5	0	2
people think I am a thief	0	10	0	5
Transporting the materials is difficult / transport problems	0	5	0	2
Problems with my car / vehicle	0	5	0	2
The weather - its hard to work if it rains	0	5	0	2
It is hard / tiring	0	0	27	7
It effects my health negatively (asthma)	0	0	9	2
I lack knowledge about recycling - I am unable to pick out the most valuable materials	0	0	9	2
Total	**100**	**100**	**100**	**100**

At Brook Street nearly half (45%) of the sample indicated that they had no problems whatsoever. Of those that stated that they had problems with waste picking, the two main problems pointed out was the police giving pickers trouble (18%), and the price paid for materials was too low (18%). Brook Street was situated in the central business district in Durban, with a more visible police presence. This may account for the greater number of respondents pointing out police harassment as a problem. Other problems included people looking down on the waste pickers because of their work (9%), the variable supply of materials or variable income from waste picking (9%), and having to carry heavy materials (9%). Due to the fact that Brook Street is in the CBD, there is a lot of vehicle traffic around the buyback centre. This is possibly a reason why 9% of those mentioning problems with waste picking pointed out that they have problems with the taxis when they push their carts on the road. Another 9% indicated that home owners give them trouble, when they try to pick scrap from their garbage.

At Eskom, 45% of the sample indicated that they had no problems whatsoever with waste picking. Of those that pointed out that they had a problem, 27% stated that their main problem was that people do not give them permission to take scrap out of their garbage, while another 27% mentioned that the work was hard or tiring. Other responses included that waste picking affected their health negatively (9%), while 9% responded that they lack knowledge about recycling, and so they are unable to pick the most valuable materials. Nine percent pointed out that that the variable income and the inconsistent supply of materials was a problem, while an additional 9% said that the stealing of materials between pickers was a problem. Nine percent also stated that they had a problem with the fact that they were looked down on by people, because of their work.

In contrast to Eskom and Brook Street, every single waste picker interviewed at Reclamation said that they had problems with their work. The main problem stated was that people do not give the waste pickers permission to take scrap out of their garbage (35%), while 15% said that animals gave them trouble, such as home owners' dogs, or snakes in the garbage. Ten percent pointed to an inconsistent supply of materials and a variable income as being a problem, and another 10% said that the police gave them trouble. An additional 10% indicated that people thought

that they were a thief. The remaining responses constituted less than 10% each of the sample for Reclamation.

One of the major problems pointed out by the waste pickers were problems that involved interactions with other people, such as the police or homeowners. Many waste pickers reported that people did not allow them to take material from their garbage, or thought they were thieves. Some also reported having problems with the police, or being looked down on because of waste picking for money. The problem with home owners could be solved if the public had a better understanding of the work that waste pickers do, why they do it, and if they were aware that waste pickers are not criminals but rather than a group of vulnerable individuals engaging in this activity in order to survive.

If one considers problems in waste picking according to gender, it appears that the males interviewed have fewer problems in this line of work, with 32% of all males in the sample indicating that they have no problems with waste picking, as opposed to 27% of the females. More men than women cited problems with the police as an issue, while more women than men mentioned that the work is hard or tiring, and the materials are heavy to carry.

The literature on waste picking has suggested that there are a number of common problems faced in this line of work. Many studies have suggested that waste pickers are often at odds with the police and the local authorities (Rouse, 2006, Medina, 1998). In this study, some waste pickers reported problems with the police (9% of the total sample); however, no waste picker reported having a problem with the local authorities specifically. McLean found that many of the Durban waste pickers she interviewed felt 'frowned upon by local authorities' (McLean, 2000a: 4), but apart from interactions with police, this was not confirmed in this study.

An additional problem with waste picking has been reported to be the health risk related to this type of work (Wilson, 2006, Medina, 1998). The lack of protective clothing and proper equipment means that the picker may be in contact with hazard substances, or sharp objects. In this study, health risks were not pointed out as a major problem by the waste pickers interviewed. Only 6% of the total sample

indicated that waste picking negatively affected their health. One picker claimed that the cardboard collected had poisonous substances on it, while another picker said that waste picking gave her health problems. This waste picker was operating at Eskom, an industrial area, and it could be that the air quality in this area was the problem, rather than the material collected or the process of collection. Another respondent indicated that he got injured from carrying the materials.

Much of the literature suggests that waste pickers are often harassed by home owners (see McLean 2000b: 19, Mazine et al, 1996: 9), and stigmatised by the general public. In this study, two respondents pointed out that people think they are thieves, while another 2 respondents said that people look down on them for waste picking. Eleven respondents (18% of the total sample) said that their major problem was the fact that people did not give them permission to take scrap out of their garbage. The results of this study are clearly in agreement with the literature on waste picking in this regard.

McLean (2000b) found that every waste picker she interviewed had had goods stolen by other waste pickers. This study found that this was brought up as a problem by only one waste picker, and was not a significant problem for most waste pickers.

Other waste pickers suggested that there was a problem with transportation, and moving the materials around. Only one individual mentioned this as his main problem with waste picking. In addition to this, waste pickers are faced with a monopsonistic market, with usually one buyer situated close to the area of collection. Waste pickers are not faced with a great amount of choice as to who to sell their material to. Another problem mentioned in the literature is that waste pickers are often at the mercy of the elements, and their income can therefore be effected by bad weather (Rouse, 2006: 6). In this study, only one individual pointed out that the weather was a problem.

Respondents were asked what could be done to solve the problems with waste picking that they had mentioned. Thirty percent of the sample had not mentioned any problems, and therefore put forward no solutions, while 12% said that they were not

sure what could be done to solve their problems, or they did not know. Of the solutions offered, one clearly dominated. Twenty Seven percent of the entire sample said that their problems could be solved if they were given a better job. This further emphasises the fact that those involved in waste picking are not engaging in this activity out of choice, and the majority wish to move out of this line of work. Five percent of the total sample mentioned that the government should provide them with support. All other solutions offered constituted less than 5% each of the total sample. Table 5.7 shows the solutions offered for the entire sample.

Table 5.7: Solutions to Problems

	% Brook Street	% Reclam	% Eskom	% Total
To find a better job	10	50	20	27
Nothing	0	5	5	3
The municipality should give us permits	5	0	0	2
Government support	5	0	10	5
They should pay a higher price for materials	10	0	0	3
Trucks should collect the materials from us	5	0	0	2
We should be given permission to search everywhere for scrap	5	5	0	3
Not sure / don't know	5	20	10	12
No Problems to solve	45	0	45	30
The government should provide us with jobs	5	0	0	2
People should let us take their scrap	5	0	0	2
Just be honest and do your job	0	5	0	2
The buyback centre should give us a salary	0	5	0	2
The municipality should get us transportation	0	10	0	3
The municipality and the factories should be involved in what we do and help us	0	0	5	2
Education about the different plastics and their usage	0	0	5	2
Total	**100**	**100**	**100**	**100**

At Brook Street, 45% of the sample indicated that they had no problems, while 5% said that they do not know what can be done to solve their problems. Ten percent of the respondents indicated that their problems would be solved if they were to find a better job, while another 10% said that they should be paid more for material. All the other responses constituted 5% or less of the total sample.

Eskom had the same number of respondents as Brook Street (45%) indicating that they had no problems with waste picking, and 10% responded that they do not know what can be done to solve their problems. A large portion of the sample (20%) indicated that their problems would be solved if they were given a better job, while 10% said that they should be provided with government support. All other responses consisted of 5% or less of the total sample.

At Reclamation, all respondents indicated that they had problems with waste picking, and 20% said that they did not know what could be done to solve their problems. Half the respondents indicated that their problems would be solved if they were given a better job, while 10% said that things would improve if the municipality would provide them with transportation for their materials. All other responses accounted for 5% or less of the sample at Reclamation.

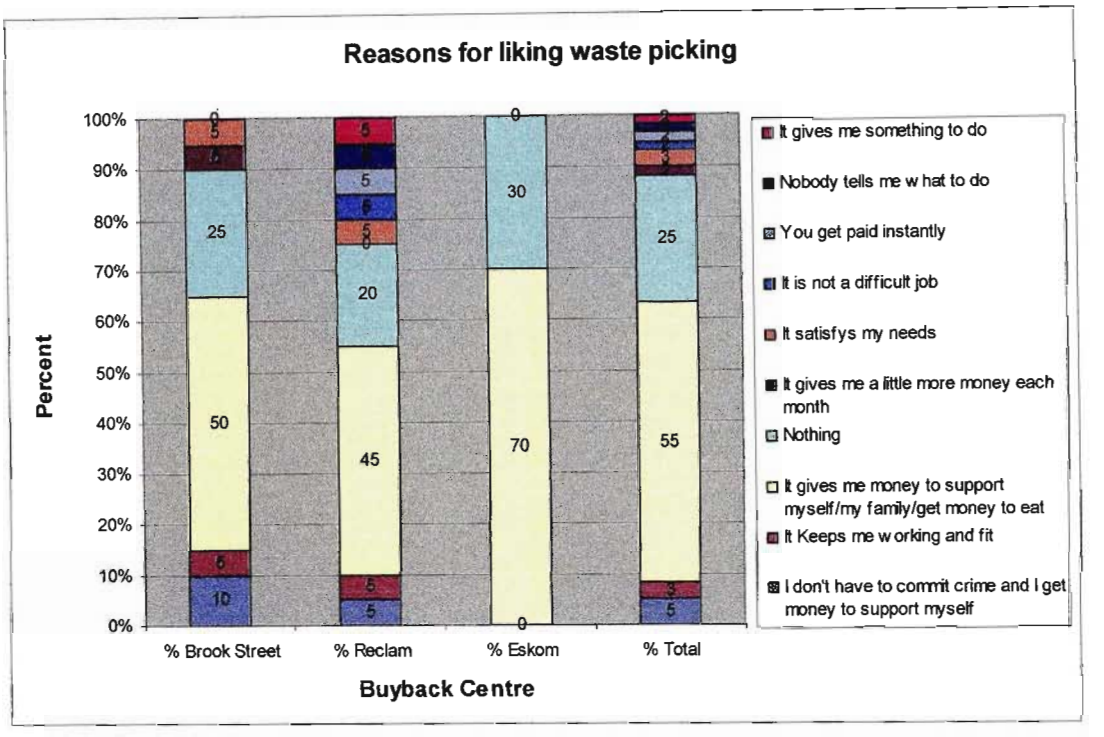
In total, 13% mentioned a solution that involved one of the tiers of government. These ranged from responses concerning national social security, such as government support (5%), and 'the government should provide us with jobs' to responses that focussed on the local municipality. The responses that mentioned local government specifically included one suggestion, that the municipality and factories be involved with waste picking and assist the waste pickers in their work. Others suggested that the municipality should provide them (the waste pickers) with transportation, or provide them with permits. McLean found that many of the waste pickers she interviewed sought recognition for their work, and 'recognition in the form of identifiable clothing was one way in which collectors believed that that their activities could be "legitimised"' (McLean, 2000a: 6). The waste pickers in this study did not specifically mention identifiable clothing as a solution to their problems, but they did point to wanting some form of recognition.

5.3.8. Likes and dislikes about the industry

In order to ascertain if there were any positive aspects to waste picking, respondents were asked if there was anything about waste picking they liked. Over half the sample (55%) pointed to the fact that waste picking helped them to survive, responding that waste picking gives them money to support themselves and their

family, or gives them money so they can eat. A quarter of the sample (25%) indicated that they liked nothing at all about waste picking. All other responses each constituted 5% or less of the total sample. The responses for each individual buyback centre, as well as the sample as a whole, are show in figure 5.19.

Figure 5.19



At Brook Street, half the sample (50%) said that they liked the fact that waste picking helped them to support themselves or their families, while 25% indicated that they liked absolutely nothing about waste picking. These results are similar compared to the sample as a whole. Ten percent liked the fact that waste picking was a substitute for criminal activity. Five percent said that waste picking kept them working and fit, while another 5% said that they liked the fact that waste picking boosted their income each month. Another 5% said that they liked waste picking because it satisfied their needs.

At Eskom the responses were far less varied. The majority of the sample (70%) said that they liked the fact that waste picking allowed them to support themselves, their families, or to get money to eat. The remaining 30% said that they liked nothing at all about waste picking.

At Reclamation the responses were more varied than at the other buyback centres. Only 45% indicated that they liked the fact that waste picking gave them money to support themselves, their families, or to eat, while only 20% said that they liked nothing at all about waste picking. The other responses were varied, with 5% pointing out that waste picking was a substitute to crime, while another 5% said that waste picking kept them working and fit. Five percent also said they liked the fact that waste picking is not a difficult job, while an additional 5% said that waste picking satisfied their needs. One individual (5%) liked the fact that you get paid instantly, while another 5% liked being his own boss, pointing out that nobody tells you what to do in this line of work. Five percent (one respondent) said that he liked waste picking as it gave him something to do, and kept him occupied.

While these results point to a range of different things that respondents enjoy about waste picking, the majority only liked the fact that waste picking was a means for them to survive, while the second largest category were those that liked nothing at all about waste picking. This further strengthens the point that waste picking is a survivalist activity, which people do not enter into by choice. It is not a desirable job according to the majority of the respondents in this study.

Respondents were also asked what they disliked about waste picking. About a third of the sample (33%) indicated that they had no problems whatsoever with waste picking, while 12% said that they disliked the variable income, or that it was sometimes hard to find material. Another 12% said that they disliked the low income from waste picking. Seven percent said that they disliked the work because it was hard and tiring, while another 7% said that the materials were heavy to carry. Seven percent also pointed out stigmatization from the general public as a dislike, saying that sometimes people look down on them or think they are crazy for doing waste picking. Other dislikes mentioned each accounted for 5% of the total sample or less.

At Brook Street 30% of the sample said that they did not dislike anything about waste picking, while 20% said that the materials were heavy to carry. Twenty percent pointed to the stigmatisation associated with waste picking, saying that people look down on them or think they are crazy for doing waste picking, and another 5% said

that they disliked the fact that people thought they were a thieves because of the work they do. Ten percent of respondents said that waste picking didn't give them enough money to meet their needs, while another 10% pointed to the inconsistent supply of materials, or the variable income as being a dislike. Five percent cited the dirtiness of the work as being a dislike, while an additional 5% said that they found the work hard or tiring.

At Eskom, a higher number of respondents (35%) indicated that they had no dislikes with waste picking, compared to Brook Street. Fifteen percent pointed out that it was hard or tiring, while another 15% indicated that they didn't like the low income earned from waste picking. Ten percent cited an inconsistent supply of material and a variable income as a dislike, while an additional 10% disliked the long distances that have to be covered to find material. Five percent said that they disliked the weather disturbing their work, while another 5% disliked the fact that if one gets injured then one cannot work and therefore earn money. Five percent felt that people thought they were a thief, and disliked this, while an additional 5% disliked everything about waste picking.

At Reclamation, 35% of the sample indicated that they did not dislike anything about waste picking, while 15% indicated that they disliked the variable supply of material and inconsistent income. Another 15% pointed to a health risk associated with waste picking, pointing out that they dislike it when they get cut by the metal they are collecting. Ten percent said they disliked that waste picking made them dirty, while another 10% said that they disliked the low income earned from waste picking. Five percent said they disliked that sometimes people would ask for money in exchange for garbage, while another 5% disliked waste picking because it affected ones health negatively. Five percent also disliked that if one gets injured one cannot work.

It is interesting that a third of the sample had no dislikes with waste picking. Considering the nature of the work, and the fact that all the evidence points to waste picking being an activity which people enter in order to survive, not out of a matter of choice, one would expect the waste pickers interviewed to have pointed out many more dislikes with the industry. This is perhaps due to the fact that while the waste pickers have not chosen this job out of choice, they choose not to complain about it

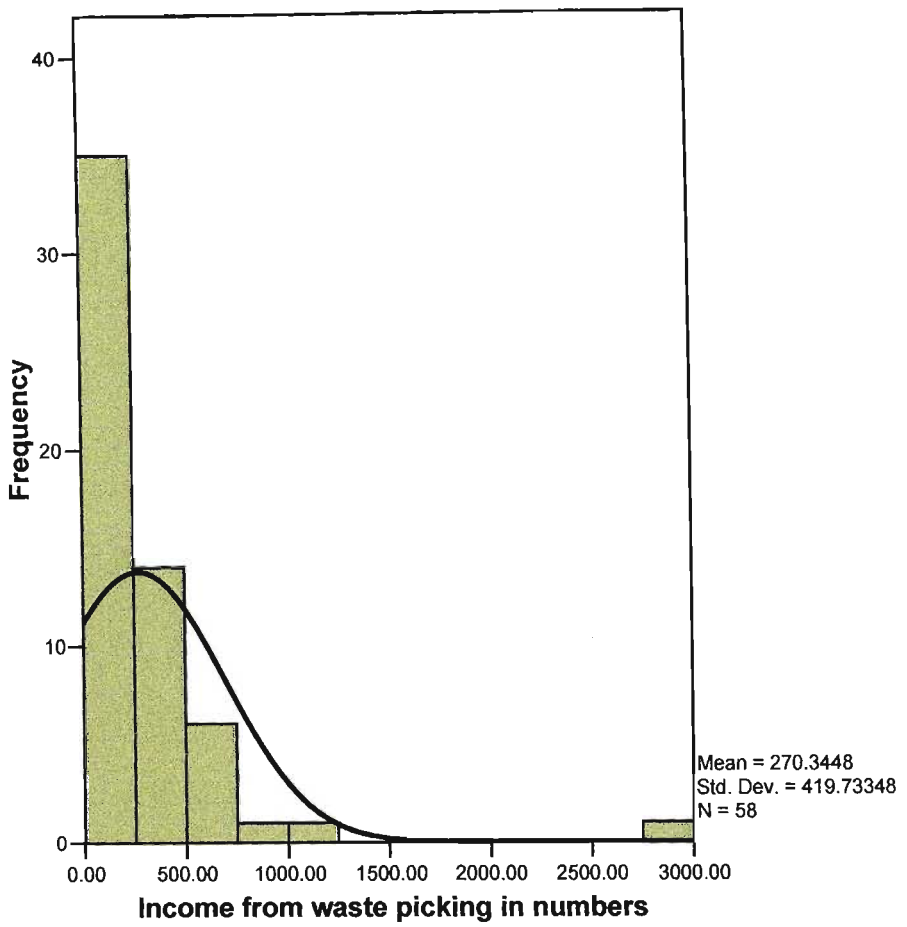
or be negative. Looking at the likes and dislikes stated together, it appears that 13 respondents (22% of the total sample) stated that the only thing they liked about waste picking is that it helped them to survive, and they disliked nothing about the job. This points to the fact that while the waste pickers choose not to be negative about their work, there is no pretence as to why they are waste picking. It is simply a matter of survival. Considering the difference in gender and the problems mentioned, women had fewer dislikes with waste picking, with 41% of the women in the total sample said that they disliked nothing about waste picking, as opposed to 23% of the men.

5.4. Earnings and Poverty

5.4.1. Earnings

Respondents were asked how much, on average, they made per week from collecting scrap specifically. Two individuals have been left out of this analysis. One individual did not want to give his weekly income, while the other respondent indicated that he did not know yet, as he had only been working for one day. Responses ranged from R5 a week to R3000 a week. On average, the waste pickers interviewed were found to earn R270 a week from collecting scrap, with the highest number of waste pickers interviewed earning R50 a week. The median was found to be R150, while the standard deviation was 420. The standard deviation for this question was very high, showing that the sample was indeed abnormal. This is illustrated in the frequency graph (figure 5.20) below. However, as mentioned in chapter 4, the purpose of this study is to present findings relating to a group of waste pickers, rather than make generalisations about the entire population of waste pickers operating in Durban. The standard deviation is mentioned here to show the large variety in responses received, and in order to compare this between the different buyback centres.

Figure 5.20



If one groups the responses, the largest portion of the sample (34%) indicated that they earned between R50 and R100 a week from selling scrap. Table 5.8 bellow shows the earnings per week made from waste picking for the sample as a whole, as well as for each buyback centre. According to the eThekwini 2005 quality of life study, a family of four needs a monthly income of R1500 a month in order to survive (eThekwini Municipality, 2005: 15). This amounts to R375 a week. This means that 82% of the total sample would be unable to meet the basic needs for a family of four, if they were relying on waste picking as the only form of income.

Table 5.8: Income earned from waste picking				
	% Brook Street	% Reclam	% Eskom	% Total
Under R50	11	10	5	9
R50 to R100	56	15	35	34
R101 to R150	11	5	10	9
R151 to R200	0	15	5	7
R201 to R250	11	10	10	10
R251 to R300	6	10	5	7
R301 to R350	0	10	5	5
R351 to R400	0	5	0	2
R401 to R500	0	5	15	7
R501 to R600	0	5	5	3
R601 to R700	0	5	0	2
R701 to R800	6	0	0	2
R801 to R900	0	0	0	0
R901 to R1000	0	0	5	2
above R1000	0	5	0	2
Total	**100**	**100**	**100**	**100**

Looking at each individual buyback centre, at Brook Street the average earned per week from collecting scrap was R147, R123 below the average for the sample as a whole. Amounts earned per week from collecting scrap ranged from R40 to R800. The most common amount earned per week was R80, while the median for the sample was also R80. The mode for Brook Street was higher than that for the sample as a whole, and the median for the sample was significantly lower. The standard deviation for the Brook Street sample was 420, exactly the same as the standard deviation for the sample as a whole. Grouping the responses, it is clear that over half (56%) of the sample indicated that they earned between R50 and R100. Eleven percent of the sample said that they earn under R50 a week from waste picking. Ninety four percent of the sample earned less than R375 a week, or R1500 a month. Only one individual (6%) said that they earned more than R375 a week.

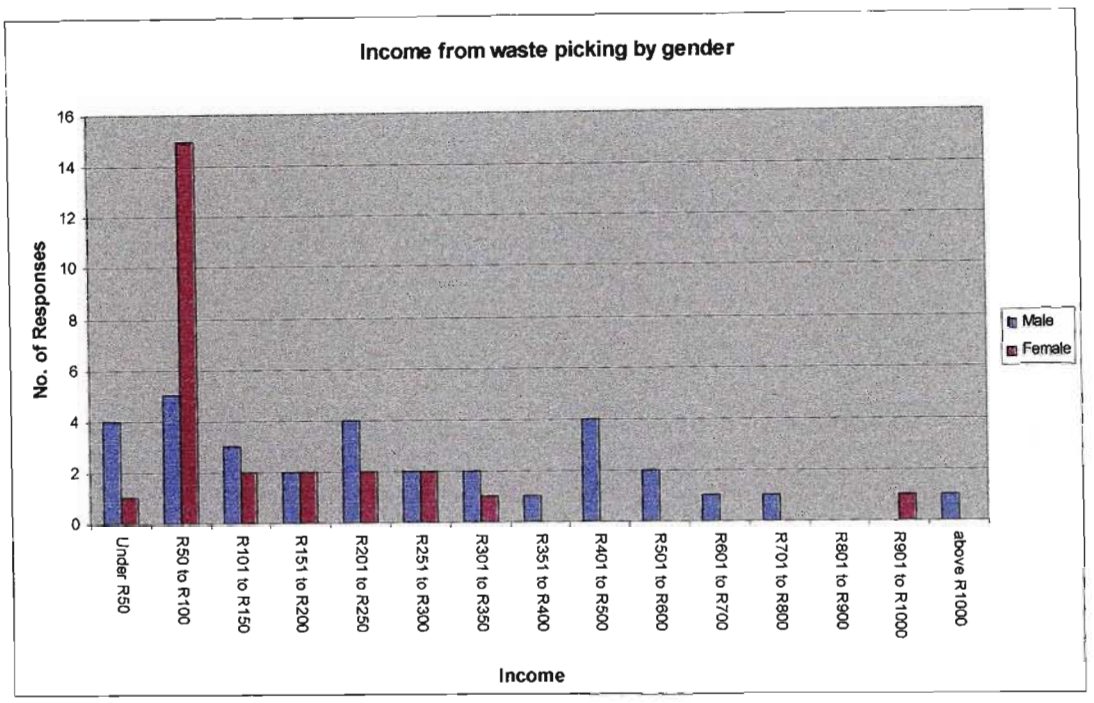
At Eskom, Respondents earned between R1000 and R45 a week. On average, the income earned from waste picking at Eskom was R256 a week, slightly below the average for the sample as a whole. The most common amount earned from waste picking per week was R50, the same as for the sample as a whole, while the median for the sample was R175, higher than the median for Brook Street as well as the sample as a whole. The standard deviation of the sample was R243, significantly lower than the sample as a whole. Grouping the responses, the largest group of the

sample (35%) indicated that they earned between R50 to R100. Seventy five percent of the sample indicated that they earned less than R375 a week from waste picking.

Respondents at Reclamation appeared to be significantly better off than waste pickers at the other two buyback centres, with waste pickers earning on average R396 a week from collecting material. Respondents ranged from those earning R3000 a week, to those earning only R5 a week. The most common amount earned from waste picking per week was R200, while the median of the sample was R250. Both the mode and median were higher than the other buyback centres as well as the sample as a whole. The standard deviation of the sample was 639, significantly higher than the standard deviation for the sample as a whole. Grouping the responses, 15% of the sample indicated that they earned between R50 and R100, and another 15% earned between R151 and R200 a week from waste picking. Similarly to Eskom, 75% of the sample indicated that they earned less than R375 a week from waste picking.

Looking at the differences in gender and the amount earned, the average amount earned by the women was R159 for a week, while men earned on average R361 a week. As figure 5.21 illustrates, the men varied a lot more than the women in terms of their weekly income from collecting scrap. This is confirmed by a large standard deviation for income earned for the men, of 523.6. Responses for the women, on the other hand, were grouped around R50 to R300, the majority (58%) indicating that they earned between R50 to R100. As expected, the standard deviation for income earned for women was significantly lower than that of the males, at 195.6.

Figure 5.21

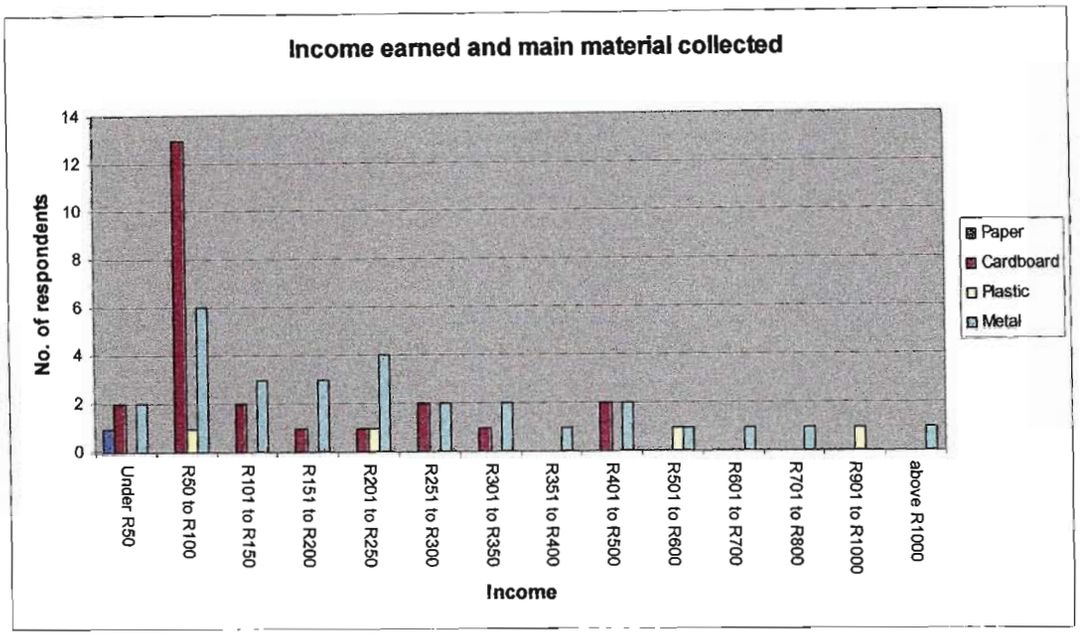


The evidence suggests that women earn less than men from waste picking, however, the cause for this is more difficult to determine. As already discussed, the men in the sample appeared to focus more on metal collection, while the women focussed on cardboard, and to a lesser extent on plastics (see section 5.3.4). This may explain why women earn less, as prices paid for metal were found to be higher, making it a more lucrative material to collect. While DeKock (1986a) found that there was little correlation between earnings and gender, this study found that there was a moderate relationship between these two variables.

The relationship between income earned from waste picking, and the type of material collected was explored in greater detail. Figure 5.22 shows the number of respondents earning an income from each material. As is evident, the range in income for those collecting metal is far greater than for those specialising in paper or cardboard. Income earned from plastic collection also tended to vary among respondents. Looking at the mean amount earned by waste pickers specialising in each material, those specialising in plastic collection appeared to be the best off, having a mean weekly income of R463, and a median of R375. Those collecting metal also did quite well, earning on average R353 a week, while the median for

metal collection was R250 a week. Those collecting cardboard and paper were found to have mean weekly incomes of R148 and R40 respectively. This conclusively proves that earnings were lower for those collecting mainly cardboard and paper, as opposed to those primarily collecting plastics and metal.

Figure 5.22



In order to analyse the relationship between material transportation and income earned from waste picking, material transportation was grouped further into four different categories. The first was those that use a trolley, wheelbarrow, or cart of some description, while the second grouped all of those that carry their materials without the use of any kind of vehicle, such as by hand. The third category comprised of those that used their own motor vehicle to transport material, while the fourth category referred to those that had their materials fetched by a motor vehicle.

Table 5.9: Income earned from waste picking and material transportation

	respondents	Mean	Median	Minimum	Maximum	Range	Std. Deviation
In my own car / van	3	1517	1000	550	3000	2450	1304
by trolley, cart, or wheelbarrow	20	274	250	30	800	770	216
a car collects them	18	188	150	45	525	480	152
By hand	17	133	80	5	460	455	126
Total	**58**	**270**	**150**	**5**	**3000**	**2995**	**420**

As can be expected, those owning a motor vehicle made far more on average than the other waste pickers. All earned above R500 a week from waste picking, and the average amount earned for this group was R1517 a week. The next best off were those using a trolley or cart to transport material. These individuals earned, on average, R274 a week. However, there was a range of responses in this category, with waste pickers earning between R30 and R800. The median for those using a trolley was R250. Those who had their materials fetched for them by a motor vehicle earned, on average, R188 a week, and the median for this group was R150. Waste pickers who had their materials collected for them earned between R45 and R525 a week from scrap. The group that was the worse off was without a doubt those that transported their materials by hand, carried it on their head, their shoulder, or in a sack. These individuals were found to earn only R133 a week on average, with the median being R80. Responses ranged in this category from only R5, to R460.

The above proves that income earned from waste picking is without a doubt linked to the ease of transportation of materials. Income decreased as the ease of material transportation decreased. Earlier it was pointed out that male waste pickers have better access to trolleys and carts for collection (see section 5.3.5). This enables them to specialise in metal collection, which means that they have the ability to earn, on average, more than women in this line of work. Better means of material transportation not only gives the individual waste picker more time to look for material in his or her place of choice, but it also allows for materials such as metal, which are difficult to scavenge by hand, to be collected.

Considering education levels and the income made from waste picking, it appears that there is a slight correlation between these two variables. Looking at each extreme, those that had a matric earned more, on average, than others. Nearly all the respondents with a matric earned above R500 a week from waste picking, however, one individual with a matric earned less than R50 a week. Those with grades 10 to 11 were found to earn R313 a week on average, less than those with a matric, but more than the average for the sample as a whole. Considering this trend, one would expect the income earned from waste picking to decrease as education levels decreased. However, there was found to be little relationship between income and those with less than a grade 10 education. These results are supported by

DeKock (1986), who determined that there was little correlation between education levels and earnings.

Since waste picking requires physical strength to carry material, and general fitness to walk long distances to seek material, one would expect younger participants to collect more material than older waste pickers, and therefore to earn more. However, this was not found to be the case. Comparing the mean income per week for each age category, it appears that there is little relationship between these two variables. However, those above 65 were found to earn significantly less on average, than those in other age categories as well as the sample as a whole. This could be due to old age, or due to the fact that this group of people may receive a pension, and could therefore be less likely to rely on waste picking to meet their needs. These studies are supported by Van Beukering (1996) and DeKock (1986), who both found little correlation between age and earnings.

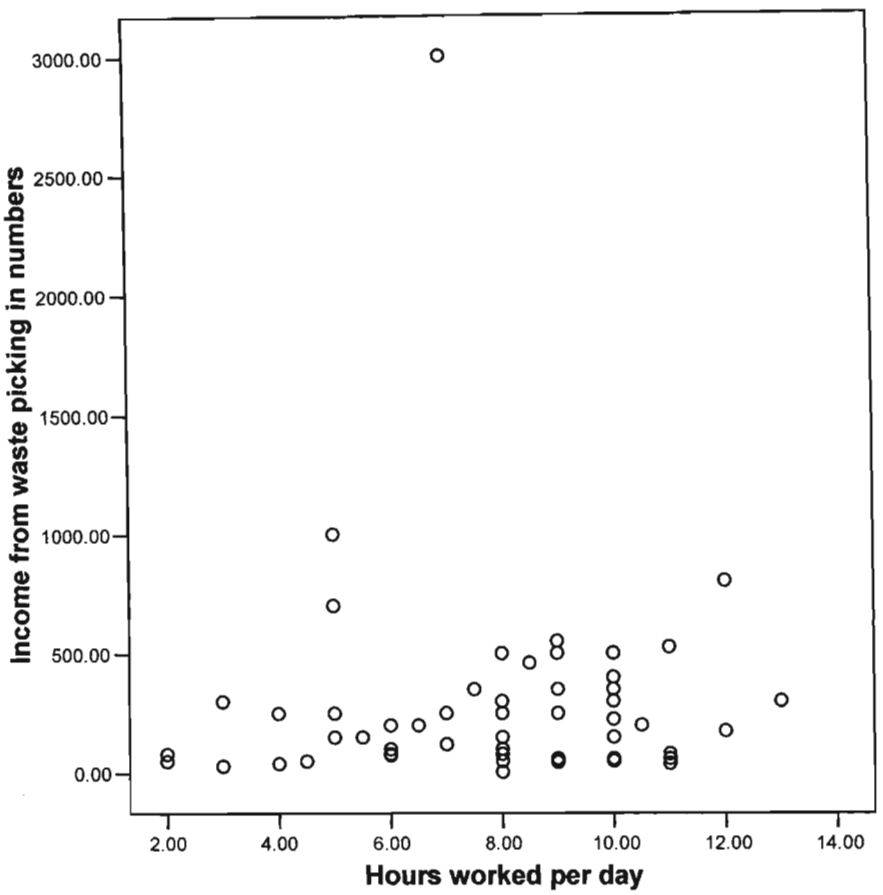
An effort was made to determine whether or not experience in waste picking had an effect on earnings. One could expect that as the time spent in the industry increased, so would the amount earned from waste picking. However, there was little relationship shown between these two variables. DeKock (1986b) also confirmed that experience in garbage picking appeared to have no impact on earnings.

It was also expected that the income earned from waste picking would increase as the hours worked per day increased. One would expect waste pickers working longer hours to earn more. An analysis of the hours spent working per day and the income made from waste picking revealed that there was a very slight positive relationship between these two variables. This is illustrated in figure 5.23 on the overleaf, which plots income against the hours worked per day.

As figure 5.23 shows, there are those that fall well outside of this trend. This indicates that other factors could influence the expected relationship between these two variables. For instance, the way in which materials are transported, or the health of the waste picker could affect their income, irrespective of the number of hours they worked. An example of this is one individual, who earned R3000 a week from

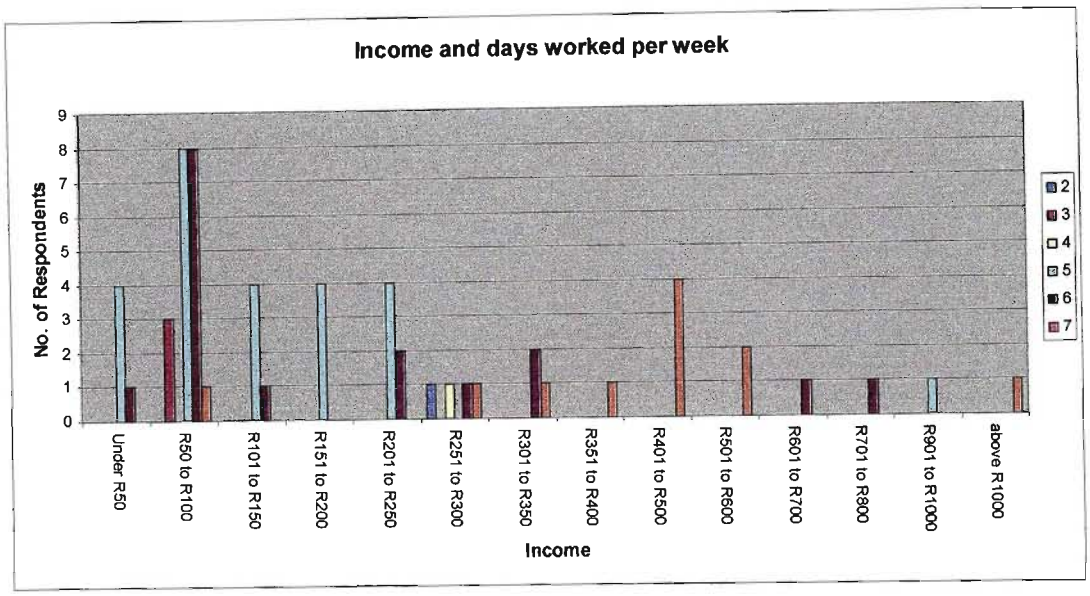
waste picking. He had access to his own vehicle, which dramatically increased the amount he could collect, and the time it took him to do so.

Figure 5.23: Hours worked and income from waste picking



Similarly to the effect that the hours per day would have on the earnings of the waste picker, one would expect that income earned from waste picking would increase with the number of days worked per week. Here, a slight relationship appeared to exist, with those working more days earning on average, more. Figure 5.24 shows this relationship.

Figure 5.24



As is clear, those working 7 days a week earned, on average more than those working fewer days. However, there appears to be little relationship other than this, and the income earned from waste picking did not seem to be significantly related to the days worked, for those working 6 days or less. These results are somewhat different to those of DeKock (1986), who found that there was little relationship between hours worked and earnings.

5.4.2. Other sources of income

In order to determine the overall income of respondents, waste pickers were asked whether or not they earned or received an income from any other source, and what those sources were. Seventy percent of the sample relied on waste picking alone for their monthly income, while about a third of the sample (30%) said that they had another form of income. These additional forms of income varied, and 22% of those earning an additional income stated that they got a monthly pension, while 28% earned money from selling or street vending. Seventeen from those earning an additional income indicated that they received a government grant, while all other responses constituted 6% or less of those earning an additional income. Table 5.10 below shows the additional forms of income earned for the sample as a whole, as

well as each individual buyback centre. The mean amount made from an additional form of income was R468.

Table 5.10: Additional income (% of those mentioning an additional income source)				
	% Brook Street	% Reclam	% Eskom	% Total
Pension	50	0	0	22
selling / Street Vendor	38	14	33	28
pack containers	13	0	0	6
carting goods	0	14	0	6
gardening	0	14	0	6
plumbing	0	14	0	6
messenger	0	14	0	6
government grant	0	14	67	17
plastering	0	14	0	6
Total	**100**	**100**	**100**	**100**

At Brook Street, a high proportion of the sample (40%) indicated that they earned an additional form of income, while 60% of the sample relied on waste picking alone to meet their needs. Of those earning an additional income, half got a monthly pension, while 38% earned money from selling or street vending. The remaining 13% of those earning an additional income did so by packing containers. The high proportion of those earning an extra income at Brook Street can be explained by the fact that they had a greater proportion of over 65 year olds at this buyback centre (see 5.2.5).

At Eskom, a high proportion of the sample (85%) relied on waste picking alone to meet their needs, while 15% earned an additional form of income. Two individuals (67% of those earning an additional income) got a government grant, while one individual (33% of those earning additional income) made money from selling or street vending.

There were a greater number of individuals at Reclamation that earned an additional income, compared with Eskom. Sixty five percent of all respondents indicated that they relied on waste picking alone to meet their needs, while 35% earned an additional form of income. One individual (14% of those earning an additional income,) indicated that they earned money from selling, while another earned a government grant. Manual labour jobs, such as plumbing, plastering, carting goods, and gardening were all mentioned, each recording one individual (or 14% of those

earning an additional income) as earning money from that source. One person mentioned that he earned an additional income from being a messenger.

5.4.3. Dependents and sole breadwinner

In order to determine how many people were relying on the income earned from waste picking, respondents were asked how many people their household consisted of, and whether or not they were the sole breadwinner for the household. The smallest households reported were single person households, while the largest household was 15 people. The average for household size was found to be 4.1 people, while the most common response given was 3 household members. The median of the sample was found to be 4 household members, while the standard deviation was 2.7. Table 5.11 shows the breakdown in household size for each individual buyback centre, as well as the sample as a whole. Over half the sample (52%) were households of 4 people or more. Nearly every waste picker interviewed (93%) indicated that they were the sole breadwinner for their household.

Table 5.11: Household size

No of people	% Brook Street	% Reclam	% Eskom	% Total
1	45	10	0	18
2	0	10	20	10
3	15	30	15	20
4	15	10	15	13
5	5	10	20	12
6	10	15	15	13
7	5	5	10	7
8 people or more	5	10	5	7
Total	**100**	**100**	**100**	**100**

Looking at each individual buyback centre, at Brook Street the average household size was 3.1, and household size ranged between 1 person to 8 people. The most common response was those reporting a 1 person household, while the median of the sample was 3 people. The standard deviation for the sample was 2.3, slightly lower than for the sample as a whole. Grouping the responses, nearly half (45%) of the sample were 1 person households, while 15% were 3 people households. Forty percent of the sample lived in households of 4 or more people. All but one

respondent (95% of the sample) said that they were the sole breadwinner for their household.

Considering Eskom, there seemed to be a greater variety in household size compared with Brook Street. Household size ranged from two people to eleven people, with the average household size being 4.6 people. The most common household size reported was 2 people, and the median of the sample was 4.5. The standard deviation was 2.2, slightly lower than for the sample as a whole. Grouping the responses, it is clear that the greatest proportion of the sample (20%) lived in 2 person households, or in 5 person households (20%). Sixty five percent of the sample lived in a household which consisted of 4 or more people. All but one respondent (95%) indicated that they were the sole breadwinner for their household.

At Reclamation, household size ranged from one person households to households consisting of 15 people. The average household size was 4.6 people, while the most people responded that they lived in households consisting of 3 people. The median for the sample was 3.5 people, while the standard deviation was 3.3, significantly higher than for the sample as a whole. Grouping the responses, the highest proportion of the sample (30%) indicated that they lived in 3 person households. Half the sample lived in households of 4 or more people. Nearly every respondent (90%) indicated that they were the sole breadwinner for their household.

Considering the number of people supported by the waste picker by gender, it is clear that on average, men support fewer people with their earnings than the women in the sample. The average household size for males was 3.8, while the average household size for women was higher, at 4.5. The median household size for women was 4, as opposed to 3 for the men. All the females said that they were the sole breadwinner for the household, as opposed to 88% of the men. Twelve percent of the men had another breadwinner living in their household.

5.4.4. Poverty

In order to analyse whether waste pickers can be considered poor, one has to look both at their total income, whether or not they are the only breadwinner in the house,

and how many people they support on their income. The benchmark for poverty used here is the income level pointed out in the 2005 eThekwini quality of life study, where it stated that a family of 4 would need a monthly income of R1500 to survive (eThekwini Municipality, 2005: 15). This translates into R94 a week per person.

Total income for each waste picker was considered. This was done by adding the income from waste picking to any additional income that the waste picker may earn. Excluded from this analysis was one waste picker who refused to answer the question, and another waste picker who was unable to give his monthly income, as it was his first day working. This resulted in a total sample of 58 respondents. It was found that 67% earned a total income of less than R375 a week (R1500 a month). However, this did not give an accurate representation of whether of not these individuals were living below the poverty line stated above, as household size has not been taken into account.

Total income for each waste picker was divided by the household size, to determine how much was available for each household member. It was found that 62% of all the waste pickers interviewed lived in households where each individual member had less than R94 a week to survive. Every single one of these waste pickers were the sole breadwinners for their households. These 36 waste pickers (or 62% of the sample) are clearly living below the survival level set for eThekwini, and can therefore be considered very poor.

Of those considered to be living in very poor households, 16 of them were men and 20 were women. This means that 76% of females in the entire sample can be considered to be living in very poor households, as opposed to only 47% of the males in this study. This further highlights the differences in terms of gender pointed out throughout the analysis. The male waste pickers clearly have better access to transportation of materials, which allows them to collect more lucrative scrap such as metal. They therefore earn more, and also have, on average, fewer dependents than the women in this study.

These findings are in agreement with the literature that exists on waste picking. While some studies have found that waste pickers earn minimum wage, or in some

cases above this, the majority have concluded that waste pickers earn very little and are usually on, or below the minimum wage (see for example Van Beukering, 1996, Hayami, 2006, Rouse, 2006). This study has confirmed that the majority of the individuals interviewed relied solely on waste picking to meet their needs. This finding is supported by a number of studies (see, for example, McLean 2000b, and DeKock, 1986a).

While some studies have pointed to the fact that garbage pickers may not be the poorest of the poor, they are faced with other factors that make them vulnerable. These factors include working conditions that may negatively affect their health, as well as the psychological stress of a variable income and no benefits for the work that they do (see, for example, Wilson, 1998: 110). These factors have an impact on the waste pickers' quality of life.

5.5. Relationship with the municipality

An aim of this study was to determine how waste pickers viewed the municipality, and to consider how the local authorities can improve the working conditions of the waste pickers. This was explored through two different questions. The first asked whether or not the waste pickers felt that their work benefited the city, and if so how it benefited the city. This was asked to determine whether or not the waste pickers viewed their work as valuable to the municipality. The second asked what the waste pickers thought the municipality could do to better their working conditions.

When asked whether or not the waste pickers believed their work benefited the city, the majority (86%) thought that it did. The largest portion of the sample (82%) indicated that they thought their work removed dirt, cleaned the city, reduced litter, or kept the city clean. The responses are shown in table 5.12 below:

Table 5.12: How waste picking benefits the city				
	% Brook Street	% Reclam	% Eskom	% Total
It removes dirt / Cleans the city/ reduces litter / keeps the place clean	80	95	70	82
Reduces the work that the municipality have to do	5	0	0	2
It doesn't benefit the city	5	5	25	12
Not sure	10	0	0	3
It keeps us away from theft	0	0	5	2
Total	**100**	**100**	**100**	**100**

Considering Brook Street, only 5% of the sample said that their work did not benefit the city in any way. Eighty percent pointed to the obvious environmental benefit of waste picking, while 5% argued that it reduced the work that the municipality have to do in terms of cleaning the city. Ten percent of the sample said that they were not sure whether or not their work had any benefit to the city.

At Eskom, a larger proportion (25%) indicated that they thought that their work had no benefit to the city, while 70% pointed to the environmental benefit of waste picking. The remaining 5% said that waste picking was beneficial to the city as it kept the waste pickers away from theft.

At Reclamation, 95% of the sample pointed to the environmental benefits of waste picking, while only 5% said that waste picking did not benefit the city at all.

In a previous study conducted in Durban, McLean (2000a) found it was obvious to the waste pickers she interviewed that they were 'providing a service to the community and the city' (McLean, 2000a: 6), and this study is in agreement with this. The way in which their work helped reduce waste and improve the environment within the city was clearly recognised by the waste pickers.

Respondents were asked what the municipality could do to improve their working conditions. A large portion of the sample (28%) said that they did not know, while another 28% said that the municipality could improve their working conditions by creating other job opportunities for them. Eight percent of the sample said that they should work for the municipality, as they already work cleaning the city, while

another 8% said that the municipality could assist them with the transportation of materials. The responses are shown in table 5.13 below:

Table 5.13: Things that the municipality can so to improve the working conditions of waste pickers.				
	% Brook Street	% Reclam	% Eskom	% Total
They can create job opportunities for us	25	35	25	28
I don't know	50	5	30	28
We should work for the municipality (we clean the city already)	5	10	10	8
The municipality should give us permits	5	0	0	2
Increase amount paid for materials / tell the buyback centre to increase money paid for materials	5	5	5	5
Bring down the water and electricity bills	5	0	0	2
They should give us money	5	0	0	2
I am satisfied with everything	0	5	0	2
They should give us money to buy a van	0	10	5	5
Give us a truck to take back to the eastern cape - there is a lot of metal there that is not recycled	0	5	0	2
Assist us with transport so we can get scrap from further away areas / better transportation for materials	0	20	5	8
Open a buyback centre closer to where we live	0	5	5	3
I would like it if they gave me my pension	0	0	5	2
To allow us to gain access to the dump	0	0	10	3
Total	**100**	**100**	**100**	**100**

Looking at each individual buyback centre, at Brook Street half the sample indicated that they did not know what the municipality could do to improve their working conditions. Twenty five percent of the sample said that the municipality could improve their working conditions by providing job opportunities.

At Eskom, about a third of the sample (30%) indicated that they didn't know what the municipality could do to improve their working condition, while 25% said that they could create job opportunities for them. Ten percent said that they should work for the municipality, as they clean the streets already.

At Reclamation, respondents were more vocal and opinionated about the way in which the municipality could improve their working conditions, with only 5% of the sample indicating that they didn't know what the municipality could do to improve things. The largest portion of the sample (35%) said that the municipality could assist

them by providing job opportunities, while 20% said that the municipality could assist them with the transportation of materials. Ten percent said that they should work for the municipality, as they clean the streets already, while another 10% argued that the municipality should give them money to buy a van to transport materials.

Some responses implied that waste pickers would like some form of assistance with the transportation of their materials. In essence, the amount of material that a picker can transport dictates how much he or she will make, so it is hardly surprising that this was pointed out as an area where the municipality could provide assistance. Also of interest are the responses that implied that waste pickers would like more recognition for the work that they do, and more support from the municipality. Responses such as "We should work for the municipality (we clean the city already)" and "The municipality should give us permits", or "the municipality should allow us to gain access to the dump" all point to this. The large number of individuals that said that the municipality should provide job opportunities further emphasises the fact that waste picking is, for most, not an activity entered into by choice.

5.6. Formal / informal sector linkages

An aim of this study was to explore the linkages between formal sector and informal sector recycling. Both forward and backward linkages into the formal economy need to be analysed in order to fully understand the relationship between the two.

In contrast to other informal activities, backward linkages into the formal economy are not very strong. This is because waste picking requires very little, or no start up capital. Any individual can pick waste off the street and sell it back to a buyback centre. However, many individuals (30%) had a trolley to transport their materials. No question was asked concerning the origin of these trolleys, whether or not the waste pickers bought them from an informal or formal business, or built the trolleys themselves. However, through observation it was determined that the different trolleys were all fairly unique, indicating that they were probably homemade.

Forward linkages into the formal economy were found to be much stronger. In the case of those selling back material to Reclamation, the material went directly to a

formal recycling company and the material was sorted and dealt with on site. Brook Street was owned and managed by the government, however, a formal recycling company collected the material. Eskom was also owned and managed by the government, but the individuals in charge at this buyback centre acted more like middlemen. They were not employed by any one recycling company, but they bought back material from waste pickers, sorted it, and arranged for it to go on to other formal recycling companies.

Ultimately, nearly all the material the waste pickers collected found its way to the formal recycling industry, as they had the means to process the material and recycle it. Waste pickers are clearly dependent on the formal recycling sector, as they provide the demand for materials. Without the formal recycling sector, the waste pickers would not be able to earn an income. However, the extent to which the formal recycling sector is dependent on the waste pickers is far more difficult to determine. Many formal recycling companies rely on other formal sector industries to sell back material, rather than on informal recycling. The informal recycling sector is relatively small in South Africa, compared to other developing countries, while the economy and manufacturing are well developed. Waste pickers are clearly more dependent on the formal recycling sector than the formal recycling sector is on the waste pickers. The relationship is an unequal one, and waste pickers are even more vulnerable because of this.

The point of convergence for informal and formal sector recyclers is the buyback centre, therefore it was necessary to ask why waste pickers choose to use a particular buyback centre, as opposed to going elsewhere. It was also important to establish whether the waste pickers had any special arrangement with a particular buyback centre, or whether they acted as rational economic actors, going where the price was best or to the buyback centre that was most convenient.

The reasons for choosing a particular buyback centre are shown in table 5.14 below. The largest portion of the sample (67%) pointed out that the buyback centre they had chosen was the closest and most convenient, while 15% indicated that the buyback centre they were at was the only one they knew. All other responses constituted less than 10% of the total sample.

Table 5.14: Reasons for choosing a particular buyback centre				
	% Brook Street	% Reclam	% Eskom	% Total
This Is the only place I know of	35	10	0	15
it is closest to me / the nearest	55	80	65	67
the money is reasonable / they pay a better price	5	5	15	8
a friend told me about this place	5	0	0	2
it is the most well known buyback centre	0	5	0	2
A vehicle comes and fetches the materials	0	0	15	5
buyback staff and owner educates us on which materials are of a higher value	0	0	5	2
We have an understanding with the owner	0	0	0	0
Total	**100**	**100**	**100**	**100**

At Brook Street, just over half the sample (55%) indicated that they used a particular buyback centre because it is the closest or nearest to them, while 35% said that they used a particular buyback centre because it was the only one they knew. Five percent mentioned the money as the reason for going to a particular buyback centre, while another 5% said a friend told them about the buyback centre.

At Eskom, a higher proportion (65%) of the sample indicated that they used the buyback centre because it was the closest to them. Fifteen percent of the sample were positive about the buyback centre, saying that they used Eskom because the money they offered for material was reasonable. Fifteen percent of the sample was not selling back material to a buyback centre, as they had their material picked up by a truck. The remaining 5% indicated that they had a good relationship with the buyback owner and staff.

At Reclamation, convenience seemed to be the factor drawing most waste pickers, with 80% of the sample said that the buyback centre was the closest to them and most convenient, while 10% indicated that it was the only place that they knew of. Five percent said that they came to Reclamation because they offered a reasonable price.

The reason the majority of the sample used a particular buyback centre was because it was the closest and most convenient, not because it had the best price. As shown earlier, the transportation of material is an issue for the majority of the

waste pickers. This explains why many of them choose to go to the closest buyback centre. The time and effort it takes to transport material means that waste pickers are left with little choice other than to sell back their material to the closest centre.

5.7. Theoretical Implications

As already discussed, the informal recycling sector has clear linkages with the formal recycling industry. While backward linkages into the formal economy are less prevalent, forward linkages are strong and unequal. The demand for recyclable material comes from the formal recycling sector, and while the waste pickers are dependent on this demand for their survival, it is unlikely that the formal recycling companies are dependent on the waste pickers to the same extent. The links between informal and formal recycling are clear, proving that a dualistic interpretation of the informal recycling sector is, in this case, invalid. The two sectors are clearly linked and interdependent, even though the relationship is unequal.

If one takes a Marxist view of the informal recycling industry, one would expect informal recycling not to be separate and autonomous, but rather 'parts of one overall capitalist system in which informal activities are subordinate to, and dependent on, the formal sector' (Bernabe, 2002: 9). Marxists argue that the existence of the urban informal sector places downward pressure on urban wage levels, and capital also benefits from a supply of cheap good and services. The informal sector workers are viewed as little more than disguised wage workers, denied of the benefits and security from formal employment.

Applying a Marxist view to the results of this study, it is clear that the formal recycling companies benefit from goods (in this case recyclable material) from the waste pickers. However, it is unlikely that the presence of the informal sector and the unemployed has a significant effect on the urban wage levels. In South Africa, protective labour legislation, and the presence of strong trade unions have resulted in a high unemployment rate, and relatively high unit labour costs compared to other developing countries elsewhere in the world (Poswell, 2002: 19). Despite the fact that there are many who are not formally employed, urban wage levels have not

been affected to a great extent because of this. One could argue that few are employed, at the expense of many.

While capital undoubtedly benefits from the material collected by the waste pickers in this study, the extent to which they are dependent on informal recycling is unclear. The relatively well developed manufacturing industry in Durban provides many recycling companies with their waste, and this accounts for most of their material collected. Despite this, the waste pickers clearly provide a constant supply of material to the formal sector recycling companies, and can be considered to be working for them. As shown above, the majority of the waste pickers are forced to use only one buyback centre, as it is close to them and convenient. Most work a normal working week or longer collecting scrap. In essence they rely on the formal sector for their income. One can view the waste pickers in this study as ultimately working for formal recycling companies, or as disguised wage workers. This study is in agreement with previous studies on this point, such as Birkbeck (1979), and Wilson (1998).

Chapter 6: Conclusion

6.1. Summary of this research

The purpose of this research has been to answer a number of questions about informal collection in Durban. Three buyback centres for recyclable material were chosen in order to gain access to waste pickers, and 20 questionnaires were conducted at three different buyback centres in the Durban area. Questions focussed on the socio-economic characteristics of the waste pickers, their working conditions, as well as their earnings and their relationship to other interest groups such as the formal recycling industry, and the local authorities.

In terms of socio-economic characteristics, the waste pickers were fairly evenly divided according to gender lines, nearly all of them were black, indicative of the unequal past in South Africa. Education levels were found to be low, with a quarter of the total sample never having gone to school. The remainder indicated that they had some schooling, although the level of education achieved was found to be low with only 8% of the sample having actually finished school and obtained a matric. The mean education level for the males in the sample was found to be higher than the females. Over half the sample (57%) was found to speak IsiZulu at home, followed by IsiXhosa and Sesotho. This is to be expected as IsiZulu is the main language spoken in KwaZulu-Natal, while IsiXhosa and Sesotho are prevalent in the areas bordering KwaZulu-Natal. Nearly all of the waste pickers interviewed (95%) fell within the economically active age category of 16 to 65, while the average age was found to be 42 years.

The majority of the waste pickers interviewed were found to be migrants to Durban (88%), and the majority of the migrants were not newcomers to the city, as 75% of them had moved here 5 years ago or more. Nearly all of the migrants had come to Durban to seek employment. Most of the migrants came from rural areas elsewhere in KwaZulu-Natal, the nearby Eastern Cape province, or the adjacent country of Lesotho.

In terms of the working conditions of the waste pickers, it was found that 88% of the sample had worked before entering waste picking as an occupation. This study was in agreement with previous research (see Skinner 2006: 130), that skills learnt in the formal sector were not necessarily being used in the informal sector. The men were found to have held a greater range of jobs previously, while the women were involved in jobs such as domestic work and selling goods informally.

It was found that waste picking cannot be considered a form of transitional employment, as many of the participants had been in the field for a long period of time, with 78% of the sample involved in waste picking for a year or longer. Despite this, a large portion of the sample (65%) were still looking for work. There was also found to be little relationship between the amount of time spent waste picking and whether or not the respondents were looking for work. This suggests that although the participants have been in waste picking for a long period of time, this is probably out of necessity rather than choice, as many of them are still looking for other forms of work. Younger waste pickers were found to be more likely to be looking for employment. The majority of those looking for work were looking for a job in a field where they had previous experience. When asked why they were involved in waste picking, 84% of the respondents cited a reason that led one to believe that they took up waste picking in order to survive. The absence of choice for these individuals needs to be recognised (Wilson, 2006: 7); as waste pickers have generally not entered this field for any other reason other than necessity.

The majority of waste pickers were found to work hard, most working a five day week, and some longer. A large portion of the sample (46%) indicated that they worked more than an 8 hour working day. Metal and cardboard were found to be the items of choice for collection, with 52% focussing on metal collection mainly, and 40% focusing primarily on cardboard collection. Metal collection was found to be dominated by males, while cardboard collection was dominated by females.

The waste pickers were found to transport the materials by different means, ranging from the use of a middleman with a vehicle, transporting the material in their own car, in a trolley, or by hand. About a third had access to a trolley, while about another third had the material fetched from them by a middleman. Twenty eight percent

carried the material themselves to the buyback centre. Only 5% owned their own vehicle which they used to transport material. There was a relationship between the type of material collected and the type of transportation, with most of those collecting metal doing so using a trolley, and those collecting cardboard tended to carry it on their head. Men were more likely to have access to a trolley, while women were more likely to have the material collected by a middleman, or to carry the material on their heads to the buyback centre.

Despite the type of work, about a third of the waste pickers (33%) had no problems with the job. Of those who mentioned problems in the job, the majority pointed out interactions with homeowners, the police, or the general public as problematic. When asked what could be done to solve these problems, an overwhelming number of respondents indicated that if they were offered a better job, their problems could be solved. When asked what they liked about waste picking, 55% pointed to the fact that it helped them to survive, while 25% said they liked nothing about waste picking at all. This further emphasises the undesirable nature of this work.

The waste pickers in this study were found to earn very little, 82% of the sample earned less than R375 a week, or R1500 a month. Nearly all the waste pickers (70%) relied on waste picking as their only form of income, and 93% of those interviewed were the sole breadwinners in their households, most of which consisted of around 4 people. A total of 62% of those interviewed were found to be living in very poor households, below the poverty line set by the 2005 eThekwini Quality of Life Study (2005: 15). The results of this study suggest that, on average, the men interviewed earned more than the women, and the women were also found to support larger households. Seventy six percent of the women were found to be living in households below the poverty line, as opposed to only 47% of the males interviewed.

Other differences in earnings were established, with those focussing on cardboard and paper earning less than those focussing on plastics or metal. It was also found that as the ease of transportation of materials increased, so did the earnings of the waste picker. More male waste pickers had access to trolleys for collection than female waste pickers, and this could be a reason for the males in this study earning,

on average, more than the females interviewed. Experience in waste picking was found to have little effect on the amount earned, as did education levels and age, although the pensioners in the sample were found to earn less from waste picking than other age groups. There was a slight positive relationship between the hours worked per day and earnings.

The study also considered the relationship between the municipality and the waste pickers, and ways in which the local authorities could support waste picking. Nearly all the waste pickers interviewed (86%) considered that their work benefited the city. Despite this, a large portion of the waste pickers (28%) said that they did not know what the municipality could do to improve their work conditions. Another 28% said that the municipality could aid the waste pickers by providing job opportunities. This further emphasises that waste pickers collect scrap out of necessity, as many would gladly switch to another job if given the opportunity.

The waste pickers interviewed seemed to have a fairly indifferent relationship with the local authorities. Not many waste pickers mentioned interactions with the local authorities as a problem, although a percentage (18%) mentioned that the police sometimes gave them trouble. When asked what could be done to solve their problems, only 13% mentioned a solution that involved one of the tiers of government. While some waste pickers pointed out that the municipality could aid in their work by providing transport, not many waste pickers gave specific suggestions as to how the municipality could proactively aid in their work. Perhaps the fact that waste picking is not as large an occupation in Durban as it is in other developing countries has impacted on this relationship between the local authorities and the waste pickers.

The relationship between formal sector recycling and informal recycling was also analysed. Backward linkages into the formal economy were not found to be very strong. Waste picking needs little or no start up capital, and therefore the waste pickers have not had to rely on inputs or supplies from the formal sector. Forward linkages into the formal economy were found to be far stronger, as formal recycling companies provide the demand for recyclable material, which they then buyback and process. The waste pickers were therefore found to be dependent on the formal

recycling companies in this regard; however, the formal recycling companies are not dependent on the waste pickers to the same degree, as the formal sector recycling companies get much of their material from other formal sector companies. The relationship between the formal recycling companies and the waste pickers is an unequal one, and it leaves the waste picker vulnerable. The idea of the formal recycling sector, as separate and autonomous, as the theory of economic dualism (discussed in section 2.4.4.1) would suggest, is clearly rejected and disproved by the results of this study.

This study was found to support the Marxist view of the informal economy. The informal and formal recycling industries are clearly linked through backwards and forward linkages, as described above. In this case, the informal recycling industry is dependent on, and subordinate to, the formal sector recycling companies. Although the presence of the informal sector does not necessarily put a large amount of pressure on urban wage levels, due to the presence of strong trade unions and protective labour legislation, the formal recycling sector clearly benefits from the work that the waste pickers do. This study supports the findings of Birkbeck (1979) and Wilson (1998), both of whom concluded that the waste pickers they interviewed were actually working for the formal recycling companies, but were not employed by them.

In this study, it was found that many pickers were forced to use one buyback centre, as it was close and convenient, or it was the only one that they knew of. There was therefore little choice available to the waste picker. Most of the individuals in this study then worked at least a standard working week collecting scrap, which they in turn sold to one buyback centre. In essence, these individuals worked for the buyback centres in this study, or the formal recycling companies. However, they are afforded none of the benefits of formal sector employment.

While waste picking clearly aids in facilitating greater profits on behalf of the formal sector recycling companies, it is unclear as to the extent that the formal recycling companies rely on the materials provided by waste pickers. This is perhaps an issue that could be looked at more closely in further research. As mentioned previously, Durban is a city with a relatively well developed waste collection system and

manufacturing sector. Companies such as Reclamation probably collect more material from formal sector companies selling material back to them, than they collect from the informal recycling sector.

Birkbeck (1979) suggested that the waste pickers that he interviewed were likely to stay poor, due to the economic forces in operation. This study supports this view, as few opportunities for improving their economic situation are available to the waste pickers in this study. Reclamation suggest that through hard work, a waste picker can in turn invest in better means of transportation, and therefore begin to make greater profits (Reclamation 2007a: 31). This entrepreneurial view of waste picking is not the reality on the ground. This study found that there was no relationship between the amount of time spent in the field of waste picking, and the means of transportation for materials. It is unlikely that the majority of the waste pickers, who are often living on or below the poverty line, will be able to save the large amount of money needed for a motor vehicle. In addition to this, the unstable price of recyclable material is likely to have a major effect on the ability of waste pickers to improve their lot. In February 2007, when research was conducted at Reclamation, the price of cardboard had dropped in a matter of days from 15 cents a Kg, to only 10c a Kg. This 50% decrease in price has a major effect on the income of a waste picker specialising in this commodity. Saving to invest in better means of transportation is severely hampered by the volatility in price.

Birkbeck (1979) also suggests that the waste picker could improve his or her lot by unionising. Together, the waste pickers could argue for fairer prices for recyclable material, or at the least greater price stability. However, the nature of the work makes any sort of networking difficult. In addition to this, the waste pickers are in competition for material, which may also hamper the formation of an organisation. Even if an organisation of some description was a possibility, it is unlikely that the waste pickers would have much influence on the price of materials. As mentioned previously, the relationship between the informal recycling industry and the formal recycling industry is an unequal one, and while waste pickers are dependent on the formal recycling industry to create a demand for material, the formal recycling industry is not dependent on material supplied from the waste pickers to the same extent.

This study confirms the fact that waste pickers are not typically entrepreneurs who enter into the field by choice, because they see an economic opportunity that they wish to exploit; but rather they are individuals who are forced into this work because there is nothing else available to them. It is desperation to survive alone that appears to drive waste picking in Durban.

6.2. Recommendations arising from this research

The waste pickers interviewed in this study do not have many opportunities open to them to better their lot in life. As mentioned previously, the waste pickers in this study are likely to stay poor due to the economic forces in operation, if nothing significant changes with regards to their working conditions. Two entities could possibly change the working conditions of the waste pickers. The first are the formal recycling companies. However, as discussed above, the formal recycling industry benefits from the material that the waste pickers provide, without having to formally employ them. It is therefore unlikely that this group will change their behaviour, as the current arrangement is to their benefit. However, in the unlikely event that they would wish to alter the working conditions of the waste pickers, some suggestions are presented below.

The second entity that could possibly change the working environment for the waste pickers would be the local authorities. Waste picking has environmental benefits, as well as providing employment for many. In the context of rapid urbanisation, diminishing natural resources, and high unemployment, informal recycling deserves more attention. The suggestions below, if taken up, could go a long way in changing the working environment of the waste pickers.

These suggestions are as follows:

- **Provide the waste pickers with identification cards, and some form of identifiable clothing.**

  Although the municipality has already provided six buyback centres, it could do more to support the informal recycling sector. The waste pickers interviewed in

this study gave some examples of this. Some mentioned that the municipality could give them permits, so that people are aware of the work they are doing, and will allow them to extract recyclable material from their domestic refuse without harassment. The issue of stigmatisation was noted in this research, and some of the waste pickers interviewed cited this as a problem with, or dislike of, the work. Recognition on the part of the local authority may go a long way towards reducing the stigmatisation that the waste pickers feel, and may aid in gaining the cooperation of the public. The municipality, or perhaps even the private recycling companies, could provide the waste pickers with some form of identifiable clothing, and / or identification cards.

- **Initiate the formation of an organisation of waste pickers**

  Innovative ways of dealing with the reality of the informal recycling sector could be applied in the case of Durban. Forming some kind of organisation for the waste pickers would be a useful, as has been established in places like Surabaya Indonesia (see Furedy, 1997: 151). An organisation could aid in organising picking areas, and there is also an opportunity to involve local communities in residential areas. If the community knew that their waste was being sorted, collected and recycled by a waste picker on a regular basis they may see the environmental, and poverty alleviation benefits of supporting informal collection. They may then be more willing to sort their waste, making it easier for the waste pickers to collect. It is unlikely that private sector recycling companies would take the initiative in this area, as they have nothing to gain from the formation of an organisation of waste pickers. Organisation may also result in waste pickers having an influence on prices paid for recyclable goods. It is more likely that the task of forming an organisation of waste pickers would be left up to the local authority, NGOs, or the waste pickers themselves.

- **Aiding waste pickers to acquire better market information**

  The majority of waste pickers interviewed in this study were found to use one buyback centre, irrespective of the price they offered relative to other buyback centres. Taking the price of cardboard, for example, at Eskom the price was 15c a Kg, and at Reclamation and Brook Street it was 10c a Kg. In general, the price

difference between buyback centres tended to differ. The waste pickers interviewed had no way of knowing what the best prevailing market price for material actually was, as the majority relied on one buyback centre. If the flow of information was better, waste pickers would be able to make more informed choices about where to sell back their material, or what other buyback centres are paying for material. The issue of transportation would still play a role in a waste picker choosing a particular buyback centre, however, waste pickers would be more informed about the prevailing market price for goods. Cellular communication could be used to inform waste pickers of changes in prices at various buyback centres, via an SMS database. This would give the waste pickers more information on the prevailing market conditions, enabling them to make more informed choices. This idea goes hand in hand with the formation of an organisation, discussed above. Again, this solution is not likely to be supported by large recycling companies. However, the municipality and NGOs could perhaps consider this once an organisation has been formed.

- **Improving the means of transportation**

  A way in which waste pickers could increase their incomes, would be if they had access to better means of transportation. The trolleys and carts that the waste pickers in this study were using varied in size and origin. Some were old shopping trolleys, while others had built their own carts. It is of interest that the buyback centres have not attempted to aid the collectors in getting better means of transportation, as it is directly linked to the volumes of material that waste pickers can collect. The buyback centres could provide trolleys to collectors who do not have one at a subsidized rate, or, they could rent trolleys out at a nominal rate.

  Improving transportation to the extent that waste pickers may be able to use a vehicle may be more difficult. It is unlikely that any of the waste pickers in this study, many of whom barely make enough to survive, will be able to save for a motor vehicle. The local authorities could possibly buy used vehicles, which they could then rent to the waste pickers at a nominal daily rate. However, the waste pickers would have to have a drivers licence to operate a vehicle. Obtaining this would be a significant hurdle for waste pickers to overcome, especially as time

taken off work means loss of income for the waste picker. In addition to this, the better educated waste pickers would be more likely to take advantage of this, at the expense of those with little or no education.

Private sector recycling companies may find this idea attractive, as it has implications for the amount of material that they can buy from the waste pickers, and therefore the amount of profit that they can make.

- **Issue waste pickers with protective clothing**

  Some of the waste pickers interviewed in this study (15%) pointed to a health risk associated with waste picking, mentioning that they dislike it when they get cut by the metal they are collecting. A way that this could be solved would be to provide the waste pickers with protective clothing. This is an initiative that could come from either the private sector or the municipality, as it is likely to result in waste pickers collecting more recyclable material.

- **Waste Education**

  Encouraging households to engage in source separation could greatly improve the working conditions of the waste pickers, and minimise the health risk associated with waste picking. The municipality has many lines of communication with its ratepayers and are in a good position to encourage households to separate at source, and leave the material on the pavement for the waste pickers to collect. However, this idea would work best in conjunction with an organisation as discussed above, where collection routes for waste pickers could be organised to ensure that the sorted material does in fact get collected.

  In addition to educating households on source separation, the waste pickers should also receive training. Plastics, for example, are complicated to identify and sort, as there are several different types. Metals, too, require identification and separation. Furthermore, there are also different prices offered for different materials. Educating the waste pickers on which are the most lucrative materials, and how to identify them will have an impact on the income that they are able to earn.

Without help from the municipality waste pickers are likely to stay poor, and continue living on or below the poverty line. The ideas above present a way in which the municipality, or formal recycling companies if they wish, could aid the waste pickers in advancing in their work. It is unlikely that the private recycling companies will change their behaviour significantly, as there is little financial incentive to do so. Innovation on behalf of the local authorities in terms of working with the informal recycling industry is needed.

6.3. Possibilities for further Research

While some ideas as to how to improve the quality of life for those involved in waste picking have been presented above, there is no doubt that policy makers will be more willing to support the informal recycling industry if they are clear on exactly how large it is, how many people it employs, and the extent to which it diverts waste from landfills. A detailed study, such as that done by Van Beukering et al (1996) in Bombay, is needed to establish how many waste pickers actually operate in Durban, how much waste collectively they are responsible for recycling, and the economic and environmental benefit of the industry as a whole. Such a study will be a major undertaking, but it will aid policy makers in gaining a deeper understanding of the participants in this industry, as well as the extent to which it benefits the city.

Furthermore, research should be conducted on the scope of recycling in Durban. An analysis of the waste stream is necessary, as is an understanding of the extent to which this activity can be grown further. Environmental resources are diminishing at a rapid ate, and recycling will have to grow as a result. Possible growth trends in the industry, and how these can be exploited to maximise employment and include the informal recycling industry, should be looked at in greater detail.

This study has given a glimpse as to how some of the waste pickers in Durban live and conduct their work. While questions were asked relating to how the municipality can possibly improve their working conditions, this was very brief. Focus groups and more in-depth interviews should be conducted with the waste pickers in order to go

into more detail as to how the waste pickers feel the local authorities could aid in supporting their work.

6.4. Concluding Remarks

The main research questions posed in chapter 1 have been answered. The socio-economic characteristics and the working conditions of the waste pickers in this study have been elaborated on in detail, while their relationship with the municipality, as well as the links between the formal and informal recycling sectors has been discussed. This research is in agreement with the majority of the literature on waste picking, that has found the individuals involved in this activity to be poor, earning very little. In addition to this, the literature suggests that waste pickers are little more than disguised wage workers, subsidising the formal recycling companies with none of the benefits associated with formal employment. This study is also in agreement with this.

The waste pickers that were interviewed in this research deserve respect from the public, and acknowledgement from the municipality. In a city where unemployment is high, these individuals should be commended on finding an innovative, environmentally friendly way in which to make a living. Further research should look more closely at the size and extent of the informal recycling industry in Durban, as this information will ultimately guide policy makers and perhaps encourage further interest in what is potentially an industry that can be used, both for poverty alleviation and sustainable waste management.

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Appendix 1: Questionnaire for the waste pickers

Name of respondent (optional)_____
Date interviewed_____

1. Gender	Male	1	Female	2

2. Race	
Black	1
White	2
Indian	3
Coloured	4

3. Please State your highest level of education attained

4. What is your home language?

5. How old are you?

6. How long have you been collecting scrap?

7. What was your previous type of employment?

8. How many people do you support financially?

9. Are you the sole breadwinner for your household?			
Yes	1	No	2

10. How long have you lived in Durban?

11. Why did you move to Durban?

12. Where did you live before you moved to Durban?

13. Apart from collecting recyclable materials, do you get money from any other sources?			
Yes	1	No	2
	Go to 14		Go to 15

14. What are these other sources of income, and how much do you get from them per month?	
Source	Amount
a.	
b.	
c.	
d.	

15. How much do you make per week from collecting scrap?

16. How many days a week do you work collecting scrap?

17. How many hours a day do you work collecting scrap?

18. Do you collect any of the following types of materials?		
	Yes	No
Paper	1	2
Cardboard	1	2
Plastics	1	2
Glass	1	2
Cans	1	2
Metal	1	2

19. If you collect more than one type of material, which material do you collect the most of?

20. Apart from the materials listed in question 16 above, what other things do you collect?

21. How do you transport the materials to their next location?

22. In which areas do you normally collect materials?

23. What problems, if any, do you experience in this type of work?

24. What do you think can be done to solve these problems?

25. What do you like about this type of work?

26. What do you dislike about this type of work?

27. Do you think that your work helps the city? If so, how?

28. Are you looking for other work?			
Yes	1	No	2

29. If so, what type of work are you looking for?

30. Why do you collect scrap instead of doing other types of work?

31. Why do you choose to drop your material off at this buyback centre (here) instead of a different buyback centre?

32. What do you think the municipality can do to improve your working conditions?