A study of waste management policy implications for landfill waste salvagers in the Western Cape

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ABSTRACT

The aim of this innovative, qualitative research was to explore the factors that led to the Solid Waste Management Department's resolution to prohibit landfill salvaging in the Cape Metropolitan Municipality and the intended and unintended consequences such a decision subsequently had for the landfill waste salvagers. Large numbers of poor, unemployed and illiterate people reside in the Western Cape. The chronic and devastating nature of poverty is forcing thousands of vulnerable people into subsistence waste picking. These people dig through ingrained dirt and filth-ridden mud to extract items that they can use to construct and furnish their homes, to sustain themselves and their dependents, and more importantly, to sell to intermediaries for an income. Although a poorly paid, insecure and unsanitary form of employment, waste salvaging still puts food on the table at the end of the day when all else fails.

This novel social development exercise studied what implications the prohibition on landfill salvaging in the Cape Metro has had for an exceedingly marginalized sector of society. This qualitative study mapped out the territory of integrated waste management and the various role players involved. The report explores the drivers for and barriers against landfill salvaging from three different perspectives: policy and planning, management and operations and informal sector waste salvagers. Government policies can sometimes prove to be less than effective in changing the disadvantaged circumstances of vulnerable communities. This research has demonstrated how the Department's decision to ban landfill salvaging has caused an even greater decline in the well-being of a section of the population that is already at risk.

The researcher used observation, semi-structured one-on-one interviewing, focus group interviewing and questionnaires as well as conducted a thorough review of waste management policy-related documents and secondary data analysis in this qualitative endeavour. The triangulation of data collection methods helped the researcher interpret how the Department's decision has adversely impacted on the informal sector landfill salvagers and to what extent and helped indicate a possible way out of the subsequent precarious development. The waste salvagers of the Cape Metro are unemployed, experiencing a poorer quality of life and feeling even more socially and economically excluded from the rest of society because of the ban on landfill salvaging. Moreover, they have developed feelings of resentment and anger that have resulted in defiant acts of trespassing and theft. This research has shown that repressive and neglectful policies on landfill salvaging will only be met with significant opposition from the salvagers.

Furthermore, given the socio-economic backlog and anticipated population growth in the Province, landfill salvaging will continue to be an important source of revenue for the poor and homeless. It is therefore the researcher's recommendation that landfill salvaging be legitimised and that landfill salvagers be recognized and organized into cooperatives that can provide them with the necessary resources to lobby for better working conditions at the top. Landfill salvaging will persist as long as chronic poverty endures. For this reason, consideration should rather be given as to how to go about formalising and controlling waste recovery at landfill sites to cater for the immediate and most basic needs of the poor. The recommendations brought forth will hopefully influence thinking about waste management policy planning and implementation in general, and be of service to furthering the country's achievement goals of sustainable employment creation and poverty alleviation.

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CHAPTER ONE
INTRODUCTION

1.1 Introduction

In this chapter, the researcher will introduce both the aim and motive for undertaking the study on waste management policy implications for landfill waste salvagers in the Western Cape. This chapter should enable the reader to gain an understanding of the researcher's intent and rationalization in producing meaningful information about the phenomenon under exploration. This chapter will also present central concepts that are regarded as an integral part of this particular research.

1.2 Point of departure

Waste salvagers[1] are people whose survival depends on collecting and sorting out garbage from the rubbish bins, waste dumps and landfill sites of our very own street corners and business centres as well as suburban areas. Waste picking is a manual, labour-intensive and hazardous activity that has been and continues to be a way of survival for the multitude of poor and unemployed in South Africa. The majority of black and coloured South Africans are still experiencing the devastating aftermath of the Apartheid era. Widespread poverty, high unemployment together with limited economic opportunities and housing shortages are socio-economic realities that continue to detrimentally impact on the well-being of this significant portion of the Western Cape population. Despite their low education, limited skills and dire living conditions, subsistence waste salvaging has helped them put food on the table and aspire to a better quality of life.

Until recently the *Minimum Requirements for Waste Disposal by Landfill* document allowed *Permit Holders*[2] discretionary power over landfill salvaging (DWAF, 1998:iv). A *Permit Holder* was basically asked to sign an indemnity form with the Solid Waste Management

[1] 'Waste salvagers' may be used interchangeably with 'waste recyclers', 'scavengers', 'waste pickers', 'reclaimers' and 'informal sector waste recyclers' among others. Nonetheless, the terms apply to those individuals whose survival depends on the collection of recyclables.

[2] "The Permit Holder is primarily and ultimately accountable for the landfill and any effect it may have on the receiving environment" (DWAF, 1998:v).

(SWM) Department; making him/her ultimately responsible for the health and safety of anyone working and/or residing on the landfill premises (Benjamin, 2007:9). In fact, the Cape Metropolitan (CP Metro) Municipality contracted-out landfill salvaging to avoid any liability issues in case of injury or fatality occurring on the premises. However due to an accumulation of health and safety problems, the Department finally decided not to renew any of its contracts for landfill salvaging as of July 2008.

Although the Department of Environmental Affairs and Tourism (DEAT) acknowledges the fact that landfill salvaging is an important source of revenue "for a sector of the population", its ultimate aim is to discourage, if not eliminate landfill salvaging altogether (DWAF, 1998:A10-14). The SWM Department felt that prohibiting landfill salvaging would be in the best interest of all those concerned. Through this study, the researcher intended to find out if the policy decision was in fact in the best interest of the informal sector waste salvagers, and if not the case, what could possibly be recommended to indicate a winning solution for all Interested and Affected Parties (IAPs).

1.3 A Contemporary perspective

The area of focus for this study is the Western Cape[3], a South African province situated on the south-western tip of the African continent with an area of 129,386 km² (PGWC, 2005:101). An estimated 5,26 million, or 11% of South Africa's population resides in the Western Cape (Statistics South Africa, 2005a:10). The Western Cape is the second highest average waste producing Province in the country (PGWC, 2005:101). Rapid population and urban growth have resulted in increased waste volumes. There are only 3 major landfill sites left in the CP Metro itself and they are currently nearing their maximum holding capacity.

Many landfill sites in the Western Cape have been closed down while others are in the process of being assessed by DEAT. This pro-active agenda forms part of the national government's aim to prevent any further damage to the country's environment and water quality (DWAF, 1998:5-1). The focus of waste management today is changing rapidly. The emphasis is no longer on the disposal of waste, but rather on how to avoid as well as reduce the generation of waste (DEAT, 2003:5).

[3] Map 1 on page 3 illustrates the Western Cape Province and its Municipal Demarcation Boundaries (Wikipedia, 2008).

Map 1 : Western Cape Province and its Municipal Demarcation Boundaries

Source: Wikipedia, 2008

An estimated 95% of the total of waste produced in South Africa is disposed of on land. According to the City of Cape Town's Manager for Integrated Waste Management Strategy Policy and By-laws, waste growth is estimated at 7% per annum; this figure outstrips the 2% per annum population growth rate (Coetzee, 2009:4). In 2006, 2.8 million tons of waste was landfilled each year (Coetzee, 2009:4). As a result, the Western Cape is quickly running out of landfills. The need to reduce landfilling is therefore driving waste management strategies and waste minimisation schemes.

The City of Cape Town has already projected to build new Material Recycling Facilities (MRFs), Transfer Stations (TSs) and a new regional landfill site within the Province. The City's SWM Department is also leading the way forward in their waste reduction and minimisation piloting projects and initiatives such as with the dual bag system of collection. However, given the population and economic growth factors, migration patterns, the

Province's inability to significantly reduce the socio-economic problems of the region and the fact that waste minimisation is still in its initial stages, waste will inevitably still find its way to landfills.

The number of people living in informal settlements is growing with more than 48% of households earning less than R3,500 per month (City of Cape Town, 2005:6). Along with high levels of poverty and the continuing migration of people into the CP Metro is a high unemployment rate; estimated at 23% in 2004 (City of Cape Town, 2005:6). HIV/Aids and tuberculosis continue to prevail, especially in the most vulnerable and poorest districts. Ad hoc and limited development in the Western Cape has resulted in an uneven distribution of income and wealth thereby resulting in unequal service delivery.

Although there is no quantifiable data that exists on the number of waste salvagers in South Africa, it is assumed that there are large numbers of poor and unemployed people using the activity of scavenging as a vital survival strategy. A lack of improvement in South Africa's economy and infrastructure as well as provision of social services and access to health care will most definitely result in an increase in subsistence waste picking across the country.

South Africa is experiencing a multitude of challenges associated with waste management and these can be linked closely to poverty, environmental health and social justice issues (PGWC, 2005:101). Given the fact that the right conditions for an integrated waste management (IWM) system have not yet been put into place (such as with resource recovery at the household level), nor rendered any significant improvement, serious consideration should be given as to whether eliminating landfill salvaging is the best case scenario for all those concerned.

1.4 Rationale

It is safe to assume therefore that the recent downturn of the world economy, the backlog in South Africa's infrastructure provision and institutional capacity and lack of fixed municipal maintenance and service funding, poverty and unemployment still remain and will continue to drive people to find novel subsistence activities such as landfill salvaging. To this day, the contribution of waste salvagers in resource recovery has been ignored and taken for granted. Despite their large numbers, waste salvagers lack the ability to influence and affect decision-

making. The author sees "participatory rights as essential to self-determination" and wished to make a point of it in this study by representing informal salvagers as justifiable stakeholders in the waste management hierarchy (Ajei, 2007:83).

To understand the importance of this study, it is essential to begin by stressing that waste can be collected, transported, stored, cleaned and recycled or reused into something of value (Medina, 2008:1). Most people believe waste to be worthless once it has been discarded and neglect to understand that through recycling, waste can take up a new form and new meaning, and more importantly, provide an income for the less fortunate and vulnerable groups of society. Through human labour and "a complicated web of social relationships", waste can be processed into new merchandise (Berthier, 2003:194). Industry and private sector businesses demand large volumes of materials to be processed (collected, sorted, cleaned, baled and crushed among others) and this in turn requires a ready and willing labour force.

Integrated Waste Management (IWM) should be viewed as a multidimensional process that will lead to the reduction of inequality, unemployment and poverty as well as serve to increase environmental protection. Social and economic development policies should be seen as a process of empowerment and sustained upliftment since the Province's current focus is to address the social development of the poor and the populations most at risk of experiencing a decline in well-being. This aspiration stems from the country's commitment towards the United Nations Millennium Declaration Goals (MDGs).

Looking at the experiences of various foreign first world countries as with New Zealand, who is known to have broken ground with its waste minimisation efforts since 1995, the City of Cape Town admits that the adoption and implementation of sustainable recycling by South Africans will more likely take more than 10 years to achieve (City of Cape Town, 2008a:9). In some countries, governments have helped create and launch programs that support the formalization of waste picking. In fact, the aim of these programs is to build upon the informal waste recycling sector and wealth of indigenous knowledge in resource recovery. In Buenos Aires, for example, there are more than 40,000 waste pickers recovering recyclables estimated at $178 million a year (Medina, 2008:4).

In many developing countries, waste management authorities have tended to focus on technological development (in the recovery, processing and industrialization of materials)

when planning for more efficient and effective recycling activities (Medina, 2008:1). Planning for technological development in waste management generally results in the exclusion of waste salvagers from the recovery system, thereby posing a threat to the very survival of our vulnerable groups. In view of the prevailing socio-economic issues in the country, and given the fact that people are essentially "forced" into waste salvaging due to economic deprivation in the first place, the researcher attempted to explore whether the Cape Metro's SWM Department's recent implementation to ban landfill salvaging was in fact socially desirable, economically viable and environmentally sound. As South Africa aspires to become a developmental state, putting in place multi-faceted interventions geared towards the upliftment and empowerment of its people is of the utmost importance.

The findings of this study and the evaluations brought forth will therefore hopefully influence thinking about waste management policy issues in general, be of service to furthering the achievement goals of sustainable employment creation and poverty alleviation and help open channels of communication between the informal sector and formal waste management stakeholders. Essentially, the recommendations derived from this study have helped indicate a possible alternative that would help create jobs, reduce poverty, save municipalities money in the long term, conserve natural resources and protect the environment as well as improve industrial competitiveness.

1.5 The research topic

"A study on waste management policy implications for landfill waste salvagers in the Western Cape"

1.6 The main research questions

1. What are the underlying factors that led to the phasing out of landfill salvaging in the Cape Metro?

2. Can landfill salvaging be considered a vital component of a viable and sustainable waste management strategy?

3. What are the Cape Metro's waste management policy implications for landfill waste salvagers in the Western Cape?

4. Are the informal sector waste salvagers willing to enter new service roles and positions in the formal, integrated and sustainable waste management system? And

5. What roles and positions are the informal sector waste salvagers foreseen to enter within the formal, integrated and sustainable waste management hierarchy?

1.7 The main research objectives

1. To explore the various factors that informed as well as urged the Solid Waste Management Department to eliminate landfill salvaging in the Cape Metro Municipality;

2. To determine whether landfill salvaging can be considered a viable and sustainable waste minimisation strategy, and if so, why the Cape Metro SWM Department did not plan for an alternative policy approach to banning landfill salvaging;

3. To identify the intended and unintended consequences that have resulted out of the SWM Department's decision to ban landfill salvaging in the Cape Metro as well as could be expected to result if the rest of the Western Cape followed in its foot-steps;

4. To determine the informal waste salvagers' willingness and capability to continue waste reclamation work as well as gain access to formal sector waste management jobs; and

5. To explore potential waste recovery and other waste management-related roles and positions that can be made available to or be accessed by the informal sector wastes salvagers.

1.8 Concept clarification

1.8.1 Policy

A policy, as defined in the Concise Oxford Dictionary (9th Ed), is "a course or principle of action adopted or proposed by a government, party, business, or individual" (quoted in Potter, 1999:239). A policy "…is developed to influence or shape behaviour [and is] the result or

outcome of some need" (Potter, 1999:239). Government policies affect large numbers of people and it is precisely for this reason that the researcher intended to explore how the changes in waste management policy are impacting on one of the most vulnerable and marginalized sectors of the population. This study required an exploration of the underlying dynamics of waste management policy as well as required an understanding of the interactions at play between policy planning and the social environment.

1.8.2 A framework for review

In order to provide a thorough and systematic coverage of the phenomenon under study, the researcher utilized the set of standards listed under Gil's (1992:71) *Framework for Analysis and Development of Social Policies*[4] as a guide for sourcing secondary information. The basic sources used consisted of the internet, academic journal articles, newspaper clippings, various websites and national, provincial and municipal policies and documents.

1.8.3 Waste salvagers: a profile

'Waste salvagers' is a term used to describe individuals whose survival depends on collecting and sorting out waste as income generation. 'Vultures', 'parasites' and 'scavengers' are just some of the derogatory terms used for such individuals who collect waste for a living. There are various forms of waste picking and these include the picking of domestic garbage from street corners and households, collecting waste from commercial and business centres, and the picking of waste on landfill sites (Khan, 1996:1).

Scavenging occurs as a result of chronic poverty and unemployment. According to Medina (quoted in Nas & Jaffe, 2004:339), people who engage in scavenging are not only relatively poor, but also occupy a low ascribed social status and are often rural immigrants in search of employment in the urban scene (Benjamin, 2007:7). Waste picking is a manual, labour-intensive and hazardous activity that requires little or no skills; therefore a viable option and way of survival for many in South Africa's "skills strapped economy" (Westcott, 2008:7).

Waste salvagers earn a living from collecting, sorting and selling recyclables to intermediaries such as recycling industries, construction companies and scarp yard dealers (Khan, 1996:2). Recyclable materials can range any where from scrap metal, vehicle tyres

[4] Appendix A illustrates Gil's Framework for Analysis and Development of Social Policies.

and bricks to paper, plastics and aluminium. In general, recyclables recovered from the landfill site are sold to a middleman, who will often exploit waste salvagers by paying low prices for materials, and then reselling those materials at a higher price to bigger industries such as foundries, factories and cosmetic firms (Khan, 1996:2).

It is important to note that waste salvagers are either "career" or "transient" waste pickers (Benjamin, 2007:43). "Career salvagers" are pickers who have scavenged over a long period of time, are knowledgeable about the activity of salvaging, earn a steady income from the activity itself and usually belong to a close knit and organised community. "Transient" salvagers, on the other hand, come to a dump site in search of nourishment or other. The refugees, who were recently forced into safety camps due to xenophobic attacks in 2008, are an example of "transient" waste salvagers. Driven by starvation, they were forced to scavenge for food and other necessities (Hweshe, 2008). The distinction between the two is often hard to discern as many of the urban poor come to the landfill site in search of materials to furnish their homes and to reuse for their own purposes.

Waste picking is extremely hazardous and an unhealthy activity. Waste salvagers generally scavenge on landfill sites without any protective clothing and ignorant of the potential health risks that it carries. Skin and respiratory diseases are exacerbated through poor landfill site management. Tuberculosis and asthma, for example, are two common respiratory diseases linked to landfill sites. Waste salvagers are essentially "forced to work in filthy, smelly, fly-ridden conditions," susceptible to eye irritations, colds, and foot and hand injuries with limited accessibility to health care thereafter (Khan, 1996:2). Furthermore, illegal dumping is especially found in low income areas such as near townships and squatter camps. This, in turn, causes greater social, health and environmental problems.

The World Bank estimates that there are an estimated 15 million waste salvagers around the world; women making up the greatest percentage of waste salvagers (Bonner, 2008:7). Subsistence waste picking exists in the majority of developing countries such as in Asia, South America and Africa; countries that have high levels of poverty and unemployment and fail to provide social security and health care services to the majority of its people (Khan, 1996:1). In South Africa, there is an estimated 10,000 waste pickers (Enslin-Payne, 2010:17). Previous research conducted in South Africa, mainly in Gauteng and Kwazulu-Natal, confirm that there are a large and growing number of people resuming to subsistence waste picking

(Benjamin, 2007:7). Informal scavenging is widespread and will continue to be so if chronic poverty persists and the large quantities of recyclables reaching the landfills are not considerably reduced.

1.9 Conclusion

Landfill salvaging has long been and continues to be a vital survival strategy and novel choice of occupation that millions of people around the world have taken up in the face of adversity. South Africa's high poverty and unemployment rates continue to hamper people's ability to enter the formal economy. The national government's intent is to discourage if not eliminate landfill salvaging. The CP Metro has already stopped contracting out salvaging and is taking measures to keep waste pickers off landfill site premises where and when possible.

It has been the aim of this chapter to introduce what the researcher wishes to explore and to what end. In the next chapter, the author presents: 1) more fundamental waste management-related concepts and 2) a thorough literature review on subsistence waste salvaging by the informal sector in South Africa, compared to other developing countries.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This literature review is two-fold: it will begin with a description of key waste management-related concepts, followed by a report on informal sector recycling in developing countries. This chapter should enable the reader to gain an overall understanding of the importance of informal sector recycling and the various key players involved.

2.2 Waste Minimisation

South Africa's aspiration for a more formal, integrated and sustainable waste management system essentially calls for a realignment of responsibilities between the public sector, private sector and civil society. In the Western Cape today, landfill sites are over-used and quickly reaching their full capacity. The acquisition of new land for landfilling is becoming increasingly difficult due to rapid urbanization, public opposition and shortage of resources. Waste management in its entirety is capital intensive. The increased operational cost to collect and dispose of waste, the significant increase of generated waste together with the limited available airspace remaining at many of the Western Cape's landfill sites has created an added pressure for the development of short, medium and long-term waste reduction strategies and alternatives (Engledow, 2005:79).

The current focus of waste management authorities in South Africa is on how to reduce the amount of waste generated. The minimisation of waste[5] is essentially the reclamation of waste which is done through various recycling and waste reduction processes; one of which is this study's main research topic, landfill salvaging.

[5] Waste minimisation is "any activity to prevent or reduce the volume and/or environmental impact of waste that is generated, treated, stored or disposed of" (IWMSA, 2009:26).

2.2.1 Waste

Waste is essentially anything that is no longer of use and has been discarded (DEAT, 2003:3). The average person produces around two kilograms of waste[6] per day in the Western Cape (Du Plooy, 1997:6). Solid waste is classified into two main categories: general waste and hazardous waste (DEAT, 2003:3). General waste consists of household waste, builder's rubble, garden waste and dry industrial and commercial waste. While general waste does not pose an immediate threat to human beings or the environment, it can produce leachate that may eventually pollute if not disposed off appropriately (DEAT, 2003:3). Hazardous waste on the other hand is toxic and has a greater likelihood of causing harm or danger to people and the environment. Salvaging however is no longer allowed on sites that manage hazardous waste and it is for this reason that the study focused primarily on municipal waste management facilities[7] dealing solely with general waste (DEAT, 2003:3).

2.2.2 Recycling

'Recycling' essentially refers to the entire life cycle under which products and materials are recovered, refined or reprocessed and converted into new or different products and materials after they have been discarded as waste. Some materials and products can be used as raw materials in a different manufacturing process and this is known as waste exchange (DEAT, 2003:3). The Integrated Waste Exchange Program, as part of the Integrated Waste Management Policy plan and Provincial waste exchange initiative, is a database that enables businesses to find someone or some entity willing to buy their waste and use it as a commodity in their own business (DEAT, 2003:3). Garden waste and any other biodegradable waste (such as vegetables and fruits) can also be minimized through composting whereby organic waste is broken down and used to enrich the soil for such activities as gardening or planting (DEAT 2003:3).

Not all waste can be recycled however. In fact, the mixing of dry and wet waste makes the recovery of materials problematic and will simultaneously decrease the value of the material

[6] Appendix B shows 2001 waste generation statistics per District in the Western Cape (Cape Metropolitan Council, 1999:102).

[7] "All wastes or products..that could impact on surface or groundwater quality, by leaching into or coming in contact with water [are stored on a temporary or permanent basis] [in a waste management facility]" (IWMSA, 2009:26).

being recovered if recoverable at all. Although it may not be all economically viable, it is estimated that up to 40% of the domestic waste produced in South Africa can be recycled (IWMSA, 2009:150). The following materials are the most popular recyclables salvaged by informal collectors: glass, paper, cardboard, plastics, metal, tyres, and goods such as fridges and microwaves (DEAT, 2003:4).

The logistics surrounding recycling consist of: collection, separation, sorting and cleaning. If the biodegradable waste is not separated at the household level (as is currently the case in South Africa), it eventually gets mixed up with all the other dry waste that ends up in the general waste stream (DEAT, 2003:9). This wet, dirty and infected waste makes reclamation of materials a foul smelling, fetid and intensive separation process for the informal waste salvagers. It also lessens the value of the recyclables, thereby decreasing the amount of money paid by a scrap dealer, buy-back centre or recycling company to an informal salvager (DEAT, 2003:9).

Due to the fact that there are no standard mechanisms that support and encourage recycling in the country, source separation is still in its initial stages. Insufficient knowledge of the benefits and methodology of recycling and waste reduction does little to encourage the buy-in of the private sector, civil society and authorities in the province (DEAT, 2000:15). Most of the waste minimisation initiatives however are carried out by the private sector such as with SAPPI (paper and fibre), Collect-a-Can (steel beverage cans and aluminium cans) and PET (plastics) among others (Benjamin, 2007:63). Until separation at source is viewed as an essential part of waste management in South Africa, recyclables will still find their way to a landfill and landfill salvaging will remain an option for the poverty-stricken.

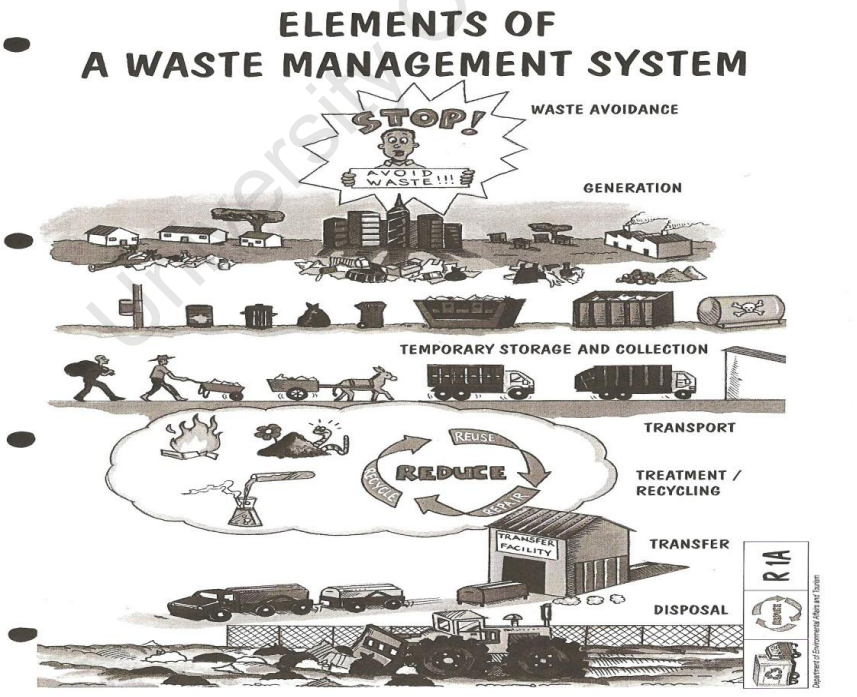
2.2.3 Means of recycling

'Recycling' may range anywhere from the mere act of removing salvageable materials from the waste stream by hand to a more sophisticated mechanized approach using conveyor belts and electromagnets (IWMSA, 2009:149). Separation at source and the concept of waste reduction is widely practiced and accepted in countries in Europe and in the USA, but hasn't yet been taken up on a country-wide scale by South Africans (IWMSA, 2009:142) This would require a major shift in mindsets in the wider South African public and private industry sector in committing themselves to greater sustainable practices of waste generation

and waste disposal. Separation at source is the government's ultimate long-term objective and will require a coordinated effort and buy-in of all members of society: industry, business, government departments and civil society.

Transfer Stations (TSs) and *Material Recovery Facilities* (MRF) represent a mid-point area whereby waste is separated on a platform before it is taken to landfill for disposal[8] (DEAT, 2003:20). *Recovery at disposal sites*, such as with landfill salvaging, is also a form of recycling whereby waste is separated by hand by either illegal or sub-contracted salvagers (DEAT, 2003:21). This form of recycling however is frowned upon and not encouraged due to its incompatibility with health and safety principles. More *mechanized recovery systems* are less labour intensive but clearly more expensive methods of recovery (IWMSA, 2009:150). Conveyor belts, classifiers and electromagnets are mechanized recovery systems that can be included in TSs, MRFs and recycling companies and can prove to be more efficient and effective in the recovery of materials if designed and managed appropriately (IWMSA, 2009:150).

Figure 1: Elements of a Waste Management System



Source: DEAT, 2003:R1A

[8] Figure 1 depicts what consists of the 'Elements of a Waste Management System' (DEAT, 2003:R1A).

2.3 Informal sector recycling in developing countries

Recycling rates in Europe are as high as 50%; 31% in the UK (Wilson et al. 2008:629). These countries however operate on a formal waste management system characterized by legislative and judicial tools that provide for and enforce an integrated source separation system that starts at the household level. In developing countries however, collection for recycling continues to be undertaken by the private sector, low-paid municipal workers and the informal sector waste salvagers.

Millions of people living in developing and globalizing economies depend on waste for their livelihood and that of their families. "The informal sector is characterised by small-scale, labour-intensive, largely unregulated and unregistered, low-technology manufacturing or provision of services" (Wilson et al. 2006:797). Further broken down, informal sector recycling refers to the waste recycling activities of those often termed as 'waste pickers', 'vultures', 'parasites' or 'scavengers' among others (Khan, 1996:1). With a lack of community organization and recognition from the authorities, informal waste salvagers are often subjected to police brutality and public scorn (Wilson et al. 2006:805). Informal waste sector recycling is unrecorded and often-time unregulated work. Those who work for a salvaging company are usually low-paid and work in groups of 10 or 20 (Wilson et al. 2006:798). According to Benjamin's research (2007:5), scavenging is defined as the following: "The manual sorting and picking of recyclable and reusable material and food from landfill and dumpsites or from streets or neighbourhood refuse collection spots for the purposes of personal use and income".

Furthermore, the first draft of the *Minimum Requirements for Disposal of Waste by Landfill* (2006) defines salvaging as "…the saving and utilisation of waste paper, scrap material, to retrieve or preserve (something favourable) in adverse circumstances" (quoted in Benjamin, 2007:5). Essentially, both of the above-mentioned terms describe a form of recycling in which waste is removed from the general waste stream and subsequently reused, repaired or reclaimed. Despite its informality, scavenging and salvaging are waste minimisation activities that reduce the volume of waste ending up at a landfill; thereby saving critical landfill airspace and minimising municipal capital expenditure.

Informal waste recycling therefore is an adaptive response to chronic poverty, deprivation, scarcity and alienation (Wilson et al. 2006:798). Lack of skills, education and financial support, the inability to find formal employment and the limited availability of work opportunities in one's locale are all factors that have driven persons into subsistence waste picking. Benjamin's (2007:7) *Rapid assessment on scavenging and waste recycling work by children in South Africa* for example, showed that parents who turned to waste salvaging had either been retrenched from formal employment or were currently employed in low-paying and seasonal jobs such as with domestic work or farm work. Moreover, many who resume to subsistence waste picking actually live in very close proximity of the landfill and have been introduced to the activity through social networks in their informal settlements (Benjamin, 2007:7). They also tend to salvage on dumpsites as a family; thereby exposing women, children and often-time elderly individuals to increased health and safety risks (Benjamin, 2007:14).

In Cairo, the Zabbaleen (the term used for informal recyclers in Egypt) are known to recover as much as 80% of recyclables with value (Wilson et al. 2006:801). Benjamin's (2007:8) assessment on scavenging in South Africa also showed that "…landfill sites [surveyed] have recorded that up to 40% of their waste is recycled due to [scavengers]". Recycling companies such as buy-back centres, private businesses, craftsman, artisans and wholesalers among others largely depend on the work of waste salvagers. In fact, informal recycling plays a key role in countries with low economic development. Such economies usually consist of a large low-to-medium skilled work force that can be utilized to counterbalance the government's insufficient funds and lack of available capital (Wilson et al. 2006:802).

2.4 The informal waste recycling hierarchy

Informal sector waste recycling in cities with an existent formal, municipal waste management system is usually consisted of the following four categories; and these categories are by no means linear and clear-cut (Wilson et al. 2006:798):

Itinerant waste buyers

These are waste collectors that come to your doorstep to collect, sort and transport your refuse waste to a recycling shop or buy-back centre. In Bangkok, waste collection is carried out by individuals or one-to-two man operations with tricycles.

Street waste picking

Informal waste salvagers pick through communal bins at collection points or off of street bins and residential areas for secondary raw materials. This act of salvaging is mostly carried out through mixed waste (or dirty refuse) before it has been collected. In South Africa, street waste picking is carried out by what is termed the trolley brigade (waste pickers that carry their recyclables in shopping carts).

Municipal waste collection

Domestic waste constitutes the major portion of municipal waste collection. Municipalities are also known to externalize waste collection by contracting out private businesses to extract waste from business centres or industrial sites for example.

Waste picking from dumps

This category consists of individuals sorting out through waste prior to compaction (or the covering of waste) on a landfill site. These individuals are known to sort through waste on landfill tips amidst bulldozers, compactors and dump trucks. Waste picking is also carried out at transfer stations and material recovery facilities where refuse is unloaded and transported via trucks or trains to their final dump site destination.

Essentially, the informal waste salvagers are found at the very bottom of the waste management hierarchy[9]. Without adequate support from the government and solid waste management authorities, informal sector waste salvagers remain susceptible to exploitation and further alienation. Their inability to add value to the secondary raw materials they salvage puts them even more at risk when trading with intermediate dealers such as scrap yards, buy-back centres and private recycling companies.

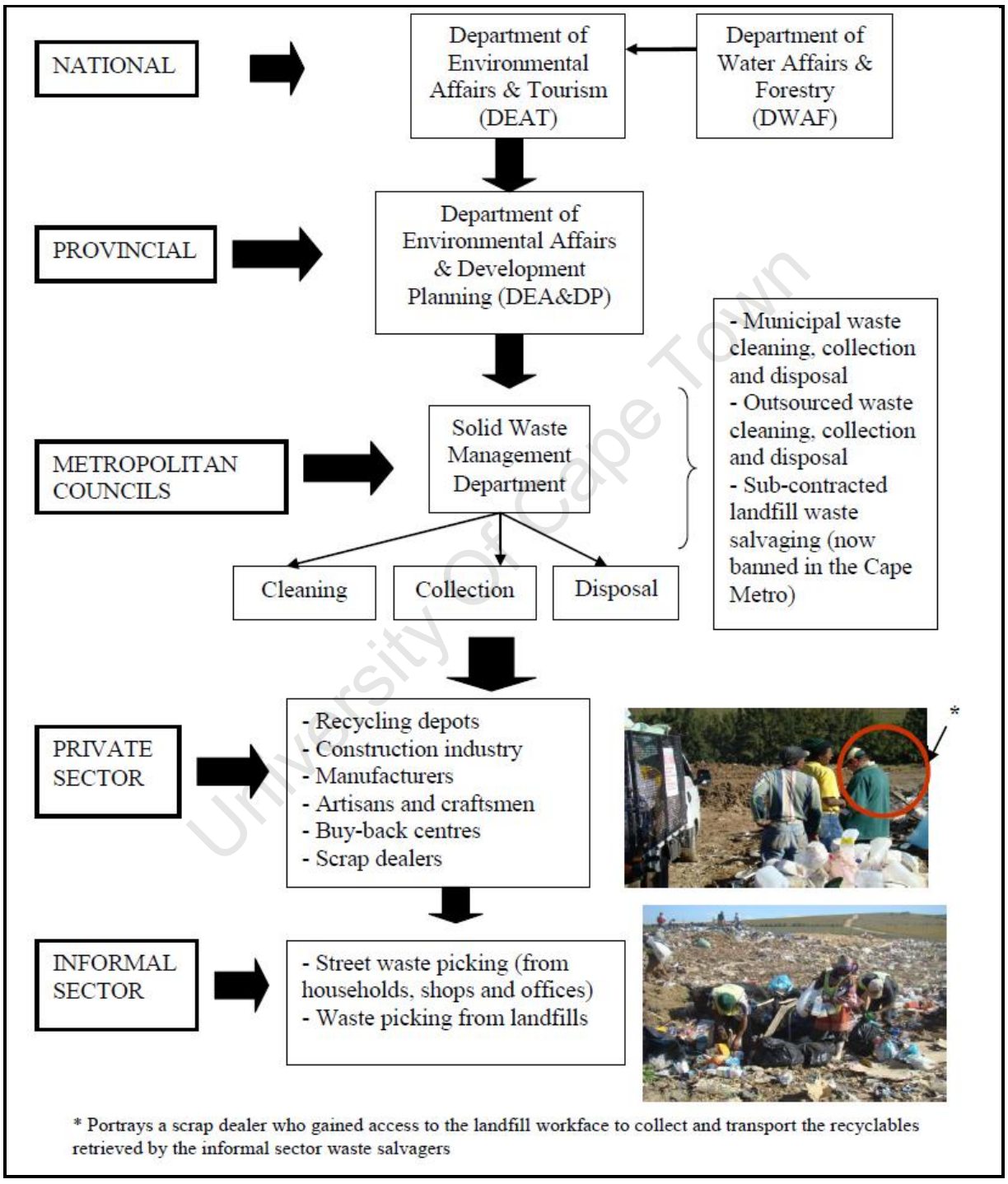
2.5 International perspective

Informal waste salvaging can be found in most cities that have experienced rapid and intensive urbanization (Mitchell, 2008:3). An estimated 2% of the population in Asian and Latin American cities alone is hugely dependent on subsistence waste salvaging due to low socio-economic conditions (Wilson et al. 2006:798). Herein, the author explores two

[9]Figure 2 on page 18 illustrates the Integrated Solid Waste Management Hierarchy in South Africa.

countries, one in Asia and the other in Latin America, whose globalizing economies have played a part in the gendering of waste salvaging populations and the work they undertake.

Figure 2: Integrated Solid Waste Management Hierarchy



* Portrays a scrap dealer who gained access to the landfill workface to collect and transport the recyclables retrieved by the informal sector waste salvagers

2.5.1 Vietnam

Similar to South Africa's transformation since 1994, following the Vietnamese Government's introduction of the "*Doi-Moi*, the economic 'renovation' policy" in 1986, the country has experienced rapid urbanization in its largest cities (Mitchell, 2008:4). Vietnam's once socialist central planning approach turned to an economy driven by market forces. Migration to urban areas characterized the *Doi-Moi* reform. Migrants came to the cities in search of work and better opportunities. One of the livelihoods chosen by the migrants entering Hanoi was the informal occupation of collecting waste. With increasing globalization and rapid urbanization came greater consumption of goods and services, and therefore, the escalation of waste in the city. "A ready labour force for waste is a potent reminder of the social unevenness of rapid and intense development" (Mitchell, 2008:4).

Mitchell's (2008:5) case study on Hanoi's informal waste collectors demonstrates how informal waste collection by migrants (temporarily as off-farm employment or permanently) has increased in recent years. Typically, the informal waste recovery industry in Hanoi consists of waste collectors (city corner waste pickers, landfill site pickers and junk buyers), intermediaries (such as dumpsite operators) and dealers (Mitchell, 2008:5). The source of income for the informal waste collectors is derived through the sale of recyclable material. Intermediaries such as scrap yard depot operators and other private recycling companies in turn buy the recyclable material from informal waste collectors and sell them to bigger industries. Mitchell's research went on to explain the rural roots of Hanoi's informal waste collectors. In fact, the majority of waste collectors working in Hanoi come from Xuan Truong district in Nam Dinh province. Waste collecting as a subsistence way of life for these people can be tied to the following four factors: social networks, population pressures, lack of secondary off-farm employment opportunities, and shift in post-independence agricultural policies (Mitchell, 2008:5).

Through social networking, one can find Xuan Truong's link to waste recycling 70 years back to a sanitation company where both children and adults participated in the collection of soil samples and the scavenging of recyclable materials (Mitchell, 2008:9). Furthermore, rapid population and the lack of job opportunities besides farming also became a factor by which Xuan Truong villagers turned to recycling as a specialization. Unlike other districts and provinces, Xuan Truong did not have any other traditions or locally based businesses on

which to rely on during the farming off-season or poor crop yields (Mitchell, 2008:9). Not only did the *Doi-Moi* political reforms in the late 1980s give rural inhabitants free choice to either sell or leave their farms, adding to in the influx of migrants to the city, but also brought about the financial burden of paying for services (Mitchell, 2008:10).

While many of Hanoi's waste collectors profess that waste collecting is a temporary occupation and their motive to continue salvaging is fuelled by their need to finance their children's education. All of these factors, whether political, economic, social or developmental in nature, led most Xuan Truong residents to the informal occupation of waste collection. The two main reasons why these waste collectors in Hanoi chose to migrate to Hanoi was due to family connections (with sellers or buyers) and/or the existent quantity and composition of waste (Mitchell, 2008:11). Similarly, waste salvagers in the Western Cape of South Africa tend to pick the busiest street corners, open dump sites and landfill sites that attract the most quantity of waste as well as the most recyclable goods.

Despite widespread waste picking and its importance, Hanoi's municipal waste management authority continues to undermine the displayed indigenous waste recovery knowledge of Hanoi's waste collectors by exercising Decision No. 63, promulgated in 2003 by the People's Committee of Hanoi (Mitchell, 2008:20). This Decision provides Hanoi authorities with the power to regulate the use of pavements in the city. Hanoi's waste collectors have many a time been expelled or denied entry or accessibility to street corners, city sidewalks and special events taking place in Vietnam. Similarly to the Western Cape's informal sector waste salvagers, the Hanoi waste collectors are very "much dependent on the political whims of the city" and defenceless against the Government's legislative exercise of authority (Mitchell, 2008:20).

2.5.2 Colombia

Colombia's waste salvagers were also driven into informal sector recycling due to "chronic poverty, high unemployment, industrial demand for recyclables, and by the lack of a safety net for the poor" (Medina, 2000:14). Until the late 1980s when scavenging was banned, landfill salvaging was widespread. Families built shacks neighbouring the landfill sites and spent their days salvaging materials for income and for their own personal use. The prohibition of scavenging on landfill sites in the late 1980s forced hundreds onto the streets

and had a severe negative impact on the income and standard of living of the salvagers and their dependents (Medina, 2000:14). These salvagers were forced to fend for themselves out on the streets of Bogotá. Without money to purchase a pushcart or horse cart, collecting and transporting recyclables became a huge struggle. They were forced to walk for long hours, sleep on the streets and through it all, were not able to collect nearly as many recyclables as they did on the dump site.

In 1986, a NGO called the *Fundación Social* (Social Foundation) helped the 150 displaced families organize themselves into a cooperative (Medina, 2000:15). In 1991, the 'Fundación Social' created a National Recycling Program that now represents more than 100 scavenger cooperatives (Medina, 2000:15). The formation of cooperatives helped give the scavengers a voice for it provided them with legal, administrative and business knowledge as well as free consulting and education on recycling. The National Association of Recyclers has not only given salvagers a chance to better their incomes but also to improve their standard of living and the way in which the world views them and their occupation.

Experience has shown therefore that repressive, neglectful or exploitive policies on salvaging have had negative impacts on salvagers and their families, and their living conditions (Medina, 2000:13). Colombia's waste salvagers did experience grave and horrifying times before they were able to establish their own national movement of waste pickers (Bonner, 1998:8). By the end of 1994, an estimated 2000 waste salvager corpses were found due to Colombia's 'social cleansing' campaign (Medina, 2000:8). On the other hand, policies that have supported and recognized salvaging activities such as scavenger cooperatives in Indonesia, the contracting-out of services for the collection of recyclables in some Colombian towns and the creation of public-private partnerships between local authorities and the scavenger communities in various Brazilian cities, show that salvagers can enjoy "higher incomes than actual unskilled formal sector workers" (Medina, 2000:13).

2.6 A local perspective: South Africa

Unlike the formation of scavenger cooperatives throughout Latin America and Asia, the waste salvagers of South Africa are scattered and unrepresented. The recognition and acknowledgment of waste salvagers' environmental, social and economic service to South Africa is carried out by only a few NGOs, local municipalities and private companies willing

and/or capable of supporting waste reclamation activities. According to SA Waste Pickers Association, an estimated 10,000 people salvage on landfills across the country (Enslin-Payne, 2010:17).

South Africa has experienced a history of colonialism, racism and repressive labour practices and policies. The apartheid era left millions of coloured and black Africans in poverty and in social, economic and political turmoil. For decades, the African people have been denied "basic social, economic, and political rights" (Abdi, 2002:40). Repressive policies such as with the Bantu Education Act of the 1950s resulted in today's large unskilled to low-skilled labour force (Metropolitan Municipality. 2002:16).

Let us first look at the socio-economic issues prevailing in the Western Cape in order to gain an understanding of the underlying factors that led and continue to persuade people to turn to landfill salvaging as a subsistence way of life.

2.6.1 Unemployment

An analysis conducted on the economy of the City illustrates that Cape Town is characterised by dual economies. The first economy, which includes the majority of the white population, benefits from formal employment opportunities, and has access to adequate social and economic services. The second economy, on the other hand, is made up of poor[10] and vulnerable communities of black and coloured Capetonians, who make up the majority of the informal sector[11] (City of Cape Town, 2005:6). The informal sector lost 231,000 jobs since 2008; the majority being in trade, finance, construction and manufacturing (Statistics South Africa, 2005b:viii). In fact, there has been an increase in the unemployment rate in five of the nine provinces; the Western Cape experienced the biggest increase of 2,1 percentage points from 2008 to 2009 (Statistics South Africa, 2005b:x). The recent global economic crisis has resulted in job losses and company closures and has definitely shown South Africa's susceptibility to global market forces (Strachan, 2009).

[10] "Poverty is characterized by a range of symptoms which include under- and malnourishment, living in miserable housing with bad hygiene and sanitary conditions, which make people susceptible to disease and reduce their life expectancy at birth" (Ajei, 2007:6).

[11] Statistics South Africa (2005b:xv) defines informal employment as "precarious" work in which people do not receive basic benefits or medical aid coverage from their employers.

South Africa is home to a large population that lacks managerial and technical skills[12] (Westcott, 2008:6). In fact, skills shortages have posed as a threat to the country's economic growth for many years. Skills shortages together with the 'brain drain' phenomenon have forced the Government to carry out selective immigration to acquire lost skills (Westcott, 2008:7). In 1998, a recorded 48% of the Cape Metro labour force was semi-to-low-skilled (Cape Metropolitan Council, 1999). In the light of these facts, the Government should recognize the reality of the country's "skills strapped economy" and make way for alternative arrangements when considering 'cradle to grave' policies in waste management (Westcott, 2008:7).

Table 1: Census 2001 socio-demographic characteristics of the Western Cape population

Socio-demographic characteristics of the population							
	% of total population	**% < 15 yrs**	**% > 60 yrs**	**% Female**	**% Foreign born**	**% of population > 20 yrs with no education**	**% of population 15-65 yrs who are unemployed**
Western Cape	10.1	27.3	7.8	51.5	2.4	5.7	26.1
National	100	32	7.32	52.2	2.3	17.9	41.6

Source: PGWC, 2009:7

2.6.2 Health

In 2008, an estimated 5.2 million people lived with HIV and AIDS in South Africa (Leake, 2009). An estimated 3.8% of the Western Cape's population, two years of age and older, are living with HIV (Leake, 2009). Although the Western Cape Province showed the lowest infection rate, the total number of people living with HIV and AIDS doubled between 2005 and 2008[13] (Wikipedia, 2009). The majority of those affected by HIV and AIDS are South Africa's young adults. The impact of the AIDS epidemic has severe consequences on not only the health, but income, productivity and ability of family members to care for each other (Leake, 2009).

[12] Table 1 illustrates Census 2001 socio-demographic characteristics of the Western Province population (PGWC, 2009:7).

[13] Appendix C demonstrates the estimated 2005 HIV prevalence in the Western Cape's sub-districts (Draper et al. 2007:6).

"[Eighty percent] of the sample would lose more than half their per capita income with the death of the highest income earner, suggesting a lingering and debilitating shock of death" (Leake, 2009). There are approximately 1.4 million AIDS orphans in South Africa. With a lack of access to proper health care and adequate social services, families are torn apart and left in emotional, health and financial turmoil. At the household level, the loss of income and a shift of expenditure towards healthcare result at the expense of education. While it may look like child labour and inappropriate child care practices to those living in the affluent sectors of society, children whose families live in such dire socio-economic conditions have no other choice than to resort to salvaging activities for their own survival (Wikipedia, 2009). Benjamin (2007:7) confirms that children who scavenge contribute up to 50% of the household's income.

Tuberculosis accounts for an estimated 80% of all communicable diseases in South Africa (Health Systems Trust, 2000:3). In fact, the Province is "known as the TB capital of the world"[14] (PGWC, 2009:3). Moreover, HIV increases the susceptibility and vulnerability of the HIV-positive individual to contract TB. Together, these statistics are cause for alarm. Migration, overcrowding, poverty, poor education and malnutrition among others are proven risk factors associated with these two diseases; the same harsh conditions, or vicious cycle to which waste salvagers are subjected (Draper et al. 2007:19).

Waste salvagers who work on landfills are susceptible to a multitude of ailments such as skin diseases, eye irritations, colds, cuts and bruises, food poisoning and more importantly are at risk of contracting respiratory diseases such as tuberculosis and asthma (Jenkin, 1995:4.6.1). Without the proper implementation and dissemination of health and safety standards and awareness, landfill salvaging will continue to be hazardous work and prove fatal for those who are not protected under the Occupational Health and Safety Act, No 85 of 1993 nor have access to adequate health care (Jenkin, 1995:4.6.2).

2.6.3 Population growth and housing

The best 2008 mid-year population estimate for South Africa is 48,7 million (Statistics South Africa, 2005a:3). In fact, the largest percentage of increase in population between 2001 and 2007 was in the Western Cape; an increase from 4,524,335 to 5,278,585 (PGWC, 2009:2).

[14] Appendix D demonstrates the Western Cape's District distribution of TB in 2005 (Draper et al. 2007:9).

Migration into the Western Province significantly contributed to this number (City of Cape Town, 2006b:11). The City's estimated 2% population growth per annum does not even take into account the 3 million visitors expected to visit Cape Town per annum by 2010; especially with the upcoming FIFA 2010 World Cup. Demolition and construction in preparation for the FIFA World Cup itself is producing up to 35% of Cape Town's waste (City of Cape Town, 2009:4).

The population density in the Province is calculated at 40.8 people per square kilometre; the Cape Metro displaying the highest density with more or less 3.5 million people or an estimated 70% of the Western Cape's overall population (Coetzee, 2009:4). Severe income disparities exist in the Cape Metro between households for whites and those for coloureds and even greater with that of black Africans (Cape Metropolitan Council, 1999). This problem is compounded by the fact that housing demands outstrips the supply of houses. Unfortunately, this housing backlog will continue to grow due to natural population growth and in-migration (Cape Metropolitan Council, 1999).

In 2009, the City of Cape Town estimated that there were 222 informal settlements and 909,931 households to service (City of Cape Town, 2009:3). One percent of the 909,931 households, which consist of informal settlements, are still underserved[15] (City of Cape Town, 2009:6). These generally overcrowded settlements make the collection of waste very difficult and often time impossible. Urban sprawl will continue to worsen the already existent discrepancy found between work and residence. This serious discrepancy existent between places of economic opportunities and residences result in higher transportation costs and time-consuming travel arrangements (Cape Metropolitan Council, 1999).

Cleaning/cleansing, collection and waste disposal services among others are the responsibility of local municipalities. However, "waste management infrastructure creation and funding are [still] inadequate for expanding services to prevent health and environmental degradation" and the projected population and economic growth in the Province will make service delivery that much harder to maintain as well as to achieve (City of Cape Town,

[15] Table 2 on page 27 shows the poverty indicators for the Western Province as it was recorded in the General Household Survey of July 2007 (PGWC, 2009:7).

2008a:5). It is safe to assume therefore that informal sector waste salvagers are a product of South Africa's history of oppression.

2.7 Landfill salvaging in the Western Cape

Typically, waste salvagers salvaging on a landfill swarm over the garbage and private pickup trucks that arrive on-site to pull out as many valuable materials as they can while the trucks are unloading their waste (Khan, 1996:2). Besides competition against other salvagers on-site, this rush is triggered by the fact that in the next few minutes a bulldozer will come by to crush, bury and compact the waste into the workface[16]. Some salvagers concentrate on certain materials; others roam around picking a variety of wastes. These materials are then sorted out (either at various places at the landfill, in close proximity to the compaction zone or nearby at someone's home) and put into separate piles ready to be transported to recycling companies, buy-back depots or scrap dealers or sold directly to 'middleman' who have gained access to the landfill (Khan, 1996:2). Unfortunately, these informal waste salvagers do not have the funds and necessary capital to invest in motor vehicles for the transportation of recyclables or even for storage space in which to keep their recyclables.

Privatization of waste management services has done little to help the plight of informal waste salvagers in the Western Cape. Although privatization could allow for the formation of salvaging cooperatives, it has not been the case. Waste salvagers lack the funds and necessary management, administrative and logistics know-how as well as the government's support to initialize the formation of a cooperative. Waste salvagers are forced to sell their recyclables to 'middlemen', or intermediaries who pay them low prices for their materials (Khan, 1996:2). Unlike the waste salvagers, these 'middlemen' have the funds and infrastructure to sort, process, store and/or transport accumulated goods that they can then sell back to industries at a higher profit (Bonner, 2008:7). These intermediaries also have the luxury to store their recyclables until the market forces turn in their favour or until they find someone willing to pay the recyclables at a higher price.

[16] "The workface is the active part of the landfill, where waste is deposited by incoming vehicles" (IWMSA, 2009:183).

Table 2: 2007 Poverty Indicators for the Western Province

Poverty Indicators as reported in the General Household Survey of 2007:		Western Cape	RSA Average
Percentage of households connected to the main electricity supply	2002	88.0	76.1
	2003	88.5	77.6
	2004	92.7	80.4
	2005	92.2	80.1
	2006	93.5	80.2
Percentage of households that use paraffin or wood for cooking	2002	15.7	37.9
	2003	16.1	36.8
	2004	12.2	35.0
	2005	9.6	33.5
	2006	7.5	31.6
Percentage of households using a bucket toilet, or which have no toilet facility	2002	5.7	13.2
	2003	9.1	11.8
	2004	3.7	10.8
	2005	5.6	10.2
	2006	3.1	8.6
Percentage of households whose refuse is removed by the municipality	2002	83.4	55.0
	2003	84.8	56.8
	2004	87.7	57.1
	2005	91.3	60.1
	2006	91.9	60.6
Percentage of households with access to piped water in the dwelling or on site	2002	91.1	66.1
	2003	89.2	67.3
	2004	92.4	67.8
	2005	92.0	68.4
	2006	93.4	71.3

Source: PGWC, 2009:7

Although waste salvaging is a hazardous and unsafe activity, it also has its rewards. Many waste salvagers say that they enjoy their work because of the income and due to the fact that they are their own boss and have the flexibility in working the amount of hours that suit them (Medina, 2000:13). Nevertheless, without representation and accrued support from the private and public sector, and waste management authorities, waste salvagers will continue to

occupy the bottom tier of the waste management hierarchy. The priority is to build and strengthen the knowledge base of waste salvagers so that they may facilitate networking amongst themselves. With this exchange of learning and sharing, waste salvagers can start to unite in enhancing their living and working conditions, all the while sponsoring their own upward movement in the formal recycling sector waste management industry.

2.8 Conclusion

Previous research and experience has helped demonstrate that any country who decides to create a more formalized, integrated and sustainable waste recycling system cannot do so without taking into account the informal ways that currently exist. The millions of people who depend on recyclables for their 'bread and butter' have acquired years if not generations of waste recycling know-how and practices; experience that should be valued and built upon rather than discarded.

In the next chapter, the researcher conducts a thorough policy review of waste management-related documents and plans that impact on informal sector waste recycling, and more specifically, landfill salvaging. The next chapter should therefore enable the reader to gain an understanding of waste management policy at both the macro and micro levels of governance.

CHAPTER THREE
PUBLIC-POLICY REVIEW

3.1 Introduction

The long-term objective of South Africa is to eliminate salvaging on all landfill sites (DWAF, 1998:1-5). The Western Cape, and more specifically, the Cape Metro, has already taken pro-active measures to eradicate any form of salvaging on landfill sites in its area of jurisdiction. Based on the author's extensive research on waste management policy, and as was further validated by the DEAT, there are no detailed plans or strategies of implementation to this day that inform how one should go about phasing out salvaging on landfill sites. Furthermore, the City's SWM Department's recent waste management policy approach to prohibiting landfill salvaging in the Cape Metro still remains unguided and undocumented thereby leaving room for unforeseen consequences and results.

The researcher will first present the main Acts, Regulations and Policies that dictate waste management at the macro-level followed by an exploration of integrated waste management operational plans at the micro-level.

3.2 Waste management at the macro-level

3.2.1 Waste management legislation

South Africa has experienced a history of fragmented waste legislation. At the time of Jenkin's research (1995:2.1), there were 37 statutes, 16 provincial ordinances and various by-laws that dictated waste management in South Africa. Furthermore, the numerous aspects pertaining to waste management (such as with littering, illegal dumping and waste disposal) are dealt with under different Acts and under different government departments.

There are five main Acts herein that are of particular interest for this research for they are laws that govern the management and ultimate disposal of solid waste, thereby affecting the scope and nature of landfill salvaging in South Africa:

1. The South African Constitution (Act 108 of 1996):

a) "Section 24 of the Constitution of the Republic of South Africa" ensures that all people have the "right to an environment that is not detrimental to human health" (IWMSA, 2009:27).

b) Section 32 of the Constitution of the Republic of South Africa dictates that "everyone has the right of access to information" since "government decision-making has direct or indirect consequences on the environment" (IWMSA, 2009:27).

2. The National Environmental Management Act (Act 107 of 1998) (NEMA):
   a) Chapter 1, Section 2 of NEMA states that "…development must be socially, environmentally and economically sustainable" (IWMSA, 2009:30).

   b) It "…requires the responsible use and exploitation of non-renewable natural resources" (IWMSA, 2009:30).

   c) It encourages "…participation of all interested and affected parties in governance" (IWMSA, 2009:30).

   d) NEMA also professes that "…social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions taken must be appropriate in the light of such consideration and assessment" (IWMSA, 2009:30).

3. Hazardous Substances Act (Act 5 of 1973): this Act stipulates "…requirements for the safe handling, transport and disposal of hazardous waste material" (IWMSA, 2009:40). The regulations specified in this Act are controlled and directed by the Department of Health.

4. Occupational Health and Safety Act (Act 85 of 1993): this Act governs and enforces "…safe working environments and conditions" including "…the responsible management of people salvaging from waste disposal at the landfill site" (IWMSA, 2009:39).

5. Environment Conservation Act (Act 73 of 1989): Sections 20 and 24 of the Environment Conservation Act is of particular interest for this research for it provides landfill site managers with the legal requirements related to the acceptable operation of landfill sites. The Minimum Requirements (MR) for the disposal of waste in September 1994 was published as a response to South Africa's long history of badly sited, designed and operated landfills (DWAF, 1998:iii).

3.2.2 Waste management policy and strategy

The accumulated findings of a major Integrated Pollution Control and Waste Management Project undertaken in the mid-1990s resulted in the publication of the White Paper on Integrated Pollution and Waste Management (IP&WM) for South Africa (IWMSA, 2009:41). The main intent of IP&WM policy is to promote a "holistic and integrated system and process of management aimed at" ensuring and enforcing the rights and regulations stipulated under South Africa's legislative umbrella of laws (IWMSA, 2009:41).

The IP&WM macro-policy adheres to the three following principles: transboundary movement (effects on human health and environment), duty-of-care (individual accountability for the management and disposal of waste) and universal applicability of regulatory instruments (regulations apply to all, from civil society to national government) (DEAT, 2000:13). The IP&WM policy also identifies the following as key issues: water, air and land pollution and waste. This national policy was compiled by a multi-sectoral project committee using a participative approach at the central, district, and local level. The IP&WM policy addresses the shortcomings of previous legislation and waste management practices by bringing forth *prevention* to the forefront of waste management as opposed to impact management and remediation (DEAT, 2000:1).

The IP&WM policy uses a "cradle-to-grave" approach where waste management is viewed in its entirety, from prevention, generation, collection, transportation and treatment to disposal as a last resort[17]. Environmental Impact Assessments (EIAs) therefore take into consideration the entire process, and not just the output. The IP&WM policy is aimed at moving away from the neo-liberal approach of development planning to one based on sustainability. The policy's

[17] Table 3 on page 33 illustrates the Waste Hierarchy (IWMSA, 2009:135).

main strategic goals, obtained through a mix-scanning approach, were prioritized as the following (DEAT, 2000:2):

- Prevention and minimization of waste;
- Direct and visible reduction in the impact on public health and environment;
- Improve the quality of life of all South Africans, particularly the previously disadvantaged communities;
- Potential for job creation;
- Potential for rapid and visible results;
- Optimum utilization of available resources; and
- Sustainable integrated waste management.

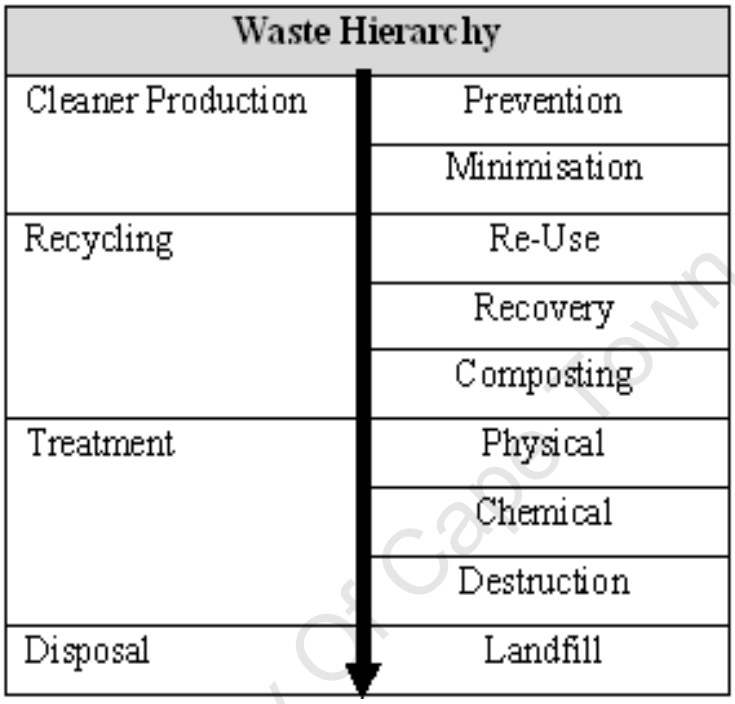
The National Waste Management Strategy (NWMS) essentially interprets the main goals set out in the IP&WM policy into action-oriented plans and objectives. Each of the main strategic goals are placed under an internationally acclaimed waste hierarchy that is meant to serve as a guide for the realization of local and provincial Integrated Waste Management (IWM) Plans (IWMSA, 2009:42).

The Strategy was compiled by the joint efforts of the DEAT and the Department of Water Affairs and Forestry (DWAF), along with various stakeholders from the private and public sectors. The Strategy helps clarify the roles and responsibilities of waste management authorities to facilitate the efficient and effective implementation of integrated waste management initiatives (IWMSA, 2009:43). All in all, the NWMS gives effect to South Africa's environmental laws which include all aspects of waste management.

The DEAT is the overriding body responsible for the dissemination of environmental laws. The DEAT is also responsible for monitoring the implementation of the Integrated Waste Management (IWM) plans drawn up by the provincial and local governments and their industrial partners (DEAT, 2000:45). Waste reduction and recycling are at the forefront of these plans. However, until the regional waste disposal facility and its transfer stations can be developed and start operating however (as proposed in NWMS), the DEAT, in consultation with the other government departments, needs to concentrate on developing and strengthening existent and alternative methods of minimisation and recycling. In fact, the

DEAT's implementation and evaluation of the policy on IP&WM should be considering how to better channel human creativity, skills and expertise in the national quest for environmental sustainability and improved quality of life.

Table 3: Waste Hierarchy



Source: IWMSA, 2009:135

3.2.3 Minimum Requirements

All waste management facilities, as is enforced under the Environmental Conservation Act (73) of 1989, must obtain a permit before operation (Van Vuuren, 2002:6). The permitting process consists of statutory requirements set out by the DWAF. An independent consultant is called in to perform an EIA in accordance with Sections 21, 22 and 26 of the Environmental Conservation Act (Van Vuuren, 2002:6). After a lengthy application process, and upon receiving approval for operation, waste management facilities are subjected to quarterly audits that are performed by independent consultants contracted by the municipality.

The *Minimum Requirements for Waste Disposal by Landfill* document was initially introduced to all IAPs for comment in 1994 (DWAF, 1998:iii). The second edition of this document, published in 1998, was as a result of a growing concern and increasing awareness

of environmental issues. Until the late 1980s, the absence of a legal framework and related statutory requirements led to ad hoc, incremental licensing initiatives (DWAF, 1998:5-1). There was no standard approach to permitting. The concept permits issued at that time differed from site to site and varied with time and geographical location demonstrating the Department's basic and fragmented approach to waste management planning. This *path of least resistance*[18] undertaken by the Department continues to impact on today's permitting process (York, 1982:28).

The objectives of the *Minimum Requirements* are the following (DWAF, 1998:5-1):

- To improve the standards and objectives of waste disposal in South Africa;
- To prevent the degradation of water quality and environment in South Africa;
- To provide guidelines for environmentally acceptable waste disposal practices; and
- To ensure that the environmental standards are applied for all landfill sites across the country, whilst still taking into consideration their suitability to differing landfill sizes and types (DWAF, 1998:5-1).

The aim of the *Minimum Requirements* is to register and permit proposed landfill sites, currently operating landfill sites and landfill sites that closed after August 1990 (DWAF, 1998:5-1). All sites closed prior to August 1990 shall be assessed for rehabilitation purposes. Concept permit holders are also required to upgrade their permits in terms of the *Minimum Requirements of 1998*. The *Permit Holder* has ultimate responsibility for the landfill during and after operational hours. The *Permit Holder* or qualified *Responsible Person/s*[19] appointed shall ensure that all phases of landfill development and management abide by the standards outlined in the *Minimum Requirements* (DWAF, 1998:1-5)

Appendix 10.3, Section 10 of the *Minimum Requirements for Waste Disposal by Landfill* very briefly addresses waste reclamation and salvaging (DWAF, 1998:1-5). Essentially, the document states that "…uncontrolled salvaging at the working face of the landfill is unacceptable..for this reason, the Department would like to prohibit waste reclamation at

[18] Incrementalism is a *basic approach to planning* that addresses the "squeaking wheel" and makes minimal and incremental adjustments on existing practices thereby taking the *path of least resistance* (York, 1982:28).

[19] "The Responsible Person must ensure that all facets of the work undertaken are properly and competently directed, guided and executed, and must therefore be appropriately qualified and experienced to the satisfaction of the Department (DWAF, 1998:1-5).

landfills" (DWAF, 1998:A10-14). The appendix then goes on to state that "…any waste reclamation operation on a landfill must be formalized and controlled..and must therefore be included in the Operating Plan" (DWAF, 1998:A10-14).

What is definitely made clear is that there will be no form of reclamation allowed on any hazardous waste sites. However, *Permit Holders* of general waste sites can allow reclamation to proceed if approved through the Permit Application (DWAF, 1998:10-13). The *Permit Holder* and *Responsible Person/s* than become/s responsible for the health and safety of the reclaimers and is required to separate the area of reclamation from the area of compaction (DWAF, 1998:10-13). Furthermore, under the Occupation Health and Safety Act, 1993 (Act 85 of 1993), the operator of a landfill site is responsible for ensuring that reclaimers wear "suitable protective clothing, in particular industrial gloves and boots with protective soles; [they] should also wear highly visible tunics" (DWAF, 1998:A10-5).

The "health and safety aspects" go on to say, if "…this equipment is provided by the Permit Holder, it could also become an effective means of identification and of ensuring that reclaimers are registered" (DWAF, 1998:A10-5). The *Minimum Requirements* fail to enforce health and safety guidelines that should be considered vital to the health and safety of waste workers and reclaimers alike when performing their tasks on-site. The above-mentioned quote merely suggests for Permit Holders to provide health and safety equipment to their reclaimers and "if" they do so, will more likely be in a better position to mitigate unwanted risks.

These vague and unclear *Minimum Requirement* guidelines can lead to a number of undesirable consequences such as the mismanagement of resources. The DWAF fails to take a stand on the issue of landfill salvaging. Such grey areas can undermine grounds for legal standing in criminal proceedings (IWMSA, 2009:33). In theory, if a Permit Holder was given authorisation to allow waste reclamation on his/her landfill site, he/she would be responsible in providing his/her reclaimers with safe working environments and conditions as defined under the Occupational Health and Safety Act (IWMSA, 2009:39). The landfill operator would also be responsible for separating the waste reclamation work from the actual workface of the landfill. In theory then, a lack of follow-through in providing such requirements would give the government grounds for criminal proceedings.

As of July 2008 however, the SWM Department of the Cape Metro decided to eliminate salvaging on landfill premises and chose not to renew any of their contracts with salvaging companies due to health and safety issues. This approach resulted in loss of employment for both the contracted salvagers and their employers, and could very well increase the vulnerability of the multitude of illegal salvagers who depended on landfill salvaging for survival.

The uncertainties and concerns discussed above are at the heart of this study's focus: waste management policy implications for landfill waste salvagers in the Western Cape. The researcher sought to explore what impact the Department's policy approach has had on the landfill waste salvagers of the Western Cape through the following research questions:

1) Why did the Department terminate landfill salvaging in the Cape Metro?
2) Is landfill salvaging a vital component of a viable and sustainable waste management strategy?
3) What happened to the waste salvagers after the City's SWM Department took the decision to ban all forms of salvaging on landfill site premises in the Cape Metro?
4) Are the informal sector waste salvagers willing to enter new service roles and positions in the formal, integrated and sustainable waste management system? and if so;
5) How can waste salvagers be incorporated into more formalized and secure waste management positions?

Given the socio-economic backlog of this country and more specifically, the Western Cape, did the City's SWM Department's decision and implementation to prohibit landfill salvaging take into consideration people's social and environmental rights? In fact, the first principle set out by NEMA "…places people and their needs at the forefront of environmental management, and aims to serve their physical, psychological, developmental, cultural and social interests equitably" (IWMSA, 2009:30). The answers to these research questions will be revealed and further discussed in Chapters five and six. For now however, let us take a closer look at waste management at the provincial and local levels.

3.3 Waste management at the micro-level

3.3.1 Western Cape Province

The Western Cape Province[20] is separated into one metropolitan municipality, five district municipalities and further subdivided into 24 local municipalities[21] (Wikipedia, 2008). The capital and only metropole of the Western Cape is the City of Cape Town. The CP Metro Municipality covers an area of approximately 2,400 squared kilometres (Coetzee, 2009:4). In 2006, Cape Town generated 76,6% of the Province's total Gross Domestic Product per Region along with the Winelands District at 10,45%, Eden at 6,14% and the West Coast at 4% (City of Cape Town, 2006b:8). The Eden District is growing at a fast rate behind the Cape Metro in terms of both economic and population growth (City of Cape Town, 2006b:9).

3.3.2 Waste management legislation

The provincial government of the Western Cape is comprised of 12 departments who work in cooperation with the national government to create laws and provide services to the people of the province (SouthAfrica.info. 2007). The Provincial Department of Environmental Affairs and Development Planning (DEA&DP) is in charge of submitting environmental plans, local government Integrated Waste Management (IWM) plans and industry plans to the DEAT for approval and monitoring purposes (DEAT, 2000:46).

Every municipality is required, under the Municipal Systems Act of 2000 to formulate an Integrated Development Plan (IDP) (DEAT, 2003:6). The IWM Plan, which consists of the municipality's waste minimisation and recycling objectives, forms part of the IDP. Essentially, the IWM Plan consists of integrated waste management procedures that focus on implementing the hierarchical management of waste (City of Cape Town, 2006a:8).

[20] Return to Map 1 on page 3 to view the Western Cape Province and its Municipal Demarcation Boundaries (Wikipedia, 2008).

[21] Table 4 on page 38 lists the Western Cape's metropole, municipal districts and municipalities (Wikipedia, 2008).

Table 4: Western Cape's metropole, municipal districts and municipalities

1 Metropole (Category A municipality)	
City of Cape Town	
5 Districts (Category C municipalities)	
I Cape Winelands District Municipality	
II Central Karoo District Municipality	
III Eden District Municipality	
IV Overberg District Municipality	
V West Coast District Municipality	
24 Local municipalities (Category B municipalities)	
I. Cape Winelands District	1) Witzenberg Local Municipality
	2) Drakenstein Local Municipality
	3) Stellenbosch Local Municipality
	4) Breed River/Winelands Local Municipality
	5) Breede Valley Local Municipality
II. Central Karoo District	6) Beaufort West Local Municipality
	7) Laingsburg Local Municipality
	8) Prince Albert Local Municipality
III. Eden District	9) Kannaland Local Municipality
	10) Langeberg Local Municipality
	11) Mossel Bay Local Municipality
	12) George Local Municipality
	13) Oudtshoorn Local Municipality
	14) Plettenberg Bay Local Municipality
	15) Knysna Local Municipality
IV. Overberg District	16) Theewaterskloof Local Municipality
	17) Overstrand Local Municipality
	18) Cape Agulhas Local Municipality
	19) Swellendam Local Municipality
V. West Coast District	20) Matzikama Local Municipality
	21) Cederberg Local Municipality
	22) Bergrivier Local Municipality
	23) Saldanha Bay Local Municipality
	24) Swartland Local Municipality

Source: Wikipedia, 2008

Every municipality is also required to develop and promulgate waste management by-laws that will facilitate the realization of waste management services and waste minimisation targets (DEAT, 2003:6). Cape Town is the legislative capital of South Africa and is the hub for policy-making and change. For this reason it is no surprise that the City of Cape Town is

the first to have developed and introduced an IWM By-law that allows the City to have greater authority and control over waste management activities (such as imposing fines for littering and illegal dumping and regulating recovery and recycling initiatives) (Communication Department, 2009:1). This important by-law, promulgated on March 10, 2009, demonstrates the City's aspiration to align itself with the principles outlined in the National Environmental Management Waste Act of 1998 (Coetzee, 2009:2).

3.3.3 Cape Metro policy and plans

The Council's Solid Waste Management (SWM) Department is the regulatory body that oversees and ensures waste management service delivery at the municipal level (City of Cape Town, 2007:5). Solid Waste Management consists of the following services: domestic collections; trade collections; garden refuse; drop-off area; area cleaning; transfer and disposal; and waste minimisation (Van Vuuren, 2002:555). These above municipal services are either provided through the municipality itself or through private companies and consultants that have been contracted by the municipality and accepted service delivery agreements with the City of Cape Town (Van Vuuren, 2002:581). Non-municipal services usually consist of industrial, medical and hazardous waste as well as builder's rubble (Van Vuuren, 2002:582).

The services performed through the municipality or through external service providers (e.g. private sector) need to be aligned with the statutory requirements set out in the National Environmental Management Act: Waste Management Bill, No 39 of 2007 and the National Waste Management Strategy (City of Cape Town, 2006a:10). The Council's IWM Plan, approved by Mayco in 2006, provides a detailed account of the Council's objectives towards minimizing waste disposal, providing service delivery, improving landfill site preservation and protecting the health of its people and environment (City of Cape Town, 2007:6).

3.3.4 Landfill management in the Cape Metro

Until the late 1990s, waste management was not regarded as a priority issue in South Africa. Waste management practices focused primarily on waste disposal and on addressing immediate needs and concerns on an *ad hoc* basis (DEAT, 2000:1). Prior to the 1950s, landfill sites were situated in most of Cape Town's suburban areas. During the apartheid era, municipal waste management services were extended only to those areas populated by white

people (International Labour Organisation, 2005:5). The coloured, Indian and especially the black Africans were left to fend for themselves.

After the repeal of pass laws and influx controls in 1986, rapid and uncontrolled urbanization led to the establishment of overcrowded informal settlements on the edge of urban areas (Metropolitan Municipality, 2002:16). Lack of waste collection services to those areas resulted in dire living conditions for millions. Despite government initiatives and transformation efforts, the uneven distribution and delivery of services still persists to this day (Onibokun, 1999:8).

The majority of today's landfill sites are still situated on the outskirts of the urban residential areas. Prior to 2005, there were 74 active landfill sites in the Western Cape (PGWC, 2005:102). Of those 74, three were classified as hazardous waste sites. It was already recorded in the Provincial Government's *Spatial Development Framework on Solid Waste Management* in 2005 that the currently active landfill sites in the City of Cape Town only had 7 to 10 years of airspace remaining (PGWC, 2005:103). Since the publication of the *Minimum Requirements* for landfill permit conditions by the DWAF in 1998, many of the sites have been closed down either temporarily for upgrade and maintenance purposes or permanently; which in this case the landfill is rehabilitated, closed appropriately and due for long-term monitoring and evaluation (DWAF, 1998:vi).

Out of the six landfill sites remaining in the City of Cape Town, three have already closed down. Hundreds of tons of waste are now being diverted to the remaining three municipal landfill sites operating in the City of Cape Town and they are: Coastal Park, Bellville South and Vissershok (City of Cape Town, 2008b). The City of Cape Town SWM Department has already phased out landfill salvaging in the three above-mentioned landfill sites as of 2008. The banning of landfill salvaging together with the closure of surrounding landfill sites will significantly shorten the lifespan of the three remaining landfills; especially since they are foreseen to reach their capacity within the next 5 to 13 years (City of Cape Town, 2008b).

Depending on the political aspirations and intentions of each newly appointed municipal mayor, on available municipal and district funds, on the degree of experienced socio-economic problems in a particular municipality and on the capability of the *Permit Holder* to ensure security on the landfill premises; these are all factors that most definitely affect

whether landfill salvaging still occurs on a particular landfill site. The City's Bellville South landfill, for example, was able to procure the necessary funds to hire metro police to patrol the landfill premises and ensure that landfill salvaging no longer occurs (Jenkin, 1995:4.6.2). Moreover, Coastal Park landfill management had to hire a 24-hour horse patrol to prevent the cutting down and thievery of their boundary fences by scavengers. Likewise and to this day, Bellville South landfill is also experiencing similar problems with their fencing; fencing that salvagers either sell or use for building material (Jenkin, 1995:4.6.2).

On the other hand, for those municipalities located in previously disadvantaged rural areas and for those located in problematic urban areas, the capability of the local governments to provide the necessary resources in regulating landfill scavenging runs short. The unfair elimination of landfill salvaging on the Cape Metro's landfills and the continual disregard of the City towards waste salvagers will continue to provoke animosity and treachery on the part of desperate salvagers.

3.3.5 Externalisation of waste management work

Today, municipalities are increasingly employing waste workers and semi-skilled to skilled professionals by contracting out waste management work (International Labour Organisation, 2005:6). Through the externalization of work, municipalities strive to cut costs, especially with labour costs, and aim to promote and increase Black Economic Empowerment (BEE), community participation and poverty alleviation (International Labour Organisation, 2005:7). For example, the Overstrand Municipality has forged a public-private partnership with Walker Bay Recycling in an attempt to promote and foster waste minimisation and create job opportunities alongside (Overstrand Municipality, 2009:41). The problem with the externalization of waste management work however is that it allows for grey areas; whereby waste management workers' and salvagers' rights and benefits may be exploited and neglected.

For example, municipalities give out waste management contracts to private *Permit Holders* that range anywhere from one to five years (International Labour Organisation, 2005:15). These contracts however make it very difficult for the employers to strategize long-term. Many employers do not offer their workers permanent jobs and/or labour law protection entitlement in case the contract will not be renewed. It is difficult for any employer to

strategize, grow and prosper in such a small amount of time. Waste disposal in South Africa costs an estimated R200 per ton (Engledow, 2005:60). In 2005, the financial cost of land-filling was between R30 and R100 per ton (Cape Metropolitan Council, 1999). The availability of suitable land for waste disposal is scarce and the time it takes to get land approved for disposal is extremely lengthy (Du Plooy, 1997:6).

The waste management sector is therefore capital intensive. The increased operational cost to collect and dispose of waste, the significant increase of generated waste together with the limited available landfill airspace remaining has created an added pressure for the development of medium to long-term waste reduction strategies and alternatives (Engledow, 2005:79). It would take an estimated five years and cost approximately R20 million in order to develop a new landfill site (PGWC, 2005:103). Authorities are therefore encouraging recycling initiatives in order to reduce the amount of waste being collected and disposed of in landfill sites. Informal salvagers contracted through labour brokers however often carry out these recycling and clean-up initiatives.

Research that was recently commissioned by the Department of Labour, has demonstrated that employees who are employed through a labour broker earn considerably less than those employees who are directly hired by their employers (Nicklin, 2009). Minister Membathisi Mdlladlana urges a re-evaluation of the labour laws and of those regulations controlling labour brokers in an attempt to ensure that employees hired through labour brokers are entitled to the rights and same protections of all other workers (Nicklin, 2009). Waste recycling and minimisation partnerships should not only be seen according to their affordability criteria, but rather as an opportunity to create and implement employment sustainability and more importantly, job security.

With today's economic recession and the increasing numbers of young potential work seekers entering the labour market, unemployment is rising (PERO, 2006:227). The Cape Metro, being the most dominant economic driver of the region, is at greater risk since many come to the metropole to seek better opportunities. Provincial and local planning, budgeting and service delivery decisions should therefore take into greater consideration the characteristics of local populations when determining the potentials and limitations to employment within the waste management industry.

The aim of this study therefore is to urge the multiple stakeholders[22] at the top of the Solid Waste Management hierarchy to view waste salvagers, or informal reclaimers as agents of change rather than passive receivers. The formation of public-private partnerships and the promotion of small-to-medium enterprises (SMMEs) in the Solid Waste Management sector will continue to be short-lived if the informal waste recycling sector is kept in the receiving line. The Province should rather help support the mobilisation and organisation of poor communities in devising practical solutions to their shared socio-economic conditions.

3.4 Finance

The Department's budget planning and provision of services differs from one Metropolitan Local Council to the next (Van Vuuren, 2002:5). The recently promulgated National Environmental Management Act (Act 59 of 2008) in 2009 caters for waste minimisation, recycling and recovery by further aligning the private waste management sector (City of Cape Town, 2008a:3). However, for the moment, neither the City nor the National Treasury budget makes provision for the new waste minimisation function (City of Cape Town, 2009:8). The University of Stellenbosch, in conjunction with the City's Solid Waste Management Department, conducted a "ground-breaking" cost modelling report on the viability of waste minimisation. The study demonstrated that municipalities will have to seek significant additional revenue to cover the costs of waste minimisation (Fiehn & Ball, 2005). The problem however is that the National Waste Management Bill fails to make provision for the necessary funding.

On a positive note however, this year's Provincial Budget makes way for four new grants; one of particular interest for the informal sector waste salvagers is the Expanded Public Works Programme (EPWP) Incentive Grant aimed at maximizing job creation (Strachan, 2009). Waste management and poverty eradication are inextricably linked and therefore should be seen as such by the Solid Waste Management authorities. The question remains however: how are the various departments going to coordinate their efforts in enabling the poor and vulnerable to play a fundamental role in waste minimisation and waste reduction strategies? The focus of waste management planners has generally been oriented around technology and engineering issues. Little attention has been given to the social sustainability

[22] Appendix E lists various waste management sector industry stakeholders.

issue. The focus of the Department therefore should rather be on how to strengthen the wealth of social capital found in its own backyard in prioritizing the maximisation of waste recovery.

3.5 Conclusion

The literature review conducted in the previous chapter informed us that despite the health and safety hazards involved, informal sector recycling is widespread and is an important source of revenue for millions of people across the world. It has also taught us that landfill salvaging can be considered a viable and sustainable waste minimisation strategy, but only if legitimized by the government and supported by the appropriate resources and necessary infrastructure. Furthermore, the policy review in this chapter informed us that landfill salvaging is not included as one of South Africa's main objectives in the promotion and expansion of recycling initiatives. In fact, landfill salvaging is to be discouraged if not eliminated.

The SWM Department's decision to further align itself with the statutory requirements set out in the NWMS by prohibiting landfill salvaging in the Cape Metro may have had some serious and irreversible negative impacts on an extremely vulnerable section of the population. This study therefore, was aimed at uncovering the intended as well as unintended consequences such a policy decision has had on the landfill salvagers and their well-being.

Next, chapter four introduces the methodology used to explore waste management policy, as it is understood at the policy, managerial and informal sector levels.

CHAPTER 4
METHODOLOGY

4.1 Introduction

This chapter describes the research strategy used to collect, interpret and report the findings on waste management policy implications for landfill waste salvagers in the Western Cape. This innovative study explored a highly dynamic and very complex topic, embedded in a rapidly changing environment. The researcher chose to conduct a qualitative exploratory study on waste management policy as it is understood and viewed by waste management authorities at the policy and managerial levels as well as by those who occupy the very bottom tier of the hierarchy and whose lives are at greater risk of being impacted by decisions being taken at the top. Throughout this chapter, the researcher will describe how the study was planned, structured and more importantly executed.

4.2 Research design

The researcher chose the 'insider perspective' (Mouton, 1996:169): a perspective that helps the researcher better understand the participants as they are in their social environment, and the social significance they attach to that environment. Solid waste management policy planning and the social environment are seen as inextricably linked. It was the researcher's intent to: seek out new insights on the Department's current take on landfill salvaging; assess how the implementation of the ban on landfill salvaging has affected the landfill waste salvagers in the area; evaluate how it could possibly affect the rest of the informal waste salvaging community if the rest of the municipalities in the Province were to engage in the same policy action; and indicate other alternative policy actions that would be agreeable to all waste management stakeholders.

To understand the depth of the phenomenon, the researcher selected a qualitative approach to the study. The qualitative paradigm allows for the exploration of deep-seeded insights, experiences, meanings and values as they are felt and understood by the participants themselves (D'Cruz & Jones, 2004:60). The uncertain nature and actual complexity of the topic called for a certain degree of flexibility, as is allowed through qualitative methods of inquiry (D'Cruz & Jones, 2004:109).

4.3 Sampling

Due to a lack of available quantifiable data and to changing population composition and demographics, the researcher made use of the non-probability sampling method and both snowball and purposive sampling techniques (Mouton, 1996:36). The methods and techniques selected for this study had to compensate for the innovative way in which the research had to be conducted. Solid waste management consists of a multitude of players; each impacting on the other in its quest for economical prosperity, environmental protection, public health defence, and for others, mere survival. To determine the parameters of the target population, the researcher approached her first case based on an identified area of expertise; pertinent to understanding policy planning as it is understood at the top of the hierarchy.

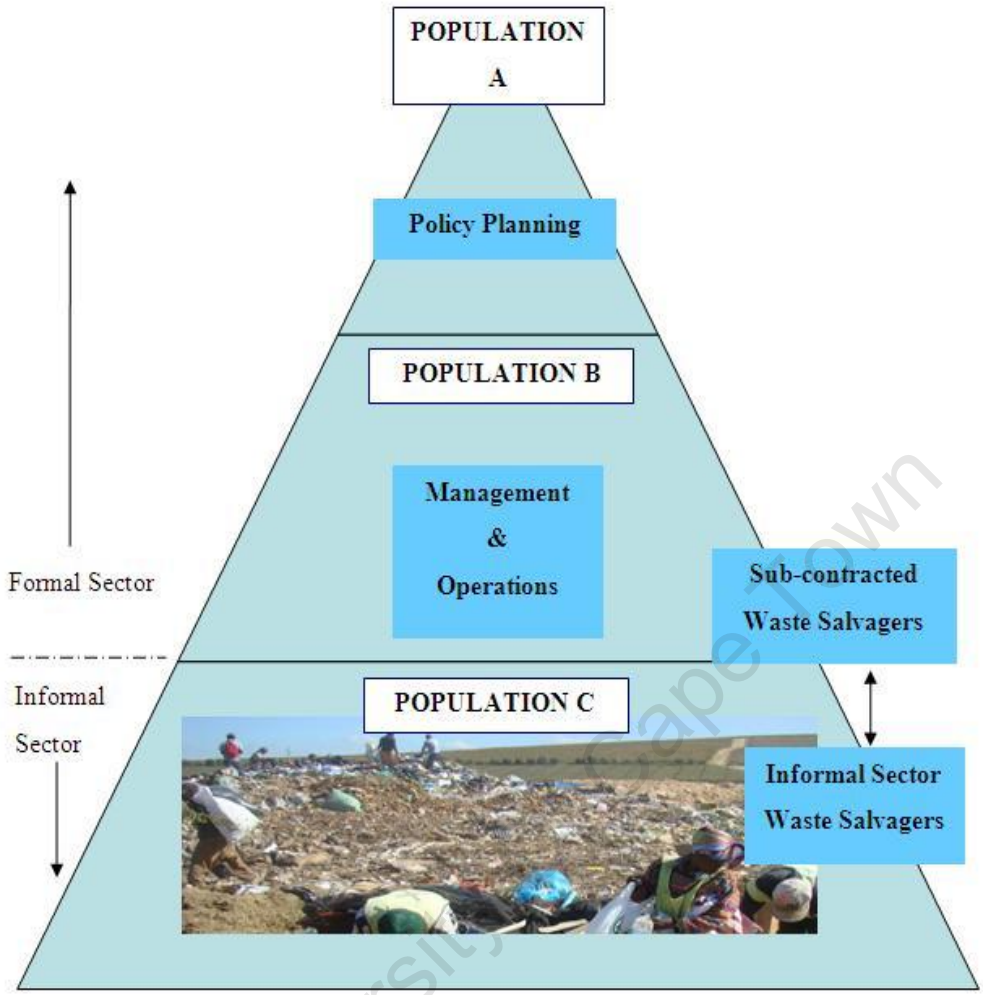
The Head of Integrated Waste Management, Strategy and Policy for the City of Cape Town in turn further identified other solid waste management stakeholders who could help bring this study to life. The researcher purposively selected 3 categories of 'units of analysis' to provide a snapshot of what is happening at the very top all the way to the very bottom of the waste management hierarchy. The majority of participants sampled however represent solid waste management in the Cape Metro. This greater concentration of Cape Metro waste management stakeholders was purposively determined due to the objectives set out in this study. Not only is the City of Cape Town generating the majority of the Province's total GDP, but is also experiencing the highest population growth and density, and more importantly, waste generation growth compared to the rest of the region. The City of Cape Town is also known as the legislative hub of the entire country and is the first to have completely banned any form of landfill salvaging in its area of jurisdiction as of July 2008.

The three categories selected therefore consist of 'population elements' that are based on common characteristics, such as with their particular position and task function in the waste management hierarchy[23] (Mouton, 1996:134). These categories are listed as the following:

1) Population A: Policy planning;
2) Population B: Management and operations; and
3) Population C: Informal sector waste salvagers.

[23] Figure 3 on page 47 illustrates the three population elements sampled for this study and their position within the waste management hierarchy.

Figure 3: Three population elements sampled



The waste management industry is a large employer, operating in every region and locality of the country. Recently, the industry has been going through many changes, legislative and other; changes that are affecting the rights, conditions, wages and for many, the livelihood of many individuals and their families. By studying a segment of each of the above populations, the researcher hoped to bring forth what those changes are and how these changes are impacting on the informal sector salvagers at the very bottom of the hierarchy.

4.3.1 Policy planning

Population A, selected through snowball and purposive non-probability sampling, characterizes those individuals found at the top of the formal waste management hierarchy. This population would typically consist of your waste management policy planners at the

provincial and municipal level. They represent environmental law and more specifically, waste management legislation. They strategize and develop context-specific IWM Plans and By-laws that dictate waste management services at the managerial and operational level.

The intent of the researcher to include this population in the study was to gain an understanding of the underlying factors that led the Department to prohibit landfill salvaging in the Cape Metro. This population would more likely be in the position to provide the researcher with a comprehensive snapshot of the social, economic, financial and political motivators behind waste management planning. Policy planners would also more likely be in the position to inform the researcher on current news and events related to waste management, and more specifically, landfill salvaging.

The policy representatives sampled for this study therefore consisted of:

a) The Deputy Director of Waste Management Governance for the Department of Environmental Affairs & Development Planning (DEA&DP);
b) Head: Integrated Waste Management, Strategy and Policy for the City of Cape Town; and
c) Head: Disposal North, Solid Waste Disposal for the City of Cape Town.

4.3.2 Management and operations

Population B, selected through a combination of snowball and purposive sampling, characterizes professionals with logistics and technical waste management-related expertise. Permission to sample *Population B* had to be sought from the City's SWM Department. This population typically consists of professionals who deal with the control, management and operation of waste management facilities, as well as the handling of specific types of waste. Essentially, these managers implement policy action. Their perception of waste management policy and the consequences that result out of their actions to implement it may very well differ from the views of the policy planners at the top.

Given the fact that these managers work at the ground level, they would have developed some kind of relationship with some of the waste salvagers who scavenged on their landfill before the ban was implemented. Their heightened sensitivity towards the informal sector

waste salvagers therefore could quite possibly discredit what is viewed by the policy planners. These managers are either government employees, private sector managers contracted by the Municipality to operate waste management facilities or are currently in an established public-private partnership arrangement with the Municipality. Management and operation representatives sampled for this study include the following:

a) The Overstrand Municipality's Principal Technician of Solid Waste;
b) The Swartland Local Municipality's Manager: Cleaning Services;
c) Manager: Disposal Solid Waste for the City of Cape Town;
d) Municipal Manager: Municipal Athlone Refuse Transfer Station;
e) Municipal Acting Manager 1: Hermanus Transfer Station;
f) Municipal Acting Manager 2: Hermanus Transfer Station;
g) Manager: Municipal Bellville South Landfill;
h) Manager: Material Recovery Facility and contracted to operate Municipal Highlands, Malmesbury Landfill;
i) Manager (private): G.M. Waste contracted to operate the Municipal Stellenbosch Landfill; and
j) Manager (private recycling company manager and also in a public-private partnership with the Overstrand Municipality): Walker Bay Recycling, Hermanus Recycling CC T/A.

4.3.3 Informal sector waste salvagers

Population C was sampled through a combination of non-probability purposive, snowball as well as accidental[24] sampling. The researcher carried out a thorough visit of the four waste management facilities that corresponded to the managers and operators of *Population B.* Unlike its South American and Asian counterparts, informal sector waste salvagers in South Africa are unorganized and fragmented; thereby making it very difficult to pinpoint there whereabouts. The Department's policy action in prohibiting landfill salvaging further destroyed the structure and what minute links still existed between the informal sector waste salvagers. This population typically consists of poor, illiterate and socially marginalized black and coloured South Africans and migrants who are struggling to make a living as well

[24] Non-probability accidental sampling results in a 'haphazard sample' where the researcher randomly and quite conveniently was able to find cases that represented the phenomenon under study (De Vos et al., 2005:202).

as access the formal labour market opportunities. *Population C* therefore was comprised of the following:

a) *Focus group 1*: illegal waste salvagers currently reclaiming at the Stellenbosch Landfill;
b) *Focus group 2*: former contracted waste salvagers and former illegal waste salvagers of the Bellville South Landfill (prior to the Cape Metro's policy approach to ban landfill salvaging);
c) *Focus group 3*: informal waste workers at the Highlands, Malmesbury Material Recovery Facility; and
d) *Focus group 4*: informal waste reclaimers at the Hermanus Transfer Station.

The preliminary interviews conducted at the four waste management facilities[25] helped the researcher gain access to the informal sector waste salvagers. The researcher was able to make contact with *focus group 2* for example, with the assistance of the waste management facility operator. As of July 2008, per the SWM Department's decision, the *focus group 2* salvagers are no longer allowed to conduct waste reclamation on the landfill premises. The researcher relied on the good faith and experience of the facility manager to gain access to the group. These preliminary initiatives not only gave the researcher the opportunity to earn the cooperation and participation of the informal sector reclaimers (by introducing the study, its relevance and the rationalization behind it), but also to gain entry and support from management at the four different waste management facilities.

Overall, the sample pool consisted of a wide range of role players of the waste management hierarchy which provided a comprehensive view of the entire system at work.

4.4 Data collection

The researcher used observation, semi-structured one-to-one interviewing, focus group interviewing and questionnaires as well as conducted a thorough review of documents and secondary data analysis in this qualitative endeavour. The combination of information

[25] See Appendix F to view the geographical location of the four sampled waste management facilities in the Western Cape Province.

collection methods allowed for greater validation of findings; each compensating for the other's weaknesses (De Vos et al., 2005:314).

4.4.1 Literature and policy review

The literature and policy review was done through sourcing secondary information on two main areas: informal sector recycling with specific reference to landfill salvaging, and waste management policy. Personal documents used included minutes of meetings, verbal communications, e-mail discussions and photographs among others. The researcher also made use of official documents which include the following: national white papers, provincial gazettes and municipal policies and plans on waste management as well as statistical reports and local municipal annual budgets, summit process records and tender contract templates. Mass media documents included newspaper and magazine clippings that related to the topic under study.

Archival material furthermore helped deepen the researcher's understanding of the context and historical relay of events regarding the specific topic at hand: waste management policy planning and implementation (De Vos et al., 2005:316). To counteract any disadvantages that may have arisen out of document study, the researcher conducted a comprehensive review of content and existing datasets from previous studies. In secondary analysis, the researcher used only the necessary data and charts that would help maximize the inputs and therefore facilitate the validity and accuracy of the findings of the current study (De Vos et al., 2005:322).

4.4.2 Semi-structured interviews

Also called "conversation[s] with a purpose", these face-to-face semi-structured interviews[26] allowed the researcher to explore waste management as it is seen and interpreted by policy planners and management implementers in the waste management hierarchy (De Vos et al., 2005:293). The data collected from *Population A and B* interviews not only served as background information for this study, but also as supportive and contradictory evidence with

[26] According to May (in Morse, 1991:189), "*semi-structured interviews* are defined as those organised around areas of particular interest, while still allowing considerable flexibility in scope and depth" (De Vos et al., 2005:292).

regard to the findings brought forth through focus group interviewing with the informal sector waste salvagers (discussed in the next section).

Each participant was given an official UCT letter[27] requesting permission to interview. Each of the participants was given a signed letter, and in turn, provided their own signed and dated consent for the interview. On the day of the actual interview, each participant was debriefed about the general purpose of the research, the confidentiality issues at hand, the role the interviewee could possibly play in the study and towards the generation of its findings as well as the approximate time it would take for the interview (De Vos et al., 2005:295). Each interview on average lasted around 2 hours.

The interview schedules[28] had pre-determined open-ended questions; each eliciting responses that would help answer the study's main research questions and objectives. So as to record the data in a systematic manner and to rely on mutual attentiveness and responsiveness during the actual interviews, the researcher gained permission to use a tape recorder from all of the subjects (De Vos et al., 2005:297). With the assistance of a tape recorder, the researcher was also able to write down occasional field notes on the non-verbal cues present during the interviews[29]. Furthermore, the researcher used a series of communication techniques[30] during the interviews to keep the respondents informed, engaged and comfortable with and during the interview process. Due to the language barrier, the researcher also used several probing methods[31] during the interviews in order to better comprehend the participants' responses; thereby enriching the datasets obtained (De Vos et al., 2005:288).

[27] Appendix G shows the UCT letter requesting permission to interview. The first page of the letter was signed by the researcher and given to the participants for their own safe-keeping while the second page was signed and dated by the participants and kept by the researcher for documentation purposes.

[28] Appendix H and I illustrate the interview schedule that guided the semi-structure interviews for *Populations A and B* (respectively).

[29] "Non-verbal behaviours such as eye contact, posture, gestures..fidgeting" (De Vos et al., 2005:311).

[30] Minimal verbal responses, paraphrasing, clarification, reflection, humour, reflective summary and encouragements among others (De Vos et al., 2005:289-290).

[31] Contradicting, linking, challenging, faking puzzlement, procuring details, and acknowledging among others (De Vos et al., 2005:290).

Towards the end of each interview, the respondent was asked if he/she felt like they had anything else to add to the interview schedule. The researcher ended the interview by thanking the respondents for participating, and especially for relaying information that was sometimes private and difficult to convey. The researcher did contact the respondents thereafter to thank them again for their cooperation and at a later stage during transcription, to verify wording and other expressions.

4.4.3 Focus group interviews

Due to the composition in and demographics of the informal sector waste salvagers, the researcher thought best to use focus groups[32] as an interviewing method. The participants would be coming from all walks of life: some would be Afrikaans-speaking; others Xhosa; some would be highly illiterate and have limited basic adult education compared to their younger counterparts; some would have acquired a lot more waste reclamation skills and experience over the years than their younger counterparts; and still others, such as the former sub-contracted waste salvagers may display greater discipline and understanding of the greater forces at work in the waste management industry compared to the more 'transient' ones who only trespass onto the landfill for food or other day-to-day commodities.

All these differing traits and characteristics would allow for free-flowing discussions on the phenomenon under study. Using focus groups not only served as a supplementary source of data, but also elicited a multitude of perceptions held about the elimination of landfill salvaging. In other words, through the process of *sharing and comparing*, the researcher would be able to gain an understanding of just how the SWM Department's policy action impacted on the landfill waste salvagers in the Cape Metro and to what extent (De Vos et al., 2005:301).

The researcher briefed each group about the purpose of the study and the rationalization behind it. The researcher was careful to explain to the focus group members that their participation would only help illustrate their struggles with waste reclamation and the implications that waste management policy planning and implementation can have for the informal sector landfill waste salvagers, but could in no manner promise changes or any improvements with respect to their livelihoods and unemployment situation. All the focus

[32] Appendix J illustrates the interview schedule that guided the focus group interviews for *Population C*.

groups were video-taped for transcription and translation purposes only with the permission of the focus group participants.

Through a series of open-ended questions, the researcher was able to obtain and interpret the waste salvagers' reactions to waste management policy and their conceptions on why the 'government is trying to put an end to their way of survival'. The researcher probed where disagreements were evident and where contradictions were apparent. Furthermore, the researcher took field notes at the same time so as to have a written account of the proceedings, sequence of events and non-behavioural as well as explicit behavioural occurrences within the group setting. All in all, the field notes included the researcher's observations of the participants, the emotion being evoked through questioning, the implicit and explicit gestures being displayed and the researcher's own sentiments, preconceptions and interpretations of the dynamics observed (De Vos et al., 2005:299).

All the focus group participants were kept anonymous throughout the research process to protect their privacy and dignity (D'Cruz & Jones, 2004:103). These participants took precious time out of their day to take part in the study; time away from fending for themselves, helping support their family as well as from doing their day's work. For this reason, beverages and snacks were handed-out to all participants during the focus group setting as a token of the researcher's appreciation.

4.4.3.1 Population C: focus group 1

On a preliminary visit to the Stellenbosch Municipal Landfill, accompanied by an Afrikaans-speaking translator, the researcher both introduced the study and was able to discern the illegal waste salvagers' willingness to participate in an intended focus group setting. On the day of the scheduled focus group interview, the manager ordered a pick-up truck to pick up a maximum of ten waste salvagers 'working' on the landfill workface, per the researcher's request. Upon the arrival of the salvagers at the prescribed meeting place and due to the information gathered during the *Population B* interview and preliminary visit to the landfill, the researcher could not help detect the manager's bias towards the coloured, Afrikaans-speaking salvagers 'working' on the landfill. The pickup truck arrived with fifteen coloured, Afrikaans-speaking salvagers, despite the fact that there were other salvagers coming from various ethnic backgrounds present on the workface.

Due to time constraints, office space restrictions and the advantages associated with a smaller sized focus group setting, the researcher asked ten of the fifteen salvagers to volunteer to stay and participate in the interview. After the researcher thanked everyone for their presence and willingness to participate, five of the fifteen salvagers returned to the landfill. The research had the same Afrikaans-speaking translator who had accompanied the researcher during the preliminary visit, at the focus group interview. Despite the ethnic and gender homogeneity of the group, the notable difference in age and salvaging experience of the participants[33] helped bring forth various attention-grabbing perspectives to the fore front of the focus group dynamics.

4.4.3.2 Population C: focus group 2

Focus group 2 consisted of waste salvagers who were either formerly contracted waste reclaimers or former illegal waste salvagers at the Municipal owned Bellville South Waste Disposal Site. As of July 2008, per the Department's decision and implementation to ban landfill salvaging in its area of jurisdiction, these salvagers are no longer allowed on the premises. This population would typically consist of sub-contracted waste salvagers who have lost their employment due to the ban and/or who were 'transient' trespassers who are now being kept off of the disposal site and from what was their only source of income.

The *focus group 2* participants[34] filed in on the day of the prescribed focus group interview until the desired number was achieved. It is important to remember that the researcher is working with the informal sector: individuals who are struggling with chronic poverty, the majority of whom have received limited schooling, and who are often ostracized by the society around them.

4.4.3.3 Population C: focus group 3

Focus group 3 interviews were conducted during the lunch hour. The researcher gained access to the informal waste recyclers of the Highlands Material Recovery Facility during a preliminary visit and interview with the manager. During the preliminary visit, the researcher briefed the 'workers' about the study, inquired about their willingness to participate as well as the day and time that best suited them for a group interview. Although the manager was

[33] Appendix K shows a profile of *Population C: focus group* 1 participants.

[34] Appendix L shows a profile of *Population C: focus group* 2 participants.

adamant in saying that the salvagers were not his employees but in fact their own 'boss', he still paid them a monthly salary and they were still bound to regular hours of work. For this reason, the researcher thought best to take these 'entrepreneurs' as little time away from their work as possible. They were also informed that preferably only ten of them would be needed to volunteer for the group setting on the day of the interview.

The researcher, as facilitator, was assisted by three translators: one Afrikaans-speaking, the second was Xhosa speaking and the third knew both languages. The majority of the *focus group 3* participants[35] were females. The researcher purposively included two male participants into the focus group setting so as to gain a perspective on a notable gendered division of labour existent within the waste management industry.

4.4.3.4 Population C: focus group 4

As with the focus group participants of the other three waste management facilities, the researcher gained access to and approval for a focus group interview with the informal waste reclaimers at the Hermanus Transfer Station during a preliminary visit and discussion with the Overstrand Municipality's Principle Technician of Solid Waste. The researcher inquired the time and day that best suited the salvagers so as not to severely inconvenience their day's work. These salvagers are basically allowed, by the Municipality, to reclaim recyclables from the waste stream, in a designated area of the Transfer Station. They work for themselves by salvaging as many recyclables as possible and selling them in turn to the private recycling company neighbouring the Station.

The researcher, as the facilitator of the group, was once again assisted by the same three translators who had helped with translation with *focus group 3*. Due to the informal nature of their work, because none of the salvagers are contracted employees, and hence are by no means allocated a time in which to commence work, the group[36] initially started out with 9 salvagers and gradually grew to 12 by the end of the session. After having noticed an explicit bond that evidently linked each participant to one another, the researcher thought best not to restrict any of the last minute entries.

[35] Appendix M shows a profile of *Population C: focus group* 3 participants.

[36] Appendix N shows a profile of *Population C*: *focus group 4* participants.

The intent of the researcher for interviewing *focus groups 3 and 4* was to gain an understanding of the informal sector waste reclaimers' impressions and perceptions about the nature and conditions associated with their current 'work' and place in the waste management industry.

4.4.4 Questionnaires

In order to gather more individualistic responses, as with capturing the focus group participants' demographics, the researcher administered questionnaires[37] with a combination of close and open ended, dichotomous and scaled questions to each of the participants either before the start or after the closing of the focus group interviews. The questionnaires were translated beforehand into Afrikaans and isiXhosa for the focus group participants. Again, the researcher worked with a segment of the population that is living in poverty, which has a high rate of illiteracy and has received limited education as well as formal training. Due to these characteristics, the researcher, with the aid of the translators, completed the group administered questionnaires with the participants one at a time; ensuring that each participant's level of understanding was accommodated for. Naturally, each questionnaire was tailored for its respective group while still allowing for a degree of standardization.

Furthermore, due to time constraints and so as to limit the amount of time the salvagers would be taken away from their only source of livelihood, the researcher made arrangements with *focus group 3* to return a second day in an attempt to breakdown the time needed for the interviews and that of the completion of the questionnaires. Some of the questionnaires were administered during the lunch hour and others while the salvagers performed their waste reclamation activity. As this is a novel qualitative study, the researcher had to stay flexible and prepared for any unexpected occurrences; including the often time disagreeable and informal setting in which the interviews and administration of the questionnaires were to be carried out.

[37] Appendix O shows the format of the group-administered questionnaires for *Population C: focus groups 1 and 2*.

Appendix P shows the format of the group-administered questionnaires for *Population C: focus groups 3 and 4*.

4.5 Data analysis

The various data collection methods utilized in this study brought forth commonalities experienced by the informal waste salvagers across a multitude of settings and geographical locations. The commonalities experienced by the various informal sector salvagers helped illustrate how waste management policy does play a part in the "life setting" of an informal sector reclaimer no matter his/her position in, level of experience and/or knowledge of the waste management system (De Vos et al., 2005:270). The findings extracted through the triangulation of data collection methods also brought forth counterintuitive material that either helped support or contradict the worldviews of the various targeted populations sampled in this study. The credibility and trustworthiness of the findings was amplified through this act of triangulation[38] (D'Cruz & Jones, 2004:76).

The study's various sets of voices and experiences ultimately came together to create a bigger picture of waste management policy at the top, its trickle down effect throughout the waste management hierarchy and the implications it carries for those at the very bottom, that of the informal sector landfill waste salvagers. In the next section, the researcher describes how these voices and experiences were interpreted and synergized into a bigger picture.

4.5.1 Transcription of data

The main research findings of this study were each placed at the top of a flowchart[39], followed by an illustration of the evolution in the researcher's thinking by which those findings were derived. Essentially, the illustrations presented for each of the five main research questions briefly demonstrates the gruelling, manual expedition of data analysis and interpretation undertaken by the researcher.

In qualitative research, data collection and analysis go hand-in-hand (De Vos et al., 2005:335). The researcher began the process of data analysis during data collection by colour coding and organising into separate folders the mountain of data sets retrieved through tape and video recordings, participant observation and note-taking. The second step involved long and taxing hours of transcription. Each semi-structured one-on-one interview was manually

[38] *Triangulation* involves combining 'multiple observers, theoretical perspectives, sources of data, and methodologies' (D'Cruz & Jones, 2004:76).

[39] The flowcharts are introduced in the next chapter.

transcribed onto Microsoft Word. With the assistance of the tape and video recordings and field notes, the researcher was able to add memos on the side describing the researcher's own insights and conclusions as well as observations of non-verbal cues captured during the interviews. These memos helped optimize clarity by re-evoking what actually went on during the fieldwork phase of data collection. These memos were also comprised of key concepts that later assisted in the interpretation of data (De Vos et al., 2005:337).

4.5.2 Coding the data

Due to the mountain of data and variety in data collection methods used, the researcher thought best to manage and code the information manually. Pre-coding involved a meticulous reading of all the transcriptions. Repetitive phrases and responses led to the emergence of prevailing thoughts and assumptions. The researcher read each transcription at least three times in order to build a coherent interpretation of the data gathered across all the different players. The process of coding data is a continuous one whereby new understandings replace old ones; constantly testing the researcher's representation of analytical thinking. Through the development of codes came the emergence of themes and categories.

The researcher worked on each focus group and semi-structured interview separately; recording the predominant segments, all the while cancelling out invalid and unwanted data (De Vos et al., 2005:336). In first-level coding, the researcher identified emerging patterns and arguments that connect each of the interviews. This process of identification brought forth existing links between the various sampled populations and their respective settings (De Vos et al., 2005:335). The forging of links also contributed to the reduction of data since multiple codes were created for single segments of passages (De Vos et al., 2005:338). The process of comparing and contrasting facilitated the fine-tuning of concepts and ultimate retrieval of data analysis (De Vos et al., 2005:335). Due to the fact that this is a social development oriented study, the researcher conceptualized a list of themes that are both associated to and embedded within the subject's broader social context.

In second-level coding therefore, the researcher was able to graphically depict the links and relationships derived from the clusters of information and hierarchies of codes developed through first-level coding (De Vos et al., 2005:343). A greater degree of analysis of the patterns and relationships displayed in the data sets were identified and consequently

'clumped' together under common themes. Once these clusters of information were identified and further configured, a storyline started to develop. This emergent storyline was subsequently translated by the researcher into decisive flowcharts. These 'frameworks of analysis' basically illustrate the researcher's interpretation and conceptualization of findings (De Vos et al., 2005:344). The researcher's 'frameworks of analysis' are further explained in the next chapter.

4.6 Reflexivity

In a qualitative study, the researcher and the translators alike become the analytical tools by which all information is processed (Seedat et al. 2001:143). Although the researcher planned for the recording of data in a variety of ways and in a manner appropriate to both the setting and the participants, language and cultural barriers nevertheless persisted. The researcher made use of several interviewing techniques and probing methods during the interviews to counteract these barriers. In the same instance, the researcher also had to take into consideration the different worldviews involved and especially the intellectual, ethical and political implications embedded within each one.

Being white, a foreigner and unable to speak directly to the subjects in their mother tongue, the researcher had to pay special attention to the power dynamics at play. The researcher had to surpass the obvious discomfort and guarded behaviour of both the *Population C* focus group participants and that of Populations A and B. The uneasiness displayed by the focus group participants are as a direct result of the marginalization and powerlessness experienced by the informal sector. The researcher had to consider the fact that the majority of the focus group participants have probably experienced public and police scrutiny on more than one occasion thereby making them distrustful, resistant and/or fearful of disclosing statements that could cost them their 'work'. On the other hand, the distrust flaunted by *Population A and B* interviewees was more as a result of fear of disclosing management practices and legislative approaches that are either confidential or could be perceived by some as racist, unbecoming and/or incompatible with environment laws and waste management legislation.

The translator is essentially the "filter of information" (Mikkelson, 2005:331) and for this reason, the researcher took care in selecting individual translators that could relate to as well as help facilitate rapport building with the informal sector population sample. The researcher

advertised for Afrikaans and/or Xhosa speaking individuals willing to help translate in a focus group setting. The advertisements were posted on Gumtree, an extensive network of online classifieds and community websites, as well as at various faculty offices at the University of Cape Town. The translators were paid a minimal amount per hour. Two of the translators were female, one Afrikaans-speaking and the other Xhosa speaking and in their first and second year of undergraduate studies (microbiology and sociology respectively), while the other two were coloured Afrikaans-speaking males, coming from the same low-income community and ethnic background (one of which who had recently lost his shack to a fire).

Using the same translators throughout the focus group interviews gave the translators the chance to become more familiar with fieldwork proceedings, and more importantly, with the research objectives. The eagerness and enthusiast shown by the translators in maximizing the validation of data gathering helped facilitate conversation and a dynamic exchange of insights during the focus group interviews. The nationality and ethnicity of the translators moreover helped override a lot of the initial anxieties experienced by the focus group participants at the start of the proceedings.

4.7 Ethics

In any social research endeavour, it is imperative for the researcher to conduct the study under certain ethical guidelines and moral standards. Since the researcher was working with vulnerable and at risk individuals, briefing played a major part in building rapport and in instilling trust in the focus group participants. Misleading the group members in any manner would mean violating the basic values of human dignity; the very values that this researcher hoped to inspire as well as reclaim on behalf of *Population C* (D'Cruz & Jones, 2004:103).

The role of the researcher was purely one of exploration and not of intervention. However, due to the inherent informalities and so as to counterbalance the language and ethnic barriers, the researcher had to probe and often time re-direct and re-phrase the questions in a way that the participants would both understand and be willing to respond to. Evidently, it was difficult and at times impossible to find the appropriate or direct translation for some of the waste management semantics. In order to avoid miscommunication and ensure that the participants understood the questions being directed at them, the researcher was forced to

redirect and, on more than one occasion, pry for answers by providing examples and initiating critical thinking on their behalf.

The researcher made it clear to the focus group participants that this study would not help them find employment nor would it make any improvements in the quality of their lives. Rather, this study was meant to help illustrate the plight of the informal sector waste salvagers and how they are currently being affected by policy decisions being taken at the top of the waste management hierarchy. Moreover, the researcher hopes that the findings and recommendations brought forth will hopefully assist formal waste management stakeholders in devising plans that may better respond to the needs of the informal sector waste salvagers and coincidentally, facilitate the attainment of national sustainable employment and poverty alleviation goals. The researcher ensured that the focus group setting was one of both giving and receiving. All participants were encouraged to ask questions about the study and any other related questions that would help put them at ease and find clarity.

Due to the sensitivity of the topic under study, the researcher vouched to keep all participants anonymous. Each subject was briefed accordingly and in his or her language of preference. Permission to request an interview from the relevant authorities and participants themselves was carried out in a timely and systematic manner. Permission to use a tape recorder and video camera were also obtained beforehand. The data recorded with the above data collection devices was used solely for data analysis purposes. Furthermore, all *Population A and B* interviewees were given a signed letter that declared the researcher's promise to adhere to research ethics and standards. All the interviewees sampled for this study were informed of their rights and participated of their own free will; free to withdraw at any time.

4.8 Limitations

This study has taught the researcher that there are no clear-cut and straightforward answers to any one of the main research questions of this study. Due to the sensitivity of the topic under study, the researcher had to continually check for consistencies as well as inconsistencies across the coded passages, as well as re-organize and re-conceptualize the data to optimize the research outcome (De Vos et al., 2005:339). It required creative thinking and demanded a keen eye in capturing subtle themes that are often overshadowed by the salient ones and proven even harder to pinpoint due to language and cultural barriers.

In order for the researcher to draw valid and logical conclusions from the data collected, the process of selecting a sample that would be representative of the whole (or target population) is of the utmost importance. While the intention of focus group methodology is not to produce generalisable data, the consistencies and commonalities found in the data extracted from across all three-population groups demonstrated a high degree of internal validity, dependability and conformability; hence strengthening the credibility of the data exposed (De Vos et al., 2005:346).

Once again, the researcher was interviewing, for the most part, a population that is highly fragmented and marginalized. The workplace and therefore, environment in which the focus group interviews were conducted was often foul smelling, dirty and extremely unpleasant. It is important to understand therefore that the focus group interviews were conducted at times in a highly unstructured manner, and in an informal and disagreeable setting. Despite the above spatial and geographical constraints and the unpleasant locale, the informal setting was familiar ground for the participants and therefore may have actually kept the participants rather at greater ease than if they had been assembled into a formal setting. The use of various recoding devices also helped overrule the often obnoxious setting in which the interviews were being carried out and facilitated data analysis at a later stage. The researcher made certain to gather all information in a systematic and standard manner across all four settings and population groups to both enhance the study's generalisability and maximize the significance of its findings.

Despite the language barrier, spatial constraints and informal nature of the study, the researcher feels certain that the data extracted from all the semi-structured interviews and focus group settings, together with the support of document study and secondary data review, is rich and consistent enough to produce valid and reliable insights into waste management policy and the implications it has had and will continue to have on the informal waste salvaging community in the Western Cape. Although the researcher deliberately carried out an extensive study on the waste salvagers, only the pertinent data was extracted and the salient themes discussed under Chapters Five and Six.

4.9 Conclusion

In conclusion, despite the complexity in and novelty of this qualitative study, the researcher believes that the selected analytical techniques and procedures used out in the field and during data analysis did help produce valid and credible information that can possibly influence thinking about waste management policy issues in general, and more specifically, about the viability of landfill salvaging. Although the rich data set extracted did relate to an existing body of theory and related research, it also produced new insights and new understandings on a current situation that is affecting the livelihood of a vulnerable section of the population residing in the Western Cape.

This phenomenology study did in fact provide a description of the issues surrounding landfill salvaging as it is seen through the eyes of three main populations who have experienced it at first hand. The wide span of information collected throughout the waste management hierarchy has helped determine that the elimination of landfill salvaging may not be in the best interest of the informal sector waste salvagers, especially in view of the Province's socio-economic backlog. To allow people to salvage is hazardous, but to merely close the option for those who earn a living this way without having a strategy in place is inhumane and goes against social development protocols. With this in mind, the researcher developed a possible alternative strategy to the ban on landfill salvaging in an attempt to produce a win-win situation for all waste management stakeholders; including the ones occupying the very bottom tier of the hierarchy.

CHAPTER FIVE
DISCUSSION OF FINDINGS

5.1 Introduction

In the previous chapter, the researcher described how the triangulation of data was interpreted through a systematic, procedural and rigorous manner. The flowcharts mentioned in the previous chapter illustrate the fruition in the thinking of the researcher and the analytical procedures used to produce the findings that will be presented herein. It is therefore in the reader's best interest to utilise the flowcharts as a reference when the researcher presents and discusses the main findings of the study.

5.2 Research question 1[40]

What were the underlying factors that led to the phasing out of landfill salvaging in the Cape Metro?

Factor 1

Landfill salvaging is first and foremost a health and safety hazard, and since the City did not want to be held responsible for any injuries and/or fatalities due to their or the operator's inability to control salvaging on the disposal site, the Solid Waste Department felt it best to ban landfill salvaging altogether and not to renew any of the sub-contracts as of July 2008.

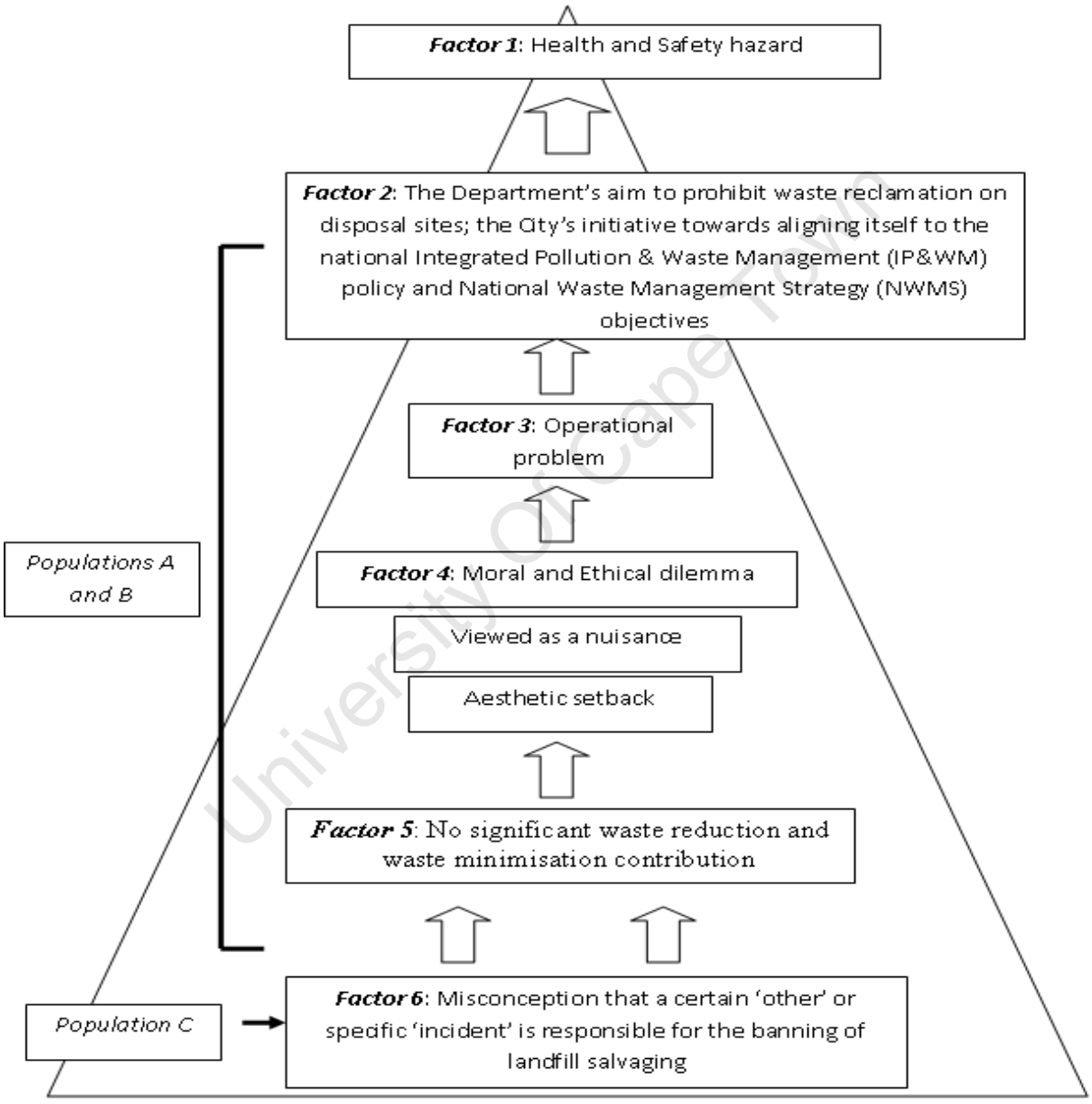
- *Population A*: 'The control was very difficult and that is the basic logistical problem that you face. So, you had a problem of trespassing, you had a huge increase in the exposure or the potential for safety. We had cases where people have been killed on the site. We had a number of injuries as well. If you have to see the operation, you've got 10 or 15 big machines operating on the site and you got 50 or 60 people. The nature of the game is this: that when the waste comes in, the first thing you do is you spread the waste because you need to flatten it and that is where they jump in, that is where they see if there are things of value'.

- *Population A:* 'And the other problem is that the fact that you had food stuff. A guy opens a packet, he sees somebody's supper from last night and they eat it. So, there is a huge risk in terms of hepatitis, gastro-intestinal diseases and a whole range of other stuff..you don't know just how much infection could, you know, go out into the community'.

[40] Use Figure 4 on page 66 to visualize the framework of analysis for Research Question 1 (RQ1).

The health and safety hazard issue is the main underlying factor that led to the prohibition of waste reclamation on the Cape Metro landfill sites. However, other factors also helped prompt the Department to ban landfill salvaging and these are discussed herein and can be viewed in Figure 4:

Figure 4: Framework of analysis for RQ1



Factor 2

The Department's aim is to prohibit waste reclamation on disposal sites. The Department's decision to ban landfill salvaging on the Cape Metro's disposal sites is not explicitly declared in any Provincial or Municipal policy strategy, Sector Plan nor is it explicitly stated in any of

its Integrated Development Plans. Furthermore, there are also no documents, plans or strategies in place informing as well as guiding disposal site management on how to appropriately go about terminating landfill salvaging. However, the decision to keep salvaging off of disposal sites is the City's initiative towards aligning itself with the National Waste Management Strategy and the Integrated Pollution & Waste Management Policy objectives.

- The long-term strategic objective of the IP&WM policy is to completely phase out salvaging at landfill sites for health and safety purposes (DEAT, 2000:19).

- "The view at the time of writing was that until informal salvaging can be eliminated, it should be discouraged, formalised and controlled, to minimise safety and health risks" (Langmore & al., 1998:A10-14).

The City's policy approach towards landfill salvaging was prompted by the next cluster of findings described herein:

Factor 3

Landfill salvaging (as it was being carried out on the disposal sites in the Cape Metro) interfered with waste management operations. *Populations A and B* agreed that landfill salvaging was not only problematic but also slowed down operational output at the end of the day. The compaction and covering of waste on the landfill work face is adversely affected by the presence of waste salvagers and the activity of scavenging; not to mention that it goes against the *Minimum Requirements for Waste Disposal by Landfill*. Both management and operational respondents furthermore reported incidents where their lives had been threatened by angry and desperate salvagers who, on more than one occasion, had tried to stop them from carrying out their day's work.

- *Population A*: 'The other problem was also..your control. I mean, you've got six security guys..they are not employed to look at your salvagers operating. They are there to make sure that your gates are mended and your fences are patrolled. And then you've got 60 odd people..there is no way for five or six guys to control all of them. It was a mob rule basically. They did whatever they wanted. So control was a serious problem'.

- *Population A*: 'You see some of the reasons why, on an operational level, we had lots of problems with illegal people coming on the site. What would happen is that the contractor

would employ 20 people or 30 people and you would get 50 or 60 people on the site. If any one of them was injured, got sick or died on the site, the City would be exposed to liability'.

The general assumption of most waste management authorities and operators is that the majority of waste salvagers scavenge the landfill for a quick fix (in other words, material they can sell quickly in order to get to their next drug fix or other). The consensus is that waste salvagers are carrying out landfill salvaging as a means for illicit drug abuse rather than as a means for generating income.

- *Population A*: 'A piece of copper, or a piece of glass would probably bring you five or six rand, just enough to get your next fix from the drug dealers…And these guys are desperate you know. They are taking our fence down to sell it to scarp yards and making 20-30 rand from it. It's costing us millions to replace the fence'.

- *Population B*: 'A few of them..you see they would be coming from Extension 13, now that's actually your gangster activity; that's your drug activity. So they would always come here rob the people or..so they try to make trouble on the site; threaten our staff, in front of the machines..stopping the machines..so the job wouldn't be finished'.

Factor 4

Furthermore, landfill salvaging is seen as dehumanizing work. Landfill salvaging is considered as both a nuisance and an aesthetic setback by waste management authorities and civil society in general. It is considered filthy and hazardous work that should not be allowed. The wider public and any foreign expert that comes to visit a disposal site with landfill salvaging being carried out cannot help from feeling repulsed as well as consider the activity as morally and ethically unjust and degrading to any human being who carries it out.

- *Population A*: 'Because, you know, you get a lot of visitors coming onto the site and they will see these salvagers picking through the waste and they were actually, many of them, shocked, some were horrified and some were disgusted. I remember the one person said, 'how can human beings live like this'. This is the most inhumane thing that she has ever seen, that human beings, people are actually working in this kind of environment'.

Factor 5

Moreover, the top waste management authorities also claim that informal landfill salvaging does not actually contribute to waste reduction and waste minimisation. They believe that informal sector waste salvagers in general only scavenge those materials that are of value to them and discard the rest of the recyclables thereof. This, they believe, does not contribute to the overall waste minimisation and diversion to landfill objective.

- *Population A*: 'If you look at that few hundred kilos of salvageable material out of there, you know; what difference have you done in terms of minimizing waste. So, you see, it's more so of an income than a reduction in the amount of waste going into the landfill. From that perspective, the old traditional way of salvaging at the work face and digging through stuff, you know, it doesn't make sense'.

However, this above-held perception of top management authorities is contradicted by some of the mid-management level operators who deal directly with waste management at the disposal site. In fact, one of the private contractors operating at a disposal site claimed that the informal waste salvagers are helping divert a considerable amount of recyclables from being landfilled, and in doing so, are helping extend the lifespan of the landfill and prolonging his contract with the Municipality.

- *Population B*: 'It's benefited the municipality in the long-run by saving plus minus 11% air space'.

- *Population B*: 'I can't see why the managers say that because each and every picker that's here..the one goes for planks, the one goes for bricks, the one goes for glass, the one goes for plastics..At the end of the day, they are not going for the same stuff, and they're getting all that stuff out. So, yes we are saving land space. Although the one just goes for this and the other one for that..in the long-run, if you put everything together, it's a massive heap that goes out [from being landfilled]'.

Moreover, some of the waste management facilities lacked weighbridges and/or an effective monitoring system that can help calculate just how much the informal sector waste salvagers are helping divert from the landfill. As Hudson (1995) so accurately puts it, "there is and can be no such thing as effectiveness unless and until there is detectable or measurable change" (De Vos et al., 2005:381). This vital information, together with the contradictions extracted

from among the responses of top waste management policy officials and that of waste management authorities, indicate a grey area that needs to be further examined.

On the other hand, the perceptions held by the informal waste salvagers (*Population C*) as to *"what were the underlying factors that led to the phasing out of landfill salvaging in the Cape Metro?"* are considerably different than those held by the senior and middle waste management and policy authorities. The majority believe that landfill salvaging is not a health and safety hazard. Their understanding is rather based on a specific 'incident' that they may have witnessed or heard about which probably angered waste management authorities and led, in turn, to the prohibition of landfill salvaging.

Factor 6

The majority of the informal sector waste salvagers who are prohibited from landfill salvaging have the misconception that a certain 'other' or specific 'incident' is responsible for the banning of landfill salvaging. Their stories suggest social, ethnic and/or racial divides. A strong sense of respect, likeness and mutual interdependence was commonly observed among participants coming from or living in the same 'locality' (Anderson & Carter, 1990:71). Social solidarity describes the bond and relationships that link individuals to each other based on a shared history or type of existence. Many of the informal waste salvagers are bound by the socio-cultural and socio-economic hardships they experience in life. Their exclusion from the formal economy and the rest of civil society leads them to develop their own habits, beliefs and values (Wilson et al. 2006:803). Bound by a shared history, these individuals distinguish the 'us' from the 'others'.

At one of the disposal sites where landfill salvaging is still carried out, the Xhosa newcomers are the scapegoats and are therefore held responsible for all mishaps. At another disposal site where landfill salvaging has been banned since November 2008, the 'Rastafarians' are to blame. The narratives tell about incidents where the 'others' have come in and disrupted the operation of the landfill, menaced landfill management and workers and even purposively set fires to the landfill.

In their eyes, those 'troublemakers' are the cause of their exclusion from the landfill; the reason why they are being kept away from what was their only means of survival, hence their current precarious situation. Not only were they stripped of their only source of income, but

their misconception and misunderstanding as to why they are no longer allowed to 'scavenge' on the landfill sites has led to acts of defiance and of resistance.

- *Population B*, operator of a landfill: 'Yes, I had controlled it for a while and then I've just given up. You know, you chase them [waste salvagers] away this side and they enter on the other side. Chase them away that side and then they enter that side. And then last year [2008], I chased them away and they set my landfill site on fire'.

5.3 Research question 2[41]

Can landfill salvaging be considered a vital component of a viable and sustainable waste management strategy?

Finding #1

Landfill salvaging can be considered a vital component of a viable and sustainable waste management strategy. *Population B* respondents with hands-on experience in operating disposal sites and with having established a closer relationship with the informal waste salvagers at ground level agreed that landfill salvaging could be a viable and sustainable option; but only if recognized and legitimized by the government and carried out away from the workface, in a structured environment and controlled manner.

- *Researcher*: Do you consider the reclamation and salvaging of materials of waste salvagers a legitimate and worthy occupation?
- *Population B*, landfill operator: It is. They are making a living out of it; every single day. These guys don't come here just to sit here for a day, or waste his time just for half a slice of bread or a cell phone or something special and small. They come here do the recycling; to support and supply.

- *Population B*, landfill operator and overseer of a mini-MRF: 'In other words, should we make 2500 rand profit per month, out of the material recovery facility, we get another picker [waste salvager] in or we make the group bigger so that we can pick more material because the more we recycle the longer the site will be in operation. And that is a win-win situation for everybody because if we recycle more there's more jobs created, I got a job for a longer period of time, and the municipality saves air space. So everybody wins'.

[41] Use Figure 5 on page 73 to visualize the framework of analysis for Research Question 2 (RQ2).

- *Population B*, landfill operator and overseer of a mini-MRF: 'It does. It does do a lot. We basically saving..for every four months working [at the mini MRF], we basically saving one month. So, every year we turn into air space, we turn into a year and a quarter'.

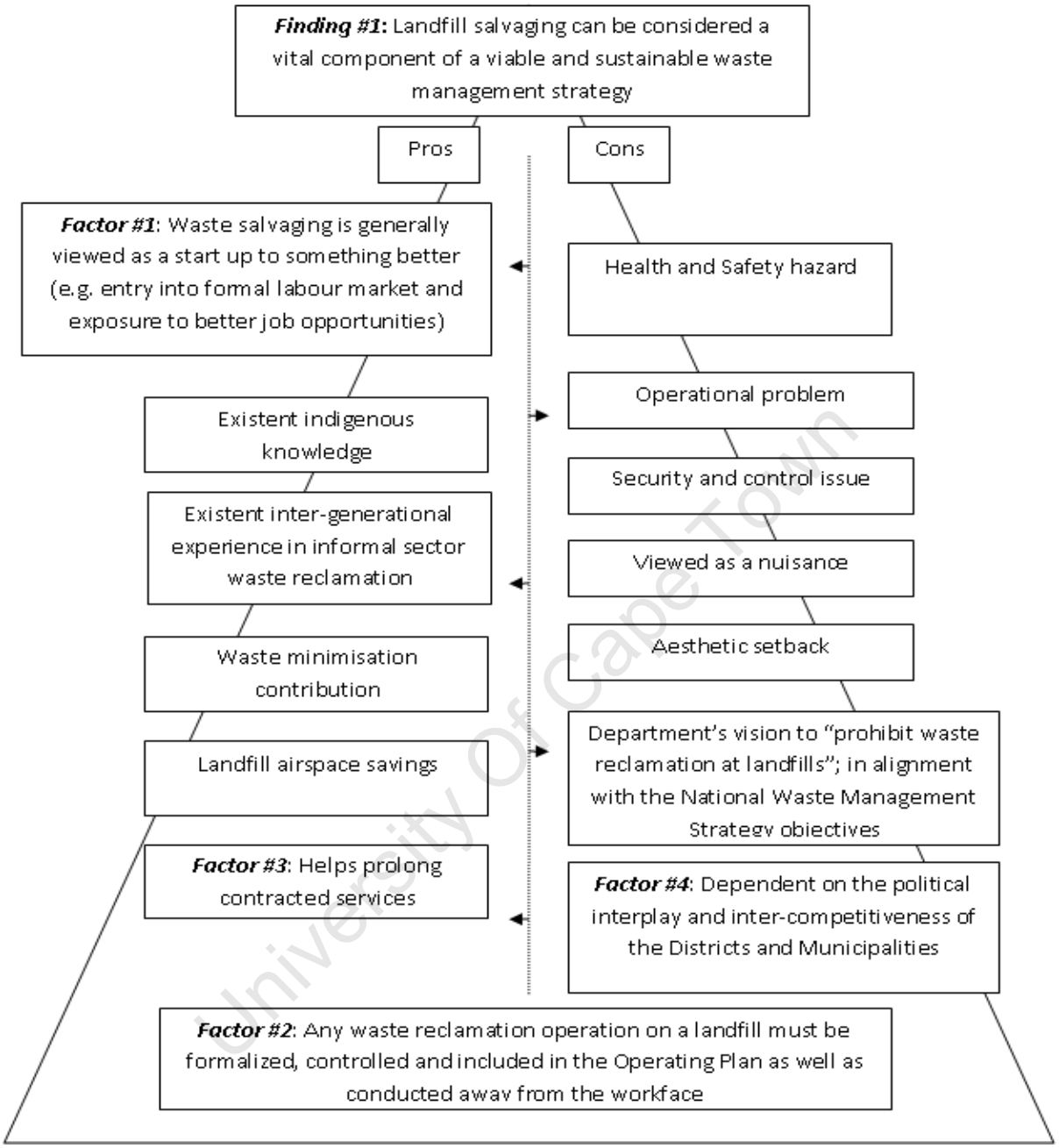
In fact, one landfill operator working for the Municipality even went as far as to say that the problem did not lie with the waste salvagers but rather with the employers of the contracted salvagers. The employer's job is to educate, train as well as build rapport with his/her employees. Furthermore, the employer is supposed to have the necessary resources to not only manage and school his/her employees, but also pay their salaries regularly and provide them with appropriate occupational health and safety standards.

- *Population B*: 'I would say landfill picking, through my experience of dealing with the people that's done the picking before, I think that there should be picking and it must be controlled. The people that's getting the contract..I think that..when you employ a person as a contractor, so he must make sure that person has the resources first of all, he's got to know those people that's going to work for him and he has to have control. If it's a guy that's law abiding, a guy that abides by your health and safety standards why not. As long as he can safeguard his people, have his people trained..know that they must pick away from your machines, stick to the time that we give them'.

The following are factors that act as supporting evidence to why landfill salvaging can be considered a vital component of a viable and sustainable waste management strategy. The reader should refer to Figure 5 for a visual representation of these factors:

Evidently, *Population C, focus groups 3 and 4* concur that landfill salvaging is a viable and sustainable waste management option. They perceive their work to be a legitimate occupation and a valid way of making an income to provide for their families and other dependents. They also believe that their acquired resource recovery skills and waste reclamation knowledge is genuine, and must not only be supported and recognized by the waste management sector authorities, but also have helped earn them a stake in the ownership of waste and/or right to waste reclamation.

Figure 5: Framework of Analysis for RQ2



When *Population C, focus groups 3 and 4* were asked why they thought they should be allowed to continue landfill waste reclamation and/or be employed in the formal resource recovery system, they listed the following points:

- We know what is available;
- We know by now which vehicles and trucks bring what particular recyclable materials;

- We know how much money is in the dump;
- We have experience; and
- We know what we should be paid since we know how much recyclables go for.

Factor #1

Waste salvaging is generally viewed as a start up to something better. *Population C* participants perceived waste salvaging as a stepping stone; one that would lead them to better opportunities. The tales of the focus group participants informed the researcher that many informal waste salvagers among them had since been offered better jobs by other companies or individuals coming through to the waste management facility; others had been recruited through reputation and word-of-mouth. A *Population B* respondent who is operator of a landfill and overseer of a MRF also concurred with the focus group participants on this fact:

- 'And from here they move to other businesses and more formal jobs. It's basically a..what's it in English..it's basically a start from no-where because most of the people working here can't read or write or never had a job before or was staying in the bush or things like that. And here they get an opportunity because we need very, very low skills, you basically need no education. So this is a place where they can start. Over the 15 years that I have been involved with the site now, out of this site, people starting here, there is two or three Code-14 drivers now and there is somebody working at the Spar in Malmesbury and we got a few people that we know started here and are sitting there'.

- 'Waste picking in a more formal way is an unskilled profession and give unskilled labour the opportunity to enter the labour market and give them exposure to other jobs'.

The informal sector waste salvagers not only display valuable indigenous knowledge on recycling but have also acquired many years of waste reclamation experience. Their inter-generational expertise in waste reclamation should be exploited in maximising waste minimisation schemes rather than neglected and dismissed until further notice.

However, despite the above findings, the City has chosen a different alternative to replace landfill salvaging as a viable and sustainable waste management strategy. This alternative lies at the heart of the City's Solid Waste Management Department's Integrated Waste Management (IWM) Sector and Integrated Development Plans; that of relying on

intermediary, integrated facilities such as MRFs and Transfer Stations to provide employment opportunities for the informal sector waste reclaimers.

- *Population A*: 'But, if it's done at the landfill, that's sort of the end of the line..there's got to be something done in the middle, you know, an intermediate process that will either divert some of this material out and create these opportunities for the small scale operators or the one-man operations'.

Factor #2

Therefore, the Department's aim is "to prohibit waste reclamation at landfills" for both health and safety issues as well as for aesthetic and operational purposes (DWAF, 1998:A10-14). Not only is landfill salvaging at the workface extremely hazardous and labour-intensive, but it is also not efficient and effective in terms of operational output. Although the Department acknowledges the fact that landfill salvaging is an important source of revenue "for a sector of the population", its ultimate aim is to discourage, if not eliminate landfill salvaging altogether (DWAF, 1998:A10-14). Rather than formalize and create an integrated resource recovery system at the landfill, the focus of the Department is to create job opportunities for the above mentioned informal 'sector' at intermediary facilities where waste reclamation can be more sheltered, structured and controlled; thereby mitigating potential health and safety risks to the reclaimers.

- *Population A*: 'Look, I think it just needs to be probably done slightly differently. Having waste pickers at the workface, that is a definite no-go. I think it's degrading to the workers themselves, it's a hugely, risky past-time or occupation and it's also very problematic when it comes to the actual operations. But, there are other options and the City has looked at quite a number of them. A good example is the Materials Recovery Facility [MRF]. There is only one in operation for the moment, that's the one in Athlone. So, what you do there is you don't put the guys [waste salvagers] at the workface. You divert the waste to them, they can take what they want out of the waste and then the rest goes back into the landfill. That way, you've actually separated them completely from the risks of moving equipment and health risks and all weather conditions'.

However, despite the Department's good intentions in minimizing health and safety risks to the informal sector waste salvagers and despite their ad hoc initiatives to provide them with alternative means of income, chronic poverty still persists and continues to drive vulnerable

people to salvage for mere survival. More impoverished people will eventually replace those who have been removed, banned and/or assisted with alternative employment. The restricted vision of the Department (such as with their current tender process) allows little room for innovation and hinders the implementation of short-term people-centred responses that could help accommodate the needs of the informal sector waste salvagers.

Factor #3

The current tender process is constricted and does not allow for the generation and realization of innovative and sustainable ideas that could help save landfill airspace and accommodate the needs of the informal sector waste salvagers simultaneously. Moreover, many of the municipalities of the Western Cape lack the funds needed to support capital ventures that would help formalize and concretize waste minimisation strategies at the landfill site. Currently, the tenders advertised are three-to-five year contracts. This leaves the private contractors with very little scope in which to plan and invest in sustainable strategies such as the building of MRFs at the landfill site in an attempt to diversify activities and create highly needed job opportunities.

- *Population B*: 'The problem from a contractor's point of view is..you've got a contract for two or three or five years, the capital outlay is so much that it doesn't make financial sense or it's not financially sustainable, not financially viable actually to put up a place like this [Material Recovery Facility] because the period of time that you've got to pay back all the capital that you spend on putting up a place like this is just too short'.

- *Population B*: 'It was something new and it was quite difficult to get the municipality to even think in that direction that we might do something here. So, I had to go with my idea to them that's not going to cost them anything. So, I went to them and I said, "I want the five years to be changed to five hectares". Should we last for seven or eight or nine years, than obviously the municipality would have gained another three or four years out of this contract. And you know landfill space is very valuable at the moment. You don't get landfills very easily'.

The inconvenience of short-term contracts therefore results in the contractor's incompliance with tender specifications such as with occupational health and safety standards:

- *Population B*: 'But it's very difficult now because if they tell me you can have the recovery material facility, but you need to build another change room and another toilet and another this and another that; then I'll just close down the place for the next year..you understand, because I only have a year to go [on my contract]. So we are sitting here at a unique problem and that is that there is only one more year to go and it's very difficult to make all these changes and yes you could ask, well, why it wasn't done before. True, maybe it was a lack of knowledge, maybe it was mismanagement from my side'.

The government fails to provide incentives for the private sector and municipal contractors to pursue people-centred agendas that address development and basic needs as integral aspects of environmental planning. Furthermore, until recently, the Department has also failed to ensure the incorporation of appropriate occupational health and safety planning procedures and hold accountable those who have been incompliant.

Factor #4

Integrated Waste Management (IWM) development is ultimately undermined by the political interplay and inter-competitiveness of the Municipalities. What is envisaged and prioritized by one Council will eventually be re-evaluated and changed by the next Council in charge. Through the semi-structured interviews, it became clear that politics are at play and most definitely determine the visions and policy decisions of each newly appointed Council. This suggests a lack of follow-through in waste management policy planning and implementation. This fragmented approach at the District and Municipal level will continue to undermine the Government's aspiration in creating an integrated and sustainable solid waste management system.

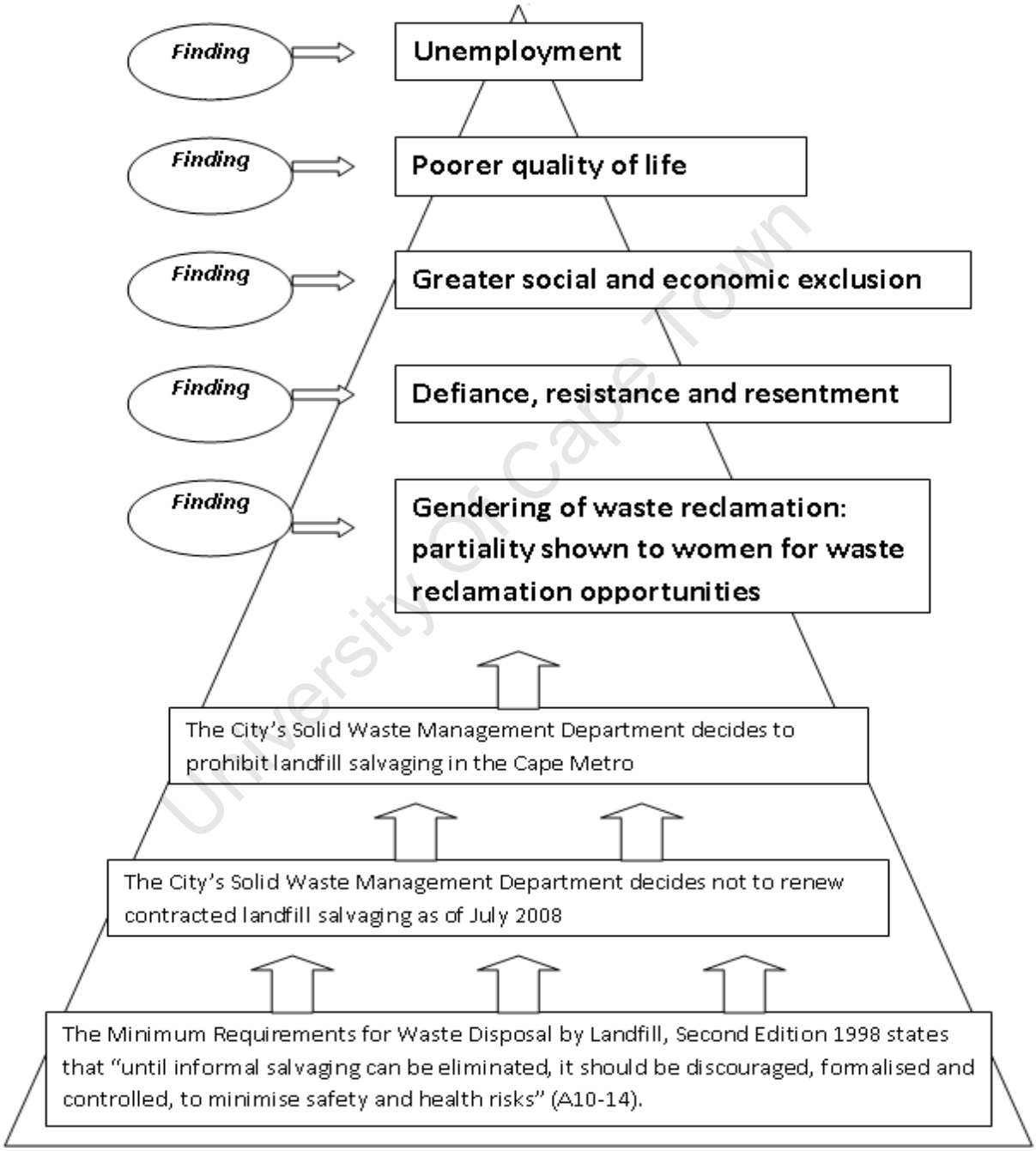
- *Population B*: 'What happens is this is a political game; this whole municipality, and not only this one, but all the municipalities are political because today the ANC [African National Congress] is in charge, and they got a new group of people running the show. They got what the other guys started to build, broken down again'.

- *Population B*: 'He comes here with a vision, and a vision..he's got a plan, he wants to put it in order. And it's a DA [Democratic Alliance] guy. Once there is a walk-over, the ANC comes in again; this will be pushed one side and something else will get priority'.

5.4 Research question 3[42]

What are the Cape Metro's waste management policy implications for landfill waste salvagers in the Western Cape?

Figure 6: Framework of Analysis for RQ3



[42] Use Figure 6 to visualize the Framework of Analysis for Research Question 3 (RQ3).

The findings and supportive evidence to the above research question are as follows and are depicted in Figure 6:

- ***Finding # 1***: Unemployment;
- ***Finding # 2***: Poorer quality of life;
- ***Finding # 3***: Greater social and economic exclusion;
- ***Finding # 4***: Defiance, resistance and resentment; and
- ***Finding # 5***: Gendering of waste reclamation.

Finding #1

The termination of contracted landfill salvaging in the Cape Metro alone, may have cost over 100 individuals their only source of income. Based on the quote herein, around a hundred contracted waste salvagers in the Cape Metro alone lost their jobs due to the ban of landfill salvaging as of July 2008. This number does not even begin to include the waste salvager contractors/employers, the sub-contracted waste salvagers, the trespassing waste salvagers and all those who depended on the three for an income.

The prohibition of landfill salvaging has had an adverse socio-economic impact on the informal sector waste salvagers and their families.

> o *Population A*: 'On the Vissershok contract there was a maximum of 40. They would be legally allowed to be on the site. Bellville it was 20 and at Coastal Park, I think it was 30. We just looked at the operational area and then decided on the numbers'.

Finding #2

The prohibition of landfill salvaging in the Cape Metro as of July 2008, has cost the majority of the landfill waste salvagers their only source of income thereby resulting in a poorer quality of life.

> o *Population A*: 'When the contract came to an end what we did was..three months before the contract was going to end, we called the contractor and the staff in and we spoke to them and said look, we are not going to be renewing the contract and that they must just make arrangements for alternative employment. So we given them enough notice for them to look at what they are going to be doing. Coming to the end of that contract, I think we just gave them a sort of leeway of about a week to go get their stuff off the site

and then the people by then had looked for alternative employment and we didn't see any of them again on the site after that'.

Unlike the perception held by the top waste management authorities, all of the *Population C, focus group 2* participants reported that they have remained unemployed and are still in search of work ever since the ban on landfill salvaging was implemented in the Cape Metro in July 2008. They have since been struggling with acquiring an alternative source of income and are spending their days at the entrance of the landfill site in search of job opportunities (such as helping unload a truck's waste at the landfill workface). Informal sector waste salvagers are a sector of the population that is at risk and most vulnerable to a decline in well-being. The probability or risk today for these informal sector individuals of falling into deeper poverty in the future is extremely high. The Department's decision to prohibit landfill salvaging in the Cape Metro turned this probability into reality.

Finding #3

The few informal landfill waste salvagers who have been assisted with alternative means of employment (due to the closure of a landfill or ban imposed on landfill salvaging within the Cape Metro) still remain in the informal sector and do not report any significant improvement in their quality of life or source of income. They are either hired to pick up litter and carry out maintenance work at waste management facilities (mainly through labour brokers), or have been allocated a space by the Municipality (at a Transfer Station for example) or by a private recycling company (through a Public-Private Partnership with the Municipality) in which to continue their informal waste reclamation work. They remain in the informal sector; thereby lacking the opportunity for advancement and unable to profit from formal sector benefits, protections and certainties.

This particular respondent labels his waste salvagers 'entrepreneurs', but yet, he pays them monthly salaries for the waste reclamation work they carry out at the mini-MRF.

- *Population B*: 'I don't have any employees. They work for themselves. They are entrepreneurs. All employees come in and out as they please'.

These waste reclaimers may profit from the security of a monthly salary and flexibility of operational hours, but yet are not protected under the Occupational Health and Safety Act, No

85 of 1993 in case of illness, injury or other (Jenkin, 1995:4.6.2). Although they are grateful to have been given work or have been allocated a sheltered setting in which to continue their waste reclamation work, many of the informal waste salvagers are still subject to exploitation by the bigger industries buying back their materials or to the political whims of the Municipality.

Finding #4

The prohibition of landfill salvaging in the Cape Metro as of July 2008 has resulted in resistance and resentment on the part of the informal waste salvagers. "The past is often a crucial factor in understanding the way in which a community might react to a proposed development" (Khan, 1994:10). The 'buy-in' in new policies, plans and regulations of individuals coming from disadvantaged communities is extremely low. The defiant behaviour and frustrated remarks from the focus group participants towards the prohibition of landfill salvaging demonstrates the lingering sensitivity that resulted out of a history of institutionalized racial discrimination and inequality among destitute communities. Some of them are even willing to risk getting shot by police and chased away by police dogs just to get their 'bread and milk' for that day. Their defiance is displayed in their acts of vandalism and theft and in their persistence to trespass onto the landfill:

- *Population B*: 'You've got your minor guys that try to come in..I don't know if you saw now them standing on the bridge, grabbing stuff from people's bakkies; metal that people is coming to dump, but I got law enforcement also controlling there, that area also. Probably when our fence is up and our gate is replaced there on top over the bridge, we'll have better control over them'.

Finding #5

The gendering of waste reclamation clearly exists in the waste management sector and calls upon the proficiency of women. The majority of the respondents who have been assisted with an alternative means of income and the majority of those who are currently working in waste reclamation are women. The anticipated integration of women into the formal waste recovery sector will not only empower women but also further their contribution to environmental management.

Clearly, the City's Solid Waste Department envisages the bulk of job creation opportunities to become available at the intermediate waste management facilities (such as the Transfer Stations and MRFs). These are intended to be built in the short-to-medium term. One can see partiality being shown towards women for waste reclamation opportunities. Not only are women perceived to be better disciplined then their male counterparts by the top and middle waste management and policy authorities, but they are also believed to work more efficiently and effectively in the waste reclamation business.

Due to their socio-economic conditions and awareness of their immediate surroundings, these women, as with the female waste salvagers of Guatemala's urban landfills, have developed an ability to fend and provide for their families by reusing, repairing and transforming materials from the landfills (Khan, 1996:2).

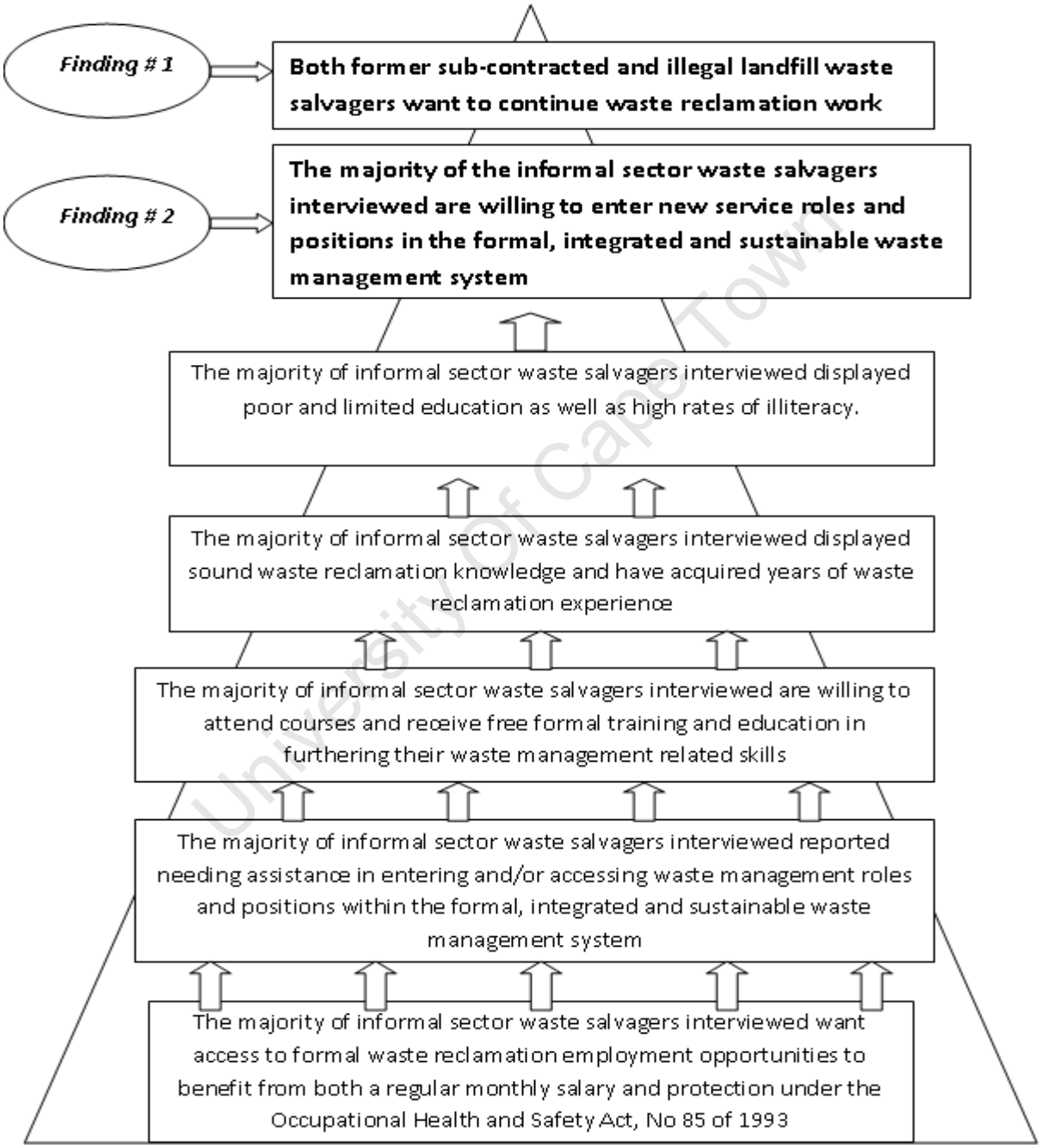
- *Population B*: 'I've found earlier, just after the pickers left..I employed two ladies off of the picker group to do work and I found strange: women are much better workers than men. They're more organized'.

Poverty and environmental degradation are interrelated and subsequently, in order to fight unemployment, there is a need to integrate women and the environment into waste minimisation schemes (Moate, 1998:13).

5.5 Research question 4[43]

Are the informal sector waste salvagers willing to enter new service roles and positions in the formal, integrated and sustainable waste management system?

Figure 7: Framework of Analysis for RQ4



[43] Use Figure 7 to visualize the Framework of Analysis for Research Question 4 (RQ4).

The findings and supportive evidence to the above research question are as follows and are depicted in Figure 7:

- ***Finding # 1***: Both former sub-contracted and illegal landfill waste salvagers want to continue waste reclamation work; and
- ***Finding # 2***: The majority of the informal sector waste salvagers interviewed are willing to enter new service roles and positions in the formal, integrated and sustainable waste management system.

The majority of *Population C* participants strongly believe that they can contribute significantly in the waste reclamation and resource recovery industry. They believe that they have the necessary skills, experience and knowledge to continue working as well as be offered job opportunities in waste reclamation. A *Population B* respondent who has formed a close bond with the waste salvagers on his site and who is aware of their plight believes that they have much to offer if only given the chance:

> o 'They are willing to work and they work very hard and they..sometimes it's raining and they come to work. They are so..how can I say now..they want to work; they are very hard workers and everyday they on the job here because if they go home with nothing..what they going to do if they only sitting there and there's no income'.

The *Population C* interviewees furthermore believe that they should be given first choice and offered such opportunities at facilities (such as MRFs and Transfer Stations) that are currently located in or are envisaged to be built in their own communities. They expressed resentment to the fact that most of the employed workers at the landfill sites did not come from the immediate community.

Some of the participants also alluded to the fact that they had received limited and poor education and lacked any kind of formal training. They continued to explain that without a curriculum vitae and proof of experience they had very little chance of getting a job. They argued that their knowledge and skills in waste reclamation was all that they could hold onto and insisted that this was their only chance of ever making a living and providing for their dependents.

Finding #1

The majority of informal sector waste salvagers interviewed reported that they would like to be assisted in entering and/or accessing waste management roles and positions within the formal, integrated and sustainable waste management system. The very few of *Population C* participants who had tried to set up their own buy-back centre or scrap dealership had failed due to a lack of storage space, security issues and start-up capital. They had insufficient space in their informal dwellings to store their materials and struggled continuously with break-ins and theft.

Moreover, the majority of *Population C* respondents stated that they would rather prefer to be employed to conduct waste reclamation activities so as to work under labour law protection and be able to profit from regular pay; rather than living with the uncertainty of not being able to make ends meet at the end of the day or week. Employment would also mean that they would no longer be exploited for their recyclables nor be excluded from waste management initiatives or opportunities. Additionally, two of the male respondents from *Population C, focus group 3*, explained their discontent with not being protected under the Occupation Health and Safety Act after having experienced severe injuries acquired on the job and not receiving proper medical attention and care thereof.

The only *Population C* participants who were not keen to be employed or change their current circumstances were: individuals who are approaching 60 years of age; individuals who are already 60 years of age and above; are men that prefer 'scavenging' materials on their own terms and at their own leisure; or individuals who are noticeably young "transient" waste salvagers, with not intention of committing themselves to a waste reclamation job. Those who were approaching the 60-year mark, for example, were knowledgeable that the old age grant was within their grasp.

- *Population A*: 'But then again, there was men scavenging too, but they don't want to work under the rules. Women will obey the rules much better than men'.

Finding #2

The majority of informal sector waste salvagers reported that they were willing to attend and receive formal training in furthering their waste management related-skills. The *Population C* participants ascertained that they would definitely like to be given the opportunity to further

their waste management-related skills and knowledge, but only if those courses and training were provided to them for free. The *Population C* participants were aware of their limited education and lack of formal training, and therefore embraced any opportunity that would help improve their chances to a better job and higher income.

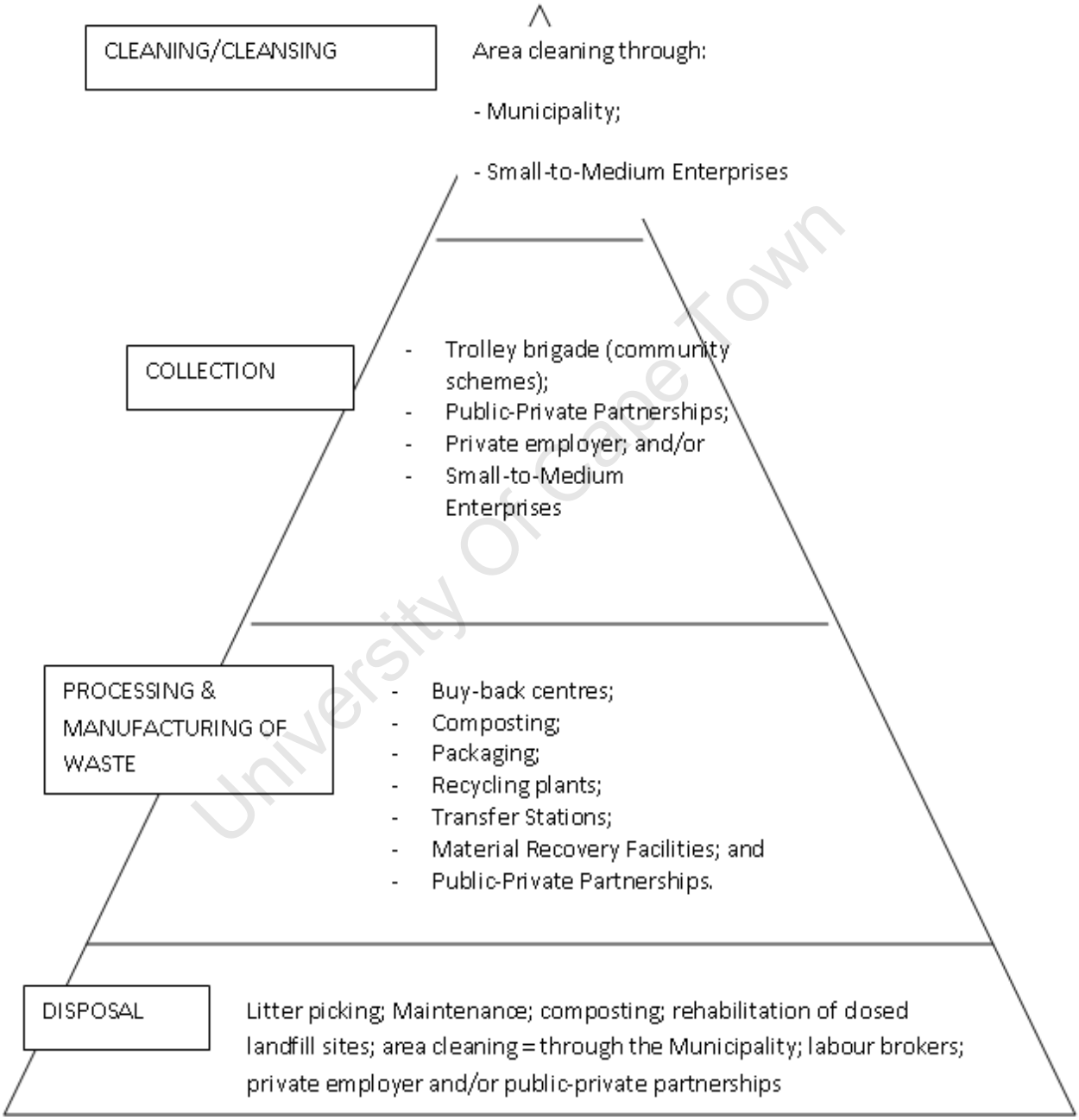
The formerly sub-contracted waste salvagers from *Population C, focus group 2* informed the researcher that their appreciation for waste reclamation work was greater when their employer respected them, treated them well and provided them with health and safety training as well as medical check-ups. They expressed their desire to continue contracted waste salvaging but only under the right manager. They explained that their last contractor, before the ban on landfill salvaging came into play, was a good employer compared to the previous one who did not know much about recycling and didn't care for their health or safety.

This valuable insight, that was further validated by a middle-management respondent, clearly proves that contracted salvaging had not been perfected and optimized as well as it should have been. Instead of looking at how to improve the efficient and effective management of sub-contracted waste pickers, the Department chose the easier way out: ban landfill salvaging altogether.

5.6 Research question 5[44]

What roles and positions can the informal sector waste salvagers enter within the formal, integrated and sustainable waste management hierarchy?

Figure 8: Framework of Analysis for RQ5



[44] Use Figure 8 to visualize the Framework of Analysis for Research Question 5 (RQ5).

Based on the semi-structured interviews with *Populations A and B* and the rigorous literature review and public policy analysis conducted, the bulk of job opportunities for the informal sector waste salvagers are foreseen to be made available through the following entities and undertakings and these are depicted in Figure 8:

- Buy-back centres;
- Composting;
- Recycling plants;
- Labour brokers;
- The new envisaged regional landfill site;
- The new envisaged transfer stations;
- The new envisaged material recovery facilities;
- Area cleaning and waste collection; and
- Public-Private Partnerships.

A *Population A* respondent, who is clearly well educated and knowledgeable on waste management policy planning and strategizing, is adamant about the fact that the informal sector waste salvagers do not carry out recycling. He believes that landfill salvaging is simply the collection of materials. Recycling, he argues, is when raw material is processed and manufactured into a product that can be re-used.

> o 'That [is what] closes the loop in terms of the re-use-recycle concept'.

He believes the market is saturated and that the only point at which job creation can be exploited is at the processing side or the recycling of waste. The City is looking at promoting public-private partnerships that can optimize and maximize the processing of materials.

> o 'You got to find a way because the Municipality, it's not our business to process waste. The municipality's responsibility lies in getting the message to the generator, to say we would like you to deal with this waste in such and such a way, and whether it's by separation or not, it's usually separation at source that's at the heart of that argument, that's where the responsibility lies.

Moreover, he believes that landfill salvaging is not contributing enough to waste minimisation targets. The biggest recovery initiatives lie in construction rubble and composting. He argues that waste salvaging activities and small-to-medium recycling enterprises will continue to fail without the legitimate backup and intervention of the Government, and sponsorship of the private industry.

- 'But I think the net effect is Brazilians like with the energy industry, the government actually put legislation and standards in place that said this is how we're going to do it. So, you have the national drive that then the legislation made possible. The reason you're not seeing the participation by industry in such a great way is everybody's waiting for this. It's probably all over the world, but South Africa..I wouldn't do it until you force me to'.

Integrated Waste Management will continue to be undermined by the Government's inability to recognize and legitimize the waste reclamation work of the informal sector waste salvagers. This persistent repressive approach towards waste management planning will continue to widen the gap between the dual economies and continue to push the informal sector into greater havoc.

5.7 Conclusion

In this chapter, the researcher discussed the main findings that were extracted from the data set. This research has broadened our understanding as to the extent to which the City's SWM Department's policy has affected the informal waste salvagers in the Cape Metro. The prohibition of landfill salvaging has had an unfavourable impact on the quality of life of a sector of the population that is already struggling with unemployment and chronic poverty and lacking access to resources and food security. These crucial findings have subsequently assisted the researcher in formulating recommendations that will help promote the well-being of the informal sector waste salvagers by increasing their chances to better work pay and conditions and by increasing their chances to lobby for change at the top of the waste management hierarchy. Moreover, by including rather than discarding the wealth of indigenous knowledge already available the government will more likely achieve its waste minimisation goals more effectively and efficiently.

In the next chapter, the researcher presents the conclusions and recommendations that came out of the study.

CHAPTER SIX
CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter will strive to draw the entire research together by presenting the conclusions that the researcher was able to extract from the data collected. The researcher will also put forth recommendations, as they were voiced out across the waste management hierarchy that can hopefully promote a more people-centred approach towards the establishment of a more formal and integrated waste management system and realization of waste minimisation goals.

6.2 Conclusions

The Western Cape's aspiration for a more integrated and sustainable solid waste management system should be viewed as a multidimensional process that will lead to the reduction of inequality, unemployment and poverty as well as serve to increase environmental protection. Development policies such as with the SWM Department's decision to prohibit landfill salvaging in the Cape Metro not only allows, but actively prompts trade-offs, and by doing so, deliberately puts more emphasis on the logistics of waste management over the aspirations and needs of the poor. As a developmental state, the South African government should take more of an interventionist role that seeks to establish favourable policies and legislation that will actively promote higher rates of growth and social inclusion as well as remove barriers to the mobility and upliftment of its people.

6.2.1 Underlying factors

Landfill salvaging is notably a health and safety hazard and aesthetic setback, interferes with landfill operations, is viewed as a nuisance as well as an unmoral and unethical income generation activity, and is believed to contribute insignificantly to the Province's waste reduction and waste minimisation goals. Given the socio-economic backlog and anticipated population growth in the Province however, landfill salvaging will continue to be an important source of revenue for the poor and homeless. Based on the perceptions and experiences of all three populations sampled, waste salvaging at the landfill site had clearly not been organised into a formal and controlled waste recovery system.

6.2.1.1 Recommendations

Given the above conclusions and the fact that chronic poverty and unemployment continue to debilitate the most vulnerable sections of the population, it is highly recommended that municipalities legitimize waste reclamation at landfill sites. It is evident that the Western Cape's aspiration for a more formal, integrated and sustainable waste management system cannot be without the incorporation of the informal sector. There are an estimated 10,000 waste salvagers in South Africa who depend on the landfill for their very survival (Enslin-Payne, 2009:17). Despite security and fencing, landfill salvaging persists to this day. Subsequently, it is only fair that the Department visualizes a plan that will accommodate for the development and basic needs of a vulnerable section of the population in furthering and upgrading the standard of recycling.

Furthermore, given the fact that recycling at source has not yet been realized and accepted as the norm, efficient and effective ways of waste recovery at the landfill site should still be considered and implemented to save landfill and transportation costs. The following are fundamental requirements needed to ensure the integration of the informal sector waste salvagers into the waste recovery aspirations of the country:

- Legalize landfill salvaging
    - Establish mini-MRFs at active landfill sites:
        - Separate waste reclamation from main workface;
        - Provide adequate space for the sorting and storage of recyclables;
        - Ensure operational hours;
        - Ensure a system of registration and identification for all personnel; and
        - Ensure a controlled and sheltered environment for waste reclamation.
    - Ensure appropriate occupational health and safety measures:
        - Compulsory protective clothing and safety gear;
        - Laundry services for the uniforms and work clothing;
        - Regular medical check-ups;
        - Provision of adequate ablution and sanitation facilities on the site (separate for men and women); and
        - Ensure that all personnel are familiar with and able to activate and implement an emergency response plan.

- Capacity-building initiative:
  - Create landfill reclaimer cooperatives that are sponsored and co-managed by an entity that can provide the necessary financial and administrative support. These cooperatives will provide its members with the power to lobby for change such as with better tariffs for recyclable materials; and
  - Provide regular training in environmental and waste management concepts.
- Benefits of waste recovery work:
  - Pay a monthly salary to waste reclaimers with the option of bonus payments for any overtime work done.

6.2.2 Viability of landfill salvaging

The manner in which landfill salvaging was being carried out on the landfill sites of the Cape Metro was a health and safety issue as well as an operational problem. Despite these conflicts however, the managers and operators of those landfill sites claimed landfill salvaging to be a viable waste reduction and minimisation strategy that had helped prolong the life capacity of their landfills and subsequently, had increased their chances of staying employed.

6.2.2.1 Recommendations

The following is recommended before any judgments can be passed on whether landfill salvaging in the Cape Metro did or did not contribute significantly towards waste reduction targets:

- The provision and establishment of weighbridges at all landfills; and
- A waste stream analysis at general waste landfill sites followed by an assessment of the social and economic benefits of waste recovery at the landfill.

Given the fact that land for landfilling is becoming increasingly scarce and difficult to acquire, that costs to create new landfills are extremely high, that incineration is too expensive and is considered incompatible with South Africa's environmental standards and that there is no formalised system for waste separation at source in South Africa, waste recovery at the landfill remains the best option for both meeting waste minimisation goals and the basic needs of the poor.

6.2.3 Consequences of the ban on landfill salvaging

The SWM Department's decision to prohibit all forms of landfill salvaging in the Cape Metro resulted in unemployment, a poorer quality of life, greater social and economic exclusion and feelings of anger and resentment that has led to acts of theft and treachery against landfill management and infrastructure by the informal sector waste salvagers. On a positive note however, women are increasingly seen as crucial constituents to a successful waste recovery business. The empowerment of women is predicted to grow simultaneously with an increase in waste minimisation initiatives.

6.2.3.1 Recommendations

The policy action taken by the SWM Department clearly had an adverse impact on a sector of the population that is already at risk of a decline in well-being. Furthermore, it marginalized hundreds of people who already have experienced a history of oppression and repressive policies, thereby forcing them to result to acts of desperation and rebelliousness. The findings of this study have helped indicate that there needs to be a greater inclusion of social redistribution, social regulation and social rights in waste management policy planning and implementation. The landfill waste salvagers of the Cape Metro are in distress and need to appeal to civil society for help. It is therefore recommended that the government, in collaboration with the private and public sector:

- Sponsor and coordinate a high profile campaign that will bring attention to the plight of the informal sector waste salvagers and their significantly undermined contribution towards Polokwane's 2001 Declaration "zero waste to landfill" objective by 2022.
- Promote capacity-building initiatives:
    - Sponsor education to the immediate communities on how poverty, environment and community health are linked;
    - Sponsor waste management, and more specifically, waste recovery education to the adult women who live in the communities in which the new MRFs and TSs are planned to be built; and
    - Organise informal waste salvager women workers into cooperatives.
- Enforce tax exemption for all landfill operators purchasing recycling resources and equipment and expanding recycling initiatives on the landfill.

6.2.4 Willingness and capability of the informal sector

Both former sub-contracted and illegal landfill waste salvagers want to continue waste reclamation work. They are especially in favour of finding waste reclamation work in close proximity to their place of residence so as to cut transportation costs. Furthermore, the majority of informal sector waste salvagers are not only willing to enter new service roles and positions in the formal, integrated and sustainable management industry, but also display acquired waste reclamation experience and knowledge that make them ideal candidates to do so.

6.2.4.1 Recommendations

In view of the fact that waste salvagers generally acquire waste reclamation skills and awareness on the job and that the majority of the waste salvagers interviewed had acquired years of waste reclamation experience, it is recommended that the government:

- Subsidies the collection and/or transportation of recyclable materials;
- Provides low interest loans for the purchase of recycling and waste recovery capital equipment and infrastructure;
- Sponsors public-private partnerships with informal settlement areas in an attempt to provide its members with the necessary managerial/administrative, technical and financial support to collect, remove, process and transport their own solid waste;
- Facilitates an assessment of the potential for job creation and associated benefits to the underprivileged and vulnerable communities through the implementation of recycling initiatives such as the management of a buy-back centre; and
- Establishes a forum with representatives from the DEA&DP, the Department of Social Development, the Department of Labour and the Department of Trade and Industry that will work towards the promotion of waste management entrepreneurship opportunities at the municipal level.

6.2.5 Access into the formal economy waste industry

Until the government recognizes and legitimizes landfill salvaging, the bulk of job opportunities foreseen to be available to the informal sector will be found at the transfer stations and material recovery facilities currently being built or planned for construction in the medium-to-long-term.

6.2.5.1 Recommendations

Evidently, the majority of the job opportunities will be in the processing of materials. The separation, cleaning and packaging of waste will require social capital. The reclamation of waste therefore will mainly take place at the TSs and MRFs. Since the processing of waste is capital intensive and not entirely financially viable, partnerships need to be built with the private sector in an attempt to help bridge the divide between the first and second economy. The following are recommendations that can help provide the informal sector waste salvagers with the organisational means to take ownership of productive employment opportunities:

- Establish a waste management support coordination centre at the municipal level that can provide informal sector waste salvagers with updated information on current data and events concerning job opportunities and public-private partnership developments.
- Sponsor public-private partnerships with disadvantaged communities in initialising composting projects. Organic waste has economic value and can be an important source of nutrient and energy value to deprived communities.
- With the recent promulgation of the new IWM By-law, the Department will now have the authority to better regulate recovery and recycling activities as well as set more rigorous minimum requirements on the storage of waste and infrastructure in waste management. With this in mind, it is recommended that the Department carefully implements policies that are geared around affirmative action; action that will favour the informal sector waste salvagers and their integration and incorporation into the formal, sustainable solid waste management hierarchy, and more specifically, resource recovery system.
- Provide incentives and include statutory requirements for the provision of waste minimisation objectives that incorporate the informal sector in tender documents.

6.3 Conclusion

This chapter brings this qualitative study to an end. The researcher hopes that the conclusions drawn from this research and the recommendations brought forth thereof will be taken into consideration by the Western Cape integrated waste management authorities as well as serve as a lesson for waste management authorities across the country. There are no clear cut answers as to how a Province must go about discouraging and eventually prohibiting landfill salvaging.

This study however helped demonstrate that eliminating landfill salvaging will only result in job losses and graver socio-economic deprivation. Furthermore, landfill operators are forced to deal with acts of vandalism, trespassing and theft due to the desperation of the informal sector waste salvagers. It is also known that when landfill salvaging is legitimized and waste salvagers are organised and supported by their government, waste picking can save municipalities money and help further the achievement of poverty reduction and job creation.

Some of the ad hoc initiatives taken by the private sector and by some of the municipalities of the Western Cape have helped shown that public-private partnerships and cooperatives can go a long way in providing the informal sector waste salvagers with the necessary recognition and support to become active agents in the development process. It is now up to the national government to promote change in power relations between the informal waste salvagers and government, industry and broader society.

BIBLIOGRAPHY

Abdi, A.A. 2002. *Culture, education, and development in South Africa: historical and contemporary perspectives*. Westport: Bergin & Garvey.

Ajei, M.O. 2007. *Africa's development: the imperatives of indigenous knowledge and values*. Doctoral dissertation. Pretoria: University of South Africa.

Anderson, R.E., Carter, I., & Lowe, G.R. 1990. *Human behavior in the social environment: a social systems approach*. 5th ed. Hawthore, NY: Aldine de Gruyter.

Benjamin, S. 2007. *Rapid assessment on scavenging and waste recycling work by children in South Africa*. Pretoria: Department of Labour and International Labour Organisation.

Berthier, H.C. 2003. Garbage, work and society. *Resources, Conservation and Recycling*, 39(3):193-210.

Bonner, C. 2008. Waste pickers without frontiers. *South African Labour Bulletin*, 32(4):7-9.

Cape Metropolitan Council. 1999. *Cape Metropolitan Area: State of environment*. [Online]. Available from: http://www.environment.gov.za/enviroinfo/sote/citysoe/cape/context.htm [Accessed 2 January 2009].

City of Cape Town. 2005. *Annual Report 2004/2005*. [Online]. Available from City of Cape Town official website – local government services: http://www.capetown.gov.za/en/Reports/Pages/AnnualReports20042005.aspx [Accessed 2 October 2009].

City of Cape Town. 2006a. *City of Cape Town Integrated Waste Management (IWM) Policy*. Annexure A. [Online]. Available from Cape Gateway: http://www.capetown.gov.za/en/solidwaste/Documents/IWM_Policy.pdf [Accessed 4 February 2009].

City of Cape Town. 2006b. *Western Cape socio-economic profile: City of Cape Town 2006*. [Online]. Available from Cape Gateway: http://www.capegateway.gov.za/Text/2007/1/city_of_cape_town_se_profile_optimisedpdf [11 November 2009].

City of Cape Town. 2007. Report to the Chairperson: utility services portfolio committee. *Waste PC Report SWM Sector Plan for IDP 23_02_07.doc*. [Online]. Available from Cape Gateway: http://www.capetown.gov.za/en/IDP/Documents/idp/Statutory_Documents/R1.WasteP20Report20SWM20Sector20Plan20for20IDP2023_02_07.pdf [Accessed 22 April 2009].

City of Cape Town. 2008a. Report to Executive Mayor: solid waste management deptintegrated waste management and service delivery sector plan. *Waste Plan SWM 17_01_08* (final).doc. [Online]. Available from Cape Gateway: http://www.capetown.gov.za/en/IDP/Documents/Statutory%20compliance%20plans/I20Waste%20Plan%20SWM%2017_01_08%20(final).pdf [Accessed 9 July 2009].

City of Cape Town. 2008b. *Waste disposal*. [Online]. Available from Solid Waste Management at Cape Gateway: http://www.capetown.gov.za/EN/SOLIDWASTE/SERVICES/Pages/Wastedisposal.aspx [Accessed 6 April 2009].

City of Cape Town. 2009. Annexure A: solid waste management sector plan for City of Cape Town (incorporating integrated waste management plan). *Annexure A City of Cape Town waste management sector plan 2009*. [Online]. Available from Cape Gateway: http://www.capetown.gov.za/en/IDP/Documents/Statutory%20compliance%20plans%202009-2010/Annexure%20I%20Solid%20Waste%20Management%20Sector%20Plan%202009.pdf [Accessed 26 November 2009].

Coetzee, B. 2009. *Progress in Cape Town since 2007 Summit*. 2009 Waste Minimisation Summit. City of Cape Town Solid Waste Management [Online]. Available from: http://www.capetown.gov.za/en/solidwaste/Documents/Waste%20minimisation%20Sumit%20March%202009/Progress%20in%20Cape%20Town%20since%202007%20Sumit%20%20Coetzee.pdf [Accessed 12 April 2009].

Communication Department. 2009. Media briefing: City's new waste management by-law. City of Cape Town Media Release No. 169/2009. Available from Cape Gateway: http://www.capetown.gov.za/en/MediaReleases/Pages/Mediabriefingcitysnewwastem a agementby-law.aspx [Accessed 15 April 2009].

D'Cruz, H. & Jones, M. 2004. *Social work research: ethical and political contexts*. London: SAGE Publications.

De Vos, A.S., Strydom, H., Fouche, C.B. & Delport, C.S.L. 2005. *Researcher at grass roots: for the social sciences and human service professions*. 3rd ed. Pretoria: Van Schaik Publishers.

Draper, B., Pienaar, D., Rehle. T. & Parker, W. 2007. *Western Cape burden of disease: HIV and Tuberculosis*. PowerPoint. [Online]. Available from Cape Gateway: *http://*www.capegateway.gov.za/other/.../bod_hiv_and_tb_workgroup_2.ppt [Accessed 28 November 2009].

Du Plooy, H. 1997. Waste: focus on litter and recycling. *Conserva*, 12(2):6-8.

Engledow, S. 2005. *The strategic assessment of a curbside recycling initiative in Cape Town as a tool for integrated waste management*. Master's thesis. Cape Town: University of Cape Town.

Enslin-Payne, S. (12 January 2010). Separate waste streams needed. Business News. *The Star*, page 17.

Fiehn, H. & Ball, J. 2005. *Integrated waste management*. Background Research Paper produced for the South Africa Environment Outlook report on behalf of the Department of Environmental Affairs and Tourism. [Online]. Available from: http://soer.deat.gov.za/dm_documents/Waste_-Background_Paper_QX0NS.pdf [Accessed 2 December 2009].

Gil, D.G. 1992. *Unravelling social policy: theory, analysis, and political action towards social equity*. 5th ed. Rochester: Schenkman Books.

Health Systems Trust. 2000. *Update for health workers, planners and managers: tuberculosis in South Africa*. Issue No. 56. [Online]. Available from: http://www.hst.org.za [Accessed 3 December 2009].

Hweshe, F. 2008. *Xenophobia: desperate refugees reduced to scavenging*. Originally published on page 8 of The Cape Argus. [Online]. Available from Independent Online (ILO): http://www.iol.co.za [Accessed 4 January 2009].

The Institute of Waste Management of Southern Africa (IWMSA). 2009. *Training course: waste management for local authorities*. Cape Town: *s.n*.

International Labour Organisation. 2005. *Organising waste management workers: the South African experience*. [Online]. Available from: http://www.streetnet.org.za [Accessed 6 June 2009].

Jenkin, N. 1995. *An assessment of landfill management and associated waste issues in the Cape Metropolitan Area*. Observatory: Environmental Evaluation Unit, University of Cape Town.

Khan, F. 1994. *Public participation aspects of the draft policy for the multi-purpose use of the Cape Peninsula: report on meetings held on the Cape Flats*. Rondebosch: The Environmental Advisory Unit, University of Cape Town.

Khan, F. 1996. *Waste picking for survival: a report on the waste salvagers of Frankdale informal settlement*. Rondebosch: University of Cape Town Environmental Advisors Unit.

Langmore, K., Ball, J. & Associates cc. Eds. 1998. *Minimum requirements for waste disposal by landfill*. 2nd ed. Pretoria: Department of Water Affairs & Forestry.

Leake, M. 2009. *AVERT: AVERTing HIV and AIDS*. [Online]. Available from AVERT.org: http://www.avert.org/aidssouthafrica.htm [Accessed 10 October 2009].

Medina, M. 2000. Scavenger cooperatives in Asia & Latin America. *Resources, Conservation and Recycling*, 31(1):51-69. [Online]. Available from ScienceDirect database: http://dx.doi.org/10.1016/SO921-3449(00)00071-9 [Accessed 14 August 2009].

Medina, M. 2008. *The informal recycling sector in developing countries: organizing waste pickers to enhance their impact*. [Online]. Available from Gridlines: www.ppiaf.org/.../gridlines/44informal_recycling_sectors.pdf [Accessed 11 October 2009].

Mikkelsen, B. 2005. *Methods for development work and research: a new guide for practitioners*. 2nd ed. London: SAGE Publications.

Mitchell, C.L. 2008. Altered landscapes, altered livelihoods: the shifting experience of informal waste collecting during Hanoi's urban transition. *Geoforum*, 39(6):2019-2029. [Online]. Available from ScienceDirect database: http://dx.doi.org/10.1016/ j.geoforum.2008.07.006 [Accessed 2 September 2009].

Moate, M. 1998. Moving towards an eco-society. *Conserva*, 12(2):11-13.

Mouton, J. 1996. *Understanding social research*. Pretoria: Van Schaik Publishers.

Nass, P.J.M & Jaffe, R. 2004. Informal waste management. *Environment, development and sustainability*. Netherlands: Kluwer Academic Publishers.

Nicklin, S. 2009. *Plans afoot to review law on labour brokers*. [Online]. Available from Black Sash: Making Human Rights Real: http://www.blacksash.org.za [Accessed 5 August 2009].

Onibokun, A.G. Ed. 1999. Synthesis and recommendations. *Managing the Monster: urban waste and governance in Africa*. [Online]. Available from the International Development Research Centre (IDRC): http://www.idrc.ca. [Accessed 1 July 2009].

Overstrand Municipality. 2009. Integrated waste management plan. 2nd ed. [Online]. Available from: http://209.85.229.132/search?q=cache:_yZah26ciIJ: www.overstrand.gov.za/index2.php%3Foption%3Dcom_docman%26task%3Ddoc_view%26gid%3D197%26Itemid%3D159+Overstrand+Integrated+Waste+Management+lan&cd=2&hl=en&ct=clnk&gl=za&client=firefox-aY:\Projdata\A128\IWMP\Overstrand_IWMP_1503.doc\jm [Accessed 14 November 2009].

Potter, C. 1999. Programme evaluation. *Research in practice: applied methods for the social sciences*. Edited by M. Terre Blanche and K. Durrheim. Cape Town: UCT Press.

Provincial Government of the Western Cape (PGWC). 2005. *Western cape provincial spatial development framework: the Western Cape province today*. Caledon Square: CNdV Africa. [Online]. Available from: http://www.capegateway.gov.za/Text/2005/12/4b_wc_pages_115-184_web.pdf [Accessed 2 February 2009].

Provincial Government of the Western Cape (PGWC). 2009. *Annual performance plan 2009/10*. Department of Health. [Online]. Available from: http://www.capegateway.gov.za [Accessed 2 December 2009].

Seedat, M., Duncan, N. & Lazarus, S. Eds. 2001. *Community psychology: theory, method, and practice: South African and other perspectives*. Cape Town: Oxford University Press Southern Africa.

SouthAfrica.info. 2007. *The Western Cape Province*. [Online]. Available from: http://www.southafrica.info [Accessed 2 September 2009].

South Africa. Department of Environmental Affairs and Tourism (DEAT). 2000. White Paper on Integrated Pollution and Waste Management for South Africa: a policy on pollution prevention, waste minimisation, impact management and remediation. *Government Gazette*. (Vol. 417, No. 20978). Pretoria: DEAT. [Online]. Available from: http://www.environment.gov.za/PolLeg/WhitePapers/20978.pdf [Accessed 10 March 2009].

South Africa. Department of Environmental Affairs and Tourism (DEAT). 2003. *Working with waste: guideline on recycling of solid waste*. Tshwane: DEAT.

South Africa. Department of Water Affairs & Forestry (DWAF). 1998. *Waste management series: minimum requirements for waste disposal by landfill*. 2nd ed. Pretoria: DWAF.

South Africa. Metropolitan Municipality. 2002. *Strategic planning for urban renewal in Khayelitsha and Mitchells Plain*. Cape Town: MCA Planners.

Statistics South Africa. 2005a. *Mid-year population estimates, South Africa: 2008*. [Online]. Available from: http://www.statssa.gov.za [Accessed 4 June 2009].

Statistics South Africa. 2005b. *Quarterly labour force survey, quarter 2, 2009*. [Online]. Available from: http://www.statssa.gov.za [Accessed 10 July 2009].

Strachan, G. 2009. *Budget 2009 speech, Western Cape minister of Finance, economic development and tourism*. [Online]. Available from Western Cape Provincial Government: http://www.info.gov.za/speeches/2009/09022408451002.htm [Accessed 29 November 2009].

Van Vuuren, A. 2002. *Solid waste management services: framework for service delivery, service levels and funding options*. Minutes of a special meeting of the Council of the City of Cape Town. Held in the Council Chamber, 6th Floor, Podium Block, Civic Centre, 12 Hertzog Blvd., Cape Town on 24 April 2002 at 10:00 a.m. Tygerberg Administration. [Online]. Available from: http://web1.capetown.gov.za/ [Accessed 10 August 2009].

Westcott, M. 2008. Power struggles and power supplies: time to take stock. *Management Today*, 24(4): 6-9.

Western Cape Provincial Economic Review & Outlook (PERO). 2006. *Socio economic profile: City of Cape Town*. [Online]. Available from Western Cape Provincial Treasury PR48/2006: http://www.capegateway.gov.za [Accessed 7 December 2009].

Wikipedia, 2008. Map of the municipalities of the Western Cape. [Online]. Available from: http://en.wikipedia.org/wiki/Western_Cape#Municipalities [Accessed 20 January 2010].

Wikipedia, 2009. *HIV/AIDS in South Africa*. [Online]. Available from: http://www.en.wikipedia.org/wiki/AIDS [Accessed 23 September 2009].

Wilson, D.C., Velis, C. & Cheeseman, C. 2006. Role of informal sector recycling in waste management in developing countries. *Habitat International*, 30(4):797-808. London, UK: Elsevier. [Online]. Available from ScienceDirect database: http://dx.doi.org/10.1016/j.habitatint.2005.09.005 [Accessed 17 August 2009].

Wilson, D.C., Araba, A.O., Chinwah, K. & Cheeseman, C.R. 2008. Building recycling rates through the informal sector. *Waste Management*, 29(2):629-635. London, UK: Elsevier. [Online]. Available from ScienceDirect database: http://dx.doi.org/10.1016/j.wasman.2008.06.016 [Accessed 5 October 2009].

York, R.O. 1982. *Human service planning: concepts, tools, and methods*. Chapel Hill: University of North Carolina Press.

APPENDICES

Appendix A: Gil's Framework for Analysis and Development of Social Policies

Section A: Issues dealt with by the policy

1. Nature, scope, and distribution of the issues
2. Causal theory(ies) or hypothesis(es) concerning the issues

Section B: Objectives, value premises, theoretical positions, target segments, and substance effects of the policy

1. Policy objectives: overt objectives and covert objectives
   a) Value premises and ideological orientations underlying the policy objectives: explicit and implicit value premises
2. Theory(ies) or hypothesis(es) underlying the strategy and the substantive provisions of the policy
3. Target segment(s) of society – those at whom the policy is aimed:
   a) Ecological, demographic, biological, psychological, social, economic, political, and cultural characteristics
   b) Size of relevant subgroups and of entire target segment(s) projected over time
   c) Short- and long- range effects of the policy on target and non-target segment(s) in ecological, demographic, biological, psychological, social, economic, political, and cultural spheres
   d) Intended effects and extent of attainment of policy objectives
   e) Unintended effects
   f) Overall costs and benefits

Section C: Implications of the policy for the operating and outcome variables of social policies

1. Changes in the development, management, and conservation of natural and human-created resources
    a) Changes in ownership, control, and locus and criteria for decision-making
    b) Changes in types, quality, and quantity of goods and services produced
    c) Changes in priorities concerning resource allocation and conservation
    d) Other changes
2. Changes in the organization of work and production
    a) Development of new models, roles, and practices
    b) Strengthening of existing models, roles, and practices
    c) Elimination of existing models, roles, and practices
    d) Changes in criteria and procedures for access to positions in the work and production system
    e) Changes in the definition of work
    f) Changes in the design of work processes and in the quality of work life
    g) Other changes
3. Changes concerning exchange and distribution of goods, services, rights, and responsibilities
    a) Changes in the quality and quantity of general and specific entitlements, task- or role-specific rewards, and general and specific constraints
    b) Changes in the proportion of rights distributed as entitlements and as rewards, or in the extent to which the distribution of rights is linked to specific roles in work and production
    c) Changes in the proportion of rights distributed directly, in kind (e.g., public provisions and services), and rights distributed indirectly, as "right equivalents," purchasing power, or money
    d) Changes in the specifications of minimum levels of rights, e.g., "official poverty line," and in the extent to which the distribution of rights actually assures coverage of such a minimum level
    e) Changes in the relative distribution of rights, the terms of exchange of work products, and the degree of inequality of rights among individuals, groups, and classes
    f) Other changes
4. Changes in processes of governance and legitimation

5. Changes concerning reproduction, socialization, and social control
6. Consequences of changes concerning resources, work and production, rights, governance and legitimation, and reproduction, socialization, and social control, for:
    a) Circumstances of living individuals, groups, and classes
    b) Power of individuals, groups, and classes
    c) Nature and quality of human relations among individuals, groups, and classes
    d) Overall quality of life

Section D: Interactions of the policy with forces affecting social evolution

1. History of the policy's development and implementation, including legislative, administrative, and judicial aspects
2. Political groups in society promoting or resisting the policy prior to, and following, its enactment: their type, size, organizational structure, resources, strength, extent of interest, value positions, and ideological orientation
3. Attributes of the natural environment and changes in it
4. Intrinsic attributes and tendencies of people and their socially shaped elaborations
5. Basic and perceived needs of people
6. Demographic developments and changes in the ratio of population size to available natural and human-created resources
7. Economic surplus and its disposition
8. Social, occupational and spatial differentiations, and differentiations of rights and perceptions of interests; class structure and class consciousness; conflicts concerning resources, work, rights, and the disposition of the economic surplus
9. Development of ideas, knowledge, science, technology, skills
10. Prevailing symbolic universe and consciousness including images of established ways of life; customs and traditions; system of ideas; beliefs; and meanings; conventional wisdom; perceptions of needs and interests; value positions; ideology
11. Critical consciousness and alternative visions
12. Interactions with other societies and exposure to alternative ways of life and consciousness
13. Social and foreign policies relevant to the focal issues of the policy
14. Summary and conclusions concerning the policy's interaction with the forces affecting its development and implementation

Section E: Development of alternative social policies; comparisons and evaluation

1. Specifications of alternative social policies
   a) Aimed at the same policy objectives, but involving alternative policy measures
   b) Aimed at different policy objectives concerning the same policy issues
2. Comparison and evaluation: each alternative policy should be analyzed in accordance with the framework and compared with the original policy and other alternative policies.

Summary of Sections A-E:

Section A: Which of the many domains of concern to a society constitute the focus for this policy?

Section B: How would the policy affect this domain in substantive terms?

Section C: How would society as a whole be affected by the substantive consequences of the policy?

Section D: What effects may be expected from the interaction of the policy with various forces within and outside society?

Section E: What alternative policies could be designed to achieve the same or different policy objectives concerning the specified domain?

Source: Gil, 1992:71

Appendix B: 2001 Waste Generation

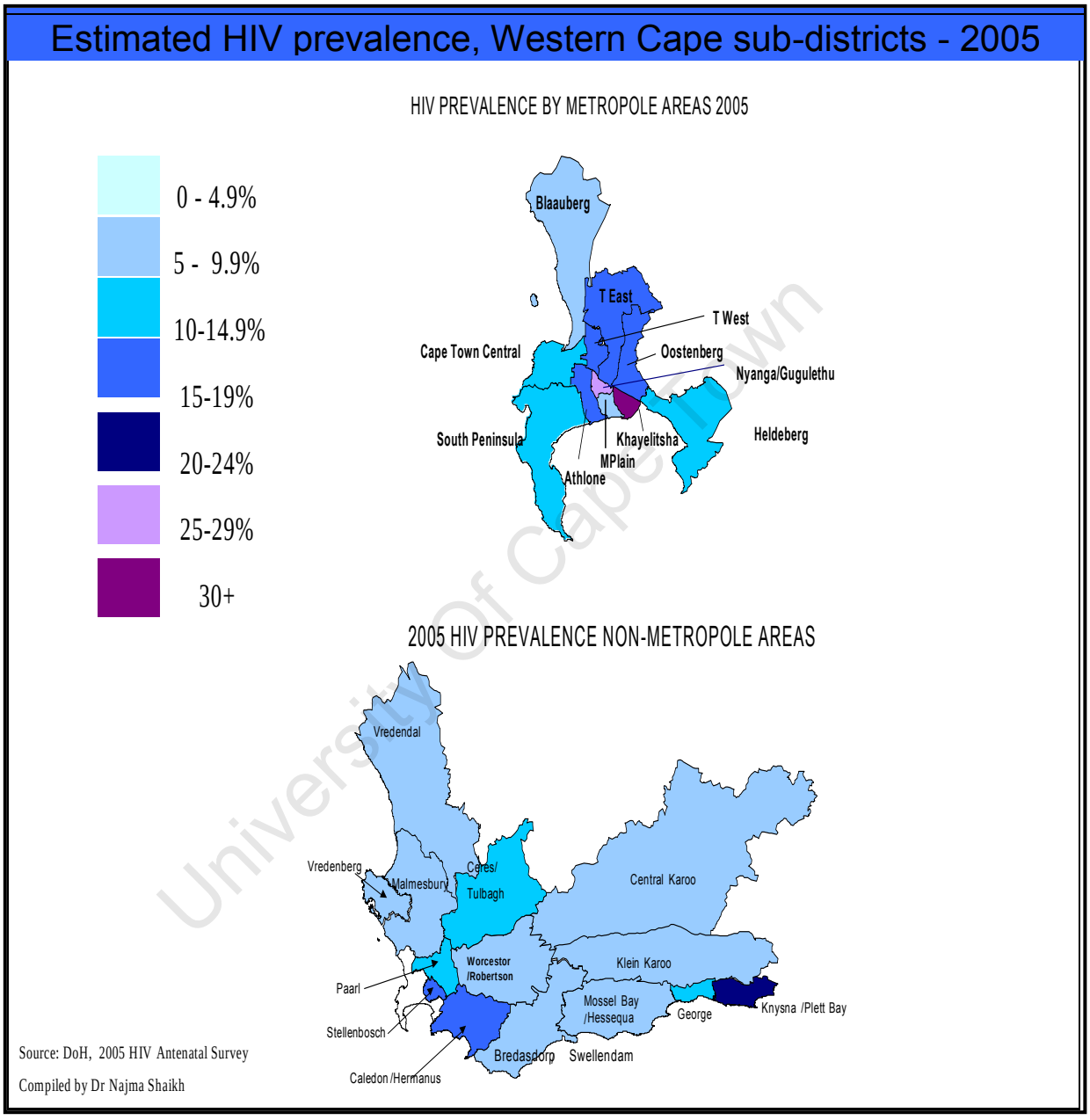
Waste Generation per District of the Western Cape 2001			
District Municipalities & Metro	Total Population	Total Waste (tons/annum)	Per capita waste generation
West Coast	140,632	49,235	0.35
City of Cape Town	2,940,628	1,079,014	0.36
Cape Winelands	364,088	159,585	0.43
Overberg	156,492	43,619	0.28
Eden	459,326	108,853	0.23
Central Karoo	33,332	6,194	0.18
Combined Total:	4,094,498	1,446,500	0.35

Source: Cape Metropolitan Council, 1999:102

Additional facts:

1) In 2001, an estimated 1,446,500 tons of waste was landfilled in the Western Cape (Cape Metropolitan Council, 1999:101);
2) In 2002, the Western Cape generated an estimated 8,827,000m³ of waste (Cape Metropolitan Council, 1999:101); and
3) In 2003, the City of Cape Town alone generated an estimated 6000 tons of solid waste on a daily basis (Cape Metropolitan Council, 1999:101).

Appendix C: 2005 HIV Prevalence



Source: Draper et al. 2007:6

Appendix D: 2005 District Distribution of TB

District distribution of TB (PGWC ETR 2005 data)

District	Cases	% Cases
METRO SUBTOTAL	25 950	57.5
C W'LAND SUBTOTAL	6 942	15.4
EDEN SUBTOTAL	5 581	12.4
W COAST SUBTOTAL	3 587	7.9
O'BERG SUBTOTAL	2 412	5.3
C KAROO SUBTOTAL	658	1.5
TOTALS	45 130	100

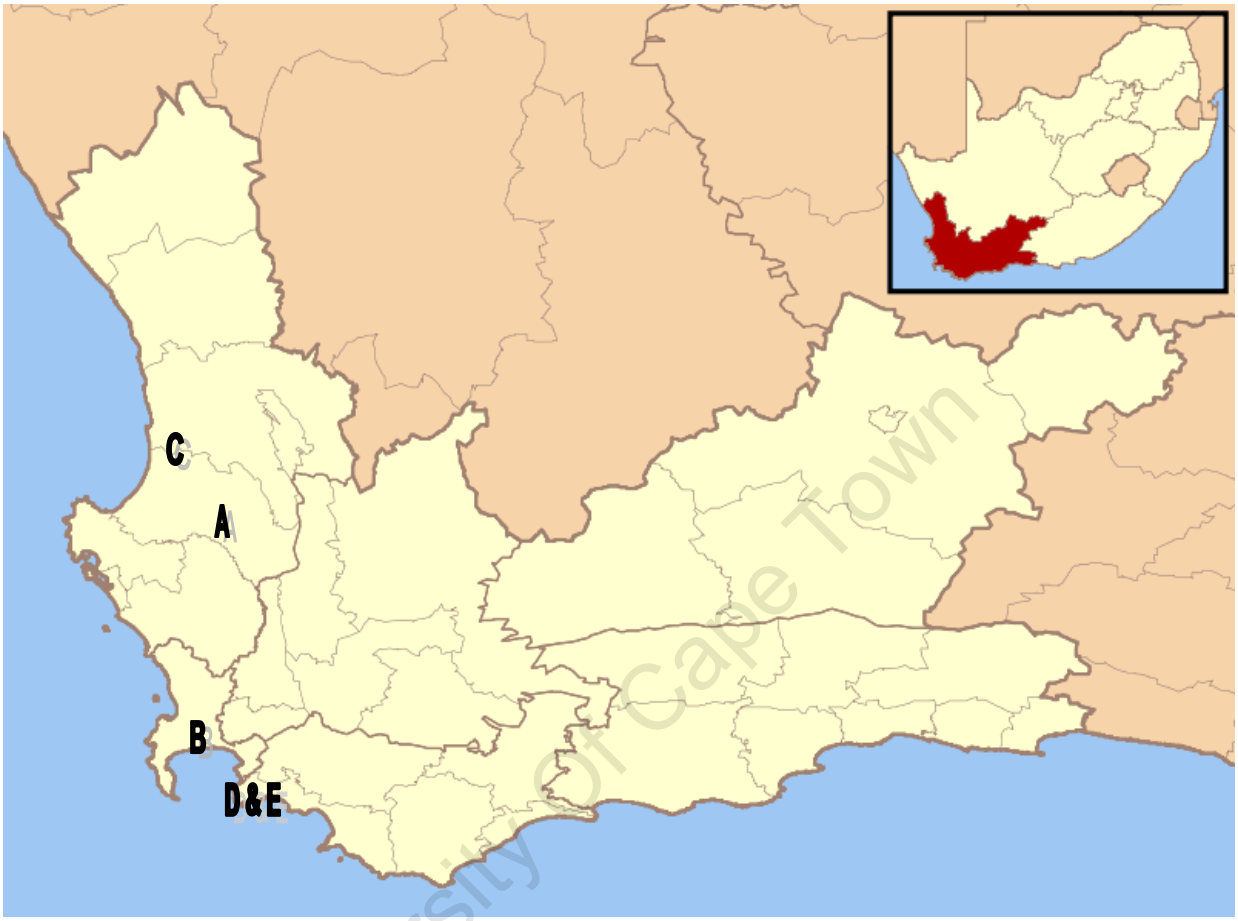
Source: Draper et al. 2007:9

Appendix E: Waste Management Sector Industry Stakeholders

Herein is a list of all IAPs; various entities with a stake in the solid waste management sector and more importantly in a position to help achieve a waste free environment (DEAT, 2003:14):

- Research teams;
- NGOs (Non-governmental organisations), CBOs (Community-based organisations) and other small community groups;
- Consumers (households, residential areas, commercial areas, SMMEs and municipalities, manufacturers among others);
- Government Departments (National, Provincial and Local);
- Policy makers (such as with the City's Solid Waste Department or Waste Management Governance at the Provincial level);
- Collectors (Local municipalities, private companies and the informal recycling sector);
- Waste processors (private recycling companies, MRFs, Transfer Stations and the informal recycling sector);
- Brokers (private recycling companies, buy-back centres and scrap dealers who buy and sell recyclable materials);
- Converters (usually private companies who buy recyclables and sell them to manufacturers who can use them as raw materials for something else);
- End-use markets (companies who purchase either recovered or converted materials to make compost or new feedstock); and
- Waste disposal facility operators (private companies or municipal).

Appendix F: Four Sampled Waste Management Facilities in the Western Cape



A. Bellville South Landfill: City of Cape Town

B. Stellenbosch Landfill: G.M. Waste, private contractor (Stellenbosch Municipality)

C. Highlands Landfill and Material Recovery Facility: private contractor (Malmesbury, Swartland Municipality)

D. Hermanus Transfer Station: Overstrand Municipality

E. Walker Bay Recycling: private company

Appendix G: UCT Letter Requesting Permission to Interview

UNIVERSITY OF CAPE TOWN

Department of Social Development

Private Bag, Rondebosch 7701
South Africa
Telephone: 27-21-650-3493
Fax No: 27-21-689-2739

Dear Sir / Madam

SUBJECT: REQUESTING AN INTERVIEW FOR RESEARCH PURPOSES

My name is Jessica Chvatal. I am a student completing my second year of Masters by coursework in Social Policy & Management at the University of Cape Town in the Department of Social Development. I am currently conducting research for my dissertation entitled: **A case study of waste management policy implications for waste pickers in the Western Cape.** The aim of this research is to explore the waste management policy approach to landfill picking and its intended and unintended impact on waste pickers. An important part of this study includes the legislative framework that governs waste management in South Africa. The findings of this case study and the evaluations brought forth will hopefully influence thinking about waste management policy issues in a general way and may be of service to furthering the achievement goals of sustainable employment creation and poverty alleviation.

I would appreciate being granted an interview or interviews with you and other managers for the purpose of this study. Anonymity will be applied upon request and/or where appropriate. As a UCT research student I will be adhering to a code of ethics that ensures the anonymity, confidentiality and integrity of the process. The principle of "no harm to those interviewed or to those affected" will guide the research. In this research, I seek to inform, generate ideas and help pose new questions for further research on the social policy aspects of waste management. The same questions and method of interviews will be used in select geographical locations to produce consistent and reliable findings; that can in turn serve both the scientific community and the social development of members of society.

Yours sincerely

Student: Jessica A. Chvatal
Department of Social Development
February 2009

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SUBJECT: REQUESTING AN INTERVIEW FOR RESEARCH PURPOSES

I have read the above declaration of research ethics and consent to the interview

_____	_____	_____
Print Name	**Signature**	**Date**

Appendix H: Semi-Structured Interview Schedule for Population A

Job Description

1) What is your job title?
2) What role(s), responsibilities and duties does your job entail?
3) Who do you report to?
4) Who do you oversee?

Landfill Management

1) What is the overarching body responsible for the management of waste?
2) Who operates and manages the landfill sites located in the Western Cape?
3) What is the role that local authorities play in the waste management hierarchy?
4) What are the Province's landfill sites and where are they situated?
5) Which of these landfill sites are classified as hazardous disposal sites?
6) Who is responsible for monitoring landfill site management compliance?
7) What is the role of a landfill site manager/Permit Holder/Responsible Person?
8) What is the role of the City/Municipality/District/Province with respect to waste minimisation?
9) Are there any new landfill sites currently under consideration in the Western Cape?
10) What is the remaining landfill airspace of the landfill sites in the Western Cape?

Landfill salvaging

1) What is the City's/Municipality's/District's/Province's position on "landfill scavenging"?
2) What is the National Government's position on "landfill scavenging"?
3) What is your opinion on "landfill scavenging" and what are the problems surrounding this issue?
4) Is or was "landfill scavenging" allowed on the any of the Province's landfill sites?
5) Please explain to me what consists of "landfill scavenging" and how "landfill scavenging" was or still is carried out on the Western Cape's disposal sites?
6) How does the current situation demonstrate the health and safety of waste salvagers in the Western Cape?
7) Why did the Cape Metro phase out landfill salvaging on its landfills?

8) Who decided to phase out landfill salvaging on the Cape Metro landfills?
9) What measures were taken to phase out landfill salvaging? How was it carried out?
10) What reactions and responses did you receive from the waste salvagers (and their contractors)?
11) What has been done to assist waste salvagers with skills training and finding alternative means of employment?
12) Is landfill salvaging a viable and sustainable waste management and minimisation strategy?
13) Is reclaiming a legitimate and viable occupation?
14) Could landfill salvaging have been considered a viable strategy if the Cape Metro had chosen to formalize the disposal site environment to suit landfill salvaging and other waste minimisation alternatives?

Recycling

1) What impact has the recent economic meltdown/crisis had on the recycling industry and its various stakeholders?
2) What types of measures have been taken, if at all, on helping foster small-to-medium micro recycling enterprises within the waste management hierarchy?
3) What types of measures have been taken in integrating the informal sector recyclers into the formal waste management sector?

Appendix I: Semi-Structured Interview Schedule for Population B

Job Description

1) What is your job title?
2) Are you a private contractor, municipal employee or other?
3) What role(s), responsibilities and duties does your job entail?
4) Who do you report to?
5) Who do you oversee?

Waste Management

1) What are your sources of funding?
2) What other sources of income do you have?
3) How much more airspace/life does this landfill site still have?
4) What are the operational hours of this waste management facility?
5) What volume of waste does this waste management facility receive on a daily basis?
6) How much of this waste is recycled and diverted out of the general waste stream?
7) What kind of recyclables or materials do you see coming into this waste management facility?
8) Do you have any types of resource recovery activities in place at this waste management facility? (e.g. chipping, composting and/or salvaging)
9) Who are your employees and how did you hire and/or contract them?
10) Who does your internal and external audits and how often?
11) Who is responsible for monitoring your compliance with health and safety regulations?
12) Do you provide your employees and/or salvagers with protective clothing and safety equipment?
13) Do your employees and/or salvagers receive health and safety training and education?
14) Do you find that your employees and/or salvagers comply with the health and safety regulations?
15) What is your waste management facility currently non-compliant with?

Salvaging

1) Do you and/or did you allow any form of landfill salvaging on the site? If not, why? If so, how was it carried out?
2) Cape Metro Waste Disposal Sites ONLY: When was landfill salvaging banned and how was this policy decision communicated to those it concerned?
3) Cape Metro Waste Disposal Sites ONLY: How did the salvagers and salvaging entrepreneurs react as well as respond to the ban on landfill salvaging?
4) Cape Metro Waste Disposal Sites ONLY: What has happened since to those waste salvagers and the salvaging entrepreneurs?
5) What are your own views on landfill salvaging?
6) In your opinion, could landfill salvaging be considered a viable and sustainable waste minimisation strategy?
7) Waste Disposal Sites ONLY: In your opinion, did or do the waste salvagers contribute significantly towards waste minimisation and the saving of landfill airspace?
8) As far as you know, what has been done to assist waste salvagers with skills training and finding alternative means of employment?
9) How would you go about integrating the informal waste salvagers into the formal waste management hierarchy; and more specifically, into the formal waste recovery system?
10) Did you (private contractor) or the Municipality ever consider formalizing and/or diversifying salvaging work at the waste management facility itself?

Appendix J: Focus Group Interview Schedule for Population C

Subsistence living

1) Waste Disposal Site Salvagers ONLY: Why did you start and/or why do you salvage at landfills?
2) Waste Disposal Site Salvagers ONLY: When you salvaged on landfills, were you contracted or hired to do so? And if so, by whom?
3) Would you rather salvage on your own terms or be employed to do so? Why?
4) What do you (or did you) enjoy about waste salvaging?
5) What do you (or did you) not enjoy about waste salvaging?
6) How did you find out that you could make a living out of recyclable materials?
7) How do you know which materials to salvage?
8) Where and to who do you (or did you) sell your recyclables?
9) Do you (or did you) ever come across dealers who do not weigh your recyclables?
10) Do you think you are being (or were being paid fairly) for your recyclables?
11) How are you (or were you) treated by waste management facility employees and workers and municipal officials?
12) How are you treated by the public in general for the 'work' that you do?
13) Former and Current Waste Disposal Site Salvagers ONLY: How do you feel about the fact that the Government has banned and ended landfill salvaging?
14) What other work would you do if you could choose and had the possibility to realize it?

Health & Safety

1) Are you (or were you) provided with any protective clothing and safety equipment? If so, who provided you with that clothing and equipment?
2) Do you (or did you) use protective clothing and safety equipment when salvaging through waste? If not, why?
3) Do you (or did you) ever receive any medical check-ups? If so, how often and what sort of tests?
4) In your opinion, have you felt (or did you feel) ill more than usual when you started salvaging waste?
5) Have you ever gotten injured while salvaging through waste?

6) Do you (or did you) consume the food and drink that you find (or found) when salvaging through waste?
7) Do some of the waste salvagers have more authority or seniority over others? If so, why?
8) What types of problems do you (or did you) experience while salvaging through waste?
9) Are there (or where there) any ethnic or racial confrontations among the waste salvagers?
10) Have any authorities such as the waste management facility manager or municipal official ever explained to you the dangers of waste salvaging and/or provided you with any health and safety training/education?

Knowledge

1) Have you ever gone to a public forum on waste management or any related subject on the matter?
2) Have you ever been trained or taught about salvaging and source recovery activities?
3) How do you know which materials are more valuable than others?
4) Do you know what the term 'composting' means?
5) Do you know what the term 'recycling' materials means?
6) Do you know what the term 'reusing' materials means?
7) Waste Disposal Site Salvagers ONLY: Do you understand why the Government and/or authorities decided to ban and end landfill salvaging?
8) Are there any organizations, churches or other groups that exist in your area that you can either go to for help and support and/or who have assisted you in any way?
9) Who do you go to for support?

Integration

1) Would you like to continue salvaging materials?
2) What changes or recommendations would you make (or have made) to help render your work more agreeable?
3) What changes or recommendations would you make (or have made) to help render your working environment more agreeable?
4) Would you be willing to work in the formal waste management hierarchy?

5) If the Municipality could provide you with waste management education and training, would you be willing to receive it and attend the courses?
6) If the Municipality could assist you in entering formal waste management service roles and positions, would you be willing to do so?
7) How can the Municipality help you?
8) Have you ever considered starting your own business? If so, what business and why haven't you?
9) What would you need to start your own business?
10) Current Waste Disposal Site Salvagers ONLY: Have you considered what you will do once this waste disposal site closes?

Appendix K: Profile of Population C: Focus Group 1 participants

Population C: focus group 1									
Nr of Participants	**Gender**	**Ethnicity**	**Language**	**Religion**	**Age**	**Education**	**Nr of people to help support**	**Range in daily income from waste reclamation**	**Month/s or Year/s in waste reclamation**
1	Male	Coloured	Afrikaans	Christian	23	Grade 6	3	R30-40	16 years
2	Male	Coloured	Afrikaans	Christian	39	Grade 5		R20-60	22 years
3	Male	Coloured	Afrikaans	Rastafarian	38	Grade 3		R20-40	39 years
4	Male	Coloured	Afrikaans	Christian	58	None	2	R40-100 (weekly)	15+ years
5	Male	Coloured	Afrikaans	Christian	19	Grade 8	1	R30-80	3 years
6	Male	Coloured	Afrikaans	Christian	19	Grade 5	2	R20-50	6 years
7	Male	Coloured	Afrikaans	Christian	57	Grade 4		R20-40	20 years
8	Male	Coloured	Afrikaans	Christian	22	Grade 5	6	R16-45	6 years
9	Female	Coloured	Afrikaans	Christian	22	Grade 9	1	R20-40	6 years
10	Female	Coloured	Afrikaans	Agnostic	16	Grade 5	1	R30-50	6 years

Data collection method	Participants	Date	Location	Duration	Translators
Questionnaires	10	Tuesday, 30th of June 2009	Stellenbosch Landfill: manager's office	1 hr 30 mins	1 Afrikaans-speaking male
Focus group	9	Tuesday, 30th of June 2009		2 hrs 30 mins	

Appendix L: Profile of Population C: Focus Group 2 participants

Population C: focus group 2									
Nr of Participants	**Gender**	**Ethnicity**	**Language**	**Religion**	**Age**	**Education**	**Nr of people to help support**	**Range in daily income from waste reclamation**	**Month/s or Year/s in waste reclamation**
1	Male	Coloured	Afrikaans	Christian	42	Grade 7	6	R15-90	1 year (illegally)
2	Male	Coloured	Afrikaans	Christian	21	Grade 7	5	R20-350	7 years (illegally); 2-3 months (under contract)
3	Male	Coloured	Afrikaans	Christian	48	None	4	R60-260	4 years (under contract)
4	Male	Coloured	Afrikaans	Christian	36	Grade 6	7	R60-250	14 years (illegally)
5	Male	Coloured	Afrikaans	Christian	32	Grade 7	4	R60-120	1 yr 5 months (illegally)
6	Male	Coloured	Afrikaans	Christian	38	Grade 7	3	R30-90	2 years (illegally)
7	Male	Coloured	Afrikaans	Muslim	32	Grade 9	6	R100-250	1 month (under contract)
8	Male	Coloured	Afrikaans	Christian	40	Grade 8	4	R50-200	6 years (illegally); 2-3 months (under contract)
9	Male	Coloured	Afrikaans	Apostolik	26	Grade 5	4	R30-300	5 years (illegally)
10	Female	Coloured	Afrikaans	Apostolik	22	Grade 8		R100-350	1 year (under contract)
11	Female	Coloured	Afrikaans/limited English	Catholic	76	Grade 11	4	R200-400 (weekly)	17 years (under contract)

Data collection method	Participants	Date	Location	Duration	Translators
Questionnaire	11	Monday, 22nd of June 2009	Bellville South Landfill: conference room	1 hr 30 mins	1 Afrikaans-speaking female
Focus group	11	Monday, 22nd of June 2009		2 hrs	

Appendix M: Profile of Population C: Focus Group 3 participants

Population C: focus group 3									
Nr of Participants	**Gender**	**Ethnicity**	**Language**	**Religion**	**Age**	**Education**	**Nr of people to help support**	**Monthly Income from waste reclamation**	**Month/s or Year/s reclaiming at Highlands**
1	Female	Coloured	Afrikaans	Christian	46	Grade 7	3	R1200.00	9 months
2	Female	Coloured	Afrikaans	Christian	55	None	1	R1200.00	11 years
3	Female	Coloured	Afrikaans	Christian	57	None	5	R1300.00	4 years
4	Female	Coloured	Afrikaans	Christian	40	Grade 3	4	R1400.00	11 years
5	Female	Coloured	Afrikaans	Christian	53	None	5	R1200.00	1 yr 6 months
6	Female	amaXhosa	isiXhosa	Methodist	51	Grade 10	4	R1100.00	3 years
7	Female	amaXhosa	isiXhosa	Christian	58	Grade 3	3	R1200.00	2 yrs 8 months
8	Male	Coloured	Afrikaans	Christian	27	Grade 5	4	R1600.00	1 yr 6 months
9	Male	amaXhosa	isiXhosa	Universal Church	49	Grade 3	4	R1300.00	3 years

Data collection method	**Participants**	**Date**	**Location**	**Duration**	**Translators**
Questionnaire	9	Wednesday, 8th of July 2009	Highlands Landfill: outside the MRF	1 hr 30 mins	1 Afrikaans-speaking male; 1 isiXhosa-speaking female; and 1 Afrikaans- and isiXhosa-speaking male.
Focus group	9	Thursday, 9th of July 2009		2 hrs	

Appendix N: Profile of Population C: Focus Group 4 participants

Population C: focus group 4									
Nr of Participants	**Gender**	**Ethnicity**	**Language**	**Religion**	**Age**	**Education**	**Nr of people to help support**	**Range in weekly income from waste reclamation**	**Year/s in waste reclamation**
1	Male	Coloured	Afrikaans	Christian	43	Grade 8	4	R90-180	13
2	Female	amaXhosa	isiXhosa	Christian	64	Grade 7	1	R79-200	17
3	Female	amaXhosa	isiXhosa	Christian	35	Grade 9	4	R46-110	3
4	Female	amaXhosa	isiXhosa	Christian	60	Grade 5	5	R76-150	8
5	Female	amaXhosa	isiXhosa	Christian	26	Grade 2	2	R40-200	2
6	Female	amaXhosa	isiXhosa	Agnostic	45	Grade 11	4	R70-200	1
7	Female	amaXhosa	isiXhosa	Christian	60	None	4	R70-100	3
8	Female	amaXhosa	isiXhosa	Christian	39	Grade 8	6	R40-150	16
9	Female	amaXhosa	isiXhosa	Christian	32	None	3	R20-100	1
10	Female	amaXhosa	isiXhosa	Zion	48	Grade 3	4	R60-180	12
11	Female	amaXhosa	isiXhosa	Zion	53	Grade 6	5	R180	15

Data collection method	**Participants**	**Date**	**Location**	**Duration**	**Translators**
Questionnaire	11	Tuesday, the 14th of July 2009	Hermanus Transfer Station: at the actual waste reclamation area	1 hr 30 mins	1 Afrikaans-speaking male; 1 isiXhosa-speaking female; and 1 Afrikaans- and isiXhosa-speaking male.
Focus Group	11	Tuesday, the 14th of July 2009	Hermanus Transfer Station: manager's office	2 hrs	

Appendix O: Group-Administered Questionnaires for Population C: Focus Groups 1 and 2

Your responses will be kept strictly anonymous.

Circle One: Female or Male

Ethnicity: _____

Language: _____

Religion: _____

Age: _____

Where were you born? _____

Where do you live? _____

How many people do you have to feed and help support? _____

Are you the only one earning money in the family? (Circle one) Yes or No

Until what grade/standard did you go to school? _____

Did or do your parents also pick waste? _____

Do your children also pick waste? _____

How did you hear about this type of work? _____

Have you picked from any other landfill sites? If yes, which ones?_____

What time do you usually get to the landfill site in the morning? _____

What time do you usually leave the landfill site? _____

How many days a week do you come and pick waste off the landfill site? _____

Do you pick waste when it rains? Yes or No or Sometimes

Do you pick waste when it is freezing? Yes or No or Sometimes

Do you pick waste when it is very hot? Yes or No or Sometimes

What materials do you collect? _____

How much do you make on average at the end of a "good day"? R_____

How much do you make on average at the end of a "bad day"? R_____

How much do you get paid for the following materials?

Scrap metal	Plastic	Cardboard	Cans
_____Rands	_____Rands	_____Rands	_____Rands
_____Volume?	_____Volume?	_____Volume?	_____Volume?

Paper	Bricks	Bottles	Other/_____
_____Rands	_____Rands	_____Rands	_____Rands
_____Volume?	_____Volume?	_____Volume?	_____Volume?

How does the landfill site management and employees treat you? (Circle one answer)

Excellent Good Average Poor Very Poor

How do you view your work at the landfill site? (Circle one answer)

Excellent Good Average Poor Very Poor

Do you do anything else other than picking waste to earn money? If yes, what?

_____

How long have you been picking waste for off of this landfill site?

_____

Have you ever had a formal job where you were paid regularly as a hired employee? If yes, what job/s?

_____

Did anyone help you find other ways of making a living after the ban on landfill salvaging? If so, how? _____

How do you view the municipality/Council? (Circle one answer)

Very helpful Satisfactory Average Unsatisfactory Not helpful

Thank you for participating in this research.

Appendix P: Group-Administered Questionnaires for Population C: Focus Groups 3 and 4

Your responses will be kept strictly confidential.

Circle One: Female or Male

Ethnicity: _____

Language: _____

Religion: _____

Age: _____

Where were you born? _____

Where do you live? _____

How many people do you have to feed and help support? _____

Are you the only one earning money in the family? (Circle One) Yes or No

Until what grade/standard did you go to school? _____

Did or do your parents also sort waste?

_____

Do your children also sort waste?

_____

How did you hear about this type of work?

_____

How do you get to your work everyday?

_____

How long have you worked here for?

_____

What were you doing before this work?

_____

Have you ever picked waste from a landfill site? Yes or No

If Yes, were you hired/contracted to pick materials off the landfill site? Yes or No

If Yes, did you make more money picking materials from the landfill site? Yes or No

If Yes, do you prefer the work that you have now? Yes or No

How did you get this work?

_____

If any, what qualifications and/or experience did you need in order to get this work?

_____

Is this work temporary or permanent?

_____

What time do you start working?

_____

What time do you finish working? _____

How many days of the week do you work here? _____

How often do you get paid? _____

How much do you get paid for your recyclables? R_____

What are you paid for this work? R_____

How much do you get paid for the following materials/recyclables?

Scrap metal	Plastic	Cardboard	Cans
_____Rands	_____Rands	_____Rands	_____Rands
_____Volume?	_____Volume?	_____Volume?	_____Volume?

Paper	Bricks	Bottles	Other/_____
_____Rands	_____Rands	_____Rands	_____Rands
_____Volume?	_____Volume?	_____Volume?	_____Volume?

Does your salary or money earned from the recyclables change significantly from day-to-day/week-to-week/month-to-month? Yes or No

If so, explain why?_____

Do you get any employment benefits? _____

Do you get any medical check-ups? If yes, who provides it for you?_____
_____

Have you ever had a formal job where you were paid regularly as an employee? If yes, what job/s?
_____

Do you have any other job/s beside this one? If yes, what job/s? _____

How do management and the workers treat you? (Circle one answer)

Excellent Good Average Poor Very Poor

How would you rate your work at the facility? (Circle one answer)

Great Satisfactory Average Unsatisfactory

How do you view the municipality/Council? (Circle one answer)

Very helpful Satisfactory Average Unsatisfactory Not helpful

Thank you for participating in this research.