

School of Geography, Archaeology and Environmental Studies

Honours Project

Title: The Rise in Backyard Shacks and the Implications for Solid Waste Management Services Provision in Bram Fischer

This thesis is submitted to the University of Witwatersrand for the award of a Bachelor of Science (Honours) degree in Geography.

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Declaration

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Abstract

There is general consensus amongst authors in the solid waste management literature that the increase in the number of people is directly proportional to the amount of waste that will be produced. However, this is just the general situation. There are context-specific situations which reflect the dynamics of one area. This paper argues that the amount of waste generated is informed and influenced by people's consumption patterns and what they consume. People's consumption is informed by their economic status. This research is based on findings from Bram Fischerville, a densified, working class, township in the South of Johannesburg. It was assumed that the increase in backyard shacks in the area pose solid waste management challenges to the municipality. The findings are twofold. First the municipality's solid waste management services provider's conceptualisation of the area as stand-alone houses misinformed their collection strategies and schedules. As a result, people's solid waste management practices due to this shortfall has proliferated the challenges. Secondly, the low economic level of the people, majority of whom can be classified as poor, influences their consumption patterns; which, in turn, influences people's perceptions of what is waste and what they discard of. Women are the agents who manage household waste through performing their household work. This gives men a misguided and misinformed perception that women waste the most. The township sanitary state is very inappropriate and this could be as a result of the increased number of people in the area at a time or due to the inefficiencies of the municipal solid waste management company, Pikitup, and its continued troubles. People have identified ways in which this situation can be reduced and how the cleanliness of the township can be maintained again. These include through recycling at the household level, employing the youth to clean the area and improvement in terms of collection frequency and timing from Pikitup.

Key words: Backyard shacks, densification, Bram Fischerville, Pikitup, solid waste management

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Chapter 1: Introduction

1.1. Overall Introduction to the Report

There is general agreement amongst scholars that a rise in population is directly proportional to the rise in the generation of solid waste (Sharholly, et al, 2007, Rotich, et al, 2006). Solid Waste Management in developing countries, especially where there are high population densities, has proved to be challenging and problematic through the years due to a wide range of issues and challenges. However, a growing population and increasing urbanisation are constantly at the peak of the “problems” list. The global emphasis on sustainable development, sustainable use of resources, both natural and otherwise, and environmental conservation and protection has contributed to the attribution of the waste state (wasting practices) as an environmental problem (Borel-Saladin and Turok, 2015). Wilson and Velis (2014) assert that only 30% of the world lived in urban areas by 1950, 54% in 2014 and that the percentage is expected to be 66% by 2030. It could be seen that population growth, increased urbanisation and solid waste generation rate mutually constitute what is identified as the problem. Borel-Saladin and Turok (2015) assert that rapid population growth, especially in the developing countries of the South, makes it difficult to provide sufficient and decent housing. This leads to rapid emergence and growth of informal settlements and informal settlements within formally established settlements. This is a true case for most South African townships, especially in Gauteng and Cape Town (Todes, 2012). The growth in urban slums, informal settlements, has been attributed to unbalanced growth in development and policy and this has left cities as places of deprivation and inequality (UN-Habitat 2013). The priority placed by the government’s policies on providing stand-alone houses speaks to this imbalance (Turk, 2016). Until November 2015, South African housing policy didn’t prioritise renting as an alternative housing strategy to accommodate the rising urban population (Todes, 2012). This has led to the dramatic increase in the number of backyard shacks and the population influx to townships, where people can get very cheap accommodation and easy and cheap access to the city and their work places. The ANC government has misinterpreted the Millennium Development Goal (MDG) of achieving ‘slum-free cities’ as a mandate to eradicate informal settlements (Ambole, 2016.) However, the new influx of people moving into the city nullifies this goal. They need to be accommodated within the city and this results in them not complying with policy requirements. In general, urban dwellers in informal settlements have to contend with

complex challenges around housing cost, tenure security, service provision, safety and proximity to job opportunities (Ambole, 2016).

Bram Fischerville, the focus of this study, is a large sprawling township on the periphery of the city of Johannesburg, Soweto and Roodepoort in Gauteng. The township is comprised of government's subsidised (RDP) houses augmented/supplemented by other forms such as backyard shacks within the subsidised housing (Todes *et al*, 2015). The large differences in housing typologies between Bram Fischerville areas have resulted in the area having to accommodate about 90000 residents. The quantity of waste generated by 90000 households in a region that was designed for 22000 is unimaginably high. The pressure exerted by this situation on waste management services provision in the township can be extreme. This could be worsened by the probable situation whereby solid waste collection may be scheduled for once a week by the municipal workers while waste generation exceeds collection (Todes, *et al*, 2015). The aforementioned statement sets the motion for the proposed study, which aims to investigate solid waste management services provision challenges experienced by municipal authorities in Bram Fischerville.

The output of this research will be presented in two broad topics: a theoretical part of the research that links the topic to the broader discourses on waste, waste management and people. This part will focus on the gendered nature of waste and waste as a consumption influenced variable. The second part is the outline of people's alternative waste management strategies and these help ease the waste burden on the township. The third part focuses on the inappropriateness of the sanitary conditions at the township, the factors that encourage this and what are the waste management services provided to address this. This will outline residents' wasting practices and their interactions with waste. Pikitup, as an institution that handles the township's solid waste management services has been interviewed and the analysed content of the interview will be written in this section. This section will also analyse the intersection of Pikitup-residents'-waste interactions and how this unfolds in the sanitary condition of the township.

1.2. Research Rationale

Over the last couple of decades there has been a shift in discourses around waste management. The discourses shifted from the emphasis, by governments, international organisations and Non-Governmental Organisations (NGOs) and Non for Profit Organisations (NPOs), on proper and sanitary waste disposal to increased encouragement of

waste stream minimisation and waste generation reduction and avoidance (DEAT, 2011). This may seem as a highly impossible task to be achieved. As such, it is paramount to investigate people's perceptions of waste; what they consider as waste and how they dispose of their waste. This is to find out if there is any value attached to waste by the residents and how this informs or influence their wasting practices.

The rise in backyard shacks in Bram Fischerville is a result of rapid densification and population growth in the Johannesburg metro as influence by the proximity to the city, jobs, transport and other important services (Todes, *et al*, 2011). This leads to a higher, per yard, generation and discard of waste and a possible strain on the waste infrastructure provided by the local authorities (Govender, *et al*, 2011). It is, therefore, pertinent to explore those possible strains and how they present challenges to the municipal waste management services provision. The finding may play a role in how future waste management plans are put in place and hence help promote the "context-specific" waste management strategy by the local municipality.

Municipal solid waste management services provision in densely populated and densified areas is often problematic. This is due to possible hindrances such as unplanned settlements, rapid waste generation exceeding collection schedule, or a lack of solid waste management facilities and equipment (Wilson and Velis, 2014). The waste collection and storage challenges often encountered by municipal authorities may have indirect effects such as the emergence of illegal dumpsites; a rampant occurrence in townships around the Johannesburg Metro Municipality (Garg and Mashilwane). This can be solved if the problem is properly researched and as waste discard begins in a house, this research will shed light on how to solve this problem at source.

1.3. Academic Aim

According to Giusti (2009), humans have generated waste throughout time. However, this was not a problem since the population was small and often nomadic. Rapid urban population growth makes it more difficult to provide sufficient and decent housing (Saladin, 2015). Waste has now become a problem due to increased population densities and high rates of urbanisation. The aim of this research is to investigate the rise of backyard shacks and how this affects domestic waste generation and how/what are the implications of this on municipal waste management services provision.

This paper aims to find gaps in the waste and densification literature and hence address the problems not covered by other researchers. The main gap is that there is no data that focuses specifically on challenges on solid waste management that are directly induced by increase in backyards shacks and yard populations. For instance, Garg and Mashilwane (2015) focus on waste disposal patterns in Mamelodi and what informs these patterns with a particular focus on people's attitudes to the environment and Owen *et al* (2000) look at the backyard phenomenon in Soweto with a mind-set that is informed by urban and regional planning; focusing on housing structures, quality and township congestions. It has been noted that the literature addresses waste management practices and challenges and densification in a form of backyard shacks in isolation. There is only one case (Govender, *et al*, 2011) in which the two issues are discussed in relation to each other. It appears that there is no synthesis of academic literature between disciplines, in this case social sciences and town and regional planning. Integrated knowledge production is important as academic information is used to inform public policy. This research will integrate information from urban planning and geography to addresses a pressing issue of inadequate waste management services provision or high generation of waste due to increased yard population and the challenges that this presents to municipal authorities. Govender, *et al* (2011) mentions this intersection in passing. However, this intersection forms the basis of this research in Johannesburg and will thus add onto the literature of waste management and densification. The paper also aims to understand the relationship between people and waste and how this influence what people do with what they consider as waste. This is to generate supplementary information for densification-and-waste literature and to provide municipal planners with a twofold research in one paper.

1.4. Overview of the Report

This report is made up of 5 chapters: the introduction, which provides an overall introduction to the report, the research rational and the academic aim that the report is set out to achieve, literature review draw evidence from literature of the existence of a problem that is reported in the report, looks at the discourses and findings from other authors, their shortcoming in addressing the problem and the gaps that the research project output will fill, the methodology outline the methods that were used in the research to accumulate data and why those methods were chosen over other existing methods, The results and discussion section of the report reports on the direct finding of the research and the analysis of the results to build an argument and present a situation that has not been reported in the literature. The

conclusion provides the concluding remarks that sums up the content of the results and the discussion to concretize the finding contained on the report.

Chapter 2: Literature Review

2.1. Waste Management Literature Review

Rotich, et al, (2006) asserts that municipal solid waste management has a lot of challenges in developing countries. However, since the level of development in these countries is different, the level, magnitude and intensity of this challenge is not the same. As the constituents of municipal solid waste are also different from country to country; it could be asserted that there are multiple causes of the solid waste management challenges, such as limited budget, municipalities taking too much than they can handle, inadequate infrastructure and others (Manaf, et al, 2009). Kan (2009) notes that the increase in solid waste generation has been, in part, induced by people's changing activities, lifestyles and consumption patterns as the world is becoming more urbanised, industrialized and the levels of affluence are increasing. However, in view of the possible contributors to the municipal solid waste management challenges, there is a general agreement amongst scholars that increase in densification plays a major role in the generation of solid waste and challenges to municipal solid waste management services provision (Pandey, et al, 2016). The abovementioned factors are important as they highlight that there are solid waste management services provision challenges in densely populated areas and there are is an interplay of different factors that lead to this, with the population being of the factors.

According to Kan (2009, pp 13) "in parallel with the environmental consciousness rising all over the world, the protection of the environment has become one of the major policies of countries and waste management has taken a major attention among the environmental protection policies of all countries". This explains the vast amount of literature produced on the topic. Kan (2009, pp 1) further writes that typical waste management system comprises collection, transportation, pre-treatment, processing, and final abatement of residues. Municipal solid waste management practices are primarily for the protection of human' health, environment quality protection, sustainable development and the provision of the support to economic productivity (Henry, *et al*, 2006). According the World Resources Institute and USAID estimates, many municipalities in developing countries spend about 30% and more of their budgets on waste management services provision but only collect about 50-70% municipal solid waste. This is not the case in urban South Africa. In

Johannesburg, where my study area is located, the municipality collects more than 90% of its solid waste (Garg and Mashilwane, 2015). This part directly pointed out that the municipal authorities are responsible for waste management services in my study area and the statistics have created an expectation that at least 90 percent of the waste in my study area is collected. However, it is important to know of the implications induced by the pressure of high populations on waste storage and collection facilities/equipment in the region as these cater for one family per yard, and waste is collected accordingly.

Sharholy *et al* (2008) asserts that the illegal accumulation of municipal solid waste in most places in India is a result of poor collection and inadequate transportation. They further state that municipal solid waste management requires the maintenance and upgrade of infrastructure for all the activities and this is becoming expensive due to the increase in unplanned growth of urban centres. This is exacerbated by the poor financial conditions faced by local municipalities (Sharholy, *et al*, 2007). This may not be the problems in Johannesburg (and Bram Fischerville) but it relates to my research question in that it can help identify whether or not the pressure that the tenants and landlords exert on waste collection bins have an indirect impact on the presence of illegal dumping sites in the region. This by-product is the result of municipality's inability to collect all the waste or people generating more waste than the municipal authorities can collect it. Phrase as an argument in final lit review

2.2. Literature Review on Densification and Backyard Dwelling

Cohen (2006) identifies the fact that there has been tremendous urban growth in developing countries. He has have asserted that rapid population growth, transformation and growth of economies and rapid technological and political change has resulted in this. Most urban areas are characterised by rapid rural-urban migration as more people want to be part of the urban economy and want to develop their live, find sustained livelihoods and access to better services (Todes, 2012). This appears to be a general trend in all developing countries and South Africa is no exception. There is rapid migration into South Africa as people from other African countries seek to find greener pasture in the country. Johannesburg, due to its developed economy and vast opportunities, is where most people chose to settle. As a result of high prices in the city, they settle in townships and get embedded in the housing dynamics of the townships, with backyard shacks being one aspect. (Groenewald *et al*, 2013). This provides the historical and current context of the situation, which is important to understand in order to prepare for future research on the topics. "In South Africa, like in Mexico, the accelerated migration of indigent rural people into urban areas caused informal settlements to

grow beyond the coping capacity of city infrastructure” (Govender, *et al*, 2011). About one-fifth of South African households live in formal housing. The provision of fully state-funded low cost housing to the urban poor in many South African townships has resulted in tremendous growth in backyard shacks dwelling/renting in those townships across the country (Morange, 2002). The new home owners, due to the social and economic stature and needs, exploited their newly acquired resource, space, and built, or allowed tenants to build, informal dwelling in their backyards.

Govender *et al* (2011) and Gunter and Manuel (2016) have investigated the effects of the South African housing policy and its utmost priority on formal housing and this how has led to the adamant presence of the informal housing sector in South Africa. Lemanski (2009) has claimed that the state, through its formal housing policies, has indirectly encouraged informal housing and backyard dwelling and has thus boosted informality by excluding other people who cannot access such formal houses. And According to Shapurjee and Charlton (2013, pp 1) “backyard dwellings arguably contradict state housing objectives by symbolizing informality and disorder; a symptom of inadequacy that the housing programme strives to overcome.” Given that policy is an “action plan”, it could be seen that informal housing, in many facets, is an indirect result of the shortcomings of housing policy in the country. From the statement above it could be inferred that research perspectives need to be broadened to understand why people, sometimes whole families, resort to backyard shacks so that multiple factors, such as politics and the economy, that contribute to this phenomenon should be researched and acknowledged. This also shows that government is aware of the situation but chose to define it as a problem instead of as another form of housing and accommodation in the South African urban settings. The government’s attribution of certain social situations can impact on other functions of government. In this case waste management services provision may be affected, in many forms, by the government priority on formal housing over renting. Literature has not found such relationship, which is important to consider for making equitable decisions.

Housing has a relationship to health. This can be good or bad, depending on the context (Cohen, 2006). Garg and Mashilwane (2015) have investigated the waste disposal patterns in Mamelodi township in Pretoria and found that waste storage and collection in the township is strained. They have identified the fact that high waste generation due to increased township population induced by backyard renting is a contributing factor to the problem. This can be validated by Cohen’s (2006, pp 1) statement that “the strain imposed on municipal services

by informal densification of unofficial backyard shacks was found to create unintended public health risks. The causes of these health risks (illegal waste disposal sites and spilling sewage) are beyond the scope of this research. However, illegal waste disposal as a challenge to municipal waste management can be asked in the interview, just to see the indirect impacts of densification on waste storage and disposal. Govender *et al* (2011) has claimed that although backyard dwellers get access to onsite toilet and water facilities, there is not enough waste disposal facilities on the stands as these are meant for one family. It was noted that the household waste disposal is unsatisfactory and that there is poor outside sanitary conditions in the yard of settlements with backyard shacks (Govender, *et al*, 2011; Garg and Mashilwane, 2015). This highlights the notion of social and power relations in the yard, especially between the landlords and the tenants. It helps to see who has the power to make the decisions in the yard, with regard to yard maintenance and cleanliness, and what are the factors that influence or stop one from making such decisions. There is a need to investigate the interactions between landlords and tenants and all the factors that come into play and see how these translate into the yard management practices.

2.3. Integrating the Reviews

From the literature review, it could be deduced that there is a positive relationship between increase in population waste generation and waste management challenges. However, as made explicit by a number of scholars, densification is not the only causal factor of solid waste management services provision. Many factors, such as the nature of the settlement, politics, local authorities budget and state of the infrastructure, all act together to result in these challenges. Urban densification is a result of rural-urban migration and other migration practices within and between countries. This is because urban areas are desirable for their economic growth, resources, and access to services. This has resulted in high population and a large shortage of housing in South Africa and other developing countries. Nearly one-fifth of the South African population resides in informal settlement (Turok, 2016). The South African government provides fully state-funded housing to the urban poor to curb this situation as the country's housing policies prioritise formal housing to create order in the urban settings (Borel-Saladin and Turok, 2015). Due to the new home owners' economic and social conditions, they build informal shacks in their backyards which they lease to tenants to supplement their income, or to earn a primary income. This creates a myriad of other problems; particularly waste management (storage and collection) services provision as a lot

of people and more waste generation strains the facilities provided for each stand by local authorities.

Chapter 3: Methods

3.1. Overview of Methods

This paper is primarily written from a qualitative study that was conducted between August and September 2016. This research is a qualitative study of the implications for waste management services provision in Bram Fischerville induced by an increase in backyard shacks. A qualitative study is important in answering the research question because individual household practices differ and so is the amount of solid waste per house hold in one plot; as such, a qualitative study is important as it allows the researcher to delve deep into the problem and probe questions that can reveal the same information in different ways (Governdor, *et al*, 2011.) Given that this research stems from both the social sciences and the built environment, qualitative studies are important in unravelling the subjective perceptions, experiences and responses of respondents from societies to make decision in the built environmental disciplines such as town planning and architecture (Wilmot, 2006). The importance of a qualitative research method for this study is that the results can be interpreted can be interpreted in a lot of different ways including through pie charts and graphical representations.

3.2. Study Area

A map of Bram-Fischerville outlining the study area

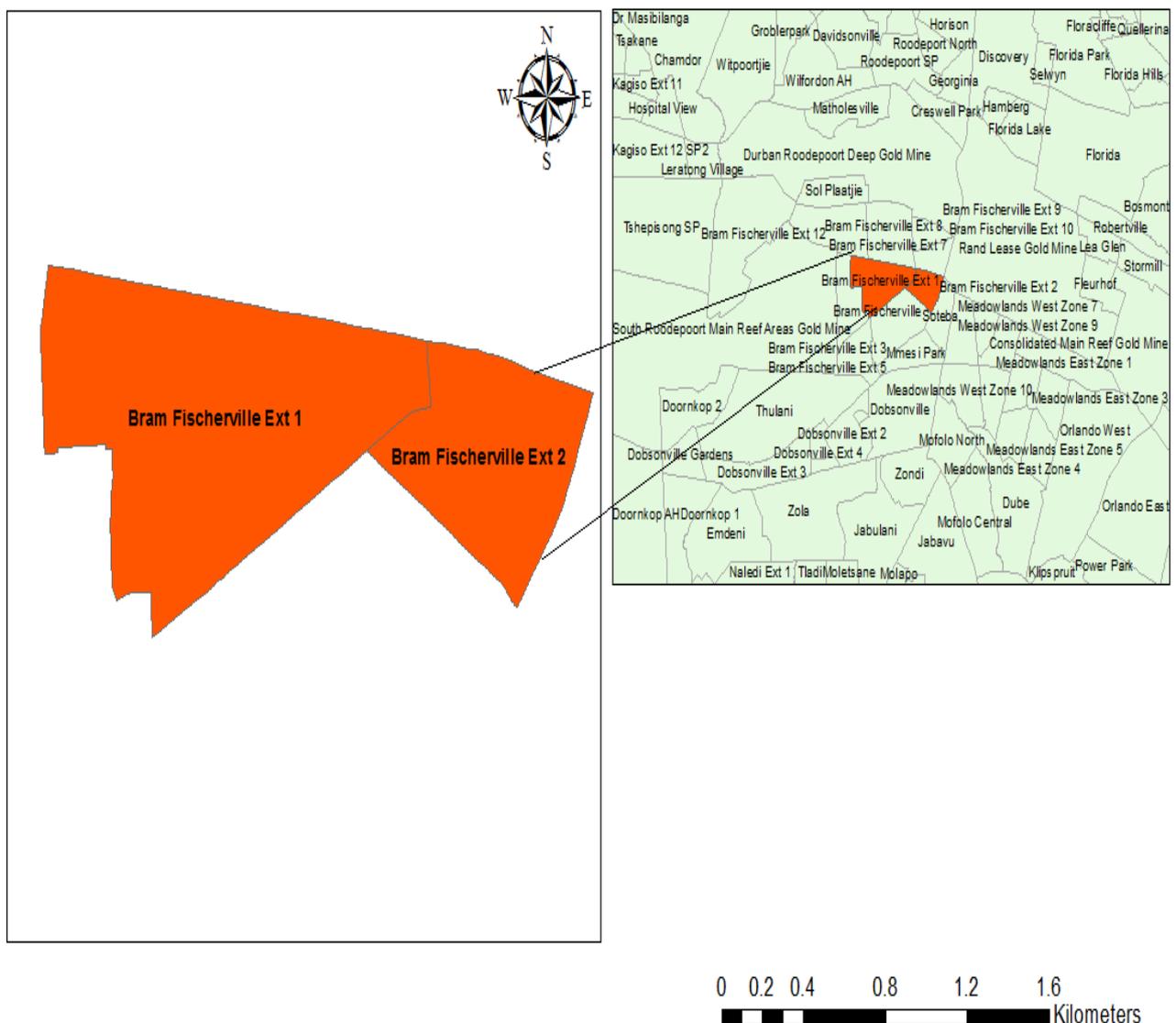


Figure 1: Map of Bram Fischerville in the context of surrounding townships and an outline of the study area

Bram Fischerville is a densifying township composed of standard Reconstruction and Development Programme (RDP) housing in the outskirts of the city of Johannesburg. The area was planned for housing people from different townships and informal settlements around the city of Johannesburg and for people who have applied for RDP housing but didn't receive it around the city and it is one of the initial major RDP developments after the 1994. Bram Fischerville is a very large township made up of up to 22 000 RDP houses and other

forms of housing including informal backyard shacks. This has resulted in an escalated population growth with Bram Fischerville accommodating over 90 000 people (Todes, *et al*, 2015). People were added on beneficiary list since 1996 from areas around Soweto and later from areas as far as Alexandra. The area was built for poor beneficiaries, including unemployed people and low income households with a monthly income that doesn't exceed R3500.00 monthly, as per subsidy conditions. The RDP phases of Bram Fischerville were settled between 1997 and 2002 and other phases were then introduced to augment the housing typology of the township (Social Housing Foundation, 2009).



Figure 2: The galvanized iron sheet shacks leased to people or built by leasees.



Figure 3: The "conventional" brick backroom in townships



Figure 4: The last on the backyard shacks typologies; a wood shack with a galvanized iron sheet roof.



Figure 5: The average size of backyard shacks in Bram Fischerville. A rubbish heap can also be seen right next to the fence. This is at the back of the yard, a place that houses waste and bins.

This study was undertaken at Bram Fischerville phase 1 and 2. These two phases are constituted of RDP houses, the original unit was (a large number of people still stay in them without any changes) $36m^2$ asbestos-roofed mixed-brick and mortar houses on a $250m^2$ stand. A lot of people have built additional housing in a form of backyard shacks to lease out to people who need accommodation (Moolla, *et al*, 2011). The area backyard shacks in the area are of three different types: 1. the first type is the conventional brick room, 2. is made of up of galvanized iron sheets and 3. is made from wooden slabs with a galvanised iron sheets roof. People either seek accommodation in a form of an already built room or physical space in someone's yard on which they will erect their backyard shack, normally a "zozo".

3.3. Sampling Methods

This research did not use any conventional sampling methods that are found on academic texts. The use of the sampling method used in this research was informed by the qualitative nature of this study and by the presence of people to be interviewed. I went into houses that had 4 or more back yard shacks to conduct the interviews. These houses were chosen based on their proximity to the main road. The reason for this is that main road provides people

with easy access to transport to and from the city, it is buzzing with commercial activities such as spaza shops, chisaynama's and cafes and a gym. These amenities attract people to the main road houses and, as observed, the houses on the main road have more back yard shacks than other houses as you delve into the township. Yards with 4 or more backyard shacks were chosen because they provided a fertile scenario to answer the research question. They also provide a case in which more than average waste will be produced because of the number of people that occupy the rooms.

3.4. Data Collection Methods

3.4.1. Semi-structured Interviews

Semi-structured interviews were conducted with respondents who were available in the yard and who gave consent. All respondents who qualified for interviewing under the ethical framework for research with human subjects were interviewed. The purpose of the semi structured interviews was to extract broader and key information about the perceptions of people about waste, conceptualisation of waste and their waste practices as informed by the value, or lack thereof, they attach to waste. This research method helped to prevent biases from respondents who want to give desirable answers (Troschinetz and Mihelcic, 2009) Semi-structured interview are used to collect subjective qualitative information from each respondent by the use of open-ended and thought requiring questions (Wilmot, 2006). These interviews were conducted in the yards, households as this is where the respondents were comfortable with doing the interviews. (Shapurjee and Charlton, 2013)

3.4.2. General Observations

I also observed the waste management practices of households and how these influence the presence of challenges to adequate waste management services provision. The importance of observations is that they give one the practical presence and first-hand information (Khan, et al, 2016). Observations have little bias and one documents what he or she has seen. They also help the researcher decipher discrepancies in the information given by the research participants (subjects) (Shapurjee and Charlton, 2013). I plan to visit the region from the morning till evening. During this time, depending on the availability/presence of people in a plot, I will be observing the solid waste management practices. This means I will be recording how many times they discard their "waste" per day, what comprises of the waste, and how much time it takes for the whole yard to fill the municipal waste bin. This research will also comment on the indirect effects densification on other waste management challenges in the area (Khan, et al, 2016; Garg and Mashilwane, 2015).

Chapter 4: Findings: Analysis and Interpretation of Findings

4.1. Introduction

This section is the synthesis of the results, the analysis of the result and the discussion. It is divided into three sections; the theoretical discourses on waste, community's alternative waste management strategies and the inappropriateness of the sanitary condition of the township. The section on the "theoretical discourses on waste" is made up of four subsections that corroborate findings from other authors that but also bring context-specific findings. This section is divided into "People perceptions and conceptions of waste", "consumption and waste", "women and waste" and "Social and power relations in the yard". The second section on waste is written of the findings that emanate from Pikitup's shortfalls as a waste management service provider in the township. This section outlines that waste separation (or recycling) and burning are two waste management strategies that are adapted by some residents and shows how this contributes to the cleanliness of the township. The final section of the research, "the inappropriateness of the sanitary condition in the township", addresses the physical sanitary conditions of the township and what or who has contributed to this. This section shows how the multiple factors can play out in resulting in a condition that is not easy to solve or redress, and further tries to find ways that could have contributed to the unsavoury condition of the township.

4.2. Theoretical Discourses on Waste

4.2.1. Perceptions and Conceptualisation of Waste

People's perceptions and conceptualisations of waste are informed by their socio-economic status and hence what they consume on a regular basis. People of different classes and socio-economic standing don't have the same conceptualisation and perceptions of waste (Maycroft, 1997). The composition of waste generated by these different groups of people is also very different in both variety of content and quantity (Beall, 1997). The conceptualisation of waste of the people in Bram Fischerville is deeply entrenched on what they consume. The people in the region have a narrow perception of what waste is and how they describe what waste is is mostly based on what they discard of. For instance, all the respondents in the interviews made mention of "ipapa or amapapa" (which, in most vernacular languages, refers to all sorts of cooked food waste) as their primary waste form. Out of all the things they could think of as waste, "ipapa or amapapa" came first into their minds (Interview 2: "I consider cooked food scraps, waste plastics, surface debris and cool

drink bottles as waste.” Interview 3: “I consider waste as something that is no longer useful to me such as old food, papers, plastics, old clothes”, Interview 1 “I consider cooked food scraps, waste plastics, surface debris and cool drink bottles as waste.”). This shows the level to which our conceptualisation of waste is both socially, but predominantly economically, informed. What they discard is a result of what they could afford to consume. The waste of these people is plain and necessary waste. It is plain and necessary in that there isn't any form of luxury or opulent/conspicuous consumption of “things and products”. The waste that they produce, as informed by what they have and what they can afford to have, and as they define it as waste, is waste that has no other value or use to the people in all its totality. They discard the waste when it no longer has any or exchange use value to them.

The waste produced by the large majority of the people (respondents) is void of planned obsolescence waste (Maycroft, 1997). The people are not discarding anything that could be seen as technologically, stylistically, or functionally obsolete. This can be inconclusive, however, it could be argued that if the people in the region of higher economic stance and they had a higher purchasing power because of more disposable income in their hands they, too, can consume things they aspire to consume; and that such waste, which could be deemed luxurious, will be present in their waste. However, because of their conceptualisation of waste; that waste is everything that has no use or exchange value to them; value, whether use or exchange could be added to the later type of “waste” and then these products couldn't be called waste. In the observations, it could be seen that the people still possessed functionally and technologically obsolete technological products such as old HiFi sound systems, CRV recorders and cassette tape sound player. All these things are not considered as waste and they play a part in decorating the homes of some of the people although they have no use or exchange value left in them. The people still see and extract some in these things. The value of the products has changed from the one they were originally purchased for to an aesthetic value. This could tell us that waste is not only the physical material that is disposed of because it can't be used again and shed light to the line of thought that waste is socio-economically produced and that this socio-economic forces shape people's conceptualisation and perceptions of waste (Maycroft, 1997).

Waste, then, is the physical manifestation of those things that the people don't consider as having any value to them. The value attached to these materials is not always monetary. It is based on these materials' or product's ability to satisfy their innate social needs (Beall, 1997). Hence, people of different needs have different conceptualisations of waste. Most people in

Bram Fischerville live to meet their most basic needs for survival; the needs for food, shelter and clothes. Most of their waste is derived from satisfying their need for food and the amount of waste generated from satisfying that need shows that they eat basic foods that are “normal” for the people in their economic state.

4.2.2. Consumption and Waste

It is not easy to draw the line between people’s conceptualisation and perceptions of waste and waste and consumption. This is because these concepts coexist and are mutually constituted, and together they shape the final product that the people consider as waste. The amount and type of waste generated by the people is dependent on how much things they buy and accumulate for social and physical consumption (Beall, 1997). The more people buy and accumulate the more they throw away when the things become obsolete and unusable. This assertion by Beal (1997) brings us to the finding in the research that although there are more people living in the yard, that doesn’t mean that they’ll generate more waste. About 10 respondents said that one bin is enough for their yards, although one yard could house more than 6 families or 15 people. This comes back to the fact that the amount of waste is dependent on the amount of things they consume. As said earlier, the people in the area consume basic things to satisfy their needs for survival. Hence the amount of waste they produce per family per yard may not be that much. This is what a respondent said when asked if the their bin ever gets full before Pikitup come to collect the waste: Interview 1, “No, it doesn’t. this is because there isn’t too many people in the yard. There are five rooms in the yards. Pikitup comes when the bin is about to get full. The only time where we struggle with waste is when the employees are on strike.” The respondents asserts that the reason the bin doesn’t get full is because there isn’t a lot of people in the yard even though there are five backyard rooms that accommodate 1 or more people and a five roomed family house. As observed, one family consisting of four to six members in the suburbs, a typical middle class family with a higher purchasing power and consumption that transcends the need for survival can fill a bin and a few large refuse bags per week. In Bram Fischerville, a lower working class township with more unemployed people and a greater population per area compared a suburb of same physical size, on the other hand, with ten to 16 people staying in one yard and using one bin sometimes don’t fill the bin up with waste in a week. This is what some people said when asked if their bins ever get full before Pikitup waste collection: “Yes it happens. We just put our small plastic bags next to the main bin.” Interview 13, “Yes, sometimes it gets full and sometimes doesn’t get full. But when it is full we are given refuse bags into

which we are supposed to throw our waste, interview 2.” What can we say is the course for this visible difference and such disparities? As many authors have asserted, more people means more waste generated. However, this directly proportional relationship between the density of people and amount of waste generated is influenced by a number of factors; consumption being one of the most prominent.

Wilson and Velis (2014, p 1) argue that “there is a strong correlation between municipal solid waste (MSW) generation per capita and the income level of the country, so, as economies grow in the middle and low income countries we can expect per capita waste levels to increase. With stagnant or very slow economic growth, one in which the lowest people never even benefit, there is no increase in per capita waste generation.” This is true for Bram Fischerville. The absolute waste that is generated by each person doesn’t increase and so is the average waste of the whole population in relation to the conceptions of waste of academics and authors.

To further illustrate the fact that consumption greatly influences the amount and type of solid waste generated, I will go to the findings. It was found from the research that “ipaapa, or amapapa”, which generally refers to food scraps in township etiquette, come out in over 95% of the respondents. Ipaapa formed the basis of what most of the people considered as waste and cooking and doing the dishes as the main activities that generate waste. That waste is no doubt ipaapa. If people’s waste is predominantly food scraps and cooked food waste this tells us that that is what they mostly consume. This research didn’t encourage the people to do a waste audit so it couldn’t find out all the other types of waste that are disposed of in the bins. The poor do not have access to good homes or adequate food supplies because they do not have “effective” demand—although they certainly have biologically based demands (Beall, 1997).

Maycroft (1997) has asserted that sufficient active demand, which means money, is the mean to acquiring things and possessions in the capitalist world and that the poor, who don’t have this, have no access to commodities-whether it is a curved T.V, a huge house or even electricity and healthy and nutritional food. He further states that having enough money credit is the only way one can access such commodities; not by a mere desire or need to have them. This could be supported by the observations made during the research. The houses of some lands and almost all tenants are void of any luxury furnisher. These houses are furnished with basic furnishers like a small, makeshift table, broken cupboards, a two seater couch and some

chairs. Most of the houses have old and rugged furnisher. This speaks of their poverty and lack of money. These furnishers could be regarded as waste by affluent and middle class people but are valuable and usable materials to the poor people. The people here need, or have a desire to have, better things and materials that would enhance their lives.

“In the Third World by contrast, municipal waste is the largest component of urban solid waste, with domestic or household refuse often accounting for around 75 per cent of the total. This is not to suggest that comparatively households of the South are the mass consumers. On the contrary, the composition of waste in the North suggests far higher levels of mass consumption; being high in volume and low in density due to the large proportion of combustibles. In terms of household work, from what people throw away we have evidence of high consumption of convenience products, for example prepared and packaged food, which save on domestic labour (Bell, 1997, pp3)”. A man has asserted that the fact that a lot of black people generate more waste is the household because they are always cooking as they never eat out as a family or bring convenience food for dinner or lunch. Interview 24 “we make so much waste because we, as blacks, are always cooking. We haven’t made it a tendency to eat out with out with our families”. It is not that people don’t want to eat out; they don’t have the means to do it. So their consumption patterns reflect on the amount and density of waste they produce.

4.2.3. Women and Waste

Women as Household Waste Managers

A lot of academic literature has covered the topic of women and waste around the world. There is general consensus amongst authors that women are a paramount agent in the solid waste discourses. They shape the domestic waste arena and they are the focus of attention for the “work” they do in the household (Schultz, 1993). It is undeniable that the household is the main repository for domestic solid waste as the household is the centre of consumption. Women, on other hand, as the agents that manage the waste that is generated after consumption have to deal with the burden of the waste generated (Buckingham, et al, 2005). As to deal with it they do as their female identities have been constructed around household work, as a virtue for good women (wife) (Bianchi, *et al*, 2000) As such, unpaid household labour is one activity that most women around the world spend a considerably high amount of time performing.

Women in Bram Fischerville are no exception; they fit well into this discourse. 11 out of 13 women interviewed in this study in Bram Fischerville are unemployed. It could be inferred that they depend on their male partners for financial means or that they are leasing their rooms or space to people who want to rent or space to erect their structures. The interviews were conducted with both landlords (12) and tenants (17). Most female tenants are not employed and they get their money from their partners. So they are responsible for looking after the household during the day and for ensuring that the household is well-managed. It could be argued that the money they receive from their male partners, then, could be seen as their reward for looking after the household. Female landlords, on the other hand either depended solely on the tenants' rent for a living as they are unemployed or widowed or they depend on both the tenants and their husbands' monetary contribution to the household. However, regardless of their source of income, all the women in the research were unemployed and they took care of the household most of the time. The main activities that women do in the household hold, as appearing in the interviews, is cleaning the house/room, cooking, washing the dishes and doing laundry. The women, as it appears in the interviews, take part in cleaning the yard and for keeping the yard in a good sanitary state at all times. They alternate and take turns with days. All these activities include a management of some sort of waste. The women are the people who are responsible for picking that waste up and for making sure that it reaches the dustbin in a desired fashion. The landlord does most of that. However, they communicate as women in the yard to share roles especially during the weekend when the ones who work are around. Those who work during the week mostly do their part on the weekend, interview 7. This is what a male tenant answered when asked "who is responsible for the sanitary condition of the yard."

This inequality in the management of household labour has been normalised and it appears okay for women to do it and not if it is being done by men (Bianchi, *et al*, 2000.). "Interview 11: It is the landlord. But she is often helped by female tenants. No, not even once would you see them sweeping the yard (referring to the males)." This is also cemented by the hegemonic view of women as "housekeepers" and men as "work" (Shelton and John, 1996). Interview 22: I have observed that women are the one who make more waste. This is because men are mostly at work and the women are the ones who do the house chores and use the bin a lot. "Interview 9: I could say so. See, women look after the house when men went to work. So more waste is generated during the day when women are busy doing their household chores." This supports that assertion made about women and men. Female landlords are either solely

responsible for the sanitary conditions of the yards or work together with the female tenants in keeping the yard clean. Three, out of four, male landlords depend on the female tenants to keep the yard clean and to manage the yard's waste till it is put in the bin. Only one asserted that he does all the cleaning as he owns up to having his own yard. "Interview 18: I do it. It's only me as the owner of the yard. I believe if you live with tenants and you don't do things yourself your yard will always be dirty." This man asserts that he keeps the yard clean and the women keep parts of the yards that are nearest to their rooms clean. Women kept on stating that they have duties when they were referring to the responsibilities towards cleaning the yard. These duties, it seemed, are deeply entrenched on their "women-ness" and that notion and language has made itself to the majority of women who stay in rented backyard shacks. They have seen this as part of the 'normal' household labour. "All the females are all responsible for cleaning the yard. We alternate with days and the yard should be swept every day and we have "duties, interview 17".

When asked which gender generates and discards of more waste both male and female respondents stated that it is women. "Interview 18: It does. Women generate and dispose of more waste and that make the bin to get full very quickly. Interview 14: "Female makes a lot of waste because of the work they do all day in the house." The people seem very aware that females makes most of the waste because of the work that they do and this may result in men playing far from the bin and waste, unless the waste is "manly" waste, such as beer bottles and cans on weekends.

4.2.4. Social and Power Relations in the Yard

Relations are paramount to the existence of societies. They form the basic building block of any society. These relations could be friendly, hostile or just neutral (Bandura, 2000). There should be a form or relationship between the landlord and the tenants for the landlord to allow the tenant to rent out space or accommodation in their yards (Taylor, 1998). This research found that the social and power relations between the landlords and the tenant in all the yards that took part in the study are friendly relationships. This means that the landlords and the tenants live well together. However, it is important to find the underlying factors that influence this type of relation for both the tenants and the landlords. One respondent asserted that she has a very good relation with her tenant, and that she even calls her mother. The woman is a no-nonsense landlord when it comes to governing her yard and yet the tenants

bear with her sternness. it could be inferred that security that her yard offers, which is surrounded by high walls and a gate that is locked at night, the yards also offers brick rooms instead of makeshift shacks, is what lures the tenants to her yard. With people complaining about high crime rates in the area, one could bear the stringent rules than to go stay at an unfenced yard that poses risks to their security.

The other factor that fuels the good and friendly relationships between the landlords and the tenants is money (Haworth and Manzi, 1999). Some landlords have no other means to generate income and so they depend on the tenants rent money and the government welfare money. One tenant showed her dissatisfaction with her tenants and asserted that she would rather stay alone with her family in her yard than share with tenants. However, she puts up with the tenants and their behaviour because they bring in a good monetary inducement that supplements her husband's salary. As the saying goes, "the hand that feeds you will control you", these landlords, as the supreme power within their yards, would love to practice their authorities and maybe rule with an iron hand. However, this is compromised by the fact that they are being paid by these tenants. As such they can't fully control everything because of the fear that the tenants will go to a yard where there are no rules and were the landlord is quite and gullible because she or he is in need of that money.



Figure 6: The high walls in one of the yard and the lockable gate.



Figure 7: The gate with the lock attached to

All of the yards that took part of this research are home-based except for one, which is run like a business. The landlord doesn't stay in the yard and all the rooms are rented out to tenants. There are three landlords who had friendly relations with their tenants while running their yard with an iron fist. On this case, it is the tenants who appear to have to put up with the landlord as they depend more on the landlord than the landlord depends on them. All three yards are secured, they have walls around them and gates that are lockable at night. The yards are well managed and maintained by mainly the landlords and then the tenants. The tenants feel safe in these yards and the cleanliness of these yards speaks to the ideals of the tenants. Interview 24 "The landlord in this yard is okay and she is friendly. She wants her yard to be clean all the time. So I also came to rent in this yard because I loved how it is. It attracted me because it is clean, it is safe and the gates are locked at night. So I have to do my part to keep in the same state as I found it". Interview 24: "The landlord in this yard is okay and she is friendly. She wants her yard to be clean all the time. So I also came to rent in this yard because I loved how it is. It attracted me because it is clean, it is safe and the gates are locked at night. So I have to do my part to keep in the same state as I found it". When asked if the landlord enforces cleanliness, the man (interview 24) replied: "A lot, she doesn't hesitate when it comes to dealing with waste issues in the yard. She ensures that her yard is clean and that whoever doesn't follow course gets her wrath." Two of these landlords have

big house that are beautifully furnished. This could indicate that they are financially capable of taking care of themselves and their families. That could be the reason they don't hesitate to exercise their authorities and maintain their yards in the ways that they want them to be.

It could be deduced that the social and power relations in the yard, between the landlord and the tenants revolve around money. The landlords who dependent heavily on the tenants' rental income have to put up with the tenants' even if the landlords are not happy with tenants and what they do. The landlords who have other means of income and don't depend only on the rental income have built safe yards around themselves and they have fewer tenants, it should be noted, and they exercise their authorities in their yards to maintain them in the way that they see fit. In this scenario it is the tenant who have to put up with the landlord because the need the safety provided by the landlords' yards. People in Bram Fischerville can pay a hefty price to be safe in their yards. This is because the area is deemed as dangerous and full of criminal activities. Most people fear that the nyaope boys are a threat to them; hence it becomes a luxury to stay in a safe and semi-secured yard.

Interview 24: Yes, when it comes to that she is very strict. She doesn't like it when we put whatever we want in the bin. She doesn't want people to directly dispose of their waste into the bin without first putting it in the bin. You have to put it in a plastic and then into the bin. A lot, she doesn't hesitate when it come s to dealing with waste issues in the yard. She ensures that her yard is clean and that whoever doesn't follow course gets her wrath.

4.2.5. Waste and Space

Gregson and Crang (2010, pp3) assert that "society has distanced itself from waste on a fear of contamination. This corroborates with... notion of waste being seen as a liability rather than as a resource." A male respondent stated that people can't share the same space with waste. Interview 24, "waste should not be in the same space as people. Waste is dangerous to human health as it is contaminated with things we don't know. We stay with children and they should be shielded from the harmful characteristics of waste. We can't have people contracting diseases because they stay with waste in their rooms." This assertion can be corroborated with an observation from the region. All residents keep their bins at the back of their yards where people don't usually spend their time. The bins are separated from people and are reserved for the back of the yard, usually next to the toilet or the furthest corner of the yard. "Conventionally, social organisation is about distancing 'decent' society from its wastes, through technologies that hide, remove and expel (Gregson and Crang, 2010, pp5)."

The notion of people distancing themselves from waste can be seen in how landfills are situated a long distance from communities. People are separated from material at the time they regard it as waste, no what the condition of the material. So all of a sudden the material belongs far away from people’s spaces and presence.

“But because waste is not good for people, we try with sincerity to inform others that waste shouldn’t stay among people. Every person should know what waste is in all its forms. It hurts me if have to take care of another old person’s waste. It’s okay if it’s kid because the kids can’t differentiate between what is good and what is bad: Interview 24.”

“I think people should be hired to teach residents about the dangers of waste. We don’t keep waste within people; it has dangerous components that can be harmful and affect people. Residents should also be taught to discard of their waste in a sanitary manner and not in the illegal dumpsites: Interview 24.”



Figure 8: The back of the yard where the bin is kept. This is behind all the rooms

4.3. Alternative Waste Management Strategies

4.3.1. Recycling as a Waste Management Strategy

The rhetoric of recycling didn't exist back in the 1960s. However, recycling, as a field, has grown tremendously over the years that there are people who make a living solely through sorting through waste (Pandey, *et al*, 2016.). Recycling is not only a good waste management strategy for the environment; it ensures that lesser (in essence more and more have been extracted) pristine natural resources are not extracted and that the environment is rid of non-organic material that cannot be composted. Wilson and Velis (2015) argue that recovering resources from waste material for economic purposes has been on the agenda of developing countries. This is because in all the 13-15 houses that the research was conducted only 4 households have put forth measures for recycling. The residents on those yards sorted their waste and separated recyclables from the general waste. They put the recyclables aside for neighbours who recycle for a living. The people on the other houses, on the other hand, know of recycling but haven't attached any tangible value to it or they are ignorant to what is happening and what they see around. They know of recycling but they haven't taken the onus to recycle or help someone who is doing it. The reason behind this inaction is that recycling doesn't pay people enough money. The other reason is that recycling doesn't benefit (monetarily) everyone (Martin, *et al*, 2006). This is because some residents want monetary inducements to partake in recycling, whether formal or informal. Most people, however, have said that there are people (informal recyclers) who would make rounds around the bins very early on collection days sorting through the bins for recyclables. "Interview 13: People are busy recycling but it's evident that they can't collect all the recyclables. There are a lot of them. Every Monday they go around removing recyclables from people's dustbins but still there's still a lot of trash." There are guys who go around collecting recyclables from our bins. They help reduce the content in the bin before Pikitup come to collect, interview 3." These people also come on Sundays and ask for permission to collect the recyclable from the bins. This is to remove the recyclables from the general waste before Pikitup takes everything away to the landfill or depots. Although this happens almost weekly, most residents are not keen to take the initiative to separate their waste and save the people some work and time when they finally come to collect the waste.

While the developed world has put attention on waste prevention and particularly diversion from landfills, some developing countries are catching up on the developments (Wilson and Velis, 2014). According to Pikitup, there is a Jozi@Work's Separate at Source Programme in all the four jurisdictions of Bram Fischerville. A Jozi at work is a Mayoral programme in the city of Johannesburg that seeks to create employment and businesses for the youth in the city through collaborator activities between the public and private sector. Jozi@Work is designed for economic and social upliftment of the young people in the city. Separation at source is a programme withing Jozi@Work for separating recyclable material at household levels (Pikitup, 2016.). This waste is given to members of co-operatives who sell it at buyback centres for an income. This corroborates Wilson and Velis's (2014) assertion. A Pikitup representative asserts that this programme has employed four cooperatives that do the collection rounds around the township weekly. They cover all phases of Bram Fischerville and collect recyclable waste from the residents. However, the people are not aware of any formal recycling initiative in the regions There is no distinction factor that would set aside "the people" as those that work of Jozi@Work' separation at source programme. So there is no evidence of people separating their waste as part of participating in the programme. Pikitup officials assert that people are being taught about waste management practices and recycling. However, participation within the initiatives is completely voluntary. Martin, *et al* (2006 pp3) states that "the availability of an effective recycling infrastructure that enables households to recycle waste is clearly a crucial part of any recycling programme; but so too are the many other factors which motivate households to make use of that infrastructure. ...motivational are essential if recycling practice is ever to attain its full potential and become a part of everyday household routine." The latter part of the quote is very important given that participation in recycling programmes if voluntary. The former statement could be corroborated by one respondents' assertion that "Pikitup should give the residents more refuse bags so that they can separate their recyclables according to category and type and hence make recycling easier for the people". The motivational factors could include a lot of different incentives to the people so as to lure them to the culture of recycling. These could include the people some bread, airtime or anything that could motivate to labour for you. It could be inferred that when the man interviewed above said he didn't benefit from recycling he might have implied that there's no external incentive he gets for helping the recyclers. The four respondents who said they practice recycling in their yards have no recycling infrastructure. They have to make do with what they have. In fact, from the findings of this research, it could be argued that these people recycling out of necessity because they try to

reduce the amount of waste that goes into the bin and increase the bin space just in case Pikitup doesn't come to collect the waste.

Belton et al (1994) found out the three main reasons why people in Glasgow didn't participate a lot in recycling programmes to be the perceptions that the buy-back centres are far, apathy and a lack of interest in recycling. These factors could also be in play in Bram Fischerville. As one respondent said that the nearest buy-back centre is in Langlaagte, and that he can't pull a trolley all the way to Langlaagte to get 50 rands; "this is because recycling doesn't pay well and the money that people get is not fixed. If Pikitup can pay people an extra for recycling then it could encourage us. We can't pull a trolley a long distance to Langlaagte for fifty rands (Q36; interview 10)". Given the poverty levels in Bram Fischerville, or South African townships in general, people are driven by monetary incentives they get from recycling. They recycle because recycling is seen as the last resort to earning a living. Those who don't earn a living from it, or do not know of anyone who does, are just not interested in recycling. .

4.3.2. Burning as a Waste Management Practice

Incineration is widely practiced waste management process. It is usually the last option for waste management in that it is the complete destruction of waste that is deemed either as dangerous or not eligible for other disposal options. Incineration of waste is practiced at landfill sites and there are protocols put forward for waste incineration. Burning waste has always been an informally practiced waste management strategy in townships, especially in informal settlements, and rural areas where there is no solid waste management services provision and where it is not reaching all residents. Burning is still being practiced in townships where there is a need for it. People in Braamfischerville burn their waste. But this practice is not expansive and not everyone practices burning as an alternative waste management strategy. Those that do practice burning use it differently to achieve the same results. This is what a respondent said when asked "who's responsible for the unsavoury sanitary conditions in the township: "It's pikitup, people can't live in the same spaces with waste so we have to take it out of our way into the dumps. No one stays at those places, but sometimes it's like we are inconsiderate of the people that stay next to those sites. That is why I think we have to burn our waste in dumpsites. As a result, you won't find waste everywhere and there won't be bad odours around the township. I, on the other hand, burn my waste. I can't stay with used diapers and food scraps: interview 9." One landlord said they practiced burning to get rid of all their waste when there was a labour strike at Pikitup

and when they had no bin. Interview 9: “We spent some time without a bin so we burnt our waste every Monday. Every household in this yard took part in burning the waste. We ensure that everything got burnt to ash before we left.” Their burning practice was inclusive of all the household waste that was produced in the yard. The waste is usually burned in their driveway. They burn everything until it is ashes. Two different respondents also practice burning as an alternative waste management strategy. However, they take the waste to the illegal dumpsite and then burn it there. According to them, this (burning at the dumpsite) is a good thing as the waste is not left to be blown by the wind and it doesn’t end up attached on people’s fences and all over the region. Interview 14: When there are clothes that I no longer need I take them to the dump just behind my yard and set them on fire. I have advised my tenants to do the same with clothes. Whatever I do here they follow course.” These respondents are aware of the fact that their actions, by virtue of dumping at the illegal dump, are wrong but they rationalise by saying that they don’t leave the waste “like that”. The third respondent is a “selective waste burner”. She only burns a selection of waste. This woman’s goal is to reduce the amount of waste that is in the bin and create some space for more waste. She selects materials that can be easily burnt such as paper, boxes and plastics, including bottles and containers. She then leaves putrescible and organic waste in the bin for municipal collection. These practices reduce a burden for Pikitup as there is no waste to collect at all. It also eases the pressure from the illegal dumpsites as they are not stuffed with more waste to a point where it becomes unbearable.

The municipality provides us with refuse bags on which we can put the additional waste. However, I also burn the waste that was not put into the wheelie bin. You are not supposed to put wet waste such as food scrabs in the refuse bags so that you can burn the contents when the municipality didn’t take it.

4.4. The Inappropriateness of the Sanitary Conditions of the Region

4.4.1. Background

Wilson and Velis state that there is 95% levels of collection coverage and controlled in middle income cities and 50% in the lower income cities and about 20-30% rates or recycling are achieved in the informal sector. This can be corroborated by the stats that are provided by the city of Johannesburg that there is 95% collection of waste in all city jurisdictions. Given such convincing and compelling evidence, one would not understand why townships and informal settlements are rampaged by littering and the presence of illegal dumpsites. It could

be inferred that multiple factors play out to produce the contradictory situations that are observed in the areas, as will be seen in this section.

The basic assumption prior to the study, as informed by unanimous consensus amongst “solid waste” scholars, was that the more the people there are in an area, the more waste will be produced. Literature identified a lot of problems faced by municipalities in the highly densifying urban areas of the global south (Garg and Mashilwane, 2015, Giusti, 2009, Manaf, et al, 2009. Kan,2009.) However, most of them failed to investigate all the variables and factors that come into play to produce waste. Moreover, they have failed to identify “consumption” as the main factor that influences the amount of waste that is generated regardless of the amount of people in an area. As said in this paper; more people is not always more waste. The contrast between Bram Fischerville and most suburbs is that Bram Fischerville has way more people than a suburb on the same size piece of land. However, the amount of waste that is produced in the two, very different areas, is more or less equal. The content/composition of the waste may be way too different. Suburbs have fewer people in one yard while yards in Bram Fischerville have more people in each.

This research offers a context-specific finding that more people is not always more waste. The inappropriate sanitary condition of most townships in South Africa gives outsiders and the people within the area a perception that there is more waste that is produced and disposed of. This is because of the fact that townships are very dirty, littering is everywhere and people discard of their additional waste inappropriately in illegal dumping sites. These illegal activities are coursed by a myriad of factors, including both a large number of people in an area at one time and the irregularities and inefficiencies of the municipalities in solid waste management services provision and delivery. The situation in Bram Fischerville is very different, and it could interpolated to other townships around Johannesburg as they have similar social and economic dynamics. There is no doubt that Bram Fischerville is highly densified and more people keep coming to seek residence in the area. This leads to more and more people in the area.



Figure 9: An illegal dump on an open space



Figure 10: The large open space that is made void for transporting electricity through overhead cables. This space is mostly used for illegal dumping activities in the area.



Figure 11: A drive way that has been turned into an illegal dump.

People have adopted their own, but not unique, waste management strategies. Each household in each yards keep a small plastic bag, as a kitchen bin, in which they dispose of their household waste. This plastic bag is disposed of in the main bin when it is full. This practice is adapted by the residents naturally, or as a convenience or it could be enforced by the landlords. However, it appears to be the most common practice in every household. Residents, both landlords and tenants, don't appear to be disposing of their waste directly into the main bin. This, the landlords asserts, is the example they set for their tenants. "I use small plastic to put my baby's diapers and other waste from the house and then throw it into the bin when it's full. I usually throw away about two plastics a day because of the diapers, interview 9." "I put my waste in a small plastic bag in the house and when it's full I take it to the main bin, Interview 13." If it happens that there is extra waste generated and the bin is full the people dispose of the waste in either Pikitup branded refuse bags (if Pikitup has provided the bags) or on their own black plastic bags. These plastic bags are then placed next to the bin when Pikitup is scheduled to come collect the waste. In most instances these plastic refuse bags are not collected by Pikitup. The residents have two options; they either take the waste straight to the illegal dumpsite as soon as the sun sets or they put bags into the bin as soon as it has been emptied. Interview 10 "Sometimes they collect them and other times they don't collect them. If you don't go check when they are collecting they won't pick the bags and leave with them." This creates a circle of the same process week after week, Interview 10

“We just put the plastic bag back into the bin as soon as it is emptied of the waste. So this means that it will be taken again next week.” Interview 11 “No, they don’t collect them. You have to put them in a bin or other people’s lessor-full bins for them to be taken.” This is also the beginning of most sanitary problems in the region, Interview 18: If Pikitup didn’t pitch on Monday we bring the waste into the yard and if they don’t pitch again on Tuesday I take the bin to the illegal dumpsite (Esgangeni).” Because there is nowhere I can put the extra waste. There isn’t enough space for it. There is an apparent tendency for Pikitup to not pitch during collection schedules and most people complain about this a lot. Pikitup has acknowledged that there are times when they are inconvenienced and that they do miss collections or come very late. In the case where Pikitup has missed their collection schedules by more than two days, people either resort to illegal dumping or alternative waste reduction strategies such as burning (incineration) or waste separation.

4.4.2. Residents Perceptions of Pikitup and its Services

Residents are people with agency and different and subjective opinions even if they are relating to the same occurrence, event, or phenomenon (Bandura, 2000). People in Bram Fischerville hold different opinions about Pikitup and the work it does in the community. These opinions and perceptions differ vastly between the landlords and the tenants. This is influenced, it seems, by the different expectations between the two agents and the value they attach to their houses/yards. Landlords are more protective of their yards, including everything that is in it. The ownership of their houses and yards symbolises their participation in the democratic social South Africa and it gives them security of tenure and a sense of (black) pride. They care about the total yard and manage it in its totality. The tenants, on the other hand, are more concerned about their single households; their love and care is on maintaining proper management in that single unit. This conflict of interest between the landlords and the tenants play out in how they view Pikitup’s role in their community as a sole provider of solid waste management services provision. Most landlords, both male and female, are not entirely satisfied with Pikitup’s services. Instead, they assert that Pikitup should do more to ensure the cleanliness of the township and their yards. A landlord gave this account when asked what her opinion of Pikitup’s services is; Interview 1 “The services rendered by Pikitup are not satisfactory. It has to improve its services; give us more dustbins. Sometimes it’s a hassle to get a dustbin from Pikitup. You can apply and spend a year without a dustbin. So where do you discard your waste in the mean time? I have to guard the truck and run to the neighbour’s bin to put my waste. When the truck didn’t come the

neighbour just has to remove my waste and put it on the ground next to my yard.” This shows that landlords, as overseers of the whole yard, expect more from Pikitup and they care about the sanitary condition of their immediate (household) space. Most tenants, on the other hand, seem to be indifferent or satisfied with the services offered by Pikitup to the community. This is what a tenant had to say when asked the same question as the landlord; Interview 2 “They do a great and commendable job as you can’t stay with a dustbin in the yard”. This might imply that the tenants haven’t yet taken ownership of the yard and that treat it as their own or that they just have a different opinion from the landlord. This attribution by the tenants can play a major role in deepening Pikitup’s “business as usual” behaviour. This is because they might not lobby with the landlords against Pikitup. However, as asserted by Pikitup, there is no such bargaining against pikitup by the people. Pikitup officials have stated that they can never guess the problems that are happening in Bram Fischerville as the people there don’t complain to them at all. Pikitup interview: “You see, the people in the area don’t complain at all to us. When we don’t what their problems are how can we solve them? The only time we hear of problems is at times like this (referring to my research)”. Pikitup says that lack of complaining only makes the problem worse because they are not addressed by Pikitup on time.

Interview 14: Pikitup is not doing well. There’s nothing that they are doing right. The past three months were really bad. The illegal dumps have become proliferated and there’s more waste that is being added to them because Pikitup doesn’t stick to schedule and misses days. If they can just stick to their schedule and come at the right time everything will be well. Landlord.

Pikitup is okay and it’s service is needed. however, pikitup’s employees break our bins. They just carelessly throw the bins to the ground after they have been emptied and this breaks our bins. When these bins are broken pikitup’s employees don’t collect the waste in them as they claim the bins are heavy. This creates the problem of illegal dumping that is so rampant in the township. Landlord. Interview 19.

4.4.3. The Intersection of Responsibilities

People and institutions usually don’t want to take ownership of things, whether related to them or not, that are perceived as negative or against the normal conventions. This behaviour has been so normalised that people find it hard to own up to their problems (Reference). People in the area blame Pikitup for the inappropriate sanitary state at Bram Fischerville and

Pikitup reciprocates the same sentiments to the people. However, the analysis of the whole situation shows that there is no one party or factor to blame. The situation in Bram Fischerville is a myriad of factors caused by both the people (residents) and Pikitup. More people is not always more waste. This is a finding of the research coming from the Bram Fischerville. Both Pikitup and the people have different roles to play in the inappropriateness of the area.

CSIR (2011) assert that vehicle breakdown contributes a lot to the failure in services delivery. However, other courses include aging fleet, poor road conditions, overloading the vehicles and lack of vehicle maintenance. Inconsistent and disrupted waste collection as a result of vehicle breakdown may directly result in illegal waste dumping. This is a problem that pikitup acknowledged. Pikitup Interview: "...Sometimes we don't collect waste because of vehicle breakdowns. Vehicles break down a lot in the landfills and in the townships because of nails and other sharp things that are put on the ground.. The situation is exacerbated in situations where drop off point are far away, or fall on different time tariffs. Pikiup accepted their role in the situation in Bram Fischerville based on their failure to collect, or for their inconsistent and disrupted collection. These problems are attributed to the factors that are outlined above.

4.4.4. The Role of the Commercial Sector in the Inappropriateness of the Area



Figure 12: A tuckshop that is attached to a house. Most tuckshops in the area are people's yards.

Townships have always been places of buzz and activities. They are sanctuaries of survival as people produce and reproduce their livelihoods through myriad activities. Survival in the township seldom go beyond making money for one and one's family, immediate or otherwise, and this is to exchange the money for consumables, such as food, shelter, water and necessary stuff that people use. With this need for consumption of necessary things that one can't go to town for, there appeared a new set of commerce in the township that has been renewed or revitalised by immigrants from other African countries. There is an immigrant shop (Makula, according to township language), in every corner of the township. These shops can be put in the same category as backyard shacks. The only difference is that they are used for both commercial and residential purposes by the owners. Although this group was not part of the study, it is important to identify their role in the inappropriate sanitary condition of the township. These later group generates waste both ways; as residents and as shop operators. As such, attention should be paid to them as well. It was observed that these people or shops also use the same bin as the general tenants in the yards, or that they burn the waste in the yard or on the driveways of the residents. The waste can indirectly find itself at the illegal dumpsite and contribute to the inappropriateness of the area. This subsector of residents doesn't pay its separate waste collection service and, like the tenants, is a liability to Pikitup. Pikitup doesn't directly acknowledge the commercial sector in the area as agents that produce waste; as such there are no measures that are put forth to accommodate them. It could good if Pikitup takes notice of this sector and accommodate it in its waste management plans. One respondent noticed the contribution of the commercial sector on waste generation. Interview 12: "But if you take the refuse bags and sort and separate your waste I think everything will be okay. The truck drivers don't like to take the plastics bags. At least if they can give us 2 or 3 rubbish bins at every side in the yard should have a bin. There's a business in the yard, a gym, and the people that come there generate a lot of waste from the things they eat. This waste goes to my rubbish bin and it takes about three days for it to be full."

Chapter 5: Conclusion

Bram Fischer is a double-edged sword. A tremendously high population in a very small space coupled by an ineffective and inefficient solid waste management service provider has led to a waste disaster in the area. Because of the double-edged nature of the situation, it is very difficult to point to the root of the problem and to hold one party responsible. If only one party was guilty for the whole situation then it would have been easy to embark on a journey

of correction and doing things the right way. With the continued rural-urban migration in the country, there is no doubt that townships closer to the cities and the metros will have growing population influx and that the backyard shacks and the people will continue to grow. The new 2015 policy on backyard shack as prioritised backyard shacks as another form of housing to accommodate the growing urban populations. The government should, at implementing the policy, address all possible issues that emerge as more people staying in one yard, especially solid waste management.

It was assumed, when drafting the plans for this research, that municipal waste management services provider experienced challenges are that induced by the backyard shacks densification in the area. However, the research drew results that show that the real world doesn't exist in contrasting binaries of issues, but that some issues are deeply rooted in the interactive/uninteractive nature of different agents of society. This research also found a very important factor relating to waste and people. That is the finding that the increase in the amount of people is not always directly proportional to the amount of waste generated. More waste is produced by virtue of more people. However, the relative amount of waste in a certain area/region depends on a variety of influencing factors, such as class, economic stature, buying power, selective consumption, etc. The local municipality and the community both present and are presented by different challenges that relate to waste management and these agent mutually exist and constitute the area (physical).

It could be seen that domestic although there are people in the area, the number of people still produce a relatively manageable amount of waste. The waste management challenges facing the municipality, especially illegal dumping, are as a result of both the shortfalls of the municipality, such as a shortage of vehicle, vehicle breakdown and landfill operating hours, and the people producing more waste or having broken bins and other equipment that cannot be lifted by the mechanical lifter of the trucks.

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