# Integrating Unorganised Waste Reclaimers into Formal Recycling Systems: The Positive Role of Key Brokers

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by

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# Abstract

Waste reclaimers create a significant impact through their role in the recycling industry. Yet, the majority perform their role undignifiedly and with little or no support. Over the past few years, this impact has been researched, acknowledged and publicised by the government and private sector. As a result, the Waste Picker Integration Guideline for South Africa was developed to assist organisations working with waste reclaimers. However, these guidelines were mainly derived from case studies where waste reclaimers were more organised than most South African waste reclaimers and none based in the Western Cape. The difference in organisation, location and demographics is significant as it alters the process used to integrate waste reclaimers.

This research sought to understand better the processes used to integrate unorganised waste reclaimers into formal recycling operations or projects in the Western Cape. The case studies were selected based on an existing integration process between a formal entity, either public or private, and an informal waste entity, a group of unorganised waste reclaimers. Five case study projects were chosen. The case study analysis resulted in a process model that highlighted the central finding, the role of the "key broker", who can build trust among the waste reclaimers and successfully integrate unorganised waste reclaimers. The findings show characteristics to play such a role and how crucial such trust-building is because waste reclaimers have a deep-seated distrust of actors in the formal sector. This research contributes to prior work by exploring what makes such integration processes successful even in the absence of large associations or intermediating NGOs.

**Keywords:** Waste reclaimers, waste picker, integration, inclusion, key broker

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# List of Acronyms

ARO - African Reclaimers Organisation

BBCID - Bard Boulevard Community Improvement District

BTP - Brawane Trolley Project

BBC - Buyback centre

COC - City of Chadika

DM - Davulane municipality

DEA&DP - Dept of Environmental Affairs and Development Planning

EA - Environmental Assistants

EPWP - Expanded Public Works Program

EPR - Extended Producer Responsibility

FEH - From Enable Help

GDP - Gross Domestic Product

IDPs - Integrated Development Plans

IWMPs - Integrated Waste Management Plans

IWR's – integrated waste reclaimers

LH - Local Hubs

MRF – Material Recovery Facility

QE - Qamama Enterprise

RS - Recycling Solutions

SAWPA - South African Waste Pickers Association

SB - Silver Brews

SDGs - Sustainable Development Goals

TIRC - The Inclusive Recycling Company

TAP - Totteg Acre Partnership

UT - University of Tetang

WP - waste picker

WR – waste reclaimer

WPI - waste picker integrator

# Integrating Unorganised Waste Reclaimers into Formal Recycling Systems: The Positive Role of Key Brokers

## Research Area

### *Real-World Challenge*

Waste management is a complex and expensive operation to perform (Aparcana, 2017). Many governments, especially in developing countries, struggle to provide a public waste collection to their residents (The World Bank, 2019). In contrast, developed countries have more sophisticated waste management systems that collect recyclables and organic waste from households using multiple bin systems. The waste management systems are also supported by laws that make it mandatory for their residents to separate their waste.

The lack of recycling services from the government and lack of enforcement of policy results in fewer residents recycling in developing nations. In South Africa, only 7.2% of the residents recycle, serviced mainly by paying a private collector to collect their recyclables or through a government recycling collection service (Strydom & Godfrey, 2016). However, this rate is higher in metropolitan areas where at least a quarter (24.7%) of residents separate their waste for recycling (Statistics South Africa, 2018). Despite the low number of households separating their waste, South Africa generates higher recycling rates than developed countries. In the plastics industry in 2018, South Africa had a 46.3% input plastic recycling rate, versus Europe's 31.1% plastic recycling rate (Plastics SA, 2019).

The high plastic recycling rate is primarily possible through the contribution of the informal waste sector workers, known as waste reclaimers. According to a survey performed by Godfrey (2021), 71% of plastic recyclables, 80% of paper recyclables, 40% of metal recyclables and 80% of glass recyclables were collected by the informal waste sector. Due to the lack of recycling happening

at the household level, high unemployment and poverty, many citizens found an opportunity to make a living separating recyclables from residents' general refuse bin or at landfills, which Samson (2020) refers to as the "separation outside source" system. It is estimated that in South Africa, 60,000-90,000 people engage in informal waste picking activities, and in 2014, they saved the government R748.8 million by diverting waste from landfills (Godfrey, Strydom, & Phukubye, 2016). However, waste reclaimers in South Africa typically exist on the margins of society, experience dire poverty and enjoy little support from the government, civil society and private sector waste initiatives. The role of waste reclaimers emerged due to high unemployment and poverty rates and the inability of the government to manage waste adequately (Ezeah, Fazakerley, & Roberts, 2013; Schenck & Blaauw, 2011). There are generally two types of waste reclaimers, residential and landfill reclaimers. Both types of waste picking are dangerous and involve significant physical and emotional health risks.

Despite their positive impact, waste reclaimers work in challenging conditions. Their livelihoods are precarious and under threat from tenders created by the government for private collectors to collect recyclables from residential areas, the same areas where waste reclaimers scratch through bins for recyclables to make a living (Lindeque, 2018). They are not taken into account when such decisions are made. The result is that waste reclaimers have fewer recyclables to source, which reduces their already low income. Previous research highlighted that a waste reclaimer could earn between R10-R96 per day (van Heerden, 2015; Schenck & Blaauw, 2011) on average. More recently, Viljoen, Blaauw, & Schenck (2018) researched street waste reclaimer earnings in 13 major city centres and surrounding suburbs in South Africa. Their research gathered income data from 873 street waste reclaimers. Their findings highlighted the following:
More than half earns R50 or less on an average day; waste reclaimers income was dependent on where they collected, with Johannesburg waste reclaimers earning the most, R20 more than the national average; female waste reclaimers earned R23.00 less on average; the age group between

25-34 earned the most, R91,79 on average and R70 on an average day; other factors such as education, marital status and nationality also played a factor on waste reclaimers earnings. However, despite the research being published in 2018, the data was collected between 19 April 2011 and 28 June 2012.

In contrast, Godfrey (2021) took a different approach in determining the income of waste reclaimers. Her research analysed data from buyback centres to determine the income of waste reclaimers through two scenarios due to the uncertainty regarding the number of waste reclaimers in South Africa. Scenario 1 was 60000, and scenario 2 was 90000 waste reclaimers. Based on the buyback data of 2017, scenario 1 resulted in a monthly income of R1211.00 per waste reclaimer and scenario 1 resulted in a monthly income of R807.00 per waste reclaimer. Despite the different approach by Godfrey (2021), the daily rate per waste reclaimer ranged between R40.35 and R60.55, which is similar to the R50 average highlighted by Viljoen, Blaauw, & Schenck (2018).

The lack of consideration for waste reclaimers has resulted in waste reclaimer associations, residents and the media highlighting it as a problem. Examples can be seen in the development of residential recycling separation at source services, mainly in Johannesburg, through Pikitup, and in Cape Town with the Think Twice recycling service (Lindeque, 2018). Residential recycling is necessary, and these services are proof that the South African government is at least beginning to prioritise the environment. However, how they go about addressing the problem is questionable. South Africa has a diverse waste industry that includes the public, private, and informal waste sectors. The role of waste reclaimers and the principle of inclusivity need to be considered when developing recycling services.

A survey on the role of waste reclaimers in the industry showed significant support for waste reclaimers having a role in the formal waste sector (Godfrey et al., 2016). 95% of the respondents, which were members of the formal waste industry, answered "yes" to the question *"Should we*

*proactively integrate the informal sector?*". However, what was clear from the research was that there is no straightforward process or path to integrate them successfully.

An attempt to address this has seen the South African Government drive the creation of waste and recycling co-operatives, but it has failed dismally, with a 91.8% failure rate (Godfrey et al., 2016). However, there have been recent success stories, such as Ekurhuleni municipality, where one of their co-operatives has recently won an award, Local Authority Recycling Innovation, at the 2018 PETCO awards. But the successes of Ekurhuleni municipality have not been replicated in other municipalities, nor among private organisations that have attempted to integrate waste reclaimers into their value chain.

More recently, the government published the Waste Reclaimer Integration Guideline for South Africa (DEFF & DST, 2020). The guidelines are meant to assist organisations working with waste reclaimers, such as municipalities, to integrate waste reclaimers into a formal recycling operation. However, this is only a guideline, and municipalities do not need to implement it yet. Furthermore, while the guidelines used previous research and case studies that involved both organised and unorganised waste reclaimers, the guidelines were designed primarily based on workshops that primarily included organised waste reclaimers and in cities where reclaimer integration is already included in their policies, such as Johannesburg. However, the reality is that most waste reclaimers in South Africa are not organised, especially in the Western Cape.

The challenge lies in successfully and sustainably integrating the waste reclaimers into the formal waste value chain with little to no organisation. In contrast, it has been done before in countries like Argentina, Brazil, and Columbia that have successfully integrated waste co-operatives into the public and private waste sectors. For example, in Argentina, 95% of waste management service is performed by waste co-operatives (Allen & Morin, 2001).

### *Research Purpose, Significance & Contribution*

This research aimed to understand how waste reclaimers that are not organised are integrated into formal waste management projects. It focused on understanding what made waste reclaimer integration projects successful or unsuccessful. It focused on who was involved, the approach methods, the integration process, and external factors that influence the success rate.

The sources of evidence used for the recent Waste Picker Integration Guideline for South Africa relied on case studies where waste reclaimers were mainly organised and in cities where reclaimer integration is already included in their policies, such as Johannesburg. Therefore, the significance of this research is that it provides a different perspective for waste reclaimer integration, focusing on waste reclaimers who are not organised. It develops an understanding of successfully integrating the waste reclaimers by studying current approaches, both successful and unsuccessful.

The outcome of the analysis of the five cases is a process model that the cases followed to integrate unorganised waste reclaimers in the Western Cape successfully. It highlights the key roles played by brokers who can facilitate interactions between the formal and informal parties.

Furthermore, the desired outcome from this research will be tangible benefits for waster reclaimers: safer work conditions, more predictable income, the feeling of being socially recognised for the work they do, and a sense of being part of something larger.

Government organisations will save money through the higher diversion rate from the landfill thanks to more waste reclaimers collecting recyclables more efficiently. They would also create more jobs through more waste reclaimers being employed. Furthermore, they would feel less pressure on integrating waste reclaimers in the municipal collection process from the media and various associations such as SAWPA (South African Waste Pickers Association), which have led protests demanding increased collaboration and a better work environment (Frankson, 2017; Washinyira, 2018).

Private waste companies are aware of waste reclaimers' significant role in the waste system. Most waste buyback companies benefit from buying recyclables from these waste reclaimers. By having waste reclaimers integrated into the formal waste value chain, they will collect more efficiently, creating more supply of recyclables.

Furthermore, due to the benefits mentioned above, the most important beneficiary will be the environment; through reduced pollution and waste going to landfills. This research thus seeks to contribute to numerous Sustainable Development Goals (SDGs), including SDG 1 – No poverty; SDG 3 – Good health and well-being; SDG 8 – Decent work and economic growth; SDG 9 – Industry, innovation and infrastructure; SDG 10 - Reduce inequality within and among countries; SDG 11 – Sustainable cities and communities; and SDG 12 – Responsible consumption and reproduction.

## Research Aims & Objectives

Research has shown that waste reclaimers play a valuable role in the waste system in South Africa, which benefits the environment and the public and private sector (Ezeah et al., 2013; Godfrey et al., 2016). However, research has also shown the precarious and dangerous nature of being a waste reclaimer (Schenck & Blaauw, 2011). In countries like Argentina, Brazil and Columbia, research has shown that it is possible to successfully and sustainably integrate waste reclaimers in the formal waste economy. However, in South Africa, there has been a struggle to achieve the same success. This has often been due to difficulties experienced in organizing waste reclaimers, e.g., into co-operatives. Godfrey et al. (2016) identified some of the reasons behind this high failure rate of waste co-operatives in South Africa. However, that investigation only focused on high-level issues such as funding, equipment, and team members. It did not explore the cooperative organisation processes or integrating co-operatives into formal value chains.

More recently, Sekhwela & Samson (2020) found that the definition of integration differed between the waste reclaimers and the formal sector. The difference resulted from the lack of

inclusivity in the design of integrations, ultimately leading to an unsuccessful integration project – Pikitup. Pikitup was a project between the municipality's waste management utility and waste reclaimer co-operatives in Johannesburg. Furthermore, Samson (2020b, p. 4) investigated the impacts of Pikitup's attempted integrations of waste reclaimers in Johannesburg and found that the integration attempts led to *"new forms of exclusion of reclaimers and led to deteriorations in their incomes and working conditions"*. Furthermore, Samson (2020b) concluded that South African municipalities are too focused on integrating into programmes without consulting them. Instead, they should focus on integrating their programmes into the existing waste reclaimer systems, which she highlights as a *"separation outside source"* system.

Furthermore, Samson et al. (2020) analysed five integration cases across Johannesburg and Metsimaholo, including those highlighted above. Much of this research and its findings were used to form the Waste Picker Integration Guideline for South Africa. In some instances, the waste reclaimers were organised prior to the integration process commencing. Given the difficulties experienced by waste reclaimers in many situations in trying to organise themselves, there thus remains a need to understand how integration processes may unfold without the reclaimers being organised.

Therefore, this research aimed to understand how unorganised waste reclaimers are integrated into formal waste management projects. This involved understanding the intricacies of the processes used to initiate the project, set up the team, approach the waste reclaimers, the integration process, the outcome, and the challenges and benefits experienced for both the formal and informal parties.

A further aim of the research is to identify the differences between the waste reclaimer integration processes in the Western Cape and the rest of South Africa. Much of the previous integration research in South Africa is based on waste reclaimers in Gauteng, which has also

influenced the National Waste Picker Integration Guideline guidelines. Therefore, this research highlights potential differences experienced in the Western Cape.

The desired outcome of this research was to develop a framework on how to integrate waste reclaimers into the formal value chain in the Western Cape, where most waste reclaimers are not organised. The framework will potentially be used by an 'institutional intermediary' who will initiate and implement the framework to integrate waste reclaimers into the formal waste sector.

## Research Question

This study investigated the following primary research question: What is the process to formalise and integrate unorganised waste reclaimers into the formal waste value chain in the Western Cape?

The following sub-questions supported the primary research question: Firstly, what are the various roles required in this process, and what are their main activities? And Secondly, what organisational forms are most suitable for waste reclaimers to become integrated into formal value chains?

## Limitations

This research only occurred in three towns, Cape Town, Wellington and Paarl, in the Western Cape, and therefore the findings cannot claim to be for the entire Western Cape context. However, these three towns were chosen because they had integration projects that aligned with the requirements for this research. These requirements are discussed further in the sampling section of chapter 3.

## Structure of The Dissertation

The dissertation is structured as follows: Chapter 2 – Explores the existing literature on waste reclaimer integration as a general topic and specifically in South Africa. It will investigate the strengths, weaknesses, inconsistencies, biases, omissions, inadequate testing, and inconclusive or

contradictory evidence from previous research; Chapter 3 – Discusses the research methodology used to perform the research. This chapter will highlight the research strategy and approach, research design, data collection methods and instruments, sampling, data analysis methods, research criteria, limitations and ethics; Chapter 4 – Presents the case study reports of the five cases investigated for this research; Chapter 5 – Presents the finding from the research and its limitations; Chapter 6 – Discussion of the findings; Chapter 7 – Discussion of recommendation and future research directions.

# Literature Review

## The Rise of Waste Reclaimers

### *Urbanisation & Inclusion*

The rise of people moving to urban areas has increased, and over half of the world's population resides in these areas (World Bank, 2015). While this increase in urbanisation is crucial for overall growth, such as lowering overall poverty through more significant opportunities to generate a higher income, cities have also become a service challenge. The rise in demand for housing and essential services from the increase in population has proven a challenge for cities. The cities' inability to provide these services forces the poor to live on the street or in informal areas where conditions are not suitable for living and access to good economic opportunities becomes less accessible. The result of this is rising inequality and exclusion, which has encouraged cities to reconsider their approach and think of a more inclusive one, known as 'inclusive cities' (World Bank, 2015).

Douglas (2017) defined inclusive cities as cities that "ensure the working poor have access to secure and dignified livelihoods, affordable housing, and basic services such as water/sanitation and electricity supply." Similarly, the World Bank's (2015) definition of inclusive cities focuses on access to essential services, households, economic opportunities such as jobs and equal rights and participation for all citizens, especially the poor.

However, such inclusion is not given in cities in South Africa due to the high inequality, highlighted by the Gini coefficient of 0.62 in 2015 (OECD Data, 2018), one of the highest in the world. This high inequality and exclusion are why many people who live in poverty move to waste picking due to a lack of access to basic housing, essential services, and formal economic

opportunities. These circumstances exclude and push the poor towards finding informal means to make a living, such as waste picking, which is a precarious and dangerous form of work.

As a result, in certain countries, such as China, the informal sector is larger than the formal sector (Phillips, 2011). Also, in India, where the informal sector counts for 93% of the workforce and contributes over 60% to the gross domestic product (GDP) and in Latin America, the informal sector represents 45% of the workforce in urban areas (Phillips, 2011). Similar impacts of the informal sector are felt in South Africa, wherein 2014, 80-90% of the paper and packaging recyclables were collected by the informal waste sector (Godfrey et al., 2016).

### *Waste Reclaimer Establishment*

Circumstances in developing nations, such as those discussed above, the challenge of waste management and developments of the recycling industry have led to the emergent role of waste picking (Aparcana, 2017; Schenck & Blaauw, 2011; Simatele, Dlamini, & Kubanza, 2017). Benson & Vanqa-Mgijima (2010) highlighted that the process of reclaiming waste for recycling or reuse from landfills or dumps is not a new phenomenon in South Africa. It was already established during the Apartheid era when the municipalities would create dumpsites close to black townships. This created an opportunity for oppressed and unemployed people to make some money by selling recyclable materials.

Research performed by Simatele et al. (2017) on waste reclaimers in Johannesburg identified that 60% were between the ages of 26 and 35, which they state is primarily due to the lack of jobs available. As a result, people turn to informal work, such as waste picking. Similarly, research performed in Cape Town by Benson & Vanqa-Mgijima (2010) found that despite the different demographics from community to community, the majority of the waste reclaimers were performing the role due to unemployment. The main difference between some was that it was their only source of income, especially those who were not South African. In contrast, it was a way of

earning an extra income on top of their social grants for others. Furthermore, the age of the waste reclaimers ranged from as young as 9 to as old as 80 years.

Research performed on waste reclaimers in Pretoria by Schenck & Blaauw (2011) found that most were between 41-50. However, Schenck & Blaauw (2011) did not highlight the lack of jobs as the main reason their participants were waste reclaimers. Instead, they highlighted that their low education levels did not allow them to find work in the formal sector.

Furthermore, Benson & Vanqa-Mgijima (2010, p. 2) also attribute the establishment and increase of waste reclaimers to the South African governments' adoption of neo-liberal policies and highlighted three reasons for this. Firstly, local authorities have reduced the quality of waste services as part of the cutbacks in the provision of public services, the need to obey tight fiscal restrictions and the worship of private businesses. Secondly, large companies have sought to cheapen input costs by recycling paper, wood and other recyclable materials. Companies have also responded to legislation requiring them to use higher percentages of recyclable materials. Lastly, over the period, the sheer scale of job losses has shifted many more people out of jobs and onto the streets.

In the South African Waste Picker Integration Guidelines, waste reclaimers are defined as “people who collect re-usable and recyclable materials from residential and commercial waste bins, landfill sites and open spaces in order to revalue them and generate an income” (DEFF, 2020, pg. 10). Marello & Helwege (2018, pg. 2) defined them more simply as “people who make a living by selling recyclables found in the trash.”

These definitions also question the legitimacy or fairness of their commonly known name, waste picker. van Heerden (2015) highlighted that terms such as waste picker create a negative image and shape how waste reclaimers are treated and perceived by the public. van Heerden (2015) further stated that terms such as ‘reclaimers’ and ‘salvagers’ have a more positive meaning and are more descriptive of their tasks. However, the name waste reclaimers themselves choose to identify with differs from region and demographics. In Cape Town, most waste reclaimers prefer the name

'skaraller' identifying the task of 'skarelling', an Afrikaans term that Benson & Vanqa-Mgijima (2010) define as *"always on the look-out for something"*, *"scrounging around"*, or *"struggling but doing something about it"* (pg. 1).

### *Waste Reclaimer Livelihoods*

Despite making a living from the reclaiming of recyclables, many waste reclaimers work in challenging conditions, and their livelihoods are precarious. The precarious nature of waste reclaimers was particularly highlighted during the COVID-19 pandemic. Due to the global lockdowns, waste reclaimers could not perform their role and benefit from collecting and selling recyclables (Sarkodie & Owusu, 2021).

Research performed on waste reclaimers in Pretoria by Schenck & Blaauw (2011) found that 69% slept on the street, 4% in backyard shacks, 4% in backyard rooms, 15% in the veld or under the bushes and 4% in hostels. Similarly, research performed by van Heerden (2015) on waste reclaimers in Cape Town were all living on the street.

Furthermore, the research highlighted that a waste reclaimer could earn between R10-R96 per day (van Heerden, 2015; Schenck & Blaauw, 2011; Benson & Vanqa-Mgijima, 2010) on average. Samson (2008) highlighted that the earnings of a waste reclaimer could depend on where they collect (landfill or street) and what they collect. According to the interview she performed with landfill waste reclaimers, the lowest earned a week was R200, the majority earned between R800 and R1000 per week, and the highest was R2000 a week.

Benson & Vanqa-Mgijima (2010) found that despite the low earnings waste reclaimers received, 70% of the female waste reclaimers interviewed came from worse conditions in rural areas, searching for a better life for themselves and their families in the urban cities. In contrast, the reality of waste picking in urban cities comes with many challenges. Waste reclaimers researched by Simatele et al. (2017) highlighted that harassment while performing their jobs and lack of

infrastructure as the two main challenges they face. They also highlighted their health as a concern due to them performing their role without the correct protective wear to protect them from health risks nor the infrastructure to protect them from the elements. Benson & Vanqa-Mgijima (2010) found similar findings in Cape Town, where waste reclaimers highlighted that the deterioration of their health is a significant concern. However, they cannot do much about it and have to continue working due to not having access to social grants. Also, they fear picking up diseases due to them scratching through bins with various sorts of dangerous waste.

In Durban, Mkhize et al. (2014) interviewed 152 waste reclaimers who were not working together to understand the 'driving forces' that affect work conditions in the informal economy. Some of the biggest challenges highlighted by the waste reclaimers were a lack of access to recyclables, toilets and water, infrastructure to store and sort recyclables as theft is a significant problem and transportation to collect recyclables efficiently. Secondly, waste reclaimers travelled long distances to sell their recyclables. Thirdly, competition from large companies and other waste reclaimers affected their work. Finally, having an unhelpful government also added to their challenges.

### *Lack of Organisation*

There are two leading waste reclaimer organisations in South Africa, SAWPA (South African Waste Picker Association) and ARO (African Reclaimers Organisation). SAWPA was South Africa's first waste reclaimer organisation. They are based in Sasolburg, in the Free State province, and have 6000 members (SAWPA, n.d.; GlobalRec, n.d.). ARO was formed in 2018. They are based in Johannesburg, Gauteng province and have 5500 members (ARO, n.d.). Combined, they have 11,500 members, compared to the estimated 60,000-90,000 waste reclaimers reported in South Africa (L Godfrey et al., 2016). Much of the research projects performed on waste reclaimer integration in South Africa were based on projects performed by members from these organisations. These insights also

influence how the national waste reclaimers guidelines were designed. However, it is clear that organised waste reclaimers are the minority.

The organisation of waste reclaimers are also dependent on location. In Johannesburg, the topic of waste reclaimer integration is much more advanced. Samson (2020b) notes that Johannesburg is the leader in South Africa regarding waste reclaimer integration initiatives. This is also attributed to policies set by City Council, such as the Reclaimer Empowerment Plan, which was integrated into Pikitup's business plan. While this does not equal successful waste reclaimer integration, it does highlight how high the municipality prioritises waste reclaimer integration.

In contrast, the City of Cape Town does not have waste reclaimer integration policies, and even though SAWPA and ARO have members there, its base is not large as Johannesburg. Research performed by Benson & Vanqa-Mgijima (2010) found that waste reclaimers in Cape Town differed by area when it came to organisation. Waste reclaimers in some areas were not interested in organising because they saw each other as competition, a lack of time due to them focusing on surviving, and alcoholism were also contributing factors. Whereas in other communities, organisations occurred but through different types of NGO's and religious organisations. Lastly, Benson & Vanqa-Mgijima (2010) highlighted instances of self-organised waste reclaimers on a small scale and were self-driven by the waste reclaimers. However, these groups simply worked together to get as much money as possible and are not focused on solving waste reclaimers' issues. However, from their research, waste reclaimers highlighted that they are interested in organising to ensure better lives for all waste reclaimers in Cape Town.

### *Waste Reclaimer Impact*

With the ever-increasing population in cities, landfills are filling up, and expensive residential recycling pilots fail due to high costs. Nevertheless, South Africa still recycled 52.6% of its paper and packaging waste in 2014. However, 80-90% of the paper and packaging recyclables were collected in

the informal waste sector (Godfrey et al., 2016). It should be highlighted that the 60,000-90,000 waste reclaimers that saved the government R309.2 – R748.8 million in landfill airspace in 2014 were able to manage these achievements without being integrated into the formal waste sector or charging for their services (Godfrey et al., 2016). According to a survey performed by Godfrey (2021), 71% of plastic recyclables, 80% of paper recyclables, 40% of metal recyclables and 80% of glass recyclables were collected by the informal waste sector. These impacts are seen in South Africa and Egypt, the Philippines, Peru, Zambia, and India (Aparcana, 2017). Through interviews performed during their research with local government officials from Johannesburg, Simatele et al. (2017) highlighted that the officials revealed that the waste reclaimers were responsible for 80% of the recovery rate of recyclable waste.

Besides the positive financial impact waste reclaimers create, there is also the environmental side. Waste reclaimers divert waste from entering the landfill, and by doing so, avoid tonnes of greenhouse gases that would have contributed to climate change. Furthermore, their methods of collecting recyclables are fossil-fuel-free primarily, compared to the formal sectors that emit carbon emissions through the fuel to power their large trucks.

While their role is informal, it works and is positively impactful. The process used by waste reclaimers to collect recyclables is different from a waste management company. The system generally is a separation at source programme that requires the recyclables to be separated at source, either the household or office. However, waste reclaimers do not receive separated recyclables. They separate it once all waste ends in the general refuse bins or the landfill. Their process is defined by Samson (2020b, p. 4) as Separation outside Source, as a *"system in which they separate the materials for the residents, transport them, prepare them for sale, and reinsert them into capitalist commodity chains that stretch across the globe."*.

There is no denying the impact of waste reclaimers on the cities in South Africa. They help the government save money by reducing waste to landfills, increasing the number of materials

collected for manufacturers, and ensuring the environments are cleaner for all citizens (Godfrey et al., 2016). However, waste reclaimers in South Africa typically exist on the margins of society, experience dire poverty and enjoy little support from the government, civil society and private sector waste initiatives.

Despite their positive impact, waste reclaimers work in challenging conditions. Their livelihoods are precarious and under threat from tenders created by the government for private companies to collect recyclables from residential areas, the same areas where waste reclaimers scratch through bins for recyclables to make a living (Lindeque, 2018). They are not taken into account when such decisions are made. The result is waste reclaimers having fewer recyclables to collect, reducing their already low income.

## Exclusion

There are various reasons why the exclusion of the informal sector exists. Sutter et al. (2017) highlighted that the difference between the formal and informal sectors could occur at different levels such as norms, practices, relationships and positions. These differences create barriers for the two sectors to work together. However, Phillips (2011) found that the formal sector is inclusive and includes the informal sector but on 'adverse terms'. Hickey & du Toit (2007, p. 4) label these 'adverse terms' as 'adverse incorporation,' provides a critical definition to understand adverse incorporation:

> "The concept of adverse incorporation, it is argued, captures the ways in which localised livelihood strategies are enabled and constrained by economic, social and political relations over both time and space, in that they operate over lengthy periods and within cycles, and at multiple spatial levels, from local to global. These relations are driven by inequalities of power."

Understanding this definition highlights the need not only to ask whether the formal sector is inclusive, but how is this inclusivity occurring and, significantly, who benefits.

### *Waste Reclaimer Exclusion*

Waste reclaimers were the inventors of growing the recycling ecosystem in South Africa (Melanie Samson, 2015a). Benson & Vanqa-Mgijima (2010) highlighted that the process of reclaiming waste for recycling or reuse from landfills or dumps is not a new phenomenon and was already established during the Apartheid era when the municipality would create dumpsites close to black townships. This created an opportunity for oppressed and unemployed people to make some money by selling recyclable materials. The waste reclaimers established the process of commodifying waste; however, they were omitted when the South African government began adopting recycling policies characterised by neo-liberal principles (Samson, 2015; Benson & Vanqa-Mgijima, 2010).

**Policies & Tenders.** Focusing on waste reclaimers in South Africa, exclusivity and inequality can stem from various sectors such as city policy and planning design. The methods used for planning and policy setting was adopted from the Global North (van Heerden, 2015) and similarly for waste management. The nations from the Global North never had to consider planning with the informal sector, as they never experienced similar amounts of informality as the Global South nations (van Heerden, 2015). Thus, creating systems that did not involve the informal sector, leaving them excluded and contributing to the already high inequality. However, Hickey & du Toit (2007) suggest that implementors investigate the problem from various dimensions, such as political, economic, socio-cultural and spatial, to allow a broader view to understand the problem and not simply blame poverty.

To understand how this gap was created from a political view, the following points are examples of waste policies highlighted by van Heerden (2015) that create barriers for waste reclaimers entering and benefitting from the formal waste economy in South Africa.

- All entities participating in waste and recycling actions need to be registered and accredited by the City Council.

- Due to the lack of skills and capital, the government creates tenders which the larger waste companies win and focuses more on 'capital-intensive growth strategies rather than labour-intensive strategies'.
- Service providers are expected to undergo expensive formal accreditation processes and need to fulfil a range of obligations and submit a host of plans.

Furthermore, Samson (2015) highlighted two policies that established the neo-liberalisation for South Africa:

1. Growth, Employment and Redistribution Strategy (GEAR), which focused on marketizing the state and promoting international competitiveness
2. The iGoli 2002 plan became the model for municipal neo-liberalization in the country.

In Johannesburg, the result of these policies for the waste management industry was the establishment of Pikitup, which resulted from merging all the city's waste management functions into one entity. Samson (2015) highlighted that this made Pikitup the largest waste management company in Africa. The neoliberal policies also required entities such as Pikitup to provide a financial return, compared to when the separate functions ran at a loss and required subsidies to operate. Due to these requirements, Pikitup began implementing policies that would allow them to profit from the recyclables. One particular case study focused on the Marie Louise landfill, where waste reclaimers had already transformed a 'dump' into a 'resource mine'. These policies were focused on creating a profit and excluding the waste reclaimers operating there. Samson (2015) highlighted that Pikitup informed the waste reclaimers that they were operating illegally on the landfill and created a tender for a private company to salvage recyclables from the landfill (which the waste reclaimers were performing). In return, Pikitup earned a fee for every tonne collected in the landfill. However, the interesting part was that the waste reclaimers would still salvage the recyclables from the landfill. However, this time, they would not have the freedom to sell to whomever they wanted to. Instead, they would be forced to sell to the contract winner, who highlighted that they would pay

them less than they earned for the materials before because the company had to pay Pikitup. This process, which Samson (2015) defines as “accumulation by dispossession,” highlights how government policies can dispose of the waste reclaimers and exclude them from industries they created and transfer them to the formal sector.

Similarly, in Cape Town, tenders are awarded to private companies to collect recyclables from residential high-income residential areas through the Think Twice programme. These policies exclude waste reclaimers by dispossessing them of the recyclables in these areas.

The policies developed highlighted the difficulty for waste reclaimers to access and benefit from the formal waste industry. Douglas (2017) further defends this notion based on results from case studies on problems faced by urban informal workers. The findings were that about half of their problems mentioned were where either 'city or state authorities – or both' had the power to change it. However, it seems that the government in South Africa is aware of this problem. A study by Godfrey et al. (2016) explored how the informal waste and recycling sector could be integrated into the formal sector in the context of Extended Producer Responsibility (EPR). The need for the research was to ensure that EPR was designed so that it does not cause competition between the formal and informal waste sectors. The outcomes of this paper are based on two regional workshops held in Cape Town (CPT) and Johannesburg (JHB) with waste delegates from the private and public sectors that filled in a questionnaire. The outcomes show high support for integrating the informal sector and recognising their role; however, 'how' to best integrate them is still unclear. The highest vote of 44% was for the informal sector's integration through formalisation as co-operatives or SMEs.

Furthermore, a discussion was facilitated around who should be responsible for integrating the waste reclaimers between municipalities and researchers. Municipality members suggested that they do not have the resources to integrate the waste reclaimers into the formal waste sector due to the government's requirements and the expectation that it will create formal employment in the municipality for waste reclaimers. Municipalities also highlighted the risk to service delivery due to

the uncertainty of the performance of the waste reclaimers. "[Municipalities] cannot work well with [the informal] sector because of its highly structured and formalised environment… too much focus on process, documentation, etc. that places a very high barrier to entry. There has to be a bridging agency such as an NPO that has the flexibility to do this engagement [with the informal sector]." (Godfrey et al., 2016, p. 4)

This research exemplifies the exclusive nature of the formal waste industry in South Africa. Waste reclaimers had no representation, yet the members discussed what they believed should happen with the waste reclaimers. Representation is critical for successful integrations to occur, as Marello & Helwege (2018) noted that in under-resourced countries, the waste reclaimers require more than the municipality offers. They highlighted an example where female waste reclaimers required the waste essentials and a place for their children to stay and learn while they work. None of these issues will be addressed without proper representation in the discussion.
Similarly, Samson et al. (2020) highlighted that municipalities that attempted to integrate waste reclaimers in their investigated cases in Johannesburg and Metsimaholo were ill-equipped and struggled to implement a successful integration.

However, there have been advances in pro-waste reclaimer integration policies. Samson et al. (2020) highlighted how the city of Johannesburg implemented a 'Reclaimer Empowerment Plan', which was also used in its waste management utility, Pikitup, business plan. More recently, and perhaps the most significant sign that waste reclaimers are being recognised in South Africa, was the development of the Waste Picker Integration Guideline for South Africa. However, this is only a guideline, and municipalities do not need to implement it yet.

The guideline is for the public sector and any organisation that wants to perform a waste reclaimer integration project. Despite this, one of the main reasons for developing it was due to a commitment made in the National Waste Management Strategy, which states that government commits to "*provide guidance to municipalities and industry on measures to improve the working*

*conditions of waste-pickers*" (Department Environmental Affairs, 2011, p. 27). Ten years later, they have achieved their target through the guideline. It was also created to assist organisations to work with waste reclaimers. The guidelines by DEFF & DST (2020, p. 71) provide a set of seven steps to assist an organisation in integrating waste reclaimers successfully:

1. Prepare
    a. Establish internal team – Establish an internal waste picker integration team.
    b. Learn – Deepen knowledge about waste pickers and waste picker integration.
    c. Commit – Commit to implementing waste picker integration.
    d. Analyse – Analyse existing commitments and programmes.
2. Partner
    a. Connect – Connect with waste pickers.
    b. Engage, listen and share – Start meeting with waste pickers on a regular basis, listen to their perspectives and the issues they raise, share all relevant information
    c. Collaborate – Establish an inclusive waste picker integration working group to plan and oversee waste picker integration.
    d. Forge a common understanding of what exists – Gather data and develop a common understanding of the existing recycling system and different stakeholders' roles, priorities and issues
    e. Support – Provide waste pickers with support to organise and strengthen existing organisations.
3. Plan
    a. Rectify problems – Address negative effects of existing recycling programmes.
    b. Register waste pickers – Register all waste pickers.
    c. Meet key needs – Address waste pickers' most pressing needs.

d. Integrate into new programmes – Integrate waste pickers and their informal system into new recycling programmes.

4. Enable
    a. Align regulatory environment – Align by-laws, permits, policies, plans
    b. Secure skills – Ensure the internal team has the relevant skills to implement waste picker integration
    c. Educate staff – Provide ongoing training for officials.
    d. Educate the public – Run awareness campaigns and conduct educational activities
    e. Secure funds – Raise funds for waste picker integration and collection of recyclables.
5. Institutionalise
    a. Include in planning documents – include in Integrated Development Plans (IDPs), Integrated Waste Management Plans (IWMPs), Business Plans and so on.
    b. Create new KPIs – make waste picker integration part of relevant staff's KPIs.
    c. Monitor, evaluate and revise – Revise the WPIP based on evidence from M&E
    d. Create a platform – Establish a permanent waste picker integration platform.
    e. Adopt the WPIP – Finalise and adopt the WPIP
6. Implement
    a. Implement the WPIP – implement all activities in the WPIP
    b. M&E – Monitor and evaluate the implementation
7. Revise
    a. Revise the WPIP – Revise the WPIP based on evidence generated from implementation
    b. Institutionalise changes – Make relevant changes to policies, planning documents, KPIs and so on.

For each step, the guidelines went into in-depth detail to describe the steps to be performed. However, the guide seems to be more applicable to work with organised waste reclaimers in the implementation steps, which is not the case for most South African waste reclaimers. During steps 2A and 2B, the guidelines assume that waste reclaimer organisations are active, which is not the case for most regions in South Africa. The suggested actions for step 2A start with "1. Start by finding out about relevant waste picker organisations, waste picker forums, NGOs and academics." (DEFF & DST, 2020, p. 79). Similarly, the suggested actions for step starts with "1. Start meeting with waste pickers and their organisations on a regular basis. 2. Agree with waste pickers and their organisations on how they would like to be engaged" (DEFF & DST, 2020, p. 80). Despite this, they do provide suggestions of what to do if there are no active or weak waste reclaimer organisations "ask them [waste reclaimers] to share ideas about what they would want from a first formal meeting on integration and how it should be organised. They may nominate people to represent them" (DEFF & DST, 2020, p. 69). However, the instructions for that scenario is oversimplified.

Furthermore, while the guidelines used previous research and case studies that involved both organised and unorganised waste reclaimers, the guidelines were designed primarily based on workshops that primarily included organised waste reclaimers. However, the reality is that most waste reclaimers are not organised and follow informal processes. Furthermore, some of the studies used to develop these guidelines focused on integration cases in cities where reclaimer integration is already included in their policies, such as Johannesburg. This highlights an element of exclusion in how the guidelines were set up. Despite the guidelines highlighting the teams should be inclusive of all types of waste reclaimers, these integration attempts will likely exclude waste reclaimers that are not part of an organisation.

Samson et al. (2020) further noted that the guidelines were only one of the challenges highlighted by municipalities when it comes to waste reclaimer integration projects. The other challenges focused on funding, targets, training, or support to design and implement integration. The above highlights the difficulty for both government and the informal waste reclaimers to work together; it also highlights that the government needs to be more inclusive regarding their planning and policies towards waste reclaimers. Furthermore, it highlights the need to investigate whether private waste sector organisations are practising adverse incorporation and capitalising from the hardship of waste reclaimers.

**COVID-19.** The COVID-19 pandemic highlighted how excluded waste reclaimers are from the formal recycling sector. While the entire recycling industry was negatively impacted, waste reclaimers suffered the most (Pholoto, 2021).

Following the initial level 5 lockdown, the South African Government released a list of essential services that could operate with a permit (South African Government, 2020). While waste management services were included in this list, the companies needed to be formally registered to apply for the permit online to get the actual permit. This resulted in the exclusion of waste reclaimers from operating and performing their informal waste management services, indirectly making their jobs illegal. Due to this, waste reclaimers were arrested for going out to try and collect recyclables to make a living (Lawyers for Human Rights, 2020). This was particularly tough on waste reclaimers as they live off what they collect, and not fulfilling their role left many families unable to provide for themselves during this period (Pholoto, 2021). Nearly a month after the initial lockdown, the minister of the Department of Fisheries, Forestry and Environment (DFFE), Barbara Creecy, announced that the department had submitted a proposal to include waste reclaimers in the 'national Solidarity Response Fund'. The fund focused on supporting the most vulnerable during the pandemic and distributing food parcels through the government's coronavirus relief plan (Krige &

Panchia, 2020). However, due to the lack of organisation amongst waste reclaimers, it was difficult to reach all of them.

Moreover, a petition was created to support the freedom of waste reclaimers in South Africa and encourage the government to support their role, despite not having specific documentation to operate (GlobalRec, 2020). The petition by GlobalRec (2020, para. 4) highlighted that the lockdown policies *"that encourage xenophobia and divisions amongst the poor"* (para.4) should end. Only waste reclaimers with an ID number could benefit from the benefits, such as those highlighted above, as *"The current policies governing lockdown mean that possession of documents or lack thereof is being used to decide who can eat and who cannot"* (2020, para. 6).

However, as the lockdown levels began to ease, waste reclaimers were allowed to operate again. But again, the exclusion of waste reclaimers was highlighted as they were exposed to the virus daily, and they did not have proper protective gear to protect them from COVID-19. According to Samson (2020a), the exclusion by the government during the COVID-19 pandemic came as no surprise due to the historical and current government policies within the waste sector not inclusive of waste reclaimers. Many of these were highlighted and discussed in the previous section.

COVID-19 also had more negative impacts on waste reclaimers earnings once they were able to collect due to its impact on the broader waste management industry. Godfrey (2021) highlighted that COVID-19 impacted the prices recycling buybacks were paying for recyclables, which had significant impacts on the lives of waste reclaimers. Sarkodie & Owusu (2021) highlighted similar findings and discussed how the limits on commercial activities, mobility and the manufacturing sector affected the waste management industry and, therefore, the prices paid for the material.

## Waste Reclaimer Integration

### *What Is Integration?*

Sekhwela & Samson (2020) noted the following: *"any integration process must start with reclaimers and officials collectively developing a common conceptualisation of integration"* (pg. 1). The statement alludes to the integration case researched failing primarily due to a lack of understanding of integration for the waste reclaimers and formal integration. Therefore, something as simple as defining what is meant by integration for both parties must get focused on during an integration project.

While there is no formally accepted definition for waste reclaimer integration, the Waste Picker Integration Guideline for South Africa defines waste reclaimer integration as follows:

> *"the creation of a formally planned recycling system that values and improves the current role of waste pickers, builds on the strengths of their existing system for collecting and revaluing materials, and includes waste pickers as key partners in its design, implementation, evaluation and revision. Waste picker integration includes the integration of waste pickers' work, as well as the political, economic, social, legal and environmental integration of waste pickers"* (DEFF, 2020, pg. 27).

While this definition is robust, DEFF & DST (2020) used previous research as a basis to create it. The definition included most of the elements highlighted in the research performed by Sekhwela & Samson (2020). They listed a variety of previous researchers that provided their version of waste reclaimer integration. The focus of their versions ranged from employing waste reclaimers, improving their current work conditions, creating access to material, policy inclusion, legitimising their work, improving their income, decreasing costs, empowering waste reclaimers and integrating the waste reclaimers recycling system.

### *How Waste Reclaimers Have Been Integrated*

Integrating waste reclaimers into the formal economy can improve the lives of the waste reclaimers and make them more efficient, thus increasing their impact and reducing inequality. However, integration is not an easy task, and it is made more difficult by the challenges of organizing waste reclaimers into co-operatives. In South Africa, the government attempted to organise waste reclaimers into co-operatives, which resulted in 91.8% of these co-operatives failing within the first year (Godfrey et al., 2016). However, in other developing nations, there are successful cases of waste reclaimers formed co-operatives (Aparcana, 2017; Douglas, 2017; Ezeah et al., 2013; Melanie Samson, 2015a).

Despite the high failure right of establishing co-operatives in South Africa, Sekhwela & Samson (2020) explained why the waste management sector for the Johannesburg municipalities still opted for this approach as the best route to integrate waste reclaimers. Firstly, funding is more accessible for co-operatives. Sekhwela & Samson (2020) noted that the mayor of Johannesburg at the time made R1billion available to set up co-operatives that would contribute to municipal services. Secondly, the waste management service for Johannesburg (Pikitup) and municipalities cannot work with individuals. Thirdly, the formal entities involved could not provide funding or support to individuals due to legislative constraints as the funds could only be used to set up co-operatives. Fourthly, they were not aware of another method to integrate waste reclaimers. Finally, they did not want to connect with individual waste reclaimers directly.

Similarly, Godfrey et al. (2017) noted that the push from the South African government to develop waste co-operatives was motivated by a high unemployment rate, slow economy and using co-operatives as a mechanism to provide waste management services to underserved communities.

Simatele et al. (2017) were in favour of the route of integrating waste reclaimers through co-operatives as it would contribute to effective waste management and job creation. However, they

highlighted the importance of organising and training the co-operatives on the *"potential negative and positive impacts of their endeavours on the environment"* (pg. 7).

**Table 1**

*The elements of the prior findings*

| Researcher | Integration Type Investigated | Findings |
|---|---|---|
| **Godfrey et al. (2016)** | Co-operatives | 91.8% of these co-operatives failed within their first year. |
| **Sekhwela & Samson (2020)** | Co-operatives | The waste management sector for the Johannesburg municipalities still opted for the co-operative integration approach as the best route to integrate waste reclaimers for the following reason:<br>1. Funding is more accessible for co-operatives<br>2. Municipalities cannot work with individuals<br>3. The formal entities involved could not provide funding or support to individuals due to legislative constraints as the funds could only be used to set up co-operatives<br>4. They were not aware of another method to integrate waste reclaimers.<br>5. They did not want to connect with individual waste reclaimers directly. |
| **Godfrey et al. (2017)** | Co-operatives | The push from the South African government to develop waste co-operatives was motivated by a high unemployment rate, slow economy and using co-operatives as a mechanism to provide waste management services to underserved communities. |
| **Godfrey et al. (2017)** | Co-operatives | Three areas requiring the most support for failing waste co-operatives:<br>1. Access to materials<br>2. Access to markets |

| | | |
|---|---|---|
| | | 3. Business development support<br><br>As well as closer handholding, mentorship and incubation to develop the business and technical skills needed to run co-operatives as sustainable businesses. |
| **Simatele et al. (2017)** | Co-operatives | Organising and training the co-operatives on the "potential negative and positive impacts of their endeavours on the environment" |
| **Douglas (2017)** | Not specific regarding form, but integrated into government | 1. Firstly, being organised was highlighted as an essential element for workers from the informal sector to engage with the government.<br>2. Having the legal requirements in place to impact policies and laws favouring the waste reclaimers organisation.<br>3. It was critical to have the legal support to engage with the government and make the necessary changes. |
| **Sutter et al. (2017)** | Roles required in the integration | 'Institutional intermediaries' assist the informal sector members in transitioning into the formal sector. |
| **Samson (2015b)** | Co-operatives | Incentivise the waste reclaimers for their service. |
| **Sekhwela & Samson (2020)** | Co-operatives | Lack of involvement of the waste reclaimers and different understanding of what integration had a significant impact on the project's failure. |
| **Aparcana (2017)** | Not specific | To improve formalisation's chances, each country would need to ensure inclusion measures at an institutional, economic and policy level. |

Furthermore, Douglas (2017) highlighted specific requirements for inclusive cities in developing nations when waste reclaimers are being integrated with the government. Firstly, being organised was highlighted as an essential element for workers from the informal sector to engage with the government. Secondly, having the legal requirements in place to impact policies and laws

favouring the waste reclaimers organisation. It was critical to have the legal support to engage with the government and make the necessary changes.

However, having organisation alone is not enough. Sutter et al. (2017) highlighted that entrepreneurs' transitions from informal to formal markets are generally facilitated by 'institutional intermediaries' that assist the informal sector members in transitioning into the formal sector. Such intermediaries are necessary as the formal sector's values and norms are different from those operating in the informal sector. They can also contribute to clarifying the incentives for formalising because it is crucial to ensure the informal workers are motivated enough to go through the transition. Sutter et al. (2017) further labelled these changes as 'institutional scaffolding' constructed by the intermediary, which are the new norms, practices, relationships and positions that support the transition to the formal sector. This highlights another important factor in the process of integrating waste reclaimers into the formal waste value chain as organising waste reclaimers into co-operatives alone is not sustainable, as proven by Godfrey et al. (2016).

Furthermore, in South Africa, Godfrey et al. (2017) focused on co-operatives as a model of integrating the waste reclaimers and highlighted the barriers causing the high failure rate of co-operatives. The outcomes were based on 64 waste and recycling co-operatives being interviewed and resulted in three areas requiring the most support: access to materials, access to markets, and business development support. These co-operatives have already organised themselves and were aware that the incentive of being co-operative is greater than collecting waste alone as a waste reclaimer. However, the challenges mentioned above further highlight the need for 'institutional scaffolding' to assist these co-operatives in developing new norms, practices, relationships, and positions to survive as a formalised entity and legal policies in their favour to assist with the development. Godfrey et al. (2017, pp. 12–13) highlighted the following: "Closer hand-holding, mentorship and incubation is necessary to develop the business and technical skills needed to run co-operatives as sustainable businesses, capable of not only creating jobs and enhancing livelihoods,

but also making an impact in the diversion of recyclable waste from landfills". They also noted three elements required to ensure the growth and sustainability of waste co-operatives in South Africa, namely, access to materials, access to markets, and business development support, as highlighted above.

However, the elements noted above by Godfrey et al. (2017) missed an element that Samson (2015b) deemed essential when integrating waste reclaimers, the importance of incentivisation. She analysed innovative approaches in integrating waste reclaimers into the formal sector in Belo Horizonte, Brazil, Pune, India and Bogota, Colombia. In Bogota and Pune, waste reclaimers were allowed to control the recyclables collection activity; they were paid for their service and could sell the recyclables. Whereas in Belo Horizonte, the government does not pay the waste reclaimers for their service. Instead, they pay a subsidy that goes towards the co-operative and allows them to increase their work security, move up the value chain, and improve their incomes. However, the approaches in Latin America were highly organised and coordinated. Marello & Helwege (2018) noted that the co-operatives were provided access to recyclables and facilities but were tasked with collecting recycling from specific routes.

Similarly to the point on incentivisation by Samson (2015b), Sutter et al. (2017) performed research on the formalisation process of small-holder farmers. They mentioned that formalisation needs to be worth the hassle, or informal workers would be unwilling or uninterested. This highlights the importance of having an attractive incentive to integrate waste reclaimers.

Sekhwela & Samson (2020) investigated an integration case between Pikitup and waste reclaimers from the Robinson Deep landfill. The waste reclaimers were instructed to form two co-operatives that would form part of the separation at source project collecting recyclables from approximately 40000 households. While these co-operatives had access to PPE, materials, transport and a sorting space, they were not paid for their service like the co-operatives highlighted by Samson (2015b). Sekhwela & Samson (2020) noted that the integration resulted in the waste reclaimers

earning less than they did before, which ultimately influenced their decision to leave the project and collect from the landfill instead. However, the researchers further noted that the lack of involvement of the waste reclaimers and different understanding of what integration had a significant impact on the project's failure. They highlighted five key areas where the two entities had different views on integration. The five areas included what reclaimers were being integrated into, the objective of integration, the integration model, the goal of recognition of reclaimers and control over integration.

Mkhize et al. (2014) researched NGOs that focus on assisting waste reclaimers and found no prominent NGOs that represent them. This is important as the cases reviewed from outside of South Africa highlighted having supportive organisations as a key to a successful integration, which further confirms the need for institutional scaffolding' as an essential requirement in integrating waste reclaimers.

Similarly, Aparcana (2017) reviewed twenty case studies on formalisation approaches in different developing nations to identify the barriers, whether they were overcome or not, and the persistent barriers, if any. It was highlighted that if all the barriers are not removed, it will cause the formalisation failure as the barrier will become 'persistent' post-implementation. No one method was identified as the most suitable. However, to improve formalisation's chances, each country would need to ensure inclusion measures at an institutional, economic and policy level.

## Integration Or Not?

As established in the section focused on defining waste reclaimer integration, there is no standard definition. Research has highlighted integration projects where the project failed primarily due to both parties having a different understanding of what is meant by waste reclaimer integration (Sekhwela & Samson, 2020). Therefore, answering whether to integrate waste reclaimers is challenging due to various understandings of what waste reclaimer integration entails.

There have not been many successful waste reclaimer integration projects from a South African perspective. The integration project researched by Sekhwela & Samson (2020, p. 12) resulted in waste reclaimers earning less money, with one of the waste reclaimers mentioning: "… it [integration] affected my money because I could not meet my daily targets, so I decided to come back [to the landfill] and work alone". The waste reclaimer decided to go back to life as usual before the integration project occurred, as it was better financially.

Furthermore, the attempts to organise and integrate waste reclaimers through co-operatives failed dismally and resulted in 91.8% of these co-operatives failing within the first year (Godfrey et al., 2016).

Samson (2020b, p. 13) argued that while integration is needed to improve the lives of waste reclaimers, municipalities should adapt themselves to the waste reclaimers' "well-functioning separation outside source system". While it is a different view, it does have merit due to numerous failed government-led waste reclaimer integration attempts. Samson (2020b) further highlighted that the integration case researched, which consisted of Pikitup and street waste reclaimers, had a negative impact on the waste reclaimers instead of benefitting them. Controversially, Samson (2020b, p. 2) argued that "integration is a mechanism of border control designed to eject and dispossess reclaimers rather than include them". This was because once the waste reclaimers left the failed integration, they lost access to the materials and were forced to collect in the early hours of the morning or sleep in the collection area to beat the recycling collection trucks. Samson (2020b) noted that the reclaimers found it ironic that Pikitup took over their streets where they collected, and the integration project turned them into thieves of the recyclables.

Similarly, Marello & Helwege (2018, p. 18) noted that waste reclaimer integration could also create a further exclusion for waste reclaimers who are not involved in the integration project. "*In middle-income countries, new waste picker co-operatives find themselves at odds with existing networks of waste pickers and with formal sector workers who exert considerable political power*".

Marello & Helwege (2018) further highlighted that the successful integration projects in South American cities only benefits the waste reclaimers that have the network. This is a reality for South African waste reclaimers, too, as many of the integration projects are done with waste reclaimers who are part of an organisation such as ARO, SAPWA or a co-operative.

In contrast, Marello & Helwege (2018) used a different approach by using the lens of government and highlighted some of the benefits of integrating waste reclaimers into the municipal collection system. The authors concluded that integration improves public health by waste reclaimers not working in landfills and reduces the amount of illegal dumping through the increase in collections. Secondly, cost savings by outsourcing the collections to the integrated waste reclaimers in co-operatives and reducing the waste going to landfills. Finally, reducing poverty as the integrated waste reclaimers will earn more and reduce the pressure on the government to provide jobs and homes to those in poverty.

Findings from the waste reclaimers van Heerden (2015) interviewed in Cape Town suggests that they do not want to form part of the formal waste sector. Sixteen waste reclaimers within the southern suburbs in Cape Town were studied, and some of them were alcoholics. Thus, these findings cannot describe all waste reclaimers in South Africa.

However, there have also been successful cases in other developing nations where waste reclaimers formed co-operatives and were successfully integrated (Aparcana, 2017; Douglas, 2017; Ezeah et al., 2013; Melanie Samson, 2015a). Benson & Vanqa-Mgijima (2010) highlighted that certain waste reclaimers were interested in organising to ensure better lives for all waste reclaimers in Cape Town. Similarly, the waste reclaimer participants in Godfrey et al. (2017) and Mkhize et al. (2014) highlighted a desire to be integrated.

Another apparent issue regarding waste reclaimer integration is the lack of waste reclaimer representation in these discussions. Samson et al. (2020) noted that it is essential to have waste reclaimers in the discussion to ensure that integration projects meet the highest priorities of waste

reclaimers when developing integration projects. Furthermore, Samson et al. (2020) highlighted that waste reclaimers felt the previous approaches, which are considered the "*charity model*", made waste reclaimers feel "*infantilised, denigrated, and disrespected*". Thus, making the chances of a successful integration project low.

The findings prove that integration is the preferred method in international cases. However, it is uncertain whether integration is the best route forward for South Africa's waste industry. Strides have been made over the past few years, but there is a lack of progress for waste reclaimers throughout South Africa. This lack of progress has seen waste claimer organisations such as ARO create their own separation at source programmes with residents to improve their livelihoods without integration (M Samson et al., 2020).

## Conclusion

The literature review sought to understand how and why the practice of waste picking emerged, waste reclaimers' livelihoods, and their impact on the recycling industry. It also investigated why waste reclaimers are kept in the informal sector or in disempowered positions through practices such as adverse incorporation and policies that are not inclusive of waste reclaimers. Finally, the literature presented research on the attempts to integrate them into the formal waste value chain and understand the barriers blocking them from integrating successfully and sustainably.

The importance of organising waste reclaimers, including them in the policies and institutional scaffolding, was highlighted as the key requirement from research in South Africa and other developing nations. Furthermore, integrating waste reclaimers is a process that involves various steps and stakeholders to occur successfully and sustainably. What was highlighted is that waste reclaimers need to be more involved in designing and developing waste reclaimer integration projects.

Most of the cases highlighted required waste reclaimers to be organised due to the constraints and policies when working with governments. Even with the new national guidelines in South Africa, waste reclaimers will still experience challenges integrating as most are not organised. Furthermore, the guidelines were developed based on various international and local experiences. Most of the local perspectives used were from waste reclaimers in the Gauteng and Free State province of South Africa, where waste reclaimer organisations are based, such as ARO and SAWPA. However, there is not much research on the existing waste reclaimer integration projects in the Western Cape. Therefore, this research will focus on identifying the viability of integrating unorganised waste reclaimers into a formal waste project focusing on the Western Cape. It seeks to understand the existing projects integration processes and roles required to make the integration process successful.

# Research Methodology

This research aimed to understand how unorganised waste reclaimers in the Western Cape are integrated into formal waste management projects. This involved understanding the intricacies of the processes used to initiate the project, form the team, approach the waste reclaimers, the integration process, the outcome, and the challenges and benefits experienced for both the formal and informal parties.

A further aim of the research was to identify the differences between the waste reclaimer integration processes in the Western Cape and the rest of South Africa. Much of the previous integration research in South Africa is based on waste reclaimers in Gauteng, which has also influenced the national waste reclaimer integration guideline. Therefore, this research highlights potential differences experienced in the Western Cape.

The desired outcome of this research was to develop a framework on how to integrate waste reclaimers into the formal value chain in the Western Cape, where most waste reclaimers are not organised. The framework will potentially be used by an 'institutional intermediary' who will initiate and implement the framework to integrate waste reclaimers into the formal waste sector. This chapter will explain the research method and design followed and the reasons for choosing them; it will also explain how data were collected and analysed and how cases were chosen. Lastly, this chapter will explain the research criteria, limitations and ethics.

## Methodology Selected

The methodology used in this research was a qualitative approach. This was chosen as it aligned with the problem this research set to investigate, which was the challenge of successfully and sustainably integrating unorganised waste reclaimers into the formal waste value chain. Furthermore, it was appropriate because of the lack of prior research performed on the waste

reclaimer integration attempts in the Western Cape. As highlighted in the literature review, most prior waste reclaimer research was in Gauteng and the Free State.

Research had to be performed on the integration processes used in existing waste reclaimer integration projects involving unorganised waste reclaimers to investigate the problem. According to Garcia & Gluesing (2013), qualitative research "provides an ideal approach to understanding these new work contexts; including considerations of complex multi-stakeholder organizing, how work practices and organizational structures and cultures evolve, and how organizations design and implement such changes to meet new challenges" (pg. 2). This highlights the appropriateness of using qualitative research based on the problem this research investigated. Furthermore, this research investigated the integration process on multiple levels, the formal participants and the waste reclaimers, and understood the particulars of the members that participated in the integration project, which is another contribution and strength of qualitative research (Garcia & Gluesing, 2013; Ayres, Kavanaugh, & Knafl, 2003). Finally, this research's mode of reasoning was focused on theory generating rather than testing. It focused more on process rather than variance. The sampling was theoretical rather than random, and the data collected were primarily qualitative. Theoretical sampling was used to identify cases involving unorganised waste reclaimers and a formal entity, either a public or private entity. The qualitative approach included a combination of semi-structured interviews, desktop research and observations to collect data, as this strengthened the grounding of theory by 'triangulation of evidence' (Eisenhardt, 1989, p. 3). Furthermore, these interviews were performed with various parties involved to ensure greater understanding from different perspectives.

This research resulted in significant amounts of data collected from the interviews, desktop research and observation data such as field notes. After the data were obtained, the analysis of the data commenced and consisted of the following steps:

1. Analysis of each case and do a within-case analysis (write up) as they are central to the 'generation of insight' and assist with managing large amounts of data at the early stages of research (Eisenhardt, 1989).
2. Search for cross-case patterns through performing the sense-making strategies discussed further in the data analysis section.
3. Use identified patterns from the previous step to develop a framework that displays the major activities in the process of formalising and integrating waste reclaimers into the formal waste sector.
4. Shaping hypotheses.

## Research Design

The case study research method was used to gather data on the integration process and the formal and informal members, where integration and formalisation occurred. The problem this research seeks to understand is a complex social phenomenon, one of the main reasons the case study method was chosen (Yin, 2009). Case study research allows the researcher to investigate everything regarding the phenomenon being studied, such as the individuals, groups, activities or a specific phenomenon (Cronin, 2014). The researcher then gains a detailed understanding of the experiences of each of the members involved in the integration (Yin, 2009). Furthermore, Yin (2009, p. 18) highlighted that the case study research method is an "all-encompassing method – covering the logic of design, data collection techniques, and specific approaches to data analysis". Furthermore, the main research question is ‘What is the process to formalise and integrate unorganised waste reclaimers into the formal waste value chain in the Western Cape?' Yin (2014) highlighted that case studies are suitable when asking “how,” “why,” “what,” and “who” questions.

Yin (2014) noted three types of case studies, descriptive, explanatory and exploratory. The exploratory case study research method was chosen for this research. The aim was to understand a

real-life phenomenon in-depth (Yin, 2009), such as the integration processes used to integrate unorganised waste reclaimers into formal projects in the Western Cape. Exploratory case study research focuses on building theory, whereas descriptive and explanatory research focuses on testing current theory (Yin, 2014). Furthermore, exploratory case study research was used over surveys or experiments to explore connections between complexities (Yin, 2014).

A multiple case study design was used to identify replication and ensure robust findings (Yin, 2009). Five case studies in total were selected from the Western Cape province, and each case required between 3 and 7 interviews, depending on the number of members in the project. The number of personnel interviewed varied depending on the case.

The design of this research was based on the combination of two case study design methods, Building Theory From Case Study Research by Eisenhardt (1989) and Case Study Research - Design and Methods Fourth Edition by Yin (2009). Based on the steps in Table 2, I used the approach of Yin (2009) for the first four steps. The approach of Yin (2009) provided the structure and framework required for those steps, such as The Case Study Protocol. However, from the fifth step, I used the approach of Eisenhardt (1989) for the analysis and pattern searching.

### *Data Collection Methods & Research Instruments*

As highlighted in the research design, the stages before the analysis stage were based on the Yin (2009) approach. The Case Study Protocol tool by Yin (2009) was followed to create a data collection plan. The data collection plan focused on creating a structure for the case study design and planning for the type of data collected, how it will be collected, and who it will be collected from. The Case Study Protocol (see Appendix C) focused on preparing the field procedures, name of sites to be – including contact details, in-field resources, the data collection plan and case study questions, along with the likely sources of evidence before data collection.

**Table 2**

*Process of building theory from case study research*

| Step | Activity |
|---|---|
| Getting Started | Definition of the research question<br>Possibly a prior research construct |
| Selecting Cases | Neither theory nor hypotheses<br>Specified population<br>Theoretical, not random, sampling |
| Crafting Instruments and Protocols | Multiple data collection methods<br>Qualitative and quantitative data combined<br>Multiple investigators |
| Entering the Field | Overlap data collection and analysis, including field notes<br>Flexible and opportunistic data collection methods |
| Analysing Data | Within-case analysis<br>Cross-case pattern search using divergent techniques |
| Shaping Hypotheses | Iterative tabulation of evidence for each construct<br>Replication, not sampling, logic across cases<br>Search evidence for "why" behind relationships |
| Enfolding Literature | Comparison with conflicting literature<br>Comparison with similar literature |
| Reaching Closure | Theoretical saturation when possible |

*Note.* (Source: Adapted from Eisenhardt (1989))

The evidence was gathered through a desktop study, semi-structured interviews, in-person and virtually, with various cases and observations from site visits. This provided multiple views on how the integration process was formed from initiation to execution and from different perspectives (Eisenhardt, 1989).

The majority of the interviews with the members from the formal sector were performed virtually as they had access to the internet and virtual meeting platforms. While in-person meetings

were challenging due to COVID-19, on-site interviews with the waste reclaimers were performed. This also allowed for observations to be made and to understand the project operations. The on-site interviews provided more context for each project by seeing the actual sites where they worked, such as the landfill where waste reclaimers collected their recyclables before being integrated or the equipment used, such as the recycling trollies. Furthermore, it was requested if documentation was used in the process, such as agreements, rules, or educational material. Certain cases required a second round of data collection after the initial analysis of the data as the analysis opened up new questions or highlighted a lack of data regarding certain sections. In particular, the second data collection focused on timelines, such as when certain activities occurred. This data was required to build a timeline of each case. This second round used various tools such as phone calls, emails, instant chat and more interviews if required.

The first case researched was the Brawane Trolley Project based in Brawane (note that the names of the companies, project, participants and communities have been changed for anonymity). This included one virtual interview with C1-F4 (see table 4 for the interviewees and their corresponding codes), 2 in-person interviews each with C1-F1, C1-F2, C1-F3 and C1-F5, and an in-person interview with two integrated waste reclaimers, C1-I1 and C1-I2. The interviews were semi-structured and focused on the participant's experience of the integration process, why and how it occurred and who was involved. Following the completion of the data collection of the Brawane case, the Wantal (3 interviews with four members), Palabong (4 interviews with five members), Kumarone (3 interviews with six members) and Alitho (3 interviews with three members) cases were then researched. All the cases performed the integration process for various reasons, which will be highlighted in the analysis.

The interview questions were adjusted from the standard set of questions (see Appendix A) based on desktop research or insights from previous interviews. Interviews were mainly prepared for English; however, I translated the questions for certain cases where the interviewee was only

Afrikaans speaking. Furthermore, written documents on project rules and processes, emails between project participants, website articles, project presentations and WhatsApp messages were also used to gather data. This process was performed over three years, from 2019 to 2021. Table 3 provides an overview of the data collected for each case and Table 4 provides the Interviews and corresponding codes for the cases studies.

### *Sampling*

This research focused on projects that integrated unorganised waste reclaimers into a formalised project. The case studies were selected based on an existing integration process between a formal waste entity, either public or private, and an informal waste entity, a group of independent waste reclaimers. The integration project needed to meet specific requirements to qualify for the sampling process. Firstly, the project needed to focus solely on integrating waste reclaimers, not unemployed people who included waste reclaimers. Secondly, the integration had to happen within the last five years to ensure descriptive recalling of events were possible. Thirdly, the projects did not need to be active; however, all the cases chosen were. Finally, the projects needed to be based in the Western Cape.

Five case study projects were chosen, all based in the Western Cape region. Table 5 provides an overview of the five case studies. The key people in the research were the integrated waste reclaimers, the key broker that managed the integration into the formal project and members from the formal entities.

**Table 3**

*Case study data summary*

| Code | Case | Data Summary |
|---|---|---|
| C1 | Brawane | 2019-2021:<br>Interviewees (7): Bard Boulevard Community Improvement District (BBCID) (3), Totteg Acre Partnership (TAP) (1), GreenWane (1), Integrated waste reclaimers (IWR's) (2).<br>Documents: Meeting minutes (1), Business survey (1).<br>Observations: Visiting Brawane to interview the IWR's and view their trolleys and operational process. |
| C2 | Wingston | 2020-2021:<br>Interviewees (4): Davulane Municipality (1), Project volunteer (supervisor) (1), Integrated waste reclaimers (IWR's) (2).<br>Documents:<br>Observations: Visiting Wingston to interview the IWR's and view their landfill and the operational process. |
| C3 | Palabong | 2021:<br>Interviewees (5): Davulane Municipality (3), Qamama Enterprise/IWR's (2).<br>Documents: Rules and Conditions (1).<br>Observations: Visiting Palabong to interview the IWR's and view their operational process at the Davulane Municipality waste transfer station. |
| C4 | Kumarone | 2021:<br>Interviewees (6): Silver Brews (2), IWR's (4).<br>Documents: Project presentation (1).<br>Observations: Visiting a project buyback centre to interview the IWR's and view their operational process in Kumarone. |
| C5 | Alitho | 2020-2021:<br>Interviewees (3): The Inclusive Recycling Company (TIRC) (2), IWR's (1).<br>Observations: Visiting the project operation to interview the IWR and view their operational process in Alitho. |

**Table 4**

*Interviews and corresponding codes for the cases studies*

| Case | Organisation | Designation | Code |
|---|---|---|---|
| Brawane | BBCID | Social development manager | C1-F1 |
| | | Social worker | C1-F2 |
| | | Precinct manager | C1-F3 |
| | TAP | Project manager | C1-F4 |
| | GreenWane | Manager | C1-F5 |
| | Independent | IWR 1 | C1-I1 |
| | Independent | IWR 2 | C1-I2 |
| Wingston | Davulane Municipality | Senior manager | C2-F1 |
| | Project volunteer | Project supervisor | C2-F2 |
| | Independent | IWR 1 | C2-I1 |
| | Independent | IWR 2 | C2-I2 |
| Palabong | Davulane Municipality | Senior manager | C3-F1 |
| | | Awareness and education officer | C3-F2 |
| | | Functional management manager | C3-F3 |
| | Qamama Enterprise | IWR 1 | C3-I1 |
| | Qamama Enterprise | IWR 2 | C3-I2 |
| Kumarone | Silver Brews | Project manager | C4-F1 |
| | | Sustainability coordinator | C4-F2 |
| | Independent | IWR 1 | C4-I1 |
| | | IWR 2 | C4-I2 |
| | | IWR 3 | C4-I3 |
| | | IWR 4 | C4-I4 |
| Alitho | TIRC | Operations manager | C5-F1 |
| | | Waste picker integrator | C5-F2 |
| | Independent | IWR 1 | C5-I1 |

**Table 5**

*Case study overview*

| | C1 - Brawane | C2 - Wingston | C3 - Palabong | C4 - Kumarone | C5 – Alitho |
|---|---|---|---|---|---|
| Type of organisation (s) | Private - NPO | Public – Local Municipality | Public - Local Municipality | Private – Pty Ltd | Private – Pty Ltd |
| No. of project partners | 6 – TAP, BBCID, GreenWane, UT, Brawanepak, FEH | 2 – Meghan & DEA&DP | 1 - QE | 6 – COC, DEA&DP, Kumabank, Befebanta, Recycling Technologies & Recycling Solutions | 1 – City Assignment |
| Type of waste reclaimers | Street | Landfill | Landfill & Street | Street | Street |
| Size (WR's) | 8 | 19 | 16 | 140 (40 members from COC) | 10 |
| Operational Area Type | Business district | Government landfill | Government MRF | Residential: Peri-urban | Residential: Peri-urban |

## Data Analysis Methods

After the data collection process was completed, specific interviews and documents needed to be translated from Afrikaans to English before the analysis could begin. Following the translations, the data were analysed and coded. The coding, which was done on NVIVO, focused on various factors, which can be seen in Table 6.

**Table 6**

*Main coding sections*

| How the integration happened |
|---|
| 1. Illegal vs legal waste picking |
| 2. Pre integration work |
| 3. Project operation method |
| 3.1. Operation styles |
| 4. WR approach method |
| 5. WR integration process |
| 5.1. Formal entity challenges |
| 5.2. Inclusiveness |
| 5.3. Integration process |
| 5.3.1.Substance abuse |
| 5.4. WR challenges |
| 5.5. COVID19 |
| |
| Waste industry views |
| 1. Bias towards formal sector |
| 2. Highlight Integration Need |
| 3. Levies, Funding & EPR |
| |
| What was the outcome |
| 1. Benefits to WPs |
| 2. Hopes |
| 3. Project outcome |
| 3.1. Success factors |
| 4. Timeline elements |
| |
| Why this integration happened |
| 1. Motivations for being involved |
| 2. Views on waste reclaimers |

| |
|---|
| 3. Who was involved |
| 3.1. Third party integrations |
| 3.2. WR characteristics |

The coding also highlighted a lack of data on a particular topic for some instances. This resulted in setting up more interviews or communicating with specific participants via email, WhatsApp or call. Upon the completion of coding each case, a report was created on the case, between 20-25 pages long. However, this dissertation's reports are summarised to ensure the chapter does not go over the limit of 15000 words. The reports focused on the coding categories highlighted in Table 6, which were developed on and exported from NVIVO.

These case study reports were then compared to identify cross-case comparisons and similarities and differences between the cases. Two rounds of cross-case comparisons were performed. The first round compared each case on various factors concerning the integration project. However, this resulted in many high-level findings which lacked depth. However, this first round highlighted significant findings consistent across the cases, which were then focused on during the second round of comparisons. The second round gave rise to a process model, see figure 11.

The process model highlighted a consistent flow of activities in all the cases: the integration process began with an initiation step to plan the project. Following this, they then gathered resources to begin an experiment. However, at this stage, the cases faced a challenge. These challenges lead to a ‘turning point’, a moment that was generally forced by the challenge faced. The turning point required the project actors to go back in the process and gather the required resources to solve the challenge.

In most cases, the solution came via the involvement of a ‘key broker’. The key broker role in the cases was the broker between the project and the waste reclaimers. While the position was not

formally listed as a 'key broker', the role was consistent through all the cases. The role was required to assist the project team with connecting with waste reclaimers, integrating them, and supervising them.

The phenomenon of the key broker was not an initial focus, but upon analysing the data, it became more apparent that it should be. Initially, the research objective was to understand the integration process to identify the factors that assisted the integration to succeed or fail. However, through conversations with the research supervisor, it was decided that the initial findings were high level and lacked the substance to make a strong argument. The role of the key broker emerged, and a decision was made to focus on that as the key finding.

## Research Criteria

### *Validity & Reliability*

To ensure validity & reliability, I used the following three tests, which have been used to ensure the quality of various types of social research (Yin, 2009).

- Construct Validity – involves identifying correct operational measures for the concepts being studied.
- External validity – involves defining the domain to which a study's findings can be generalised.
- Reliability – involves demonstrating that the operations of a study, such as the data collection procedures, can be repeated with the same results.

The tactics for these tests can be seen in table 7. The research ensured internal validity by using multiple sources of evidence gathered during data collection. Interviews with multiple participants were performed, and desktop research, documents and observations were also used. In addition, an established chain of evidence was added by creating reports for each case study that cites the interviews, documents, and observations and establishing a case study database that

houses the transcripts, images, documents, and observations with details regarding their creation date and time.

The research ensured external validity by using multiple case studies to identify replication and confirm robust findings.

Reliability was ensured by using a case study protocol, creating folders to store all data collected per case and uploaded transcripts, images, documentation and observations to NVIVO.

**Table 7**

*Case study tactics for four design tests*

| Tests | Case Study Tactic | Phase in research in which tactic occurs |
|---|---|---|
| Construct Validity | • Use multiple sources of evidence<br>• Establish a chain of evidence<br>• Have key informants review draft case study report | • Data collection<br>• Data collection<br>• Composition |
| External Validity | • Use theory in single-case studies<br>• Use replication logic in multiple-case studies | • Research design<br>• Research design |
| Reliability | • Use case study protocol<br>• Develop case study database | • Data collection<br>• Data collection |

*Note.* (Source: Adapted from Yin (2009))

## Inclusion of an Insider Research Case

I disclose that I am a co-founder of the Alitho project company, TIRC. Initially, the company focused on motivating South Africans to recycle by making a professional recycling service accessible to them and a behaviour change tool that incentivises residents to recycle. However, through experience, I learned about the critical role of waste reclaimers in the ecosystem and wondered how it was possible to work together. The idea was sparked while I attended a Mphil in inclusive innovation block week. The lessons learned about what inclusive innovation is and what it means to be inclusive assisted with creating the method for the Alitho project company to begin its work with the waste reclaimers. I also began reading about waste reclaimer integration from an academic standpoint. The literature review findings highlighted the high failure rates of previous integration efforts in South Africa and some local and foreign successes. Together, these findings and my vision for our company motivated me to explore a deeper understanding of waste reclaimer integration.

I used various research methods to reduce biases in the research process, especially in my own company. The following steps were taken when performing interviews with the Alitho project members:

- I performed the interviews out of work hours over weekends to ensure the interviewees were not in a working state of mind which could have impacted how the interviewees responded and how I asked the questions.
- I asked the same questions to interviewees from the Alitho project that were asked to the participants from other cases and did not use insider knowledge to answer questions or develop findings for the case.
- I clarified to the participants that I was interviewing them in their capacity as a student. They should assume that I do not know anything about the Alitho project to ensure that interviewees answered the questions without any assumptions.

However, being personally engaged in the research can also have benefits. As Bishop et al. (2018, p. 2) noted:

> "*Researchers working from the inside-out are motivated and positioned to employ deep, long-term, real-time engagement, with access to many types of sensitive data, often unavailable to outsiders. Researchers for whom events have direct personal relevance as insiders to a phenomenon and organization, thus, have the means to bring different and deeper insight and richer understandings to organizational research by including their experiences"*.

Having such insight allowed me to understand the responses of the interviewees. For example, during interview C3-I1, the participant highlighted that the buyback companies pay them less because they are further away from the metro city. I asked the participant how much they received, and the answer was an unbelievably low price. I urged the participant to double-check their invoices, and it turned out that the participant was referring to the price per kilogram and not tonne. By not having that insight, an outcome could have been that they have a challenge of getting unfair pricing. However, the statement was corrected, and that was avoided.

While researching the rest of the cases, I used bracketing techniques to avoid bias or assumptions. Tufford & Newman (2012, p. 2) define bracketing as a "method used by some researchers to mitigate the potential deleterious effects of unacknowledged preconceptions related to the research and thereby to increase the rigor of the project". While there are various methods of integrating bracketing, I primarily focused on the note-taking technique. This technique required me to take notes during the data collection and analysis phase, which I used when writing about the specific case.

Lastly, the case study reports presented in chapter 4 are summarised versions of the original reports to abide by the maximum word count rules per chapter. Most of the critical information has

been retained. However, some more granular details and sections had to be removed to simplify the research results reported.

## Research Ethics

### *Ethical Considerations*

Before research could commence, I had to apply for ethical clearance from the university's ethics committee. During this process, I had to specify the background of the research, the methods and the type of data that would be collected. Furthermore, after each calendar year, this process has to be repeated.

In facilitating the research and data collection, informed consent was required before each interview; I provided each interviewee with a physical or digital form. I would then explain their research and the participants through the consent form. In addition, I sought permission to record during data collection. This was to be followed by discussing the consent form and the interviewees providing their consent. I then moved on to ask their permission to record the interview. If the interview was in-person, it was recorded using a smartphone, with a virtual interview recorded via the platform. A copy of the consent form can be found in Appendix B.

The names of the companies, projects, participants and communities were purposely altered with aliases replacing them to ensure anonymity. This was particularly helpful while writing up the case study reports and findings. Furthermore, in this chapter, participants were referred to via an interview code that linked them to a case and role. This was done as the participant's pseudonyms were only introduced from chapter 4.

# Cases

## C1 – Brawane

### *Overview*

The Brawane Trolley Project (BTP), described as a *"facilitated programme that provides personal and economic development opportunities for WR's"* (TAP, 2018, para.1), is a cross-collaboration initiative focused on improving the lives of WR's in Brawane. The project is a partnership between Totteg Acre Partnership (TAP), Bard Boulevard Community Improvement District (BBCID), GreenWane, and From Enable Help (FEH).

**Photo 1**

*BTP WPWR's with their trolley*


*Note.* (Source: Author's own, 2020)

### *Why was this project initiated?*

#### Who was involved and why?.

***Formal entities.*** Brawanepak - Brawanepak, a paper product manufacturer, created the spark that began the BTP. Whitney Preston, the social development manager at BBCID, highlighted that a representative from Brawanepak and TAP requested her assistance connecting Brawanepak to an NGO or shelter that could assist them with setting up a buyback centre for WR's in Brawane (C1-F1). She further highlighted their interest in setting up a buyback centre were to obtain more paper and invest their CSI funds (C1-F1).

Gary Frederick & Paul Vern - After being approached by Brawanepak and TAP representatives, Whitney knew Gary Frederick & Paul Vern, who developed a trolley to assist the WR's as part of their course at Brawane Business School. Whitney then invited Gary and Paul to join a meeting with Brawanepak and other stakeholders in the project. She highlighted that they had a few meetings, but they no longer continued with the project after their studies (C1-F1).

BBCID - The BBCID's goals are to have a clean, safe and sustainable environment. They are also responsible for the crime and grime in the Brawane area. Whitney highlighted that the motivation to join was because many WR's lived on the streets in Brawane, which is considered 'grime' (C1-F1). From a crime perspective, WR's generally stole trolleys from the clients of BBCID, such as supermarkets and used them to transport their recyclables. This theft generally led the security team of BBCID to confiscate the trollies from the WR's. Because of this situation, BBCID got involved with the project. Jerry Parker, a social worker from BBCID, was also involved and Lena van De Merwe, a precinct manager. Jerry's role was to build relations with the WR's, get them involved with the project and address the substance abuse. Jerry had experience working with homeless people in Brawane and was well-known amongst them.

TAP - According to The TAPP (n.d.), it *"is mandated to promote and accelerate the regeneration and upliftment of Brawane and surrounding areas, to drive its future as a prosperous, successful and attractive commercial centre for business owners, and a vibrant, inclusive, safe and modern hub for residents, students and the general public."* (Para. 2)

Marlee Milton, a project manager from the TAP, was the person representing TAP in the BTP. Her role was to get the businesses to join the project and provide recyclables to the WR's. She performed initial market research to gauge the interest of the businesses. After the market research, she linked the WR's with specific businesses. The TAP also played a sponsor role by covering the costs for the initial research done by Professor Cynthia Sylvester and the stipends to ensure the WR's attend training.

FEH - From Enable Help (FEH) is a social development organisation based in Brawane providing services to the homeless and unemployed. Whitney highlighted that she got FEH involved as their GROW Job and Life Rehabilitation Programme would assist the WR's integrated into the project (C1-F1). Brawanepak proposed that FEH be responsible for managing the buyback centre during the initial meetings and that participants of their GROW programme would work as sorters, which Brawanepak would pay through their CSI funds ("Recycling and Trolley Project meeting - 25 April 2017," 2017).

GreenWane - GreenWane is an organisation tasked with developing and promoting the green economy. The BTP forms part of its circular economy programme. The GreenWane representative in this project was Kenly Bertha. Kenly met Whitney, from BBCID, at a conference and, after hearing the BTP, offered her assistance to research WR's and buyback centres in Brawane. Kenly's contribution consisted of providing waste industry expertise, researching the WR's and buyback centres in Brawane, providing connections to the relevant personnel from the City of Chadika government and ensuring that the buyback centres the project partnered with were legal.

University of Tetang (UT) - Professor Catherina Sylvester from the University of Tetang was introduced to the project by Kenly as she was already performing research on WR's in the Western Cape region. Professor Sylvester joined the BTP to assist the project team in researching what is currently happening in the Brawane CBD area regarding recycling, WR's and buyback centres. She consolidated all her findings from her research and presented them to the project team, who could then decide how to move forward regarding the project.

***Informal entities.*** Waste Reclaimers- This project focused primarily on the street WR's in the Brawane CBD area. Currently, eight WR's are part of the project, some living in shelters and others living at home. Jerry highlighted that the WR's living in the shelter would like to be at home but do not make enough money (C1-F2). Furthermore, most of them collected the recyclables using stolen Shoprite trolleys in the past. However, that is illegal, and BBCID generally confiscates the stolen trolleys from them.

The project WR's are also survivalists that are highly dependent on their daily income from the recyclables they collect. So much so that when the project team set up a training session, none of the WR's joined. This resulted in the project team providing the WR's with a stipend if they attended.

## *How the integration happened*

### Pre-integration work.

***Research.*** Before the project launched, the team performed two research activities to help inform decision making. First, the TAP was responsible for performing market research with the businesses in the Brawane CBD area. Second, the TAP team produced a survey and distributed it to their database of businesses in the Brawane CBD. Marlee highlighted that the survey was intended to gauge their interest in the concept of 'adopting a WR', which would entail each business being

assigned a WR and collecting their recyclables (C1-F4). From the survey, 65% of the 100 businesses were interested and were keen to join the project.

The second research activity, which GreenWane and UT performed, focused on the WR's and buyback centres in the Brawane CBD. Marlee noted that the research focused on WR earnings, collection sources, distance travelled, and their perception of their work (C1-F4).

***WR approach method.*** The WR approach method for the BTP was semi-structured, with steps and procedures but also ad hoc methods. The ad hoc method mainly occurred because Jerry was well-known and trusted by WR's and approached him privately instead of the prescribed process.

**Photo 2**

*Jerry addressing the BTP WR's*

*Note.* (Source: TAP's website, 2021)

***Approach methods.*** First approach method: Structured approach - Using the market research on WR's and buybacks in the Brawane CBD, the project team approached a buyback centre to partner with. Marlee highlighted that the project team chose the particular buyback centre as most WR's from the research sold their recyclables there (C1-F4). However, Marlee also highlighted that it was not a partnership, it was just an 'interaction', and the owners were willing to assist them in getting the signups (C1-F4). This 'interaction' allowed the project team to engage with the WR's who sold at the buyback centre and inform them about the project and the benefits if they joined. The first phase of this approach method included a register which the buyback managed. The WR's had to fill in this register each time they sold their recyclables. This register created a database of the regular and consistent WR's.

Ad hoc approach - News about the project also spread through word of mouth amongst WR's. The WR's who never met the team at the buyback centre would approach Jerry directly as he is known and trusted amongst the WR's and homeless people.

***Second approach method.*** A second approach was required after the project's launch, as five of the ten WR's integrated from the structured WR's approach fell off the project. Marlee noted that the five falling out of the project was mainly because they were substance users (C1-F4). She also highlighted that many businesses closed during COVID-19's initial lockdown was another reason for some members falling out (C1-F4).

For the second approach, the project team had to find a new method to attract WR's as the buyback centre they worked with did not want to continue the relationship. The project team discovered that this buyback centre was operating illegally. Due to the spotlight of the project, the business owner decided to not continue with this 'interaction'. The project team then approached specific WR's who stayed in the FEH shelter and were part of the GROW job creation programme. One of the FEH shelter perks is the 'shifts' available to work and earn money through the GROW programme. Ashton Sawyer, one of the WR's integrated into the project and stays at the FEH

shelter, highlighted that they earn R60 per four-hour shift (C1-I1). However, that is only when there are shifts available. Seth Mac, another WR in the project staying at the shelter, highlighted that he would then go and collect recyclables when he does not have a shift (C1-I2). The WR's from the shelter need to make enough money to pay for their shelter, which is R10 per night, R2 per locker, and food. The WR's had to have already gone through the screening process to stay at the shelter. This was performed with the WR's in the first approach method. This process made integrating WR's from the shelter simpler.

**What was told to the WR's.** Due to the two approach methods used, the message and value propositions at the two approach locations were different. To the WR's from the first approach, the message was more focused on the legal and professional elements of the project at the buyback centre. WR's were told about the project's objective, to legalise and professionalise waste picking by connecting WR's to businesses with recyclables, providing them PPE, identification and legal trollies. This focus on legal and professional could have been motivated by the relationship WR's have with BBCID, who confiscates their recyclables and trollies if it is a stolen trolley.

However, the shelter WR's' approach method was slightly different as they have shifts that they perform at the shelter. The approach was more around promoting it as an added benefit to their current lifestyles.

### *The outcome of the approach methods*

The objective of their first approach was to identify the 'regulars' from the WR's in the Brawane CBD area and integrate them into the project as the first members. Marlee noted that the regulars are likely to be the ones who work the *"hardest, bring in the most waste"*, and are therefore more reliable, which will be important when they get introduced to businesses (C1-F4).

However, the screening activity was why most did not move forward and join the programme. The screening made the project much less attractive as there were twenty WR's after

the screening, but only eight were introduced to the businesses. The screening process required the WR's to disclose personal information such as if they are addicted to substances, income, living conditions etc.

The second approach method was required as, at one point, they lost five of the eight WR's in the project. They approached WR's who stayed in the shelter and was part of a job creation programme. This made integrating them much more accessible as everyone who stays at the shelter needs to be screened.

### *WR integration process*

#### Integration process.

***Step 1 – Commitment.*** The first step for the WR's to join was to show commitment by filling in a register each time they sold their recyclables at the buyback centre. This process was to be completed for at least a month. After showing their commitment for a month, they were invited to be assessed by Jerry.

***Step 2 – Assessment.*** The assessment, Whitney refers to as a "psychosocial report", consists of the following (C1-F1):

- Basic personal and background details - name, surname, where they originally come from, schooling background, how many children they have, the highest qualification.
- Substances – If they use any, what kind of substances do they use, and how frequently they use them.
- Finances - how do they handle their finances? What do they spend it on? How much did they earn per day?

***Step 3 – Substance abuse.*** If they are addicted to any substance, they get referred to the rehabilitation facility by Jerry and need to make an appointment for themselves. Once they have done so, they can continue with the integration process.

***Step 4 – Access to PPE.*** This PPE includes gloves and project branded bibs which confirmed their participation with the BTP.

**Photo 3**

*BTP WR's receiving PPE*

*Note.* (Source: TAP's website, 2021)

***Step 5 – Monitor for consistency.*** For the next two months, they monitored the WR's for consistency. Marlee highlighted that the monitoring stage looked at if they kept their PPE and if they brought in waste consistently, which was monitored by the report of the buyback centre (C1-F4).

***Step 6 – Business introduction.*** At this stage, the WR's officially part of the programme was then assigned to businesses in the CBD by TAP, where they could access clean recyclables, especially cardboard. However, only five pitched to be matched with a business from the eight WR's. Therefore, weekly collections were performed by allowing each collector to collect from four businesses each.

***Step 7 – Monitor performance.*** Following their introduction, they were monitored for another few months. Then, Marlee noted that they followed up with the businesses to understand if the WR's were coming to collect consistently and on the specified days and time (C1-F4).

***Step 8 – Provide the WR with a trolley.*** After a month of monitoring them, they then received a recycling trolley. However, the project initially only had four trolleys, which they gave to the four most consistent WR's.

### *Project operation method*

Figure 1 provides an overview of the operational process for the BTP.

**Collection spots.** The project WR's are assigned businesses to collect from Marlee, and the businesses liaise with her regarding collection days before forming their relationship with the WR's. Once the WR's have collected from the project locations, they also collect from their spots before joining the project.

The project WR's took their role seriously and were very professional when finding new clients. Ashton highlighted that he would visit shops, build up his clientele, sweep in front of their stores, then receive recyclables and even money for his services (C1-I1). Ashton further highlighted that as someone who knows Brawane and who stayed in a shelter, he knew where the hotspots were to get recyclables (C1-I1).

**Trollies.** The WR received a trolley to collect the recyclables as part of the project. Marlee noted that the WR's had to book out the trolleys during the lockdown when they used them (C1-F4).

**Project rules.** The project WR's need to abide by specific rules when performing their duties. Ashton highlighted that the rules are as follows (C1-I1):

- Wear the project bib
- Be presentable
- Do not consume alcohol or smoke while working with the trolley
- Do not fight with one another over recyclables

**Financial distribution.** The project WR's would usually collect all their recyclables, combine them, sell them, and split the money evenly. However, Ashton did not enjoy this distribution method

and suggested that they get a scale to determine how much each WR brought in before combining it as “at the end of the day everybody wants a fair deal of the share” (C1-I1). Seth disagreed with that method and responded, *“It doesn’t matter if you bring today ten kilos then he bring today six kilos and we make it just fill up and then afterwards we take it and sell it, even up”* C1-I2. This highlighted some disagreement in the operation of the financial distribution.

### *What was the outcome*

The project was established in 2017 and had many periods where the project was not progressing due to various factors, the latest being COVID-19. However, they have managed to integrate 8 WR’s into their project and convince 22 businesses to join.

The WR’s involved in this project feel that the project has improved their work routine, specifically the trolley and being considered a legal WR within Brawane. However, they highlighted that they need the community involved and the other WR’s to work on a larger scale. In Brawane, there is a clear distinction between legal and illegal WR’s, which has caused specific illegal WR’s to target and threaten some of the WR’s in the project.

The formal entities believe that the project has been a success thus far. Marlee highlighted that the introductions to the businesses resulted in them creating relationships with the WR’s, which has created a sense of belonging and dignity for the WR’s (C1-F4).

Today, the project is still growing. Brawanepak is back in the project. Currently, the project team is expecting Brawanepak to provide three containers that will be used to set up a buyback centre at the FEH shelter. Also, the project does not give a trolley to one WR. Instead, people who form part of the GROW teams at FEH interested in participating in the project receive a trolley for that day and return the trolley each day to FEH. Figure 2 provides a timeline of the integration process development.

**Project operation.**

**Figure 1**

The operational process for the BTP

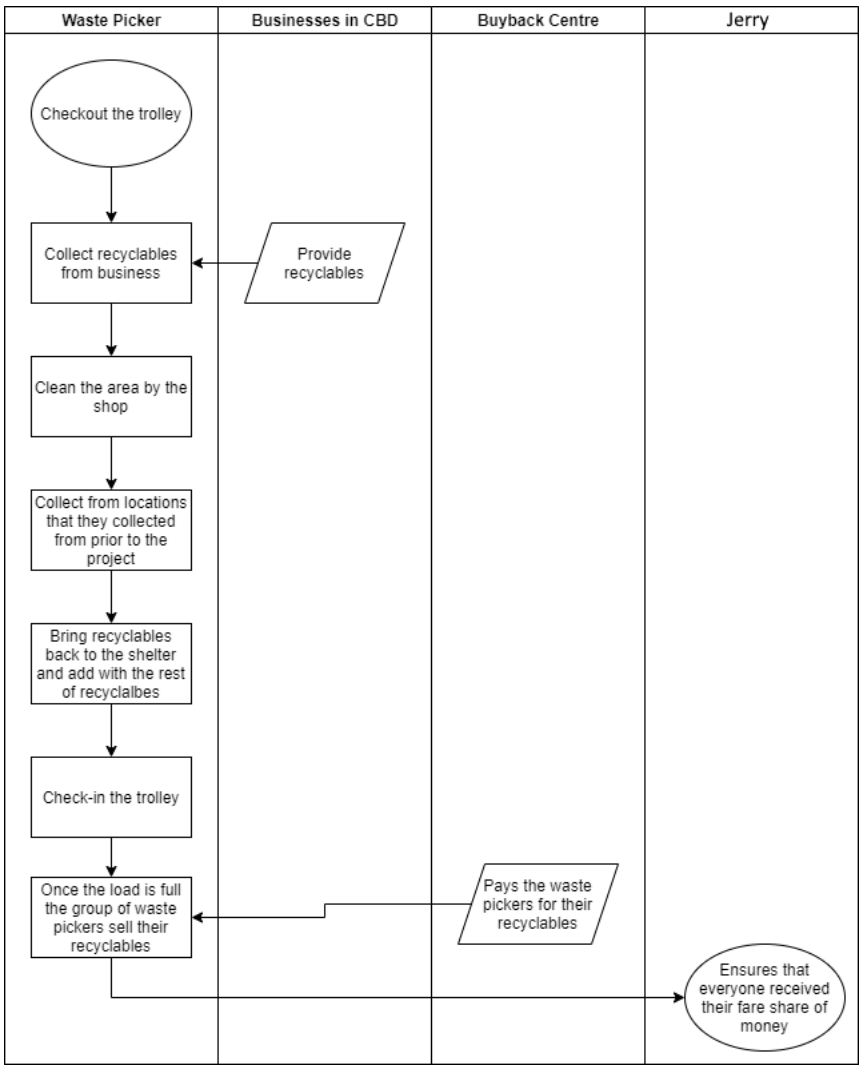
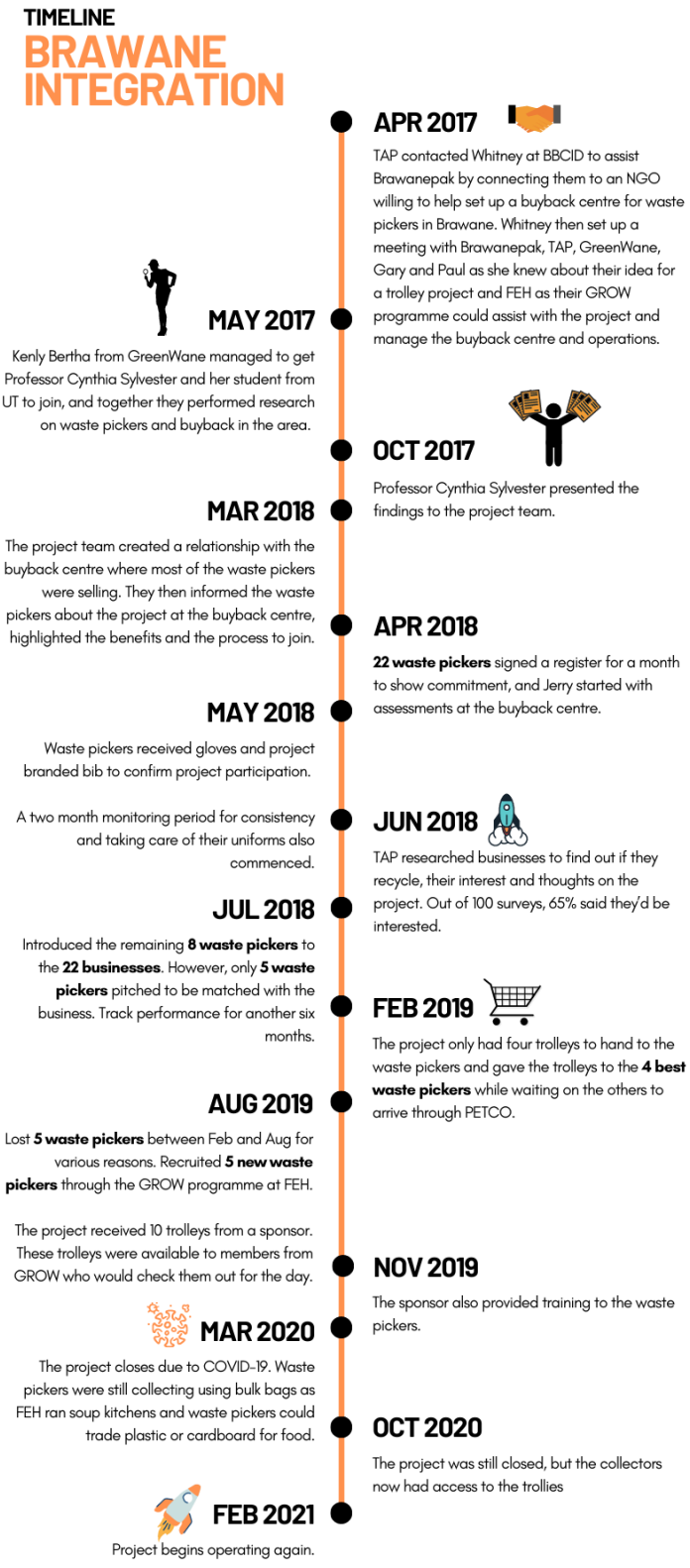


**Figure 2**

*BTP Integration Timeline*



**Benefits to WR's.** The BTP provided many benefits for the WR's.

***Access to PPE & trollies.*** Integrated WR's involved got access to gloves and bibs. However, only the few who made it to the final round and were the most consistent received access to the trollies. Ashton highlighted that the trolley made their lives easier than their previous method of pulling bulk bags around (C1-I1).

***ID's & cv's.*** WR's were assisted with getting their ID's. Jerry, however, is aware that for the WR's to appreciate these items, the project cannot provide them for free, and he ensures they contribute twenty rands towards the ID document, and the project will provide the rest.

***Family & rehab.*** Jerry assists with sorting out problems at the homes of WR's that no longer stay there. Furthermore, suppose a WR is addicted to a substance, Jerry used their desire to join the project to motivate them to set up an appointment at the rehabilitation facility, the outpatient rebab facility.

***Extra income.*** The project has also created extra income for the WR's. Jerry highlighted an example where one WR could drop money at home twice a week as he earned more.

## C2 – Wantal

### *Overview*

The Wantal Recycling Project is a WR integration initiative involving the Davulane municipality, represented primarily by Travis Sheldon, and Meghan Precious, the project supervisor and owner of an informal buyback centre and the WR's that operated on the Wantal landfill site. The objective of this integration project was first to remove WR's from the landfill, as it is illegal, and integrate them into the recycling project of the municipality as 'intrapreneurs'.

## *Why was this project initiated?*

### Who was involved and why?.

***Formal entities.*** Davulane municipality, represented by Travis Sheldon - Travis has been the senior manager for solid waste and landfill management at the Davulane municipality since 2018 and has a background as an environmental health practitioner. Travis is highly experienced, working as a waste manager for the past 25 years in various municipalities.

The state of Wantal landfill site was one of the main reasons the Davulane municipality created this project. Travis highlighted that the landfill was "out of control" and that even before joining Davulane municipality, they approached the South African police to get the WR's off the landfill (C2-F1). He highlighted that it was so dangerous that people got stabbed, gun-pointed, and robbed on the landfill site. Admittedly, Travis admitted that he was also scared during his first week on the site and could not take pictures as just previously, one of his staff members was robbed by some of the dangerous WR's on the landfill.

However, having experience doing this before during his time at a previous municipality, Travis was determined to get it right at the Wantal landfill site too. Travis highlighted that he has a passion for WR's and gets his "kick" when he has taken them from where they were, working on a landfill site to helping them become "successful intrapreneurs within a building, which is provided by the authority" (C2-F1). Travis noted that the municipality's role is to provide the infrastructure for WR's, make recycling viable, and essentially help them.

Travis highlighted two priorities for the municipality *"we want to create jobs, and we want to minimise the waste that goes on to the landfill site"* (C2-F1). Therefore, it is a significant benefit to reduce waste going to the landfill and integrate the WR's into their recycling programme from a waste management perspective. As for the job creation priority, that is technically not true. The

intrapreneurs are not employed. They sort the recyclables that the municipality collects through their recycling programme, and the intrapreneurs sell them to make a living.

DEA&DP (Dept of Environmental Affairs and Development Planning) - DEA&DP provided training for all WR's who joined the project. The training focused on waste management, the purpose of recycling and what can be recycled. The WR's also received a t-shirt and certificate for completing the training.

***Semi-Formal entities.*** Meghan Precious - Meghan Precious is a community member from Wantal that got involved in recycling by buying boxes from the WR's in the community as she and her husband had no source of income. Although Meghan is all about helping her fellow community members, she once had to postpone the interview as she needed to assist a family with some issues. However, thanks to her ability to speak various languages and excellent reputation amongst the community members, her involvement has been essential in this project.

Meghan is a volunteer in the project, and her role is to coordinate the WR's at the sorting site. She is also the person who buys recyclables from the WR's. However, she is more than a coordinator or buyback; she has a genuine relationship with the WR's and truly understands them. Upon interviewing a group of WR's at the project site, Meghan knew each WR's background, their issues and assisted with helping the WR's communicate during the interview.

Meghan has been in the project for nearly three years as a volunteer, ensuring the operation runs smoothly by ensuring the WR's are sorting efficiently, sorting the correct materials, and buying the recyclables from the WR's.

Meghan's role has been added as a semi-formal role as she is a volunteer in this project and not a WR. However, her buyback business is a registered entity.

***Informal entities.*** WR's - This project focused on the Wantal landfill WR's. The WR's who joined the project were only a few of the original WR's that operated illegally on the landfill, and from the 65 that joined, today, there are only 19 'intrapreneurs', as the project refers to them. While

they were landfill WR's previously, Meghan made a clear distinction between "*someone who is working with a trolley on the street and someone who is doing recycling for the whole day"* (C2-F2), with the latter being the intrapreneurs.

The landfill was a dangerous place to work, with many criminal activities. Travis highlighted that even before he joined, the municipality approached the South African Police Services to assist as *"people were stabbed, they were gun pointed, and they were robbed on the site, it was it was unsafe"* (C2-F1).

Due to the rules of being part of this project, most of the WR's who were still part of it are much more abiding than those who never continued to be part of it. Kirstin Jean, one of the WR's in the project, highlighted that *"the landfill is very rough compared to here, it's relaxed, we enjoy talking with one another. At the landfill, it was dangerous. Many guys were there with pangas and knives"* (C2-I1). Kirstin herself is 20 and cannot attend school as she is assisting her family in making an income at the project site. As a result, she only completed grade 8.

### *How the integration happened*

**Pre-integration work.** The municipality was responsible for the landfill site and was aware of the problems occurring on the site. Travis was informed of all the previous issues before embarking on this project. Travis highlighted that he requested one of his staff members to take photos of the activities on the landfill site; however, the employee was robbed of his phone while taking them (C2-F1).

**WR approach method.**

***First interaction.*** Following the failed attempt at getting data from the landfill, Travis decided to go to the landfill to fix the problem. Travis highlighted that he approached the WR's on the landfill and gathered them together; there were only 6-8 of them. Then, he introduced himself and his colleague and discussed their intentions. Travis made it clear that he informed them he was

there to help and "make them part of the solution" (C2-F1). He further highlighted the need to have some control over the landfill and his intentions of dignifying their work and providing them with a better work environment. He then informed them that he would be back for another meeting.

***Second interaction.*** During the second meeting with the landfill WR's, which was a day or two after the initial meeting, around 30 of the 100 landfill WR's showed up, and Travis realised that he needed to find a way to gain their trust. So again, Travis highlighted that he would be back, hoping that the word would spread and more would attend.

***Third interaction.*** Following the WR interactions with Travis, some of them informed Meghan about the upcoming meeting; they sold their recyclables to her at this stage. Meghan highlighted that the WR's requested she join as Travis wants to talk to them, as *"they are not welcome anymore on the landfill site, they are going to put them on a private side, then they can work from there"* (C2-F2).

During the third meeting with the landfill WR's, Travis highlighted that Meghan approached him after the meeting and told him: *"Sir, I'm Meghan. These people requested me to come and listen to what you have to say"* (C2-F1). At this point, Travis realised that Meghan is the "*open door towards a trusted relationship towards these informal recyclers"* (C2-F1). Travis then told Meghan about the project, and she gathered the people on the landfill site and told them what would happen if they did not 'intervene'. Together, they highlighted the opportunity and ultimately said that if they did not join, they would *"come in with the police and law enforcement"* (C2-F1). *"We've said to them 'all right, on the 23rd of July, we will meet you separately on a specific area at the landfill site, then nobody is going to be allowed to be on the working surface anymore'"* (C2-F1).

For Meghan, this relationship was also an open door for her to use the municipal site to do her work. She was currently operating her buyback centre from her house and looking after the WR's as she knew some of them. Travis offered Meghan a 3-month contract as a supervisor under

the EPWP programme as, by law, it can only be 3-months and not longer (C2-F1). However, Meghan continued to stay on as a supervisor voluntarily after the contract ended.

**The approach method outcome.** While it took Travis a few attempts to get the WR's attention on the landfill, Meghan added the trust element with the WR's. Travis noted that of the 100 WR's working on the Wantal landfill that they addressed, 68 of them returned on the 23rd of July 2018, which was the date the WR's would not be allowed to go on the 'working site' of the landfill.

**Photo 4**

*Wantal landfill working site*

*Note.* (Source: Author's own, 2020)

He further highlighted that the rest of the WR's were not interested as some WR's *"cannot operate in a controlled environment"* (C2-F1). Upon asking if that is the only reason, Travis highlighted that criminals were working on the landfill, blending in as WR's, but drug dealers. He highlighted that *"these drug lords use the landfill site as a dealing environment"* (C2-F1).

Staying true to his word on the 23rd of July 2018, Travis brought in 'strong security services with dogs' to remove the WR's who never joined and still went on the landfill. They were removed and arrested.

### *WR integration process*

**Integration process.** Following the multiple approach phases, the next step was integrating the WR's into the project. The integration process for this project did not involve many steps. On the first day, the 65 WR's arrived at the site where they would be working, were informed of the rules, provided with PPE, shown their workplace, and provided recyclable material.

***Rules workshop.*** On their first day, the WR's had a workshop on the rules to follow if they wanted to work at the site. Travis highlighted the rules which they discussed with the WR's:

- They will not be paid; they are working for themselves
- They need to be there at 8 am to begin working
- They will work until 5 pm
- They have to be sober
- If they do not adhere to these rules and begin making trouble, they will be put out
- The restricted area they were allowed to use
- They are not allowed to go on the landfill's 'working surface' area.

***PPE.*** The WR's were provided with reflective jackets and gloves on their first day.

***Working area & waste.*** Lastly, the WR's were shown their work area and provided with bags of recyclable material to sort.

**Photo 5**

*The original working area*

*Note.* (Source: Author's own, 2020)

**Photo 6**

*The current working area*

*Note:* (Source: Author's own, 2020)

### *Project operation method*

Figure 3 provides an overview of the operational process for the *Wantal integration project*.

**Internal processes.** While the intrapreneurs and Meghan had rules to follow from the municipality, they also created internal processes. For example, daily team meetings were important as Meghan answered any questions and prayed together. These meetings were crucial for Meghan to build her relationship with the intrapreneurs (C2-F2).

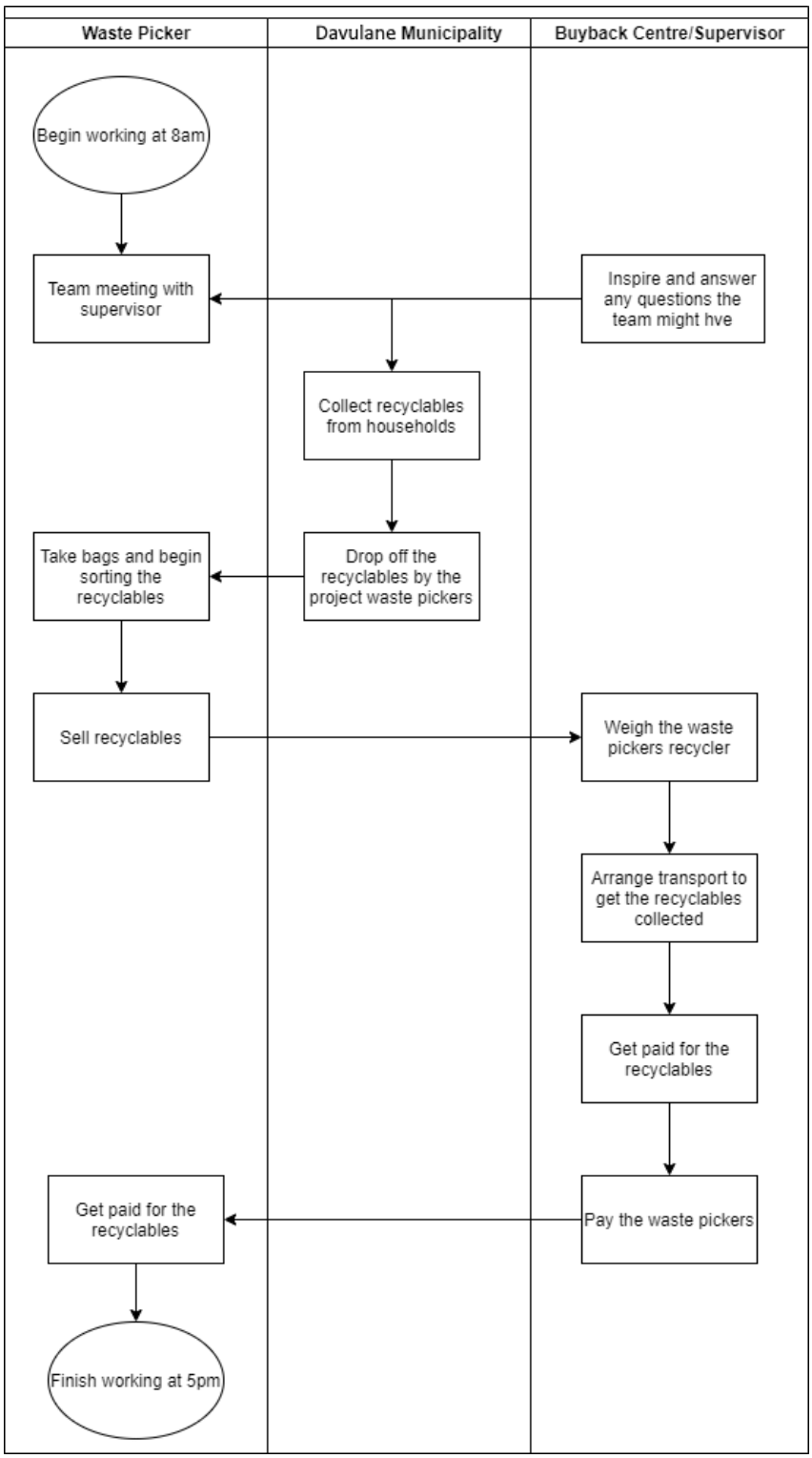
**Financial distribution.** Each intrapreneur, or group of intrapreneurs, received money based on how much they sold. Meghan would organise the buyback centre to collect with a truck each week. They would then sell their sorted materials through Meghan on a Friday and receive their money the same day.

**Incoming Material.** Because the intrapreneurs worked from the municipality's landfill site, they received recyclables through its recycling programme, ensuring a constant flow of materials. However, compared to the number of materials dumped on the landfill, the recycling programme collected limited materials, such as paper, plastics, glass and metals.

**Project operation.**

**Figure 3**

*The operational process for the Wantal integration project.*



### *What was the outcome*

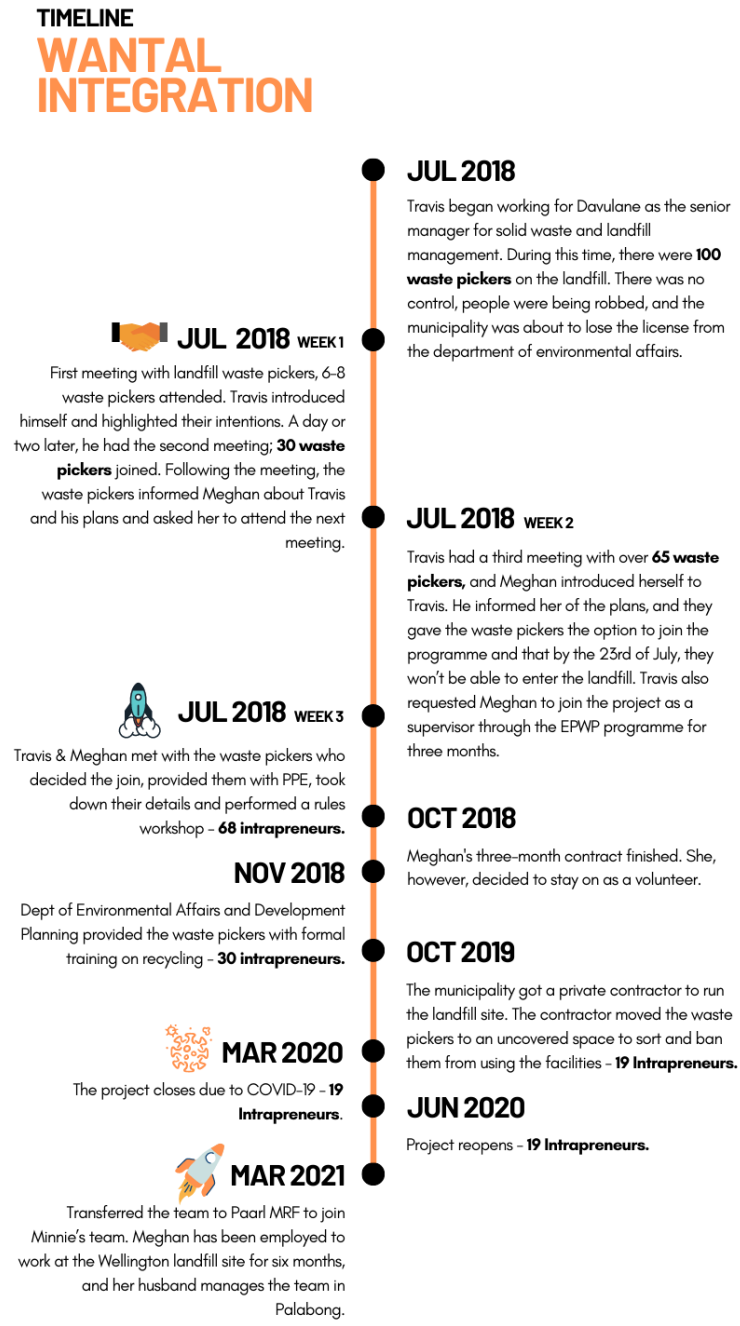
**Project outcome.** Getting 100 WR's off a landfill and integrating them into a project linked with the municipality recycling collection was a challenge for all entities involved. Today there are only 19 WR's involved in the project. The reasons for this high drop off rate are related to the following:

- Change in landfill management to a private company that never took the landfill ban as seriously as the municipality did, resulting in waste reclaimers going back on the landfill. Meghan noted that this caused many intrapreneurs to leave the project as they preferred operating on the landfill (C2-F2).
- Criminal activity - Travis highlighted that the criminals blending in as waste reclaimers were the ones who never decided to join the project. *"There's a lot of dealers, but under the name of informal recyclers. So, that is one of the reasons why those people didn't want to be controlled, and you will never control them"* (C2-F1).
- Operational style - Due to the free nature of how the landfill waste reclaimers operated, integrating into a rules-based environment was a challenge for some of them. It made it difficult for the project team to manage. Meghan had various challenges caused by the habits and manners of the waste reclaimers. Some of these challenges consisted of violence, substance addiction and difficulty adapting to the operations style.

One of the main objectives of this project was to divert waste from the landfill for the municipality. According to Travis, the municipality diverts 35% of the waste generated through recycling their builders, green and dry recyclables waste. However, the recycling at source project that collects the intrapreneurs' recyclables only accounts for 1% of their total waste stream. Figure 4 provides a timeline of the integration process development.

**Figure 4**

*Wantal integration timeline*



**Benefits to WR's.**

***Safety.*** For the remaining WR's in the project, safety was a clear benefit. Specifically, in the case of Kirstin, she is a young lady that collects with her parents, and according to her, the landfill was *"rough, there were many guys with pangas and knives"* (C2-I1). Crime and the use of drugs were daily occurrences in the landfill, and thanks to this project, they get to work in a safe environment. Meghan highlighted that some WR's used to get robbed of their material. Kirstin highlighted that where they are now is 'relaxed' and that people enjoy talking with one another.

***Access to PPE & assistance to get ID's.*** WR's received PPE by joining the project, including uniforms, shoes, gloves, and masks. Travis highlighted that the WR's were taken to home affairs and banks to open accounts with municipal transport. However, Meghan highlighted that the WR's had to go independently.

***Social Skills.*** Meghan, who is the supervisor and buyback entity in this project, plays a motherly role with the WR's. Travis labelled her a 'godmother' to the WR's in the project and highlighted how good her relationship is with them. In addition, Meghan highlighted some of the more social lessons she imparted to the WR's:

> "I teach them how to forgive people, how to treat people, how to work with other people, how to see another person's feelings, how not to hurt someone, or not, let me put it like this, don't do something to someone, but you don't want that person to do it to you. So, every day I started to talk to them, come there, we pray. I explained to them anything they want to know; I try my best to explain and they will be satisfied by the end of the day. So, I teach myself to feel the other person's feelings, I want to see, to read your mind if something is upsetting you. If something is not the right at home, then there is where I started to build a relationship with them." (C2-F2).

This special bond help keep the remaining WR's; Kirstin has a similar sentiment.

***Access to clean recyclables.*** Thanks to the partnership with the Davulane municipality recycling programme, the WR's in the project get access to recyclables separated at the source. The benefit of this is that the recyclables are less contaminated than waste in the landfill. In addition, the WR's can also collect more as the majority of the waste they receive are recyclable.

***Selling.*** Generally, WR's would have to travel far distances to sell recyclables or wait for the person to come to the landfill. Now they can sell directly to Meghan, who is already based at the project site, reducing the need to travel to a buyback or wait on one to come to the landfill.

***Training.*** Travis arranged training for all WR's who joined the project with DEA&DP (Dept of Environmental Affairs and Development Planning). The training focused on waste management, the purpose of recycling and what can be recycled. However, Travis highlighted that the WR's were already aware of what was recyclable and in demand. The WR's also received a t-shirt and certificate for completing the training.

## C3 – Palabong

### *Overview*

The Palabong Recycling Project is a waste reclaimer integration initiative involving the Davulane municipality (DM) and a co-operative of waste reclaimers, Qamama Enterprise (QE), meaning *"start afresh"* (C3-I1). Minnie Kyra represents the co-operative, and the integration project launched in June 2019. While most integration projects are initiated from the formal entity, this one was initiated by Minnie and her association, SAWPA (South African Waste Picker Association). The objective of this integration project was to integrate waste reclaimers from Palabong into the recycling operation of the DM.

**Photo 7**

*Minnie and Nettie*

*Note.* (Source: Author's own, 2020)

## *Why was this project initiated?*

### Who was involved and why?.

***Formal entities.*** The Davulane Municipality (DM), represented by Travis Sheldon, Samantha Farris, Kristin Francis, were the main formal entity involved in the project.

DM - Travis has been the senior manager for solid waste and landfill management at the DM since 2018 and has a background as an environmental health practitioner. Travis is highly experienced, working as a waste manager for the past 25 years in various municipalities.

Kristin Francis is an awareness and education officer at DM and a coordinator for the integration project. Kristin highlighted that at the beginning of the project, her role was mainly focused on guiding Minnie on sorting, running the operation, connecting her to buyers, and

informing her how to use the machinery at their disposal, such as the balers and conveyor belts (C3-F2). Samantha Farris is a Solid Waste Functional Management manager at the DM.

According to Samantha, the motivation for starting this integration project was mainly due to the success of the Wantal integration project and the fact that they had the facility available that was not in use (C3-F3). She further highlighted that it was vital for them to find a way to *"incorporate the informal collectors into the formal system and still have the success"* (C3-F3). However, Samantha also made it clear that while the social element is essential, the main objective for the department is first to divert the maximum waste from the landfill, which projects like these also assist in doing. Travis further highlights this by mentioning that the Municipality wants to create jobs and minimise the waste on the landfill site (C3-F1).

SAWPA (African Alliance Waste Picker Association) - According to Gaia (2020), SAWPA "is a body that works to promote the rights of waste pickers in South Africa and to strengthen unity and cohesion among waste pickers". SAWPA was formed in 2009 and, according to GlobalRec (n.d.), has 6000 members. In this project, SAWPA were the initiator to connect Minnie and the rest of the waste reclaimers to the DM. Travis highlighted that the SAWPA members heard about the success of the Wantal project and wanted their members in Palabong to join that project (C3-F1).

***Informal entities.*** QE - At the heart of QE is Minnie Kyra. Minnie started waste picking in 2014 following her being retrenched, which put her in a situation that made it difficult to feed her family. Doing something in the recycling space was an obvious choice for her as in her previous job, she taught children about separating waste which is where she learned about recycling. In this integration project, Minnie plays the role of coordinator. She is also a member of SAWPA, a provincial coordinator and has been a member since 2015/2016. QE was formed in March 2017 by Minnie and three other members after Minnie met with SAWPA regarding the opportunity to work at the Palabong transfer station.

Waste reclaimers - The waste reclaimers involved with QE were from the Palabong area. Following Minnie's retrenchment, she began to collect recyclables and sell them. Initially, she highlights that they used to collect on their own and had to sell it on the day of collection as they never had space to sort and sell and the fact that people would steal her recyclables should she leave it anywhere. She then communicated with other waste reclaimers and eventually was introduced to SAWPA.

Another waste reclaimer in the QE is Nettie Tillie. Nettie said she was a seasonal worker at a farm struggling to find work. She then decided to collect recyclables and sell them for a living. She met Minnie, and they began to work together.

## *How the integration happened*

### Waste Reclaimer approach method.

***Municipality Approach.*** A formal entity usually initiates the integration projects from the cases I reviewed. However, in this case, the informal party initiated the integration project. The members from SAWPA requested a meeting with Travis regarding the Wantal project. He highlighted that they were interested in getting their members to join the Wantal project. However, he informed them that they did not require more intrapreneurs in Wantal, instead proposing the Palabong opportunity. However, he highlighted that a few things needed to happen before they began the project, such as clearing the Palabong transfer station, which was not in use at that time, and expanding the separation at source service to more areas to get more recyclables (C3-F1).

QE was introduced to the DM through SAWPA. They were in their area at a time when SAWPA members were in Wantal, protesting against a proposed waste incinerator that would impact the livelihoods of many waste reclaimers in the area (Ground Work, 2019). According to Minnie, SAWPA advised her to work with the DM as they can provide the support required.

Following the confirmation that they would be able to work at the Palabong transfer station, Minnie and the rest of QE met with Travis and following that, they had a few more meetings together. According to Minnie, after their first meeting with Travis, he told them, “okay, it is fine, I can give you this space only if I can see how serious are you. I want to make sure you are really the waste pickers, you aren’t people taking chances” (C3-I1). Minnie highlighted how they proved to him that they were waste reclaimers by showing him how determined they were.

Following the meetings between QE and the DM in March 2019, Minnie received the go-ahead to begin recruiting extra members to join QE and work at the Palabong transfer station. According to Travis, he requested 20 names to join the project.

***First waste reclaimer approach.*** After getting the confirmation regarding the workspace, Minnie began her recruitment for members. The first waste reclaimers to join the QE were not waste reclaimers. According to Minnie, they decided to look for struggling people who needed money as there was no employment in the community (C3-I1). To lure members, Minnie told these potential members that she was about to start a project that eventually would turn into permanent jobs. However, this was not true, as Travis highlighted that he informed QE that it was not a permanent job and a pilot project.

Kristin further highlighted that this initial group did not know much about sorting recyclables and which items were recyclable and which were not (C3-F2).

The approach method outcome - The first approach method resulted in the co-operative having 20 members when they started at the Palabong MRF. However, there was confusion about how things work in the recycling industry because Minnie recruited non-waste reclaimers. According to Minnie, these members assumed that municipalities would pay them as they worked at municipal facilities (C3-I1). Minnie highlighted that they were made aware of the process and that she was always transparent with them. She told them that they were working on municipal premises. However, the amount of money they make is dependent on how hard they work. It also seems that

working amongst municipal workers, who did not have to work as hard as them, confused them *"they could not understand why we need to push them to work hard, while those municipalities people are working freely." (C3-I1). After a while, their unhappiness grew, and Minnie then started to see their behaviour change "people start to misbehave, people started being rude, swearing at us"* (C3-I1). The first members began leaving around August 2019.

Following this, Minnie and her team decided that they would not work with them and let them go.

***Second waste reclaimer approach.*** Following the realisation that non-waste reclaimers would be challenging to integrate into the project, Minnie then decided to approach waste reclaimers instead as they better understood the process. Minnie and the two remaining members visited different landfills to hold meetings with the waste reclaimers and approach them on the street. This process began in October 2020, and they are continuing the process at the time of the interview. At these meetings, Minnie highlighted the benefits of joining them:

To get the waste reclaimers to join, Minnie used the following as value propositions to the waste reclaimers:

1. Collective – by using the collective power, Minnie highlighted to the waste reclaimers that it would be better for them to work together and that their voice could be heard better together than alone.
2. Testing – Minnie made sure to highlight to the waste reclaimers that they could come and try it before deciding. This allowed waste reclaimers first to test whether it would work for them or not.
3. SAWPA Backing – Minnie also highlighted working with SAWPA and its benefits. By working with her co-operative, the waste reclaimers would also gain their benefits and backing. Minnie highlighted recent benefits they received, such as PPE and having the opportunity to talk to UNIDO and the Japanese officials.

**The approach method outcome**

Minnie recruited seven new waste reclaimers to join her and the remaining two founding waste reclaimers of QE.

## *Waste reclaimer integration process*

### Integration process.

***Rules workshop.*** On their first day, the waste reclaimers had a workshop with Samantha and Kristin on the rules to follow if they wanted to work at the site. Samantha provided the rules, which they discussed with the waste reclaimers:

RULES AND CONDITIONS

1. Working hours Mondays to Fridays: 8 am to 4 pm
2. Access to the premises is subject to carrying the work identity card at all times.
3. Wearing safety clothing is compulsory at all times.
4. The work area must be cleared between 4 pm and 4:45 pm.
5. No alcohol or drugs are allowed on the premises.
6. No person may be under the influence of alcohol or any intoxicating substance.
7. No person may jump on vehicles.
8. No weapons of any kind are allowed on the premises.
9. No contact with the public is allowed.
10. No access to the landfill or any other work area.
11. No fighting or use of obscene language is allowed.

Failure to comply with rules will result in immediate expulsion.

***PPE.*** On their first day, the waste reclaimers were provided with overalls, gloves, and shoes.

***Access cards.*** To work at the municipal MRF, the waste reclaimers needed to provide their details and ID. Once this was complete, they received access cards to enter the premises.

**Photo 8**

*The working area*

*Note.* (Source: Author's own, 2020)

***Working area & waste.*** Lastly, the waste reclaimers were shown their workspace and provided with bags of recyclable material to sort.

## *Project operation method*

Figure 5 provides an overview of the operational process for the *Palabong integration project*.

**Internal processes.** While the waste reclaimers from QE had rules to follow from the Municipality, Minnie also created a set of internal rules. Some of these rules were similar to those provided by the Municipality, such as start and end times, tea and lunchtimes. Weekly team meetings were compulsory. According to Minnie, each member had to attend the meeting, as there are constant changes, such as price changes in material, which all members need to be informed of (C3-I1). The meetings were also a platform to understand the waste reclaimers' feelings towards being at the MRF. Minnie would ask questions such as, *"guys, are we still working okay? Are we still*

*feeling like being here? What is wrong, that you see that we need to correct as people who are at the forefront"* (C3-I1). By the end of the meeting, Minnie would have a good sense of how the waste reclaimers feel and areas that need improvement.

***Financial distribution.*** The money made from the sale of recyclables is distributed evenly amongst the waste reclaimers in the co-operative. Minnie highlighted that they split it equally because they were still struggling due to the market prices for recyclables being low at the time (C3-I1).

Payments initially were made weekly. However, that has changed to the end of the month because they needed to arrange transport to sell the recyclables, and by paying once a month, they could build up a decent amount of money.

According to Minnie, the first few days were challenging for the waste reclaimers recruited in the second approach as they were used to *"work, sell and eat"* (C3-I1). However, to assist them with the transition, Minnie highlighted that they focused on selling items they could sell daily, such as *"returnable bottles of drinks, beers and scrap [metals]"* (C3-I1). This process eased the burden of waiting for the end of month items.

**Incoming Material.** Because QE worked from the Municipality's transfer station, they first started to receive the recyclables from the public who came to drop off their recyclables. The municipality then extended their residential recycling collection service, which also came to the transfer station. Samantha highlighted that the extension ensured they had a constant flow of materials (C3-F3).

While QE's position was where they wanted to be, it was not perfect for them regarding the incoming waste. According to Minnie, only 10% of the waste they receive are the items they will sell, and the rest goes back to the landfill (C3-I1). The municipality takes the non-recyclable waste back to the landfill for free. Residents put their waste into two bags, a clear one for their recyclables and a black one for all their non-recyclable waste. However, Minnie highlighted that the recyclables they

receive are a *"mess"* and that residents will dispose of mixed items in their clear bags that are not recyclable (C3-I1).

***Proactive Approach.*** While Minnie and her team do not have much control over what the residents put in their recycling bags, they have taken a proactive approach to improve how residents recycle. Before the COVID 19 pandemic, Minnie and her team taught pupils at local schools about recycling, focusing on why they should recycle and sort at home. The objective of the training is that the pupils will then go home and inform their parents how they should recycle.

### *What was the outcome*

**Project outcome.** The project that QE took on was quite a step up compared to the work of an individual waste reclaimer. While Minnie and her team have faced their fair share of challenges, their performance has improved since they started. According to Kristin, they are collecting between 20 and 30 tonnes of recyclables per month which is good compared to the beginning (C3-F2). Today, QE has 16 members after losing most of the original 20 members for various reasons.

While it is difficult to measure what success looks like, both the informal and formal entity in this integration project has agreed that it has been a success based on their desired outcomes. The municipality is getting waste diverted from the landfill, and QE has access to recyclables, a location to sort and equipment to bale their materials. This success was recognised by both teams, as highlighted by Samantha *"I mean, a few years back, one would not think that this would actually be possible. In a municipality to execute something like that. Yes, no this is a good project, yeah"* (C3-I3). Figure 6 provides a timeline of the integration process development.

Project operation.

**Figure 5**

*The operational process for the Palabong integration project.*

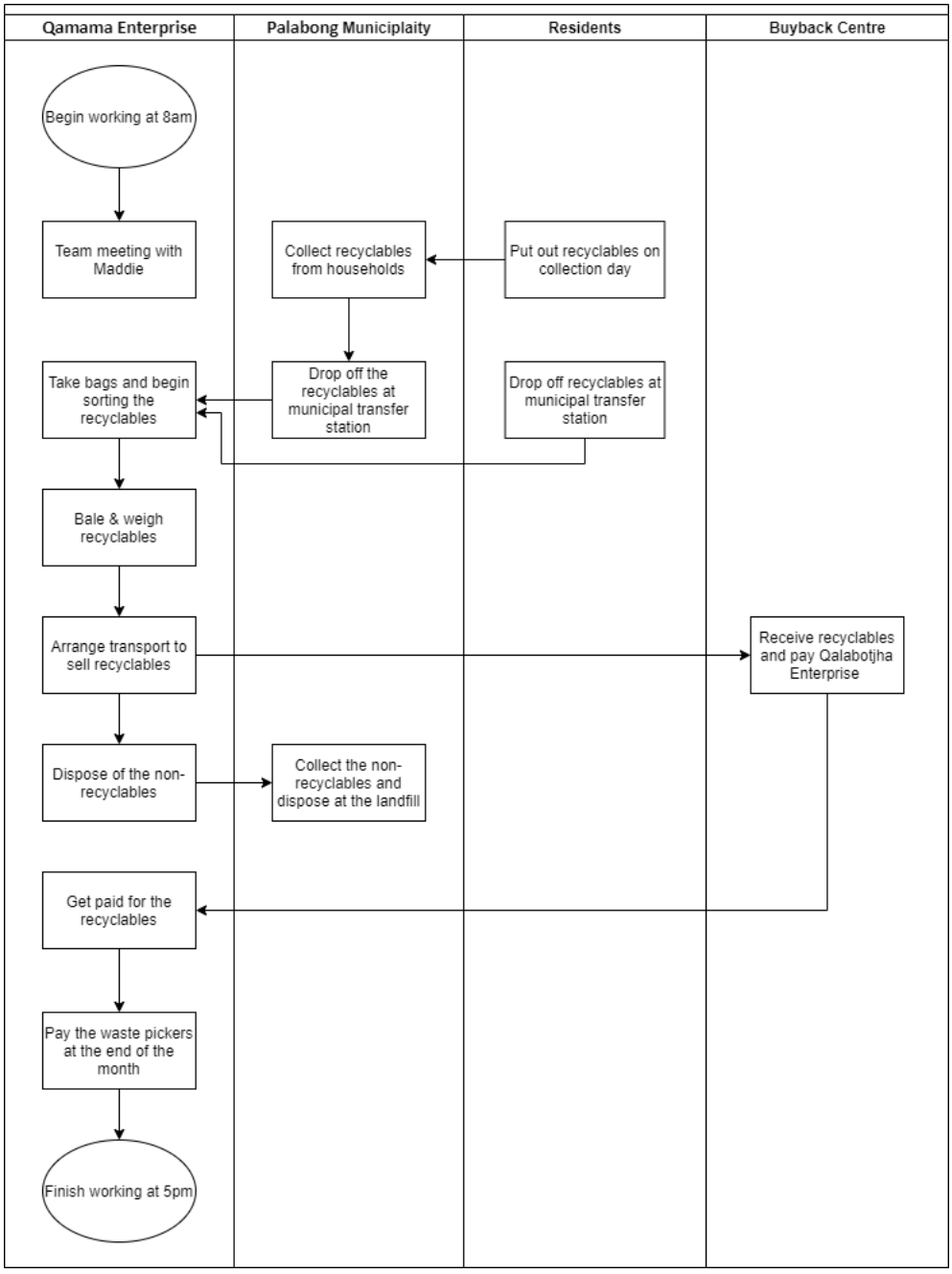
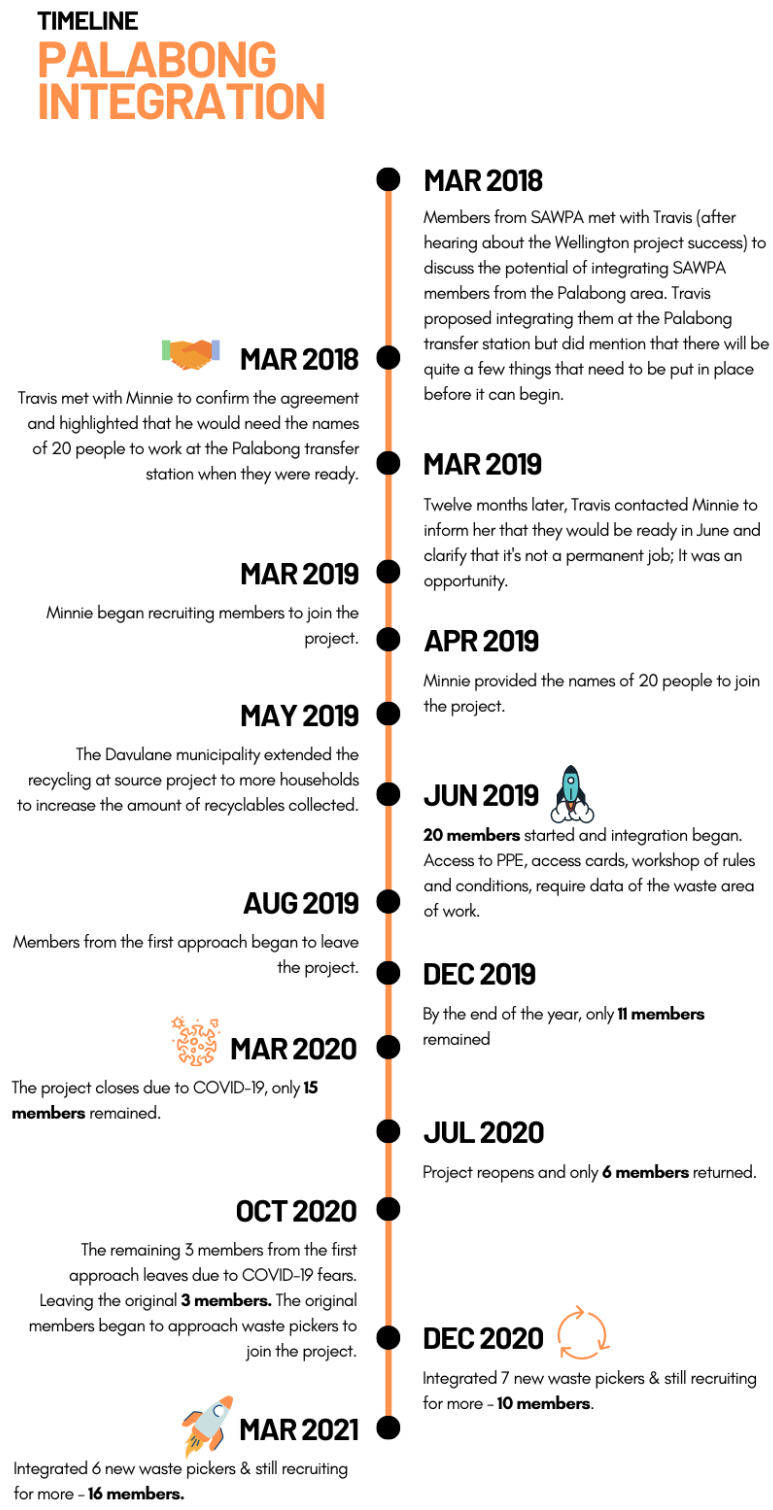


**Figure 6**

*Palabong integration timeline*



**Benefits to waste reclaimers.**

***Efficiency.*** Minnie highlighted that things are better than her processes as a waste reclaimer. They now benefit from having the recyclables dropped by them. The money is better as they can store for a more extended period due to their space before selling. By selling in larger quantities, they can also negotiate better prices was the off-takers.

***Free facilities.*** QE has access to a great working area that creates safety for their operation and protection from the elements and the machinery that some formal recycling enterprises cannot afford.

**Photo 9**

*Plastic bottle baler*


*Note.* (Source: Author's own, 2020)

**Photo 10**

*Can baler*

*Note.* (Source: Author's own, 2020)

**Photo 11**

*Baled plastic bottles*

*Note.* (Source: Author's own, 2020)

**Photo 12**

*Floor scale*

*Note.* (Source: Author's own, 2020)

***Training & support.*** Included with this facility was support, especially from Kristin Fredericks. However, Minnie made it clear that no formal training was provided.

***Access to PPE.*** The members from QE received PPE. According to Minnie, they will receive a new set of overalls, safety boots, and gloves each year.

## C4 – Kumarone

### *Overview*

SustainableGrowth is a recycling project established by Silver Brews (SB) that operates in Kumarone, Midtown Dap and Phamelo. The project aims to empower local buybacks centres (BBC's) and WR's, referred to as EA's (Environmental Assistants), by providing them with resources and skills to improve their jobs and livelihoods. SustainableGrowth was initiated in 2018 and ran a pilot in 2019. Currently, the project is working with three BBC's and 140 WR's.

***Why was this project initiated?***

**Who was involved and why?.**

***Formal entities.*** Silver Brews (SB) - SB is one of South Africa's largest alcoholic beverage producers, and SustainableGrowth is a project initiated by the head of the sustainability team, Evan Sherman.

The project managers involved are Brayden Vinson, a sustainability specialist and Aubrey Malachi, a sustainability coordinator. Aubrey was the one on the ground. Initially, he worked with the pilot implementor when he joined in 2019. However, once their contract ended, he spearheaded the project on the ground along with Brayden and project partners.

Recycling Solutions (RS) - In 2018, SB put out an RFQ for a service provider to implement the project's pilot. Recycling Solutions (RS), a waste management solutions company, applied and was chosen.

Government: Provincial Government – Department of Environmental Affairs and Development Planning (DEA&DP) - According to DEA&DP | Environmental Affairs and Development Planning (n.d.), their mandate is to *"enable a resilient, sustainable, quality and inclusive living environment for all"*. Within the SustainableGrowth project, DEA&DP enabled the WR's to join the Expanded Public Works Program (EPWP) and earn a monthly stipend. The partnership came about when SustainableGrowth members reached out to DEA&DP as they had an existing project running. Aubrey highlighted that DEA&DP received funds from the national government to be used on sustainable projects in the Provincial (C4-F2). DEA&DP then decided to partner with SustainableGrowth and use SustainableGrowth as one of their projects to focus on creating projects in other areas while SustainableGrowth benefits from EPWP.

City of Chadika (COC) - Aubrey said the COC had a recycling project running in Phamelo and Drift Sands, specifically working with women (C4-F2). Together they agreed to join the projects

under SustainableGrowth. The COC primarily provided waste management training to the EA's and shipping containers to set up a BBC.

Befebanta - Befebanta is a community organisation in Kumarone that primarily focuses on providing temporary shelter for the youth, skills development, early childhood care, poverty alleviation, and healthcare information to the community in Kumarone and surroundings (Befebanta, n.d.). Brayden noted that Befebanta assisted them with getting a better context of the community and the EA's and being a community ambassador for the project (C4-F1).

Kumabank - Kumabank took the EA's and Buybacks to their branch in Kumarone mall, provided financial training, and allowed the EA's to open up a bank account with them.

Recycling Technologies - Recycling Technologies is an application development company that created the app used by the BBC to allow SustainableGrowth to track the project's data, such as what sort of materials are sold, how much are they earning for it, and who is selling it.

***Informal entities.*** BBC's - SustainableGrowth partnered with local BBC's in Kumarone for two reasons: to assist and uplift buybacks through infrastructure and training to grow their businesses and access the WR's who sold to them. The project worked with three BBC's run by Florence, Eula and Percy. These buybacks are informal and operate from their backyard, besides Florence. Before joining as a BBC on the SustainableGrowth project, Florence already managed to get a space to work from a local supermarket.

**Photo 13**

*Florence's workspace*

*Note.* (Source: WineLand Media, 2021)

**Photo 14**

*Eula's buyback*

*Note.* (Source: WineLand Media, 2021)

Environmental Entrepreneurs (EA's) - The EA's are WR's joined the project, and Aubrey highlighted that the project chose EA's as they wanted WR's to be better and accepted in society

(C4-F2). The EA's collect from various locations, the bins, streets and local shops. Brayden highlighted that getting proper PPE is of utmost importance to them as they collect in various terrain, and without proper PPE can be dangerous (C4-F1).

### *How the integration happened*

**Pre-integration work.** SB' pilot was set up to understand the recycling value chain, who the members were, how they could work with them, and what role they could play as a company. RS was responsible for running the pilot, performing market research on the recycling industry in focus areas and determining how the project moved forward. Brayden highlighted that they were responsible for mapping the area and identifying the BBC's locations and prices (C4-F1). They also captured information about the WR's, such as their names and photos.

**Approach method.** This section will explain the two methods used to create relationships with the BBC's and WR's.

***First approach - RS approach.*** BBC's - As highlighted previously, RS was responsible for executing the SustainableGrowth pilot in February 2019. Brayden highlighted that RS had a good network in Kumarone as they knew the environment and people (C4-F1). They visited BBC's physically and informed them of the benefits of joining the project, which according to Aubrey, was to help them create legal and sustainable businesses (C4-F2). Brayden highlighted the sort of questions they asked the buybacks *"would you be interested in joining this project with SB? This is how SB will support you. This is what you will get out of the project"* (C4-F1).

WR's - One of the problems that caused the split between RS and SB was caused by the model focusing more on working with the BBC than the WR's. According to Aubrey, SB wanted to work with the WR's and people from the community, but they mainly received information on the BBC's (C4-F2).

The approach method outcome - Aubrey noted that when their contract ended, the project team only had names of WR's that they could not track and relationships with BBC's (C4-F2). It is for these reasons that their contract was not renewed. However, Brayden highlighted that when they partnered with the government, the government highlighted that they would get a contractor to manage the project, which caused SB not to require the services of RS (C4-F1).

Aubrey highlighted that RS provided them with the names of three BBC's that they managed to create relationships with after their six-month contract. However, one BBC was eventually eliminated as they could not work with it. The remaining two were Eula and Percy's BBC's. All the SB team received were images of the WR's and their names.

The following are the number of WR's RS managed to approach and get basic details of:

- Eula's BBC: 48 WR's
- Percy's BBC: 60 WR's

***Second approach – SB.*** BBC's - Following RS's six-month contract, SB decided not to renew their contract and go back to the drawing board to plan moving forward. According to Aubrey, the relationship with the buybacks was good. However, they still needed a new plan to gain their trust without the RS by being present regularly. So, the SustainableGrowth team approached the two BBC's that were already part of the project, highlighted their intentions for the buyback and WR's, and requested a meeting with the WR's who sold their recyclables.

WR's - According to Aubrey, the relationship with the WR's was not as good as with the buybacks. In addition, the WR's were hesitant to work with them as they had trust issues, and the new plan would require them to gain their trust by being present regularly (C4-F2).

Aubrey set up meetings at the BBC to speak to the WR's, and once the SB team got the approval from the BBC's, the buybacks communicated to the WR's to attend the meeting with the team. Aubrey explained what the project was about during the meeting, their intentions, and the WR's benefits. Then, each Thursday for two months, Aubrey visited the buyback and had

conversations with the WR's to inform them of the project, encourage them to join by submitting their IDs, and reassure them that they would come through for them and assist them.

One of the WR's Aubrey approached was Florence, who was introduced as a BBC previously. Initially, she was not a BBC and started as a WR. Aubrey was informed of her by RS; he approached her and told her the following: *"Listen, we understand that you are a WR, can you tell all the other WR's within this area that we are from SB, we want to empower WR's."* (C4-F2).

The approach method outcome - Building trust with the WR's was not easy for the SB team; however, they managed to engage with them, build trust and get feedback during these engagements. The following are the number of WR's who decided to sign up and submit their ID's:

- Eula's BBC: 20 WR's
- Percy's BBC: 3 WR's
- Florence (who was not a buyback at this stage): 70 WR's

There are various reasons for the drop in WR's from the initial two BBC's. For Eula, it was merely that only 20 out of the 48 brought their ID's. Aubrey discovered that corruption occurred at Percy's BBC for Percy's buyback. He realised that not everyone on the list was an actual WR, and the buyback added people's names to *"score points"* (C4-F2).

### *WR integration process*

**Integration process – WR's.** Following the approach phase, the next step was integrating the WR's into the project.

***Step 1 – Commitment.*** To become an EA, the WR's needed to provide a certified copy of their ID's at one of the projects partnered BBC's. However, according to Brayden, they still supported WR's even if they did not provide an ID hoping that they would eventually provide the ID with items such as the PPE (C4-F1).

Integrate EA's in EPWP - For an EA to earn the EPWP stipend, they needed to be registered with an ID, and once they provided the ID, they were automatically registered for EPWP.

***Step 2 – Compulsory training with the COC.*** The WR's needed to attend compulsory waste management training at the Integrated Waste Management Facility. The COC provided transport and a meal to ensure all the WR's would attend.

***Step 3 - Provide biographical data.*** The EA's needed to provide their biographical information, which a member from DEA&DP captured.

***Step 4 – Receive PPE.*** Following the training, 160 sets of PPE were sourced, consisting of a conti-suit, safety glasses, and gloves. During this process, Aubrey highlighted that they had to hold off giving out the PPE once they found out that not everyone who registered was WR's *"the BBC put in names of people just to score points or people that were not WR's."* (C4-F2). With the help of other WR's, he had to identify actual WR's. He did this by highlighting the people he had met and saw doing the work and conversing with two seasoned WR's *"Then after I'll call Barcelona, and Mogamat because then they've been waste picking for long, and we would see together, we would verify, who's doing work? Where are they picking? Are these people WR's or not? And then they will tell me that these ones are not pickers."* (C4-F2). After this validation process, the EA's who were actual WR's received the PPE.

***Step 5 – Receive a trolley.*** The SustainableGrowth project provided the consistent and best performing EA's with trolleys to assist them with their collection. However, only four trollies were handed out as part of the pilot. According to Brayden, once the BBC's are set up with the Recycling Technologies app, they can track who of the EA's deserves a trolley based on their performance (C4-F1).

**Photo 15**

*EA with a trolley*

*Note.* (Source: Bizcommunity, 2021)

**Integration process – BBC's.**

***Step 1 – Commitment.*** Following the approach by the SustainableGrowth team, the BBC's had to commit by assisting them with spreading the word of the project, getting the WR's to attend the meetings with the SustainableGrowth team and collecting IDs. They also had to provide their IDs to get the project's benefits, such as EPWP and training.

***Step 2 – Compulsory training with the COC.*** The BBC must also attend compulsory waste management training at the Integrated Waste Management Facility.

***Step 3 – Receive PPE & equipment.*** The BBC has also received PPE, which consisted of an overall, glasses, and gloves. However, they also received equipment such as scales.

***Step 4 – Set up BBC.*** While not all the BBC has received this benefit, buybacks that join SustainableGrowth get assistance with setting up a BBC, not in their backyard. The only BBC that received this benefit was Florence.

Get land for BBC - The SustainableGrowth project team engages with the local ward councils to find suitable land to set up the BBC.

Get containers for the BBC - Once the project team has secured the land to set up the BBC, they place the containers that the City of Chadika sponsors. While only Florence has been set up, Aubrey highlights that they are currently engaging with the local ward councillors to find a space for another WR they chose to become a BBC.

***Step 5 - Set up Recycling Technologies software.*** Each BBC will receive a mobile device with data to access the Recycling Technologies app. The app will be used each time an EA sells their recyclables at the BBC; it will capture the EA's details, what they sold, the weight and the price paid. However, upon interviewing Florence, she highlighted that they have yet to receive the mobile device to work from the app (C4-I1).

### *Project operation method*

Once the integration is complete, the project operation has minimal involvement from the formal members. Figure 7 provides an overview of the operational process for the *SustainableGrowth integration project*.

**Collecting recyclables.** The EA's collect their recyclables from various sources. Once they collect and sort their items, they will take them to a BBC to sell.

**Buyback process.** Florence buys the recyclables from the EA's as a BBC on the project. Her team takes it to their buyer for specific recyclable materials, and other materials get collected from their site. However, Florence also allows some of the people who are part of a co-operative with her to sell directly to her buyers as it helps her when cash flow is tight, and it also allows her to get better prices when they combine their items (C4-I1).

**Committees.** Florence and her team also created a committee to discuss various topics regarding their operation with nine other co-operative members. According to Brayden, the formal

entities in the project also have steering committee meetings once a month involving SB, COC and DEA&DP to discuss the project's progress (C4-F1).

**EPWP.** According to Brayden, a service provider selected by DEA&DP has members sign the register at the BBC's every morning and afternoon to receive the monthly stipend. If they miss a day, they need to prove why they were not present. If they do not have the proof, they deduct R100.

The stipend is for 12 months, and by the time the stipend expires, Brayden highlights that they hope the members will use the stipend as a *"head start"* to empower themselves by investing in themselves or a business (C4-F1).

**Mobile application.** A mobile application was introduced for the BBC's to monitor the project effectively. The application will allow the project to monitor consistent EA's, what they are selling and how much they are receiving at the buybacks. Each buyback will receive a mobile device and data to capture the information.

### *What was the outcome*

**Project outcome.** When the project started, SB set a goal of impacting 150 WR's through the SustainableGrowth project; they could achieve it thanks to their partnership with the COC. However, currently, they only have 140 members. From the 140, 40 members joined through the COC projects, and the rest joined through the SustainableGrowth integration method. Furthermore, they have another 100 members joining the project once verified and trained for two weeks. Aubrey has highlighted that they have been told that these members are WR's, but it has not been verified (C4-F2). SustainableGrowth managed to work with and assist three BBC's. The most significant outcome of the SustainableGrowth project was setting up a buyback operation for Florence. Figure 8 provides a timeline of the integration process development.

**Project operation.**

**Figure 7**

*SustainableGrowth Operation Process*

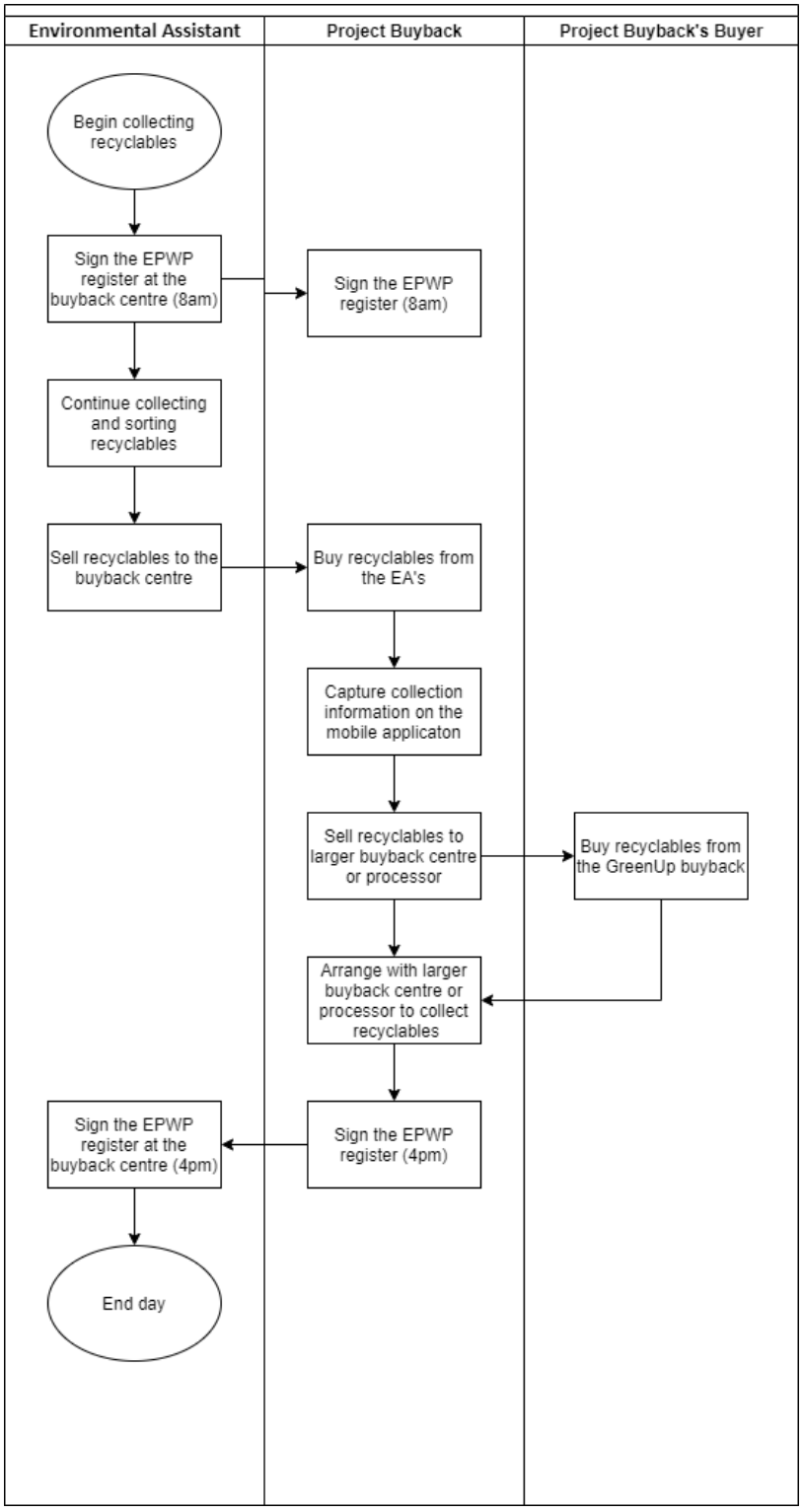
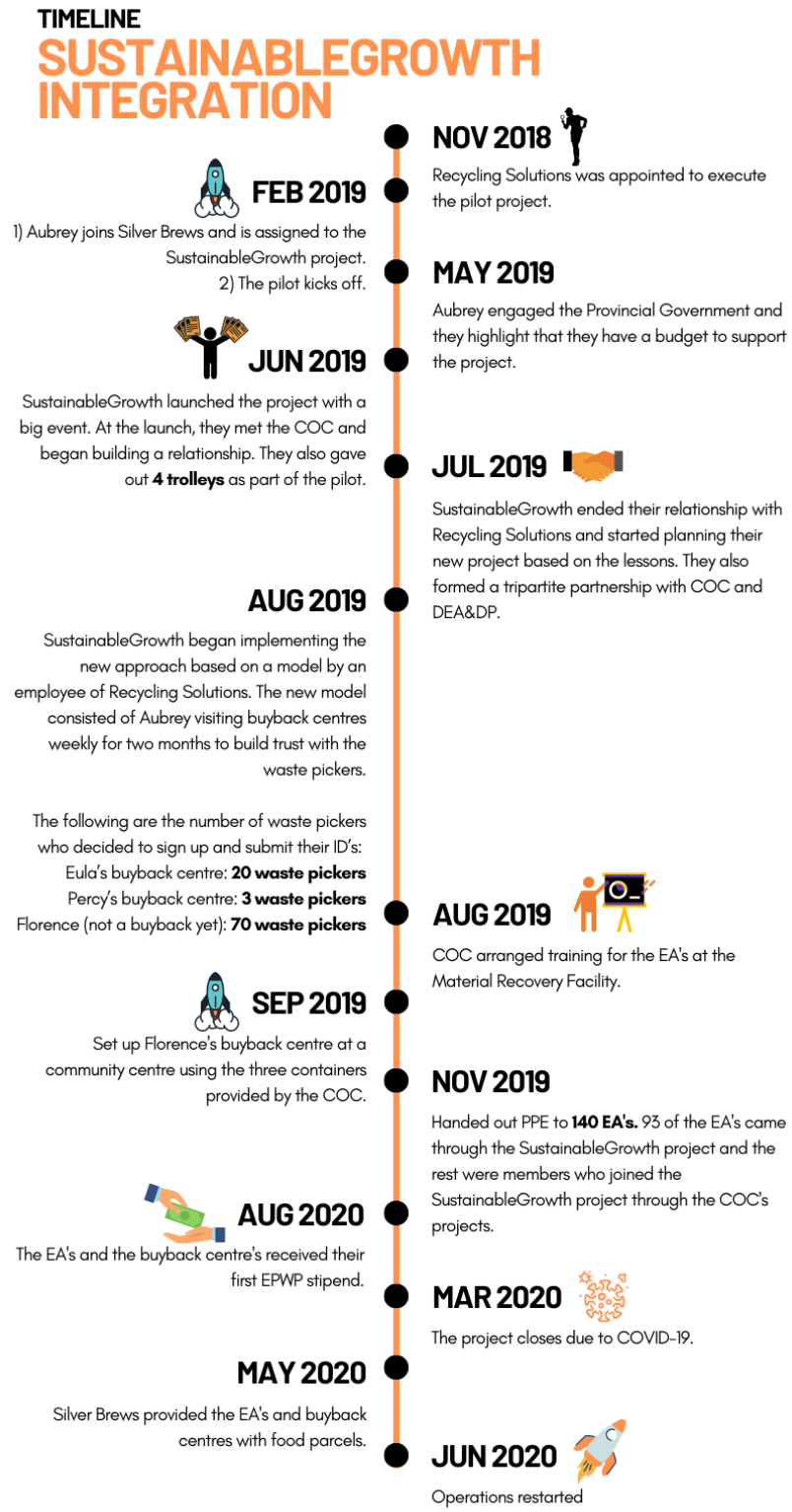


**Figure 8**

*SustainableGrowth Integration Timeline*



**Benefits to WR's.**

***Access to PPE, equipment and infrastructure.*** Through SustainableGrowth, the EA's and BBC's received PPE, including gloves, overalls and goggles. According to Florence, since they received the uniforms, they are more respected within the community *"before you pick up that thing you can must look firstly, there's nobody who sees you, then if there's nobody, you can pick it. But now, we are not afraid because we're wearing our work suits and everybody knows that we are doing recycling"* (C4-I1).

Furthermore, the BBC also receives infrastructure, as was the case for Florence. She received three containers from the COC, and she is still waiting on another three. The buybacks also receive scales to weigh the recyclables. The project has also partnered with an app to allow the BBC's to capture the data and have an electronic record instead of working from paper only.

***COVID.*** During the lockdown, the SustainableGrowth team provided the EA's and BBC's with food parcels, masks and sanitiser. Currently, they are still providing the buybacks with sanitiser.

***EPWP.*** The EPWP stipend brought some stability for a precarious profession "Now it's better because they also get money every month for 12 months. Every month there's money coming in" (C4-I1).

***Training.*** The EA's and BBC's received access to waste management training at the Material Recovery Facility. The COC provided the attendees with transport, lunch and certificates once they completed their training.

They also received training on how to start a business. According to Aubrey, the training goal was to ensure they had the skills and knowledge to start sustainable businesses (C4-F2). Siyabonga, one of the co-operative members, highlighted that the training highlighted opportunities and know-how of where to go if they would like to open their own business (C4-I2).

***Bank accounts.*** Through the partnership with Kumabank, the EA's and BBC received financial training and access to bank accounts, which they needed to receive their EPWP stipends.

## C5 – Alitho

### *Overview*

The Inclusive Recycling Company (TIRC) is an award-winning recycling solution based in the City of Chadika (COC), South Africa. As a co-founder of TIRC, I will refer to the project as we; please see the limitations section in the methods chapter for more information.

TIRC provides collection services to households, apartment blocks and offices through a paid collection service. However, since 2019, TIRC has created a free recycling solution focused on low-middle income communities where residents generally do not recycle. TIRC has also decided to integrate WR's (waste reclaimers) into their model to perform the collections. The case report will focus on our accessible and inclusive model only.

**Photo 16**

*Collector on a Tricycle*

*Note.* (Source: TIRC, 2019)

TIRC services over 1000 households through their free collection model and have integrated 18 WR's that perform two roles: either a recycling collector or sorter. This report will investigate why the service was initiated, how it operates, the integration process and the benefits.

## *Why was this project initiated?*

### Who was involved and why?.

***Formal entities.*** TIRC - Norman Makai, the Co-Founder and operations manager of TIRC, highlighted that TIRC is trying to make recycling accessible, inclusive and rewarding (C5-F1). TIRC provide households with a free collection service in low-middle income communities performed by integrated WR's (IWR's). In return, residents who recycle also earn Recycling Money, a virtual currency created by TIRC that can be used to purchase various vouchers on their platform. According to Norman, TIRC created this service as it wanted to get more residents to recycle and do so in a more inclusive way (C5-F1). Greg Willis is another member of the TIRC team who recently joined as the WPI (waste picker integrator) and primarily focused on the integration process of WR's into TIRC.

Town Mission - Town Mission is an NGO that provides various programmes focused on breaking cycles of poverty and transforming communities (Town Mission, n.d.). They became involved in this project through TIRC, approaching them to use their branch in Alitho as a location for their free model pilot. Town Mission agreed, and as part of the pilot, TIRC agreed to use two members from their ex-convict rehabilitation & reintegration programme as the first collectors.

***Informal entities.*** WR's - The WR's involved in this project are a mix of WR's, scrap metal collectors and an unemployed person from the Alitho community. However, not all were WR's before joining the TIRC project. The approach section will provide a better overview of who was involved.

### *How the integration happened*

**Pre-integration work.** Before creating their accessible and inclusive recycling model, TIRC only operated a paid recycling model in middle-upper-income communities using vehicles to collect. During this process, the founders realised that to make a more significant impact and get the majority of residents to recycle, TIRC would need to make recycling more accessible. TIRC also realised that WR's were already doing recycling collections, but not in a dignified way. These factors then lead to the creation of the accessible and inclusive model. However, Norman highlighted that TIRC needed to raise funds before implementing the project as it is a resource-intensive operation (C5-F1). The funds were required to pay for the canvassing, set up the decentralised recycling hubs, the tricycles, uniforms and equipment for the IWR's. The first funds received through a competition covered the pilot project for six months in Alitho. The purpose of the pilot was to test their assumptions and prove that the model could work on a small scale. At the end of the pilot, TIRC managed to signup 65% of the households approached, and of that, 60% were active each week (C5-F1). The results were used as evidence to get more funding and continue growing their model.

**WR Approach method.**

***The first approach – Norman.*** Following the pilot and successful fundraising, Norman took on the role of finding WR's to join them. Coming from the technology startup world, the founders used the skills and methods learned, such as customer discovery, to learn more about the WR's in the community.

Customer Discovery - Norman highlighted that the first step was to make the TIRC team visible to the WR's and connect with them (C5-F1). He further noted that it is difficult to connect with them while they are working and found that the 'sweet spot' to engage and create a relationship with them is at the buyback centres once they are done collecting for the day (C5-F1). The customer discovery step helped the TIRC team understand WR's better, how to speak with them

and what drives them through having informal interviews when connecting with them and observations. Norman highlighted that customer discovery is essential because WR's are different in different areas (C5-F1). The following are the various interactions Norman would have with the WR's before approaching them:

Interaction 1 – Canvas the area - Norman highlighted that TIRC persons should know how many WR's there are in the area, map out their descriptions, try to memorise who they are, how they look, etc.

Interaction 2 – Continue building the relationship - Once WR's are known and where they will be, Norman would go around and greet them and sometimes give them sandwiches while they are working.

Interaction 3 – Approach WR - By the third interaction, the WR's would have become familiar with Norman, and he would be familiar with where they would be and approach them and initiate the conversation. Norman highlighted that it is essential to talk about them and learn about them and their job to show that you understand their role's enormity and respect (C5-F1). To assist with building trust, Norman says that it is essential to know the buybacks around the community, as if the WR is selling at a different one, you can highlight a place where they can get more (C5-F1). It is also vital for discovery to understand how much the WR's are earning and their expectations. This would also be the interaction where Norman would explain what TIRC can offer them if they join, such as the Local Hubs, the access to clean recyclables from the households, the uniforms and the fact that TIRC will come and do the buyback and the Local Hub. However, Norman also notes that it is essential to gauge what is essential to the WR as sometimes it might be about the price TIRC can offer versus what they are getting now (C5-F1). At this point, Norman will then propose a deal for them to come through.

However, Norman was not the only one trying to approach WR's. He also had the current collectors already on the team assist with finding more WR's as the WR's approached will get to see the benefits for them if they join.

The approach method outcome - Following the dual approach of Norman and the collectors approaching WR's, the outcome was as follows:

- WR's approached: 70 WR's
- WR's returned: 2 WR's
- WR's integrated: 2 WR's (the four other members, as highlighted previously, were not WR's)

Norman highlighted that it is challenging to retain WR's as TIRC's offering requires a behaviour change of being in the same areas versus going from community to community looking for an opportunity. Furthermore, it is difficult for them to grasp that there is enough opportunity in one area (C5-F1).

***The second approach – Greg.*** Following the difficulties TIRC experienced while integrating WR's, TIRC began searching to find a person who could assist with this process. Greg's household recycled with TIRC. He was unemployed and asked his collector whether he could collect to make some money. From there, he met Norman and got offered the role of WPI. He started on the 1st of June 2021 as the WPI for TIRC (C5-F2).

The following will highlight the approach method Greg used:

Interaction 1 – Canvas the area - Greg highlighted that he would go to various communities to find the WR's, even outside active communities.

Interaction 2 – Approach WR - Once he saw a WR, he would approach them while collecting from a bin or having a trolley with recyclables. During this approach, he would determine whether they are interested in a job opportunity and not have to 'skarel' anymore. Because of the forwardness of the approach, Greg highlighted that it could go either way, either getting screamed or sworn at or the complete opposite, where they would agree and ask what they have to do.

However, more than half of his interactions did not end well, where they would swear or scream at him at times, thinking he was taking them for a joke. For those that did go well, the next step he performs is to give them his address, take down their basic details and inform them to come on a day before training will take place to identify if they are interested before inviting them to a training session.

The approach method outcome - Within a few weeks of being with TIRC, the outcome of Greg's approach was as follows:

- WR's approached – 58 WR's
- WR's returned – 19 WR's
- WR's integrated – 10 WR's (the two other members, as highlighted previously, were not WR's)

Compared to the method of Norman, the approach Greg took does seem more effective, even though it is much less structured. Greg noted that it would be more difficult for someone like Norman than him as he is from the streets and has WR friends (C5-F2). In comparison, Norman would come across as too professional.

### *WR integration process*

**Integration process – WR's.** Following the approach phase, the next step was integrating the WR's into the project.

***Step 1 – Commitment.*** While TIRC had two different approach styles, the steps are taken to integrate the WR's are similar. Both Norman and Greg required the WR's to meet them on a specific day. Norman would need them to meet him at the local hub site 2-3 days a week, and once they arrive, he would request they do 'odd jobs' such as sorting recyclables for a few hours and paying them for their time. He further highlights that it is essential to not put too many constraints on them, only to ensure a date is given to them and a time as they are independent. Greg required the

WR's to meet him at his house a day before training. Once they show up, Greg uses the time to capture more details of the WR's, such as their basic demographic data, background, area of residence, and living situation. Once this process is complete, he will inform them of the next day's training and the location. Greg further highlighted that a few of the WR's would show commitment by coming to his house but no return to training. He is yet to understand why this happens.

***Step 2 – Training.***

Once the WR's have shown they are committed and serious about joining TIRC, they begin their training. Again, the TIRC training process has also changed between interviewing Norman and Greg. Initially, the TIRC training programme took around three weeks to complete, whereas currently, it takes around two days. This could be because WR's already knew how to sort and identify recyclables versus someone who does not work with waste.

Previous training method: Step 1 – Receive training gear - green bib and some gloves. Step 2 - Pair the WR with an existing collector or sorter to learn from.

The WR's get paired with an existing collector and sorter to learn the TIRC processes. During this time, they will have to learn the following:

- How to perform a collection and use the collector's app to capture weights from residents
- How to ride the tricycle and signal while cycling
- How to sort recyclables
- How to prepare for buyback

Step 3 – Social and soft skills training focused on how to deal with people - Part of the TIRC model is that they connect the WR's to the households with recyclables, and at times, the residents would ask them questions or queries about something. Eric Marty, one of the IWR's who is now a recycling collector for TIRC, highlighted, for example, that many of the residents would ask him about how Recycling Money work. Norman further highlights the importance of preparing them through scenario training of what to do if they encounter various types of customers to handle

themselves in the situation. During this training method, which could take between 2-3 weeks, the WR's receive a standard fee for each day they work to ensure they are focused on learning.

**Photo 17**

*WR Training*

*Note.* (Source: TIRC, 2020)

Current training method - The current training is performed over two days, with the rest happening when they collect or sort. Greg highlighted that one of the original collectors for TIRC that joined in the pilot would come in and perform the training on the following:

- How to communicate with people – Day 1
- How to sort the recyclables – Day 1
- How to ride the tricycles – Day 2
- Practical test – take the WR to a few houses to approach residents, interact and perform the collection – Day 2

***Step 3 – Receive their streets/assigned to their local hub.*** Once the WR's have completed training, they would receive their sheets with the list of addresses to collect from if they become Recycling Collectors for TIRC. Whereas, if they became a Recycling Sorter, they would be assigned to their Local Hub.

Furthermore, because the current training plan is so short, Greg would continue to monitor them at this stage to ensure they are okay and doing what they are supposed to be doing.

***Step 4 – Receive a tricycle.*** The Recycling Collectors would receive their tricycle, sign responsibility, and begin their collections.

***Step 5 – Receive uniform.*** The Recycling Collectors and Sorters will now receive their uniforms and sign responsibility for it.

***Step 6 – Open a bank account.*** Norman highlighted that it is essential to have cash in the beginning stages of the integration as some WR's do not have bank accounts (C5-F1). However, as they are integrated, the TIRC team assists them with opening bank accounts.

**Photo 18**

*Launch of the third local hub*

*Note.* (Source: TIRC, 2021)

### *Project operation method*

Figure 9 provides an overview of the operational process for the *TIRC integration project*.

**Local Hubs.** The Local Hubs (LH) are decentralised locations within a community where the IWR's are based. The LH uses shipping containers to set up the structure with a shade sail between them.

**Households.** The households within the community are the primary source of recyclables for the operation. TIRC signs up and onboards the households and then connect the recycling collectors to their designated streets. TIRC also coordinates with households, sending out reminders for collections and updates should there be any delays. However, the collectors also created their own relationships to get more recyclables, such as spaza shop owners.

**Buyback process.** The TIRC team will buy the sorted recyclables from each LH, paying a fee for each material based on its weight.

**Photo 19**

*TIRC buyback process at Local Hub 3*

*Note.* (Source: Author's own, 2021)

**Internal processes.**

***Team leaders.*** Each LH has a team leader who is responsible for the team. The team leader is elected by the integrated team operating the LH. During the operation, the TIRC team will contact the team leader throughout the day for updates and inform him/her of issues coming from specific households in their streets. The team leader also shares the concerns or issues from the collectors or sorters and shares those with Greg.

***Financial distribution.*** Generally, the team splits the amount made equally. However, there are cases where they will decide if someone should get less due to their performance or if they contributed or worked less.

## *What was the outcome*

**Project outcome.** Since the decision to create an accessible and inclusive recycling model in 2018, the TIRC team had to be resilient to get it where it is now. While it took some time to get actual WR's to join, TIRC currently has ten members integrated, of which eight were WR's before, who are collecting from 1000 households.

The integration model has also undergone various changes since 2018, especially since the arrival of Greg. Within a few weeks of joining TIRC, Greg managed to approach 58 WR's, of which 13 joined, and three were removed. However, due to the operational model, the project can only integrate more WR's once more Local Hubs are made available for them to operate. Figure 10 provides a timeline of the integration process development.

**Project operation.**

**Figure 9**

*TIRC Operation Process*

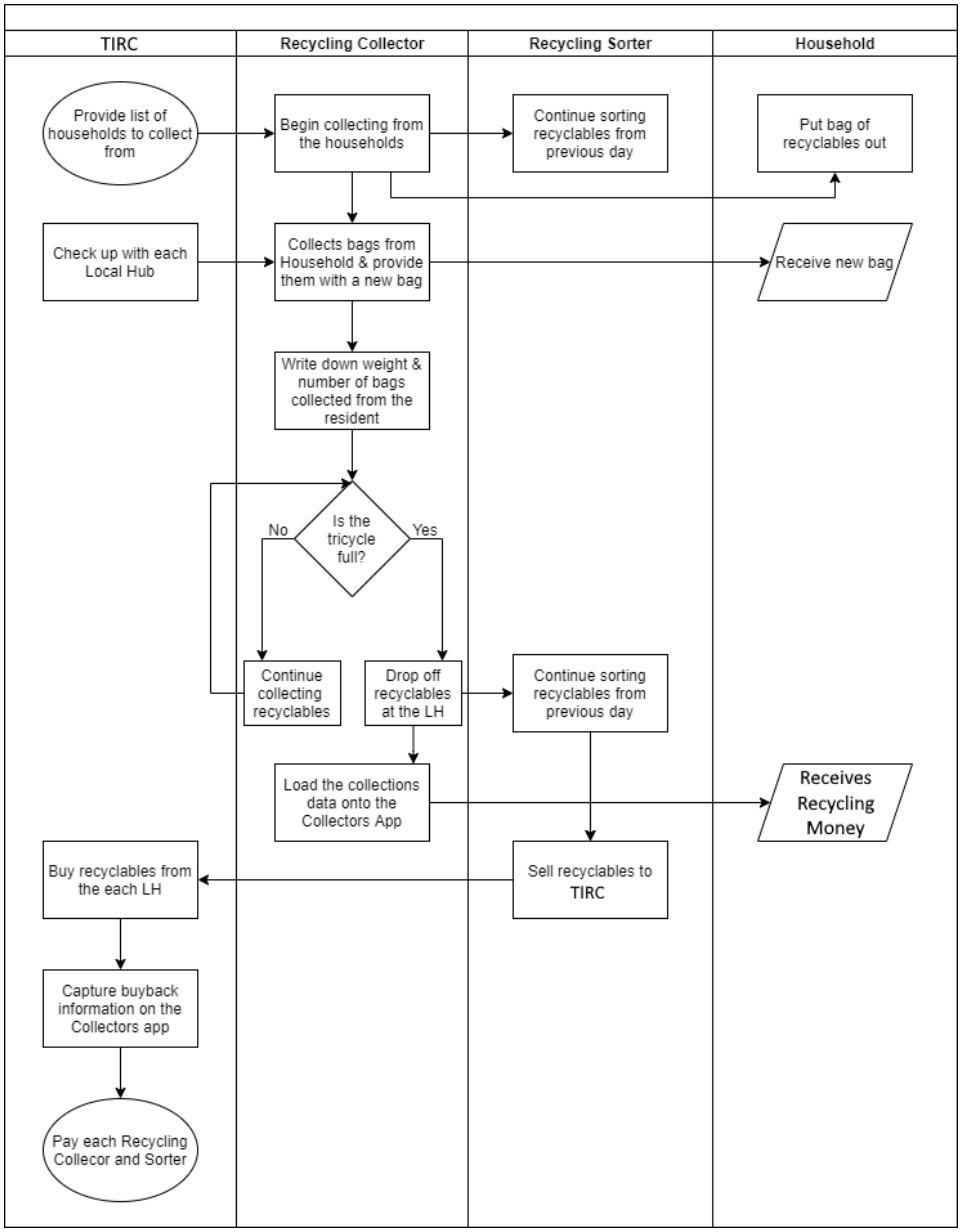
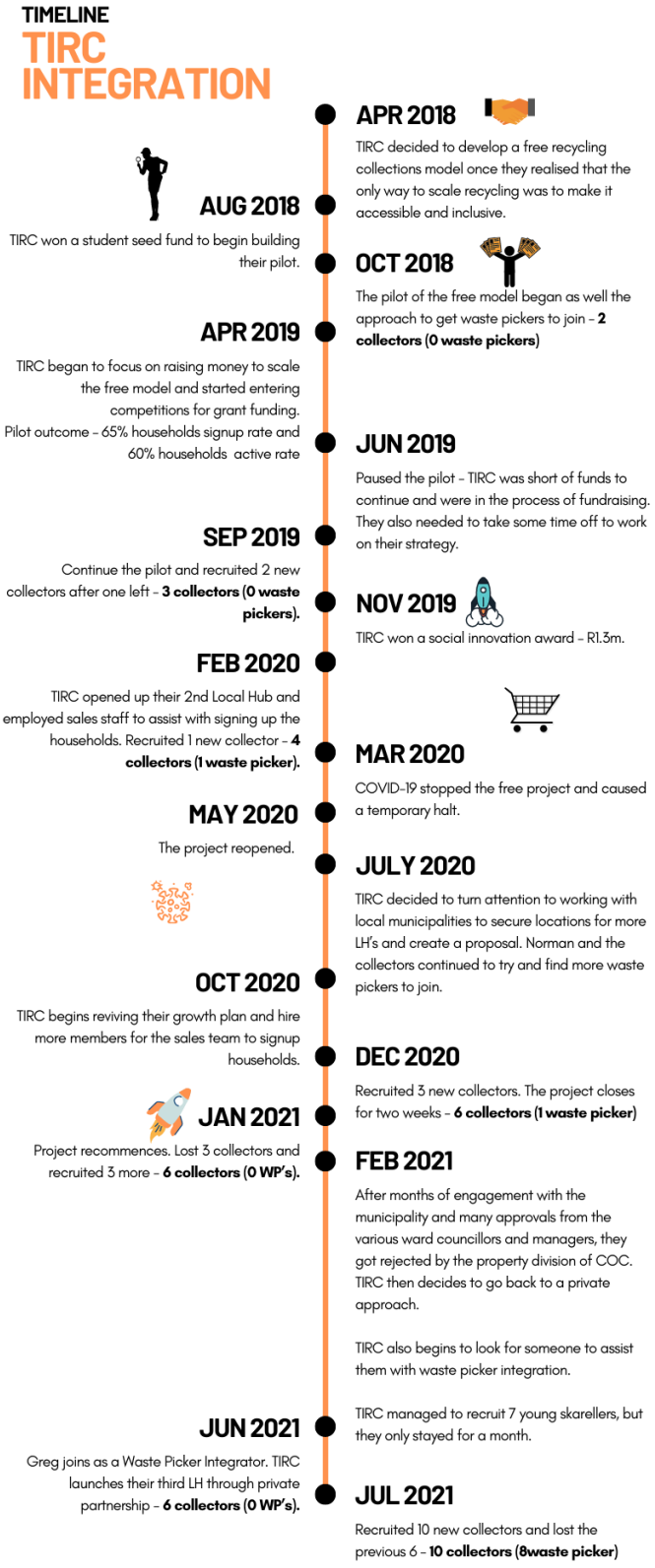


**Figure 10**

*TIRC Integration Timeline*



**Benefits to WR's.**

***Access separated recyclables, tricycles and local hubs.*** Through the TIRC model, the IWR's have access to what Norman refers to as their 'scaffold model' that equips the WR's with everything they need to be successful, such as the Local Hub and tricycles uniforms, and PPE. Eric has a different view of the scaffolding model term *"They form the structure, we must just fill in the bricks"* (C5-I1).

Access to separated recyclables - TIRC performs signing up households close to the LH. The Recycling Collectors then collect these separated recyclables "we don't have to scratch in a bin and through the dirt. We get out a bag full of bottles, all we do is, we sort it out, and it gets sold, and then we get the money" (C5-I1).

**Photo 20**

*Recycling Collectors and Sorters with their new uniform*

*Note.* (Source: TIRC, 2021)

***Community recognition.*** Thanks to their uniforms, the community takes the WR's more seriously and recognises them for the role they play. Eric highlighted that before, people would look at him differently compared to now *"never would I have thought they going to say 'Hi, how are things with you? You must come around, I have bottles at home.' Then I thought, 'Wow, that aunty never spoke to me'"* (C5-I1).

***Money.*** According to Greg, the recycling collectors and sorters are happy with the amount they are making through the project (C5-F2). TIRC pays the WR's for their material is similar to what they would make selling to a buyback centre.

***Training.*** Through the TIRC project, IWR's get exposed to various types of training. Norman highlighted that they put the WR's through scenario training on everyday situations they will encounter with the residents.

**Photo 21**

*Recycling Money donations parcels*

*Note.* (Source: TIRC, 2021)

***Bank accounts.*** The IWR's get assistance from TIRC to open bank accounts.

***Recycling Money Donations.*** TIRC allowed the residents that earn Recycling Money to donate that Recycling Money to the IWR's.

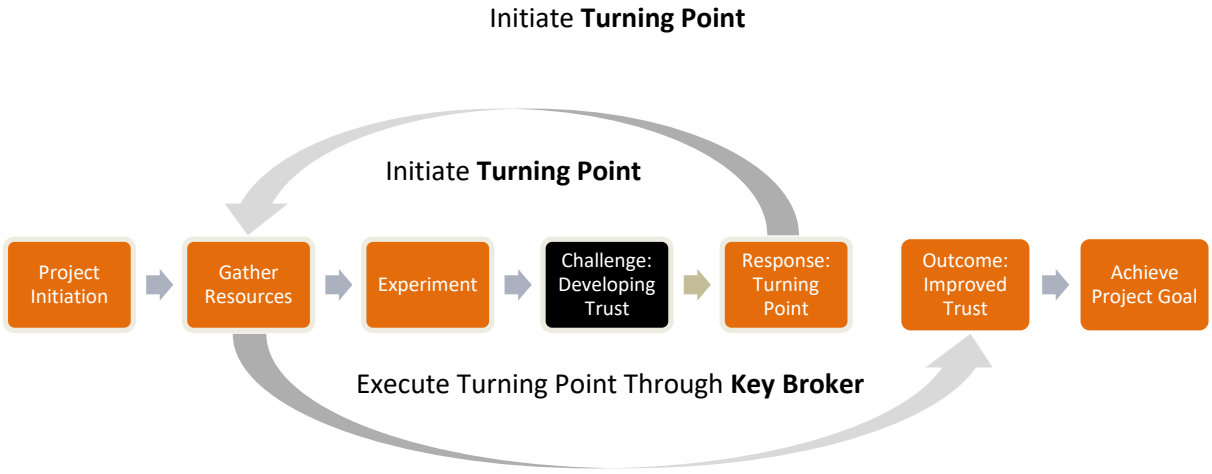
# Findings

The case study analysis resulted in a process model, as illustrated in figure 11. The projects attempting to integrate the waste reclaimers followed a similar pattern, culminating in the process model. The case studies followed a similar start, albeit in different conditions, with an initiation step that started the project. They then gathered resources such as raising funds, networking or using internal resources to begin their experiment to integrate waste reclaimers.

However, most of the cases also faced challenges at this stage which varied from case to case, and it occurred at different stages during the experiment phase. The majority of the challenges concerned developing trust with waste reclaimers. The projects struggled with getting waste reclaimers to hear them out during their approach, trust their onboarding process, or trust those that approached them. These challenges forced the establishment to respond, the *turning point.*

**Figure 11**

*Waste Reclaimer integration process model*



The turning point was a moment, a change that resulted in the project overcoming the challenge. In some cases, the turning point happened by chance, whereas in others, it was purposeful. However, despite how it came about, the turning point resulted in the emergence of the key broker that played a pivotal role in solving the challenge. Certain cases already had a key broker on their team during the turning point, and this was the moment where they showed their importance to the success of the integration. Cases that never had a key broker met theirs during the turning point, and they had the answer to their challenge.

However, before executing the turning point, the projects needed to return to gathering resources to address the challenge. These resources came in the form of networks, finance or access to internal resources. Once they regathered resources, the project could execute the turning point. Following the entire execution of the turning point, the projects needed to adjust their model to fit the changes from the turning point. The number of processes that needed to be changed varied from project to project.

Lastly, following the execution of the turning point and intervention of the key broker, the projects were able to make progress and meet their targets.

Table 8 summarises case-specific evidence for each of the activities in the process in figure 11. For the cases where there were multiple experiments, the columns have been split to accommodate the multiple activities.

The rest of this chapter will discuss the findings of this research by providing the outcomes of the cross-case comparisons for each of the main activities highlighted in the process above.

**Table 8**

*Case-specific evidence for each of the activities in the process*

| | C1 – Brawane | C2 – Wingston | C3 – Palabong | C4 – Kumarone | C5 – Alitho |
|---|---|---|---|---|---|
| Initiation | Brawanepak wanted to open a new buyback centre to buy the recyclables from the waste reclaimers in the Brawane CBD. Also, business students Gary Frederick and Paul Vern had an intention to build a trolley to assist the waste reclaimers with their daily collection routine. | The municipality needed to get the waste reclaimers off the landfill as it was illegal and out of control. They also needed to reduce the amount of waste going to landfills. | Members from SAWPA met with Travis (after hearing about the Wingston project success) to discuss the potential of integrating their members from the Palabong area. | The reasons for initiating C4 were vast, in total, 9. It touched on empowering the community, creating a drop-off point for waste reclaimers, creating sustainable income, deviating Silver Brew's packaging from the landfill and improving their brand. | We decided to increase the number of residents recycling but do so in an inclusive way by integrating waste reclaimers into the collection model. |

| | | | | | | |
|---|---|---|---|---|---|---|
| Gather Resources | Following the initiation, more project partners were approached with different skill sets. They also needed to get PPE and trollies for the waste reclaimers. | C2 required no extra resources as the waste reclaimers were operating on their landfill, and they had the existing infrastructure to place the waste reclaimers once integrated. Furthermore, Travis had extensive experience in integration. | The municipality had to clear the Palabong transfer station, which was not used then, and expand the separation at source service to more areas to get more recyclables. | In 2018 Silver Brews put out an RFQ for a service provider to implement a pilot of the SustainableGrowth project. Recycling Solutions, a waste management solutions company, applied and was chosen. Recycling Solutions was responsible for running the pilot. | | We needed to raise funds twice. First to run the pilot and, secondly, to grow the pilot process. The funds were required to pay for the canvassing, set up the decentralised recycling hubs, the tricycles, uniforms and equipment for the integrated waste reclaimers. |
| Experiment | Before the project launched, the team performed two research activities to help inform decision making. They then | Travis wanted the waste reclaimers to work on a separate space off the landfill and began approaching them to | Twenty members that Minnie recruited started, and integration began. Access to PPE, access cards, | The pilot launch consisted of performing the market research, providing vital information | Aubrey set up meetings at the buyback centre to speak to the waste reclaimers each Thursday for two | During the pilot, TIRC never worked with waste reclaimers to perform the collections from residents. Following |

| | | | | | | |
|---|---|---|---|---|---|---|
| | began approaching WR's at a buyback centre and integrated them into the project. They also needed to onboard the businesses. | explain the situation and solution through informal meetings. | workshop of rules and conditions, require data of the waste area of work. | regarding the recycling industry in focus areas, and determining how the project moved forward. | months. Aubrey visited the buyback and had conversations with the waste reclaimers. | successful fundraising, we expanded the project and began approaching waste reclaimers to join their free residential collection service. |
| Integration Challenge(s) | The assessment caused many waste reclaimers not to want to join. Eventually, they lost five waste reclaimers and could not approach more as the buyback centre was illegal and did not want to work with them. | After the second meeting, Travis realised that he needed to find a way to build trust with the waste reclaimers. | There was confusion about how things work in the recycling industry because the people Minnie recruited were not waste reclaimers. This led to their dissatisfaction and low work performance. | The waste reclaimers were hesitant to work with them as they had trust issues. | Aubrey only managed to get 23 waste reclaimers. | TIRC struggled to get the waste reclaimers to join the project. Only one actual waste reclaimer joined, but the rest were not. |

| | | | | | | |
|---|---|---|---|---|---|---|
| Turning Point(s) | The project began approaching waste reclaimers at the shelter, which Jerry knew and assessed. | After the waste reclaimers informed her about Travis and his plans, Meghan joined the third meeting. Travis offered her a short-term role as supervisor of the project. | Minnie approached actual waste reclaimers to join the project after non-waste reclaimer members left. | Used an internal resource to run the project instead of the contractor. | Aubrey approached Florence, informed of her by Recycling Solutions; he approached her and asked her to tell all the other waste reclaimers about it. | Getting a Waste Picker Integrator (WPI). |
| Outcome | Jerry created trust with waste reclaimers thanks to his existing networks and reputation, which resulted in waste reclaimers being willing to join. | Meghan created trust with the waste reclaimers, which resulted in waste reclaimers being willing to join. | An increase in performance from the project team resulted in better income and more waste diverted from the landfill, increasing the municipality's trust in their ability. | The involvement of Aubrey built trust with the WPs & BBCs. | Florence managed to get 70 WR's, thanks to her network and existing trust with local waste reclaimers. Florence also joined the project as a buyback centre. | An increase in trust with waste reclaimers increased the number of waste reclaimers willing to join. |

| | | | | | | |
|---|---|---|---|---|---|---|
| Impact | The project was able to achieve its goal of integrating waste reclaimers. | The project achieved its goal of integrating waste reclaimers from the landfill with less resistance. | Meeting expectations from the municipality ensured they could continue working at the MRF. | Meeting Florence, getting the BBC's to join the project and inform waste reclaimers to progress towards meeting its target of working with 100 waste reclaimers. | The project met its target of working with 100 waste reclaimers. | The project achieved its goal of integrating waste reclaimers to perform the recycling collection. In total, TIRC had ten integrated waste reclaimers. |

## Initiation

There needs to be an initiation step to get an integration project started. The initiation is generally performed by individuals or organisations that have something to gain through the integration project. In the five cases analysed, four were initiated by the formal sector, and C3 by the informal sector.

In C1, the members who initiated the project, Brawanepak, intended to open a buyback centre to get more paper to process and manufacture. The business school students, Gary Frederick and Paul Vern, had an intention to build a trolley to assist the waste reclaimers with their daily collection routine. However, Gary Frederick and Paul Vern left the project while it was still in the idea phase, and the mantle mainly fell with TAP, BBCID, FEH and GreenWane, who also have their motivations to be involved with the project.

In C2, the state of the Wantal landfill site was one of the main reasons the Davulane municipality created this project. Travis's senior manager highlighted that the landfill was out of control. Before joining Davulane municipality, they approached the South African police to get the waste reclaimers off the landfill. He highlighted that it was so dangerous that people got stabbed, gun-pointed, and robbed on the landfill site.

However, having experience doing this before during his time at a previous municipality, Travis was determined to get it right at the Wantal landfill site too. Travis highlighted that he has a passion for waste reclaimers and gets his “kick” when he has taken them from where they were, working on a landfill site to helping them become “successful intrapreneurs within a building, which is provided by the authority” (C2-F1).

**Table 9**

*Formal Entities Roles and Motivations*

| Name | Organisation | Role | Motivation |
|---|---|---|---|
| Mike Sherman | Brawanepak | Buyback centre | Accumulate more paper to manufacture products while doing good through CSI funds. |
| Gary Frederick & Paul Vern | Business school students | Social innovator | Assist the waste reclaimer in their daily routine |
| Whitney Preston | BBCID | Social development manager | Reduce crime and grime |
| Jerry Parker | | Social worker | |
| Lena Valentin | | Precinct manager | |
| Marlee Milton | TAP | Business connector | Uplift Brawane CBD |
| Kenly Bertha | GreenWane | The waste expert | Develop and promote the green economy in the province |
| Professor Cynthia Sylvester | UT | The researcher | Extend research to understand waste reclaimers better |
| Unknown | FEH | The shelter | Assist the homeless and create job opportunities for the members residing in their shelter |

The senior manager also highlighted two priorities for the municipality *"we want to create jobs, and we want to minimise the waste that goes on to the landfill site"* (C2-F1). Therefore, it is a significant benefit to reduce waste going to the landfill and integrate the waste reclaimers into their recycling programme from a waste management perspective. As for the job creation priority, that is technically not true as the intrapreneurs are not employed. They sort the recyclables that the

municipality collects through their recycling programme, and the intrapreneurs sell them to make a living. If they do not work, there is no income, and therefore it is not technically a job.

The Davulane municipality was also involved in C3. However, in contrast to the previous cases, C3 was initiated by the informal side. SAWPA, an association that represents waste reclaimers, met with Travis after hearing about the Wingston project success to discuss the potential of integrating their members from the Palabong area. Travis proposed integrating them at the Palabong transfer station instead. This would allow the Davulane municipality to extend its recycling collection operation to more areas and divert more waste from landfill.

C4 was initiated by the head of the Silver Brews sustainability team, Evan Sherman. Silver Brews' objectives focused on empowering the community, creating a drop-off point for waste reclaimers, creating sustainable income, deviating Silver Brew's packaging from the landfill, and improving its brand. Similarly to the previous cases, the project was developed to help waste reclaimers, but there were also many benefits for the formal entity in seeing the project succeed. They, therefore, had various motivations to develop this integration project.

C5 was initiated as they decided to increase the number of residents recycling but doing so in an inclusive way by integrating waste reclaimers into their collection model. What separates C5 from the other cases is that this was a project – part of a business model. TIRC created a new model from our previous model, a paid model that primarily operated in upper-income communities. Our new model was a free collection service that worked with the waste reclaimers to perform the collection through their decentralised recycling setup. C5 integrating waste reclaimers was also very appealing to raise funds for the model. Therefore, C5, in a way, had to make sure that it integrated waste reclaimers.

Regardless of the reason for initiating the project, it is clear that there needs to be a strong desire in making the integration a success. This is the first requirement in creating a successful integration project that all parties involved get their *kick.*

## Gather Resources

Once the projects have the motivation to integrate waste reclaimers, they needed to gather the resources to give the project the highest chance at succeeding. These resources differed from project to project as each project focused on its strengths to gather resources.

C1 focused on networks and internal resources. The Social development manager at BBCID was able to call on their internal resources, such as their Social worker and Precinct manager. She was also able to get the manager at GreenWane to join the project and provide her expertise in the waste field. The manager from GreenWane was then able to get the researcher from UT to join. The project manager from TAP was able to spend her time on the project. These organisations could utilise their internal resources because the project and its mission fell within their mandates.

In contrast, C2 required no extra resources as the waste reclaimers were operating on their landfill, and they had the existing infrastructure to place the waste reclaimers once integrated. Furthermore, the senior manager had extensive experience in integration, having done it successfully at previous municipalities.

Similarly, C3 had the existing infrastructure; however, the municipality had to clear the Palabong transfer station, which was not in use at that time, and expand the separation at source service to more areas to get more recyclables. They also had to use more internal resources to assist the waste reclaimers in integrating training and business development into a municipal process.

As a large organisation, C4 had the budget and internal resources, which they used to put out an RFQ for a service provider to implement a pilot of the SustainableGrowth project.

In contrast, C5 never had much budget as a small business, but it used its skills to raise funds to make the project a reality. C5 needed to raise funds twice. The funds were required to pay for the canvassing, set up the decentralised recycling hubs, the tricycles, uniforms and equipment for the integrated waste reclaimers.

# Experiment

## *Research*

To better understand waste reclaimers, all non-government projects performed extensive research during their projects. C1 had UT and GreenWane as their partners to research the waste reclaimers in the Brawane CBD to understand better how they work. It focused on the waste reclaimer earnings, collection sources, distance travelled, and their perception of their work. For C4, Silver Brews sourced a company to perform a pilot project. This consisted of them performing the market research and providing vital information regarding the recycling industry in focus areas. C5 used the customer discovery methodology to understand better the waste reclaimers in their operational area. They also ran a pilot project to understand better how our model could work during this time.

In contrast, the government projects performed minimal research. C2 and C3 involved Travis, who is highly experienced, working as a waste manager for the past 25 years in various municipalities and previously performed an integration project.

Furthermore, in government projects, the scenario is different from non-government projects. In the government projects scenarios, specifically C2, the waste reclaimers had less choice to join the project as it was a case of either joining or not collecting recyclables on the landfill. With C3, the waste reclaimers needed the municipality. These factors reduced the amount of research to be performed for the government projects compared to the non-government projects.

## *Approach*

The methods used to approach the waste reclaimers for the government projects were different for the C3 and C2 projects. C2 consisted of 3 informal meetings on the landfill between Travis and the waste reclaimers. The meetings consisted of Travis explaining who he is, their intentions, and how it will work. The last meeting involved him and Meghan informing them that if

they do not join, they will not be able to operate on the landfill. For the C3 project, Travis informed Minne that she would need to have waste reclaimers ready to work, and she and her partner, Nettie, initially approached people who were struggling and needed money in the community. However, the members they approached were not waste reclaimers. Like all the non-government projects, C3 also needed a second approach that focused on approaching street & landfill waste reclaimers as they could not work with the previous batch.

While the approach was different for all the non-government projects, all their approaches involved buyback centres. C1's first approach consisted of them engaging with waste reclaimers at the buyback centre after selling their recyclables. However, it also consisted of an ad hoc approach where waste reclaimers would hear about the project and approach Jerry informally. In C5, waste reclaimers were approached on the street and at buybacks after selling their recyclables. However, our approach method consisted of 3 interactions with the waste reclaimers before informing them of the project. While similar to C1, C4 had a more formal relationship with the buyback centres as they also benefited from the project. In their first approach, the service providers focused primarily on the buyback centre relationship, which caused them to have a second approach method without the service provider, as did the rest of the non-government projects.

In the second approach method, C4 still leveraged their relationship with buyback centres to communicate to the waste reclaimers that they should attend the meetings with the project team. During these meetings, the project team explained what the project was about, their intentions, and the waste reclaimers' benefits. C5's second approach consisted of recruiting a waste picker integrator (WPI) who had a much more direct approach to waste reclaimers. The WPI would approach waste reclaimers while collecting and, if interested, take down their details. While a risky approach, the outcomes were good for the project. C1's second approach, the project team had to find a new method to attract waste reclaimers as the buyback centre they worked with did not want

to continue the relationship. The project team began approaching specific waste reclaimers who stayed in the FEH shelter and were part of the GROW job creation programme.

### *Integration & Outcome*

All cases besides C4 had less than 20 waste reclaimers integrated by the end of the integration process. This could be because the C4 project required less operational involvement from the waste reclaimers than the rest. In their operation, the waste reclaimer only had to ensure they signed the register in the morning and afternoon to receive their EPWP stipend. Furthermore, selling at the buyback centres that worked with the project was not compulsory.

In contrast, the other projects operations required the waste reclaimers to perform various tasks and operate under rules. C2 started with 68 waste reclaimers integrated. Within four months, they were 30, and a year later, they were 19. The high dropout rate was caused for various reasons. The waste reclaimers who joined had to adhere to numerous rules compared to their carefree way of working on the landfill.

Furthermore, not all the waste reclaimers on the landfill focused on dry recyclables, such as plastic, paper, metals or glass (which is what they had to sort and sell through the project). Some focused on items they would not get through the project, such as e-waste or scrap metal. Also, the landfill, which they were banned from, had new management that never took security as serious, and eventually, waste reclaimers returned to the landfill. According to one of the waste reclaimers, Kirstin, she is still with the project as it is safer than working on the landfill.

Similarly, C3 also integrated into the Davulane Municipality's recycling operations, as did C2. They also had to abide by the same rules when joining. However, this time it was not random waste reclaimers joining the project; they joined through a co-operative, Qamama Enterprise, which was formed due to the opportunity at being integrated into the municipality, with three original members. Once the project was confirmed, Qamama Enterprise had to recruit waste reclaimers to

join. They initially approached unemployed people from their community who were not waste reclaimers. After their first recruitment drive, they were in total 20 members. A few months in, members began to leave due to the different expectations of their roles. They were now 11 members six months later, including the original 3. A year later, they were back to the original three only and then began recruiting actual waste reclaimers from the street and landfill this time. By March 2021, they were 16 members in total.

The other two non-government projects also had varied reasons for their outcomes. C1 started with 22 waste reclaimers who showed commitment and began the assessment process. However, three months later, when they were introduced to the businesses, only 8 remained, and only 5 of them pitched to meet the businesses. A year later, they lost 5 of the eight waste reclaimers and began recruiting 5 more from the FEH shelter to remain at 8.

## Challenge

The projects faced a challenge that led to the turning point following the experim*ent*. These challenges came at various stages within the experiment.

As highlighted in the experiment section, C1 needed a second approach after the project's launch, as five of the ten waste reclaimers integrated from the first waste reclaimer approach fell off the project. According to Marlee, the project manager from TAP who was responsible for linking the business and WR's, the five falling out of the project was mainly because they were substance users. She also highlighted that many businesses closed during COVID-19's initial lockdown was another reason for some members falling out.

For the second approach, the project team had to find a new method to attract waste reclaimers as the buyback centre they worked with did not want to continue the relationship. The project team discovered that this buyback centre was operating illegally. Due to the spotlight of the

project, the business owner decided to not continue with this 'interaction'. This was a critical situation as the project needed to find more collectors who could collect from the businesses.

C2 faced its challenge early in the experiment. During the approach phase of the integration, Travis struggled to get the waste reclaimers on the landfill to trust him. During the second meeting with the landfill waste reclaimers, which was a day or two after the initial meeting, around 30 of the 100 landfill waste reclaimers showed up, and Travis realised that he needed to find a way to gain their trust. So again, Travis highlighted that he would be back, hoping that the word would spread and more would attend. During the third meeting, some of the waste reclaimers decided not to listen to what he had to say. Travis knew he needed to find a way to gain their trust.

In contrast, C3 faced their main challenge later compared to C2. Once the project was confirmed, Qamama Enterprise had to recruit waste reclaimers to join. They initially approached unemployed people from their community who were not waste reclaimers. After their first recruitment drive, they were in total 20 members. However, there was confusion about how things work in the recycling industry because Minnie recruited non-waste reclaimers. According to Minnie, these members assumed that municipalities would pay them as they worked at municipal facilities. Minnie highlighted that they were made aware of the process and that she was always transparent with them. She told them that they were working on municipal premises. However, the amount of money they make is dependent on how hard they work. It also seems that working amongst municipal workers, who did not have to work as hard as them, confused them *"they could not understand why we need to push them to work hard, while those municipalities people are working freely."* (C3-I1). After a while, their unhappiness grew, and according to Minnie, she then started to see their behaviour change *"people start to misbehave, people started being rude, swearing at us"* (C3-I1). The first members began leaving around August 2019. Members left due to the different expectations they had of their role. They were now 11 members six months later, including the original 3. A year later, they were back to the original three only.

In contrast to the rest of the projects, C4 had two main challenges that needed solutions. The first was a lack of alignment between Silver Brews and Recycling Solutions, who was responsible for executing the pilot. Their model focused more on the buyback centre than the waste reclaimers, whereas Silver Brews wanted to work with the waste reclaimers and people from the community. However, they mainly received information on the buyback centres. The second challenge was building trust with the waste reclaimers following the adjustment to solve the first challenge.

C5's biggest challenge was to integrate any waste reclaimers. Since launching the pilot in October 2018, C5 only managed to integrate one waste reclaimer, with the rest being skarellers or unemployed persons. The project used a complicated and time-consuming waste reclaimer approach method, which was unsuccessful. This, according to Greg, was because Norman was not from the 'streets', which resulted in waste reclaimers not easily trusting him.

## Turning Point

Following the main challenge(s) each case faced, they needed to develop a solution. These solutions came in the form of a 'turning point', a moment that occurred, a change that resulted in the project overcoming the challenge.

C1 needed to find a new way to integrate more waste reclaimers to join the project and continue their collections at the businesses. A solution was required as they lost 5 of their previous waste reclaimers, and the buyback centre they worked with to recruit waste reclaimers was no longer willing to work with them. By losing the buyback partner, the project lost a crucial partner in forming relationships with waste reclaimers and a location to meet and communicate with them. To combat this, C1's project team used the strength of their network to find a solution. The solution was to recruit waste reclaimers that stayed in the FEH shelter. Furthermore, these waste reclaimers had already been assessed by Jerry and had an existing relationship with him through his role as a social worker.

For C2, Meghan joined the third meeting after the waste reclaimers informed her about Travis and his plan. She introduced herself to Travis, and he realised that she was the "*open door towards a trusted relationship towards these informal recyclers*" (C2-F1). Travis then told Meghan about the project, and she gathered the people on the landfill site and told them what would happen if they did not intervene. Travis highlighted that Meghan went to the members who did not listen to his proposal, and being multi-lingual, she could converse to the Xhosa waste reclaimers. Meghan then managed to get them to where Travis was on the landfill, and they highlighted the opportunity and ultimately that if they did not join, they would "*come in with the police and law enforcement*" (C2-F1). The choice was up to the waste reclaimers. The turning point for the project happened when Meghan joined the third meeting to show her support of the project as a trusted person amongst the waste reclaimers. Following this, Travis offered Meghan a short-term role as the project supervisor.

For C3, following the realisation that non-waste reclaimers would be challenging to integrate into the project, Minnie decided to approach waste reclaimers instead, as they had a better understanding of the process. Minnie and the two remaining members visited different landfills to hold meetings with the waste reclaimers and approached them on the street. This process began in October 2020, and they were continuing this process at the time of my interview. Minnie and her team recruited seven new waste reclaimers to join her and the remaining two founding waste reclaimers of Qamama Enterprise. Three months later, they managed to recruit another six, and according to Francis, they were collecting between 20 and 30 tonnes of recyclables per month, which is good compared to the beginning of the project.

At C4, to solve the first challenge of the lack of alignment between Silver Brews and their service provider, Recycling Solutions, who was responsible for executing the pilot, they decided to use internal resources to spearhead the project on the ground as the service provider's model focused more on the buyback centre than the waste reclaimers, whereas Silver Brews wanted to

work with the waste reclaimers and people from the community. After the pilot, the SustainableGrowth plan had to be redrawn and restarted. Therefore, following the initial pilot, they decided not to renew the contract and instead use one of their existing human resources to perform the project tasks, in this case, Aubrey. This decision was the first turning point for the SustainableGrowth project.

The second turning point for C4 was focused on solving the trust challenge with waste reclaimers. While Aubrey's involvement improved the trust between the project and waste reclaimers, he could not meet the project target. One of the waste reclaimers Aubrey approached was Florence. Initially, she was not a buyback centre and started as a waste reclaimer. Aubrey was informed of her by Recycling Solutions; he approached her as at the time he needed to find waste reclaimers to join the project and told her the following: *"Listen, we understand that you are a waste picker, can you tell all the other waste pickers within this area that we are from Silver Brews, we want to empower waste pickers."* (C4-F2). The project struggled to create trust with waste reclaimers before meeting with Florence. Florence recruited most waste reclaimers to the project due to their relationship with her. Without the 70 waste reclaimers she recruited, the project would not have met its target.

For C5 getting a Waste Picker Integrator (WPI) was the turning point. The C5 actors were well aware of their challenge to integrate waste reclaimers. C5 only managed to integrate one waste reclaimer, with the rest being skarellers or unemployed persons. So they decided to begin searching for someone who could fill the position of WPI. At the same time, Greg was unemployed and searching for a job. His household recycled with the Alitho project, and he asked his collector whether he could collect to make some money. The collector then informed Norman about Greg, and Norman visited him. From there, Norman realised that Greg could potentially fill the role of WPI due to him being a local, street-wise and familiar with waste reclaimers in the operational area. Norman proposed it, and Greg accepted.

### *Adjust*

Following the turning point, the projects needed to adjust their model to fit the changes. The number of processes that needed to be changed varied from project to project.

For C1, the turning point made integrating waste reclaimers from the shelter simpler. However, they needed to adjust the approach used, which was initially designed for street waste reclaimers. To the waste reclaimers from the first approach, the message was more focused on the legal and professional elements of the project at the buyback centre. Waste reclaimers were told about the project's objective, to 'legalise and professionalise waste picking' by connecting waste reclaimers to businesses with recyclables, providing them PPE, identification and legal trollies. However, the shelter waste reclaimers' approach method was slightly different as they have shifts that they perform at the shelter. The approach was more around promoting it as an added benefit to their current lifestyles.

Due to C2's turning point occurring so early in their experiment, they never had much to change. Travis offered Meghan a 3-month contract as a supervisor under the EPWP programme as, by law, it can only be 3-months and not longer. However, Meghan continued to stay as a supervisor voluntarily after the contract ended. The rest of the adjustments that needed to be made, such as providing the waste reclaimers with a space to sort and ensuring they receive recyclables were part of the original project plan.

Similarly to C1, C3 had to revise how they approach waste reclaimers and the value propositions used compared to the method used to approach the previous group who were not waste reclaimers. To get the waste reclaimers to join, Minnie used the following as value propositions to the waste reclaimers:

1. Collective – by using the collective power, Minnie highlighted to the waste reclaimers that it would be better for them to work together. She highlighted that their voice could be heard better together than alone.
2. Testing – Minnie made sure to highlight to the waste reclaimers that they could come and try it before deciding. This allowed waste reclaimers first to test whether it would work for them or not.
3. SAWPA Backing – Minnie also highlighted that they are working with SAWPA, which has its benefits. By working with her co-operative, the waste reclaimers would also gain their benefits and backing. Minnie highlighted recent benefits they received, such as PPE, having the opportunity to talk to UNIDO and the Japanese officials.

For the first turning point of C4, Aubrey was the one on the ground. Initially, he worked with the project implementor, Recycling Solutions, when he joined in 2019. However, once Recycling Solutions' contract ended, he spearheaded the project on the ground with Brayden and project partners. In addition, he engaged directly with the waste reclaimers and buyback centres. Aubrey said the relationship with the buybacks was good after Recycling Solutions left. However, they still needed a new plan to gain their trust without Recycling Solutions by being present regularly. So, the SustainableGrowth team approached the two buyback centres who were already part of the project, highlighted their intentions for the buyback and waste reclaimers, and requested a meeting with the waste reclaimers who sold their recyclables.

In contrast, the relationship with the waste reclaimers was not as good as with the buybacks. In addition, the waste reclaimers were hesitant to work with SustainableGrowth as they had trust issues, and the new plan would require them to gain their trust by being present regularly. Aubrey set up meetings at the buyback centre to speak to the waste reclaimers. Once the Silver Brews team got the buyback centre's approval, the buybacks communicated with the waste reclaimers to attend the meeting with the team. During the meeting, Aubrey explained the project's

intentions and benefits for the waste reclaimers joining, such as PPE, waste management skills and financial training. Then, each Thursday for two months, Aubrey visited the buyback and had conversations with the waste reclaimers to inform them of the project, encourage them to join by submitting their IDs, and reassure them that they would come through for them and assist them.

The second turning point adjustment for C4 was setting up Florence to have her own buyback centre. The SustainableGrowth project team had to engage with the local ward councils to find suitable land to set up the buyback centre. Once the project team had secured the land to set up the buyback centre, they placed the containers. The buyback centre must also attend compulsory waste management training at the Integrated Waste Management Facility. The buyback centre also received PPE, which consisted of an overall, glasses, and gloves. However, they also received equipment such as scales.

C5 actors had to onboard and train the WPI as, before this, Greg had no experience in the recycling or waste management industry, and C5 did not have a WPI in its ranks. For both parties, it was a new experience. The initial training was basic onboarding training about the TIRC, its mission and processes. The WPI was then trained on the tools they used and how to perform the expected administration activities, such as data capturing and reporting. Norman also introduced the WPI to all the existing partners and began to manage the WPI through the process.

## Key Broker Impact

Table 10 provides a detailed overview of who the key brokers were, their previous experience, role in the project and they managed to build trust with waste reclaimers.

### *Key Broker Comparison*

**Table 10**

*Key Broker Comparison*

| | C1 – Brawane | C2 – Wingston | C3 – Palabong | C4 – Kumarone | | C5 – Alitho |
|---|---|---|---|---|---|---|
| | Jerry Parker | Meghan Precious | Minnie Kyra | Aubrey | Florence | Greg |
| Role | Waste reclaimer integrator & project supervisor | Waste reclaimer integrator, project supervisor & buyback centre | Waste reclaimer integrator & project supervisor | Project co-ordinator & waste reclaimer integrator | Buyback centre & waste reclaimer integrator | Waste reclaimer integrator & project supervisor |
| Project tasks | Create relationships | Recruit WR's, coordinate the | Recruit and manage waste | Project monitoring & reporting to head | Get waste reclaimers to join the project. | Recruit and manage waste |

| | | | | | | |
|---|---|---|---|---|---|---|
| | with the waste reclaimer and address substance abuse through assessment. Get WR's an ID. | waste reclaimers at the sorting site. Buy the recyclables. Manage WR's | reclaimers. Engage with the municipality. Arrange collection of materials. Educate residents on what to recycle | office. Be the person on the ground. Create relationships with buyback centres & waste reclaimers. Share lessons with Silver Brews | Communicate with Aubrey and provide waste data with Silver Brews | reclaimers. Assist with training. Have daily check-ins with WR's. Data capturing of info of WR's |
| Organisation | BBCID | Private buyback | Qamama Enterprise | Silver Brews | SustainableGrowth | TIRC |
| Background/Previous employment | A social worker that worked with the homeless in Brawane CBD for many years | Buyback centre & community volunteer | Environmental education & waste reclaimer | Academic researcher & consultant at an environmental solutions company | Waste Reclaimer | Sold scrap metal, worked as a wireman, foreman in construction and most recently, a receiving at a maritime company |
| Gender | Male | Female | Female | Male | Female | Male |

| | | | | | | |
|---|---|---|---|---|---|---|
| Age | 40-50 | 30-40 | 30-40 | 20-30 | 50-60 | 40-50 |
| Race | Coloured | Black | Black | Black | Black | Coloured |
| Relationship creation methods with WR's | He had a reputation in the community, worked with the homeless for many years, and genuinely cared for people. | She had a reputation in the community, bought recyclables from WR's before the project, and genuinely cared for people. | She approached WR's in streets and landfills with the proposition and wanted to help unemployed residents | To connect with WR's he worked with BBC's that had existing relationships with WR's | She was known in the community, was previously a waste reclaimer, and desired to help people. She also operated a buyback centre through the project | He was known in the community. He approached WR's randomly and had WR friends |

**Why brokers were needed.** The main finding of my research was around the key role played by the brokers between the project and the waste reclaimers. While the position was not formally listed as a 'broker', the role was consistent through all the cases. The role was required to assist the project team with connecting with waste reclaimers, integrating them, and supervising them. Thus, the key brokers needed to be able to operate and understand the formal and informal world and the stakeholders within these sectors. Importantly, they needed to get the waste reclaimers to trust the project and join them.

The work of waste reclaimers is informal, with different cultures and norms than the formal sector where the projects generally operate. Thus, facilitating change is essential as the formal sector's values and norms are different from those operating in the informal sector. Furthermore, the key broker needed to highlight the incentive of formalising to ensure the informal workers are motivated enough to go through the transition. Sutter et al. (2017) labelled these changes as 'institutional scaffolding' constructed by the intermediary, which are the new norms, practices, relationships and positions that support the transition to the formal sector.

**Why they were able to play this role.** The key brokers all had an understanding of waste reclaimers, either through being one previously or working or socialising with them. They understood how waste reclaimers think, communicate and operate within their areas. For example, though C5's key broker, Greg, was not a waste reclaimer, he had sold scrap metal before and had friends who were waste reclaimers. These insights and experiences, combined with his experiences of working in formal jobs, provided him with the necessary resources to play the key broker role. Similarly, Minnie from C3 also had experience working in the formal sector and informal sector as a waste reclaimer. These insights and experiences from the formal and informal world made them perfect for the key broker role.

In contrast, Jerry from C1 worked as a social worker, and through his job, built up experience of working with the homeless, some of whom were waste reclaimers, and relationships with them before the project. Compared to the rest of the key brokers, Jerry was the most formally qualified to perform this role due to his professional expertise as a trained social worker. Similarly to Jerry, Meghan from C2 also worked with waste reclaimers before joining the project. However, she worked with them through her buyback centre that bought their recyclables. Add to this her charitable role of helping members in the community with various issues, and it makes Meghan a well-known and respected figure amongst the community and waste reclaimers, someone they look to for help and the person who buys their material.

All cases had one key broker besides C4. This was because the project required relationships with waste reclaimers and the buyback centres. Aubrey had to play the key broker role first between the buyback centres and then some of the waste reclaimers that the buyback centres managed to set up meetings with. While Aubrey did not have any direct link to waste reclaimers, he is an academic researcher. He used these skills to communicate with the buyback centres, who then set up meetings to communicate with the waste reclaimers. Building trust with the WR's was not easy; however, he managed to engage with them, build trust and get feedback during these engagements. While he did manage to integrate some, he struggled to reach their target of 100 waste reclaimers. However, Florence was the key broker between the project and most of the waste reclaimers she recruited. As a waste reclaimer, who then started a buyback centre, she had the network and trust to play the role. Furthermore, due to her previous experiences working with the grocery stores in her community and the waste management company that sponsored her with a vehicle and trailer, she had the knowledge and experience to work with the formal sector. This assisted her in playing the key broker role between Audrey and the waste reclaimers.

Furthermore, the key broker's race and language(s) are similar to the race and language of most waste reclaimers in the project area. Also, the key brokers were from the area where the project took place. This highlighted the importance of the key broker being a local to get a form of trust with waste reclaimers. Reputation also played a role in C4 (Florence), C2 and C1. The key brokers also genuinely cared for helping people from their area, which enhanced their reputation in the community.

## Impact

This section will highlight the impact created on each project following the adjustment caused by the turning point.

**Trust.** The outcomes of the turning points had a similar result of increasing the trust with the project partners, especially the waste reclaimers. In C3's case, the increase in trust was more to do with the municipality trusting that they could perform as expected. They never had to focus on building trust with waste reclaimers as much as the other cases because the team consisted of waste reclaimers. This made convincing other waste reclaimers to join easier than the other cases. This finding is also seen in C4, where Florence was able to get recruit 70% of the required waste reclaimers to meet its target. In C1, C2 and C5, the turning points involved someone joining or an existing member who could help build trust with waste reclaimers. Jerry in C1 had an existing relationship with the waste reclaimers from the shelter. C2 and C5 struggled to get waste reclaimers to trust them until their key broker joined. For C5, within a few weeks of being with TIRC, Greg managed to integrate ten waste reclaimers. These findings highlight the importance of trust within an integration project with waste reclaimers and the key broker's role in creating that trust. Similarly, after Meghan joined, they were able to get 68 of the 100 waste reclaimers to trust them and join on the first day.

**Meeting targets.** The turning point was essential in ensuring the projects met their targets. All the cases had the objective of working with waste reclaimers. Some had specific targets, such as C4, which had a target of integrating 100 waste reclaimers and C3, with 20 waste reclaimers. In the other cases, C1, C3 and C5 wanted to integrate waste reclaimers and never had numeric objectives. However, in C3's case, their turning point assisted the project with reaching another target, which was to meet the expectations regarding tonnes being recycled from the municipality they worked with. Before the turning point, they struggled to sort the recyclables delivered to them due to the performance. However, after their turning point, they met their performance expectations as they integrated real waste reclaimers and not simply unemployed people to sort. The turning points were essential to the projects in achieving their goal, which was to work with waste reclaimers, and in C4's case, buyback centres. C5 created a project specifically designed to assist waste reclaimers, but C5 struggled to get any waste reclaimers to join its project until the turning point.

# Discussion of Findings

This research was inspired by my experience working in the recycling industry in my professional capacity. I co-founded a company focused on motivating South Africans to recycle. While successfully motivating residents to recycle and collecting their recyclables, I became more aware of the role of the waste reclaimer. The company was collecting recyclables, along with waste reclaimers. The only difference was that waste reclaimers were performing their collections by scratching through residents' bins and residents separated their recyclables for the company. Logically, it made sense for waste reclaimers to work with the C5 project instead of against us. Also, just like the waste reclaimers, recycling initiatives were being displaced by government tenders that automatically colonised recyclables in communities, so I began to sympathise with the constant challenges waste reclaimers face, as they risk being displaced by tenders or private companies.

I became interested in understanding waste reclaimers and learned about their significant impact on the industry, yet they were not included in the formal sector and worked in horrible conditions. The inspiration was to find out how to successfully integrate waste reclaimers into a recycling solution that is inclusive and built for the South African context.

This research, therefore, sought to answer the following questions: What is the process to formalise and integrate unorganised waste reclaimers into the formal waste value chain in the Western Cape?

When I embarked on this research, I initially focused on understanding how waste reclaimer integration was performed. I discovered that the process is essential, but who was doing it was even more critical in determining whether waste reclaimers would be interested in joining a waste reclaimer integration project, especially amongst unorganised waste reclaimers. Trust was a critical

factor to have between the waste reclaimers and the integration project, and without it, projects found it difficult to get waste reclaimers to work with them.

These findings challenged my assumptions that it was more about how integration is done and less about who does the integration. It also challenged my assumption that the formal sector only initiates integration projects as in C3, it was the waste reclaimers that initiated the integration. Furthermore, it highlighted that various factors differentiate waste reclaimers, and one cannot simply use universal solutions when attempting to integrate them.

The research findings demonstrate that waste reclaimer integration projects should start with building trust and a relationship with waste reclaimers to better understand their needs before developing the project. However, it also highlighted that building relationships and trust is not a role that anyone can perform. It requires a specific type of person, and the characteristics required are dependent on the type of waste reclaimers the project intends to integrate. This role was labelled the 'key broker'. Furthermore, my research demonstrated that integrating waste reclaimers into projects run by private organisations is more efficient and inclusive, as they can adjust the processes compared to projects run by the municipalities with a set of rules that the waste reclaimers need to conform to.

The research engaged members involved in waste reclaimer integration projects in the Western Cape region, both formal members and waste reclaimers. The formal members varied depending on the project. Out of the five cases, two were local municipalities, one was a recycling company, another was a large alcohol beverage company, and the fifth was a combination of community development organisations. Similarly, the waste reclaimers integrated also varied. Some projects focused on landfill waste reclaimers, while others focused on street waste reclaimers in residential areas or CBD.

As highlighted in the problem statement and literature review, most of the prior research on waste reclaimer integration projects was based in Gauteng and Free State province, where waste reclaimers are more organised through co-operatives or waste reclaimer associations such as SAWPA or ARO. However, this is not the case for most waste reclaimers in the Western Cape province. Therefore, the findings provide insight into how waste reclaimer integration projects occurred in the Western Cape. Furthermore, it highlights the critical role of the 'key broker'. The key broker was required to successfully get waste reclaimers to trust the formal entity and build relationships. The findings highlight what made the key brokers successful, which will help any future waste reclaimer integration project where waste pickers are not organised.

## Contributions To The Literature

Prior research on integrating waste reclaimers in South Africa, as well as in other countries, has emphasised the role of waste reclaimers being organised in large associations, such as SAWPA and ARO, so as to give them more bargaining power. Alternatively, as in some South American examples, the integration process has been supported by intermediary organisations, such as NGOs. This is in line with Sutter's and colleagues' (2017) finding, which emphasises the importance of an "institutional intermediary" to help informal actors find a foothold in formal markets, essentially bridging the different institutional worlds. My research contributes to this prior work by exploring what makes such integration processes successful even in the absence of large associations or intermediating NGOs.

My key contribution is to explain the need for a "key broker" who is able to build trust among the waste reclaimers. My findings show just how vital such trust-building is, because waste reclaimers have a deep-seated distrust of actors in the formal sector, based on their prior experiences. They also show that such "key brokers" need particular characteristics in order to play such a role, including direct personal experience or at least intimate knowledge of the day-to-day

lives of waste reclaimers, as well as of the local community context. Without such intimate experience and knowledge, waste reclaimers seem unable or unwilling to offer their trust. It is unlikely for a large NGO to be able to demonstrate such local-level knowledge and embeddedness, as in the analysis by Sutter and colleagues (2017), so I open the way to more research on the need and opportunity for such locally embedded brokers.

## Contribution To Practice

Based on the various findings highlighted above, this section will discuss the key lessons of the waste reclaimer integration projects that were researched in this study.

### *Key Brokers Should Be Prioritised In Integration Projects*

In all the cases besides C3, the key broker was not part of the initiation stage of the project and only got involved after the project team understood the need to have one. Key brokers should be prioritised when implementing an integration. Besides C3's turning point, all the turning points led to the key integrator joining the project. By prioritising the key broker, the project's chances of successfully integrating waste reclaimers will increase, the amount of time attempting to integrate waste reclaimers without a key broker will also be saved, and lastly, the reputation of the project will be more positive with the waste reclaimers from the beginning.

### *Key Broker Requirements*

From the earlier comparison of the key brokers, the similarities between the various brokers were established. The following is a list of the requirements that make a successful key broker:

1. Be able to bridge the formal and informal worlds
    a. Have some experience working or operating in both formal and informal sectors
2. Be local or have close knowledge of the context of the community

   a. Being seen as one of the people in the community will increase the chances of waste reclaimers trusting the key broker

3. Be able to communicate in the languages of the waste reclaimers
   a. In South Africa, the chances are high that the targeted group of waste reclaimers will speak more than one language. Therefore, the key broker needs to be multilingual to communicate and build trust with all waste reclaimers.
4. Have a reputation in the community and relationships with waste reclaimers
   a. This will increase the speed at which waste reclaimers will trust the key broker and increase the key broker's ability to understand waste reclaimers
5. Have a passion for helping people

### *Successful Integrations Are Local & Community-Driven*

While unplanned, members from the community where the integration took place played a critical role. C1's key broker, Jerry, has worked in Brawane for many years and had a good relationship with the people, especially the homeless and businesses in the area. C2's turning point involved Meghan hearing from the waste reclaimers about the project, and she decided to go to the landfill and introduce herself to Travis. Without the waste reclaimers informing her and taking the initiative, the turning point would not have occurred. In both C3 and C4, the key brokers were from the community, had the local context and cared for the area's people. Similarly, in C5, Greg lived in a household that recycled with the project and asked one of the collectors for a job as a collector. The collector then informed the operations manager, and he approached Greg as they were looking for a waste reclaimer integrator at the time.

### *Pilot To Learn & Make Changes*

Pilots are essential to learning the best way to go about integration, and in the cases researched, the resulting lessons led to the turning points. C4 used a pilot to learn more about the

industry and players. They also piloted using a contractor. However, through the pilot, they learned that they needed an internal person “on the ground” to create the required trust between the project and the waste reclaimers and buyback centres. Similarly, C3 learned after their first attempt of working with non-waste reclaimers, which led Minnie to perform the turning point of recruiting existing waste reclaimers. Also, C5 ran a pilot project, which helped them realise that integrating waste reclaimers is not simple if you do not have the skill-set of a key broker. This insight led C5 actors to begin looking for a waste reclaimer integrator which led to the turning point of recruiting Greg for that role.

### *Waste Reclaimers Are Skilled Professionals, Albeit Informal*

Recycling integration projects meant to integrate waste reclaimers cannot be filled by people simply looking for work. Waste reclaimers have experience collecting on their own, travelling many kilometres to different areas, scratching through bins or on the landfill to find recyclables to sell and then travel many more kilometres, on foot, to the nearest buyback centre. They have experienced all the hardships of waste picking, which general unemployed people have not. Given these experiences, they are much better placed to appreciate the potential benefits of participating in integration projects. In contrast, the general unemployed people would not have such understanding.

For example, C3’s turning point occurred when members from the first approach method left after becoming disgruntled by the financial return they received for their work. In contrast, waste reclaimers are aware of the prices they will receive for materials they sell as they have already done the work. Furthermore, waste reclaimers have some skill level when it comes to sorting, making it easier for them to be effective.

Similarly, in C5, the project team became increasingly desperate to find a waste reclaimer integrator after realising that people who are not waste reclaimers cannot fill the role or appreciate

as much as waste reclaimers would. However, C5 actors struggled to integrate waste reclaimers until they found a waste reclaimer integrator.

### *Integration Projects Need A Robust Social Work Focus*

Integration projects with waste reclaimers cannot only focus on recycling or waste management elements. Some of the waste reclaimers the projects worked with lived on the street. Living on the street creates severe challenges for the waste reclaimers and the project seeking to integrate them in formal value chains.

For example, C1's social development manager noted that integrating waste reclaimers into the project will not work if addiction rehabilitation is not taken care of. Even though the waste reclaimers who are addicted to a substance had access to the rehabilitation centre, she highlighted the difficulty, especially for those who live on the street, as they lack the support system. C1 also prioritised assisting waste reclaimers in getting their IDs and moving back home if they lived on the street or shelter.

Similarly, C2's key broker assisted the integrated waste reclaimers with family disputes. C5 was aware of the social issues that affected its waste reclaimers, such as drug addiction. However, they never had a programme to assist them. Therefore, an integration project needs to focus on assisting wasting reclaimers with social issues, as well as improving their livelihoods from a recycling perspective.

### *Partnerships Are Important*

In all the integration projects, partnerships were important. For instance, C4 would not be able to reach its target of working with 100 waste reclaimers without their partnerships with the buyback centres. Also, they would not have been able to set up the buyback centre for Florence, train the waste reclaimers, or provide EPWP stipends without their partnerships. Similarly, C3 would not have been possible without the willingness of Travis to open the opportunity to Minnie and her

team to operate from the municipality's facility and expand their separation at source programme to accommodate them.

Of all the cases, C1 exemplifies this lesson the most. Their project had the most project partners, thanks to the network and knowledge of community organisations, that assisted them in making their project a reality. These organisations focused on improving the area, such as BBCID and TAP, played a crucial role in connecting stakeholders for an integration project.

Furthermore, the knowledge of the partners assisted with linking the relevant organisations with the project, such as the rehab facility and the shelter in the case of C1. This saved the project time compared to if the project was new in the community. The partners also had a workforce and resources which they could allocate to the project.

All parties involved need to get their 'kick' for an integration project to succeed. This ensures that both the formal and informal party is motivated to see the project succeed.

### *Waste Reclaimers Do Not Have To Wait On The Formal Sector To Initiate Projects*

C3 was unique as it is the only case from this research where the members from the informal sector took the initiative and proposed a project to the formal sector. This initiation, however, was only possible thanks to WAWPA and highlighted the importance of organisation amongst waste reclaimers. Regardless, it is a lesson that waste reclaimers, when they mobilise in an organised manner, can initiate projects that can benefit them.

## Limitations

The first limitation was communication with waste reclaimers. English is only a second or third language for most waste reclaimers, which made communication challenging at times. However, if there was a challenging scenario with interpretation, there was always at least one waste reclaimer that could assist with translations. Furthermore, specific waste reclaimers were less inclined to open up due to a lack of trust.

The second limitation is the number of cases. Only five cases in the Western Cape met the requirements to be considered a case in this research. In the methods chapter, I highlighted the requirements used to qualify cases.

The third limitation was COVID-19. While I was able to visit the site of each case, most of the interviews, especially with the formal members, were performed virtually. Due to this, there is a potential of missing specific observations that would only be visible in an in-person meeting.

The fourth limitation is the limited information on the key brokers. The research design was initially focused on understanding the integration processes used by these projects and developing a model from the activities and processes that worked for ease of future integrations. However, during the analysis, the role of the key broker became the integral component of successfully being able to integrate waste reclaimers. However, by this stage, all data collection was complete, and therefore the information about the key broker was limited. Future research can explore this role in more detail.

# Conclusion & Recommendations

If waste reclaimers are made a part of the inclusion and integration process. In that case, all waste reclaimers need to be addressed and not only those with whom it is easier to work, such as organised waste reclaimers. Through five case studies that consisted of 27 interviews over three years, this research focused on understanding the processes used to integrate unorganised waste reclaimers into formal recycling projects. Each case was unique and had different requirements. However, the main finding was the critical role of the key broker that was instrumental for these projects to be able to integrate unorganised waste reclaimers successfully. However, these cases were only based in the Western Cape and findings in other provinces might have a different outcome. Therefore, another recommendation is to perform this research in other provinces. Previous research has highlighted the significant impact waste reclaimers have on the recycling industry, with little to no integration. By building a waste reclaimer integration process built for the needs of the local waste reclaimers, which responds to the needs of the majority of waste reclaimers, which are unorganised, the impact of integration attempts can be more successful and impactful.

## Recommendations

As highlighted in the limitations, there is limited information on the key broker. Therefore, the first recommendation is to perform deeper investigations on the key broker personality, background, demographics, etc., to understand the specific qualities that enable them to play their essential role. Furthermore, investigate whether the key broker's empathy engender the trust gained or if was it the brokers tie to the others in the network that was most important.

The second recommendation is to perform similar research in other provinces in South Africa where waste reclaimers are not organised. Most of the information regarding waste reclaimer

integration are from the areas where waste reclaimers are organised. These findings might assist in understanding whether the importance of the key broker role is nationally realised when integrating unorganised waste reclaimers.

The third recommendation is to adjust the Waste Picker Integration Guideline for South Africa to accommodate most waste reclaimers, which are unorganised. This should be done to ensure fewer failed attempts at waste reclaimer integration. This recommendation focuses explicitly on the team establishment step in the guideline, which is vague. The addition of the key broker role should be added, particularly in situations regarding unorganised waste reclaimers and using the findings in this research as a criterion of what to look for in the potential key broker.

The fourth recommendation

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# Appendix A – Standard Interview Questions

## Interview Questions – Formal Waste Organisation

Purpose of the interview

- Tell me some more about the project you initiated.
    - Is it still going?
- Why was the project started? What was the motivation? And why did you want to integrate or partner with an informal waste workers?
- Was there any specific buy-in required from your organisation or team before you could go ahead?
- Initiation
    - How did you go about initiating it?
    - How were they approached?
        - Were all of them WR's before?
        - Of those approached, how many joined the programme?
    - Who were all the **role players** that ensured this partnership happened smoothly? On your side and there's.
    - Were they any specific resources required to get the project going?
    - What were your requirements for the informal waste organisation before you could create a partnership?
    - What were the biggest risks and how did you mitigate them?
- Operations
    - After the agreement and everything is in order, how did you go about setting out the operation to ensure things worked smoothly?

        - Was there training? If so, what sort of training?
    - Because of the different operating style and norms, how did you align yours and their norms and methods to be able to work together. Were there any significant changes that were required internally or some sort of change management intervention?
    - Was there any external partner required to make the process sustainable?
    - What were the requirements from the informal waste organisation? And how did you meet them?
    - Of those that joined, how many more has joined and how many has left the programme?
        - Why?
- There's a high rate of failure when it comes to formalising the informal waste sector, why do you believe this process worked/didn't work?
- Why don't other organisations/municipalities attempt to do what you've done?
- If you had the chance to redo this process, what would you have done differently?
- What's the vision of the project and do you think you're successful?
- Would it be possible to get the details of other team members you mentioned to interview them?

## Interview Questions – Key Broker

- Why did you want to integrate or partner with a formal waste organisation?
- How did you go about initiating it?
- What did you as an organisation have to do in order to work with the formal waste organisation?

- What were some of changes you needed to make to be able to work in the formal sector? Were these changes easy to make?
- Was there any specific buy in required from your organisation or team before you could go ahead?
- Who were all the role players that ensured this partnership happened smoothly? On your side and there's.
- Because of the different operating style and norms, how did you align yours and their norms and methods to be able to work together. Were there any significant changes that were required internally or some sort of change management intervention?
- There's a high rate of failure when it comes to formalising the informal waste sector, why do you believe this process worked?
- Was there any external partner required to make the process sustainable?
- If you had the chance to redo this process, what would you have done differently?

## Interview Questions – Integrated Waste Reclaimer

# Appendix B – Consent Form

**MASTER OF PHILOSOPHY IN INCLUSIVE INNOVATION**

**INTERVIEW CONSENT FORM:**

**Participant name:** …….

I volunteer to participate in a research project conducted by Chad Robertson as partial fulfilment of the requirements for the MPhil Degree at the Graduate School of Business. I understand that the research is designed to gather information about 'Formalising the Informal Waste Sector' and that I will be one of approximately 30 of people being interviewed for this research.

Background and purpose of the research

Waste pickers in South Africa typically exist on the margins of society, experience dire poverty and enjoy little support from government, civil society and private sector waste initiatives. The role of waste pickers emerged due to high unemployment and poverty rates, and the inability of government to manage waste adequately. This research seeks to explore and understand successful processes used to integrate and formalise waste pickers into the formal waste sector in South Africa. The desired outcome of this research is to potentially develop a framework on how to integrate waste pickers into the formal value chain.

Ethics approval

Ethical consent for the study has been approved by the *UCT Commerce Faculty Ethics in Research Committee*

Participation and confidentiality

I understand that my participation in this research is voluntary, that I will not be compensated and that I may withdraw at any time.

The interview will take approximately 45 - 60 minutes to complete and will be audio recorded

I understand that I will not be identified by name in any reports using information obtained from this interview and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.

Consent

I consent to participate in this interview, based on the terms outlined above and subject to the following additional condition of my own (if any).

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**Signed by interviewee** **Date**

…….. ……..

**Signed by Student** **Date**

**Contact details**

- **Researcher:**
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# Appendix C – Case Study Protocol

## Overview of the CS Project

Waste pickers in South Africa typically exist on the margins of society, experience dire poverty and enjoy little support from government, civil society and private sector waste initiatives. The role of waste pickers emerged due to high unemployment and poverty rates, and the inability of government to manage waste adequately. This research seeks to explore and understand successful processes used to integrate and formalise waste pickers into the formal waste sector in South Africa. The desired outcome of this research is to potentially develop a framework on how to integrate waste pickers into the formal value chain.

## Field Procedures

### *Name of Sites To Be Visited Including Contact Details*

**Brawane.**

- TAP Head office
- FEH shelter
- Collection points

**Davulane.**

- Davulane municipality – Travis Scott
- The waste centre – Meghan, the foreman & a worker

### *In Field Resources*

- Fully charged recording device
- A book to take notes & a pen, and a backup pen
- Consent forms
- Interview questions

## Data Collection Plan

### *Types Of Evidence To Be Collected*

The primary source of data will come from interviews with various roles players in the integration process. These role players will be a mix of formal waste management players from private or public sector, informal waste collectors and an intermediary that connects the two prior players. During the data collection process, you'll be performing the interviews but also observe the interactions between the formal waste member and the intermediary as well the interaction between the intermediary and the informal waste collectors. Furthermore, capturing or getting copies of any type of documentation used in this process will be important, such as contracts, educations material etc.

### *Expected Preparation Prior To Site Visits*

a. Understand the overview of the case
b. Prepare interview question per role player within each case and understand if there are any language barriers to prepare questions for
c. Setup interview slots with each member to be interviewed
d. Get location of site(s) and contact details of interviewees
e. Prepare all tools required to extract data

## Case Study Questions

- The main purpose of the protocol questions is to keep the investigator on track as data collection proceeds
- Each question should be accompanied by a list of likely sources of evidence
    - Could be the names of the interviewees, docs or observations.
    - **These questions for the structure of the inquiry and are not intended as the literal questions to be asked**

## *Levels Of Questions*

> *Level 1:* questions asked of specific interviewees;
>
> *Level 2:* questions asked of the individual case (these are the questions in the case study protocol to be answered by the investigator during a single case, even when the single case is part of a larger, multiple-case study);
>
> *Level 3:* questions asked of the pattern of findings across multiple cases;
>
> *Level 4:* questions asked of an entire study—for example, calling on information beyond the case study evidence and including other literature or published data that may have been reviewed; and
>
> *Level 5:* normative questions about policy recommendations and conclusions, going beyond the narrow scope of the study.

- *Concentrate heavily on level 2 for the CSP*
- *L3*
  - *Example, are more larger project difficult to integrate vs smaller ones?*
  - *Should not be part of CSP for collecting data from a single case*
  - *L3 Qs cannot be addressed until the data from all cases are examined. Similarly, L4&5*

## *Level 1*

**Informal collector.** Understand and identify the chronological process from joining to execution.

During this time, ask questions regarding the following:

- What was the expectation of your role?
- Expectation of the benefits for joining
- What they needed to change to be able to join
- The adjustment
- The type of interventions required to maintain performance
- Daily routine
- Challenges of integration
- Is it better than before?
- Things they'd like to change

**Formal member.** Understand and identify the chronological process from ideation to execution.

During this time, ask questions regarding the following:

- The motivation to start the process of integration
- The challenges faced how if it was, how was it overcame
- The roles & resources required to get the project going
- The method used to approach the waste pickers
- The method used to integrate the waste pickers

**Intermediary.** Understand and identify the chronological process from joining to execution.

During this time, ask questions regarding the following:

- What was the expectation of your role?
- The method of getting the WPs to join
- The method of maintaining performance
- The type of interventions required to maintain performance
- Daily routine
- Challenges of integration

### *Level 2*

- Why was the project initiated?
- What was the outcome of the integration, success or failed? Why?
- Was it a private or public project?
- Who was involved in the project from the initiation to the operation?
- Was any training involved? If so, what material was used?
- What was the chronological process from ideation to execution?
- Were there any KPIs that were monitored and needed to be met?
- How many waste pickers were there at the start and how many are there now?

### *Level 3*

- What were the common traits/steps taken by the successful cases?
- Were certain cases that had specific roles more successful than other?
    - Success? Higher retention rate of waste pickers
- Was funds a factor in determining the outcome of the process?
- What organisational forms are most suitable for waste pickers to integrate?

### *Level 4*

N/A

### *Level 5*

- What policy changes are required to benefit the integrating process for waste pickers?