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*We apologise if we have excluded an individual or organisation.*



# Acronyms

<b>AISWM</b>	Advanced Integrated Solid Waste Management
<b>AWT</b>	Advanced Waste Treatment
<b>CIISC</b>	Brazilian Interministerial Committee for Social Inclusion of Waste Reclaimers ( <i>translated from Portuguese</i> )
<b>CODEMAS</b>	<i>Conselhos Municipais de Desenvolvimento Ambiental de Minas Gerais</i>
<b>COPAC</b>	Cooperative and Policy Alternative Centre
<b>CSIR</b>	Council for Scientific and Industrial Research
<b>DEA</b>	Department of Environmental Affairs
<b>DGRV</b>	Deutscher Genossenschafts- und Raiffeisenverbände e.V.
<b>DTI</b>	Department of Trade and Industry
<b>EMM</b>	Ekurhuleni Metropolitan Municipality
<b>FNLC</b>	National Waste and Citizenship Forum (Brazil)
<b>ISWM</b>	Integrated Solid Waste Management
<b>IWS</b>	Informal Waste Sector
<b>KKPKP</b>	Kagad Kach Patra Kashtakari Panchayat
<b>KP</b>	Knowledge Product
<b>LM</b>	Local Municipality
<b>MBT</b>	Mechanical Biological Treatment
<b>MRF</b>	Material Recovery Facility
<b>MSW</b>	Municipal Solid Waste
<b>NEMWA</b>	National Environmental Management Waste Act
<b>NGO</b>	Non-Governmental Organisation
<b>NWMS</b>	National Waste Management Strategy
<b>PPE</b>	Personal Protective Equipment
<b>PPP</b>	Public Private Partnership
<b>RLM</b>	Rustenburg Local Municipality
<b>SANACO</b>	South African National Association of Cooperatives
<b>SEDA</b>	Small Enterprise Development Agency
<b>SEIA</b>	Strategic Environmental Impact Assessment
<b>SMME</b>	Small, Medium and Micro Enterprises
<b>SWACH</b>	Solid Waste Collection and Handling (cooperative)
<b>SWM</b>	Solid Waste Management
<b>SWOT</b>	Strengths Weaknesses Opportunities and Threats
<b>UCLA</b>	Uswag Calahunan Livelihood Association
<b>UMDM</b>	uMgungundlovu District Municipality
<b>UNICEF</b>	United Nations Children's Fund
<b>VS</b>	Versus
<b>WCT</b>	Wildlands Conservation Trust
<b>WIEGO</b>	Women in Informal Employment, Globalising and Organising

# Glossary

Terminology	Definition
<b>Advanced Integrated Solid Waste Management</b>	The coherent and sustainable application of approaches and solutions that reduce the amount of waste that needs to be landfilled.
<b>Advanced Waste Treatment</b>	A specific technology or facility that alters the characteristics of waste through physical, thermal, chemical, and/or biological processes either prior to, or in place of, landfill. AWT broadly includes the recycling and/or recovery elements of the waste hierarchy.
<b>Business-to-Business Value Chain Interventions</b>	Supporting value-adding activities such as the production of final goods from recycled waste.
<b>Cherry Picking</b>	Selective picking of the most valuable materials.
<b>Circular Economy</b>	An economy where solid waste is valued as inputs into the economy without exiting the economic flow of goods after initial use.
<b>Contaminated Recyclables</b>	Recyclable materials mixed with, or 'contaminated' by, other types of waste.
<b>Corporate Social Investment</b>	Proportion of companies' profits injected into poor communities.
<b>Corporate Social Responsibility</b>	The continuing commitment by businesses to behave ethically and contribute to economic development while improving the quality of life of the workforces and their families as well as of the local community and society at large.
<b>Formal Sector</b>	All jobs with normal hours and regular wages that are recognised as income sources on which income taxes must be paid.
<b>Formalisation</b>	Legalising and ensuring compliance with business regulations, tax laws, etc.
<b>Human Rights Interventions</b>	Aimed at addressing the most basic human rights (the right to work in a safe environment).
<b>Informal Recycling Sector</b>	Individuals, families or (informal) small private sector entities whose activities are not organised, sponsored, financed, contracted, recognised, managed, taxed nor reported on by the formal solid waste authorities.
<b>Informal Sector</b>	That part of an economy that is not recognised or monitored by government, often not taxed, or captured in national statistics.
<b>Informal Sector Integration</b>	Methods to organise or formalise the informal recycling sector as part of official waste management strategies.

Terminology	Definition
<b>Informal Service Sector</b>	Entrepreneurs providing small-scale waste collection and cleaning services in rural and poor areas.
<b>Informal Valorisation Sector</b>	Recovery of recyclables and small-scale manufacturing by the informal sector.
<b>Informal Waste Sector</b>	An all-encompassing term that captures the totality of informal economic activity in the cleaning, waste management services and recycling sectors.
<b>Integrated Solid Waste Management</b>	The coordinated use of a set of waste management approaches and solutions, each of which has a functional role in an overall solid waste management system, and that combine together as a recognisably coherent whole.
<b>Itinerant Waste Buyers</b>	Recyclers who go door-to-door, collecting, buying or bartering for materials, before they have entered the official waste stream.
<b>Labour Force</b>	People who are able and willing to work.
<b>Linear Resource Economy</b>	An economy where solid waste exits the economic flow of goods once generated.
<b>Material Recovery Facility</b>	A facility where recyclable materials are recovered and sorted. At a dirty MRF, recyclables are sorted from mixed waste input feedstock; at a clean MRF, recyclables are sorted from a separately collected mixed-dry-recyclable input feedstock.
<b>Mechanical Bio-logical Treatment</b>	A combination of mechanical and biological processes used to pre-treat the input feedstock, and produce outputs including recyclables, refuse-derived fuel, and/or biologically stable compost.
<b>Traders</b>	Formal or informal entrepreneurs and companies buying recyclables from individual waste reclaimers or companies and reselling them into the recycling value chain.
<b>Primary Collection</b>	The collection of waste from the point of generation (e.g. household or commercial premises) and its transport to community containers or other places of secondary collection, or final disposal.
<b>Professionalisation</b>	Imparting professional skills and capacities.
<b>Refuse-derived Fuel</b>	Waste fraction with good combustion properties that can be used as fuel.
<b>Secondary Collection</b>	The collection of waste from a place of temporary storage that is distant from the point of generation (e.g. community containers or other locations) and transport to transfer station, treatment or landfill.
<b>Separation at Source</b>	Sorting of different materials at the source of generation (households, businesses, etc.), before collection.
<b>Waste Management Hierarchy</b>	An integrated set of options dealing with waste generation and the disposal thereof in order of preference: Reduce generated waste, reuse, recycle and compost, recovery of energy and disposal.



# Chapter No. 1

## INTRODUCTION





# 1 Introduction

## 1.1 Background to the AISWM programme

The South African government, in partnership with the German Development Cooperation, is implementing an advanced integrated solid waste management (AISWM) programme for the Republic of South Africa.

The programme sets out to prepare projects in pilot municipalities and disseminates knowledge, experience and practical application of advanced waste treatment (AWT) and broader AISWM systems in the context of South African municipalities.

AISWM is not a universally known term but is used to describe integrated solid waste management (ISWM), making use of AWT technologies, within a framework of policies, legislation and practices that reduce dependency on landfill for the disposal of waste. The programme defines AISWM as the *coherent and sustainable application of approaches and solutions that reduce the amount of waste that needs to be landfilled*.

AISWM is the process of advancing waste management practices up the hierarchy away from landfill and towards creating energy, recycling and composting, reuse and reduction. AISWM does not necessarily demand the use of sophisticated and expensive technology; rather it involves a blend of management systems and appropriate technologies that succeed in sustainably diverting waste away from landfill.

The Department of Environmental Affairs (DEA) coordinates the programme nationally, with the Rustenburg Local Municipality (RLM) and uMgungundlovu District Municipality (UMDM) partnering locally. Each of the partner municipalities receives tailored consultancy support for the preparation of AISWM projects that may be integrated into, and be sustainable in, their local situation.

The programme intends to implement successful AISWM systems in municipalities and undertake **KNOWLEDGE DISSEMINATION AND TRAINING ON BEST PRACTICES, EXAMPLES AND LESSONS LEARNT** from the projects.

Five knowledge products (KPs) are prepared to support capacity building on AISWM across South Africa. The KPs provide clear, concise and factual information to support decision-making on AWT and AISWM, so that municipalities and their partners can plan and implement the next generation of facilities.

## 1.2 Relationship between knowledge products

**KP3, RECOGNISING THE INFORMAL WASTE SECTOR IN ADVANCED WASTE TREATMENT**, builds on KP1: *An introduction to advanced waste treatment*, and KP2: *Appropriate technology for advanced waste treatment*. It raises considerations for including the informal waste sector (IWS) in the recycling and/or recovery elements of AISWM systems. The full suite of KPs is illustrated in Figure 1.

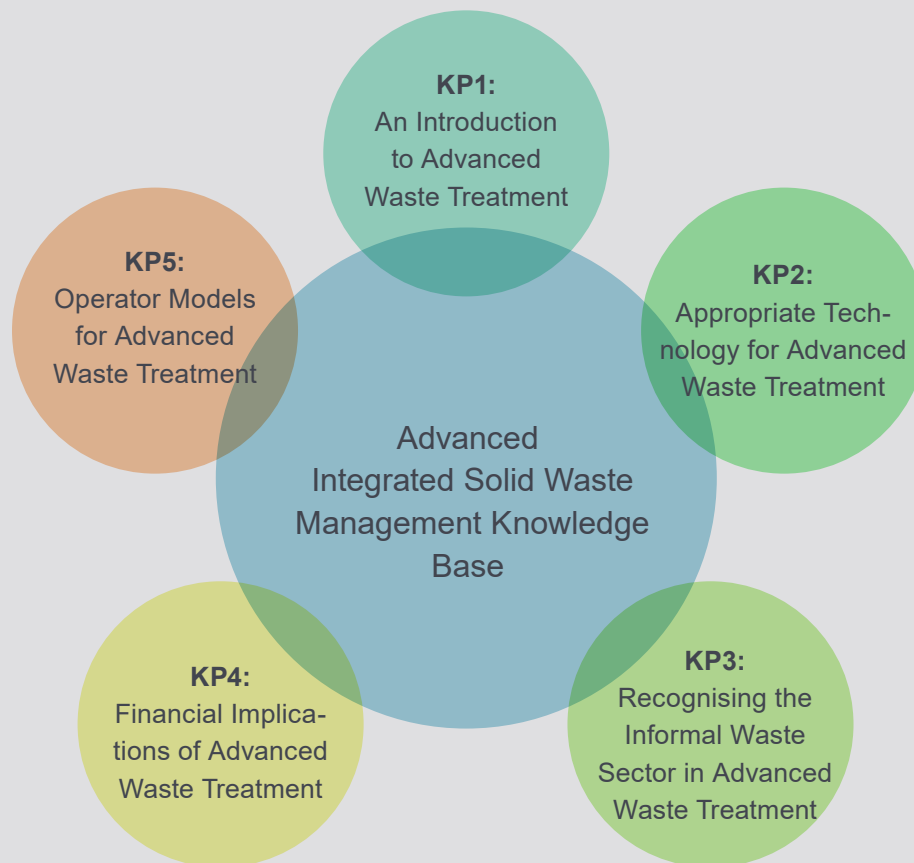


Figure 1. Relationship between knowledge products in this series

### 1.3 Municipal socio-economic challenges with solid waste management

South African municipalities face multiple **challenges**, which influence the status quo of solid waste management (SWM) practices, and their ability to implement new legally compliant systems that are compatible with policy objectives. These include:

- ▣ Rapid population growth, urbanisation and consumerism, leading to increasing quantities of solid waste.
- ▣ System capacity constraints for collection, treatment and disposal of solid waste.
- ▣ Lack of capital finance for new infrastructure and equipment.
- ▣ Lack of operational revenue linked to low levels of fees.
- ▣ Inefficiencies in service delivery caused by lack of organisational reform.
- ▣ Limited ability to locate and develop new landfills due to strong public reaction against such facilities.
- ▣ Reduced public awareness and buy-in to new approaches.
- ▣ The entry into the market of numerous operators, cooperatives, NGOs and waste traders, often with competing or conflicting interests.
- ▣ Increasing numbers of informal waste reclaimers working on the fringes of the waste management system, often living and working in poor conditions.

Traditionally, SWM has been regarded one dimensionally, with waste being collected and disposed of at 'sinks' that we know as landfills or dumpsites. However, since the inception of the *National Environmental Management Waste Act 59 of 2008 (NEMWA)*, municipalities are urged to adopt an integrated multidimensional approach to SWM by applying the principles of the waste management hierarchy in the development of their ISWM systems. The hierarchy includes waste reduction, reuse, recycling

and composting, creating energy (recovery) and disposal – with reduction being the most desirable and disposal the least. Both approaches, one-dimensional and multidimensional, are presented in Figure 2.

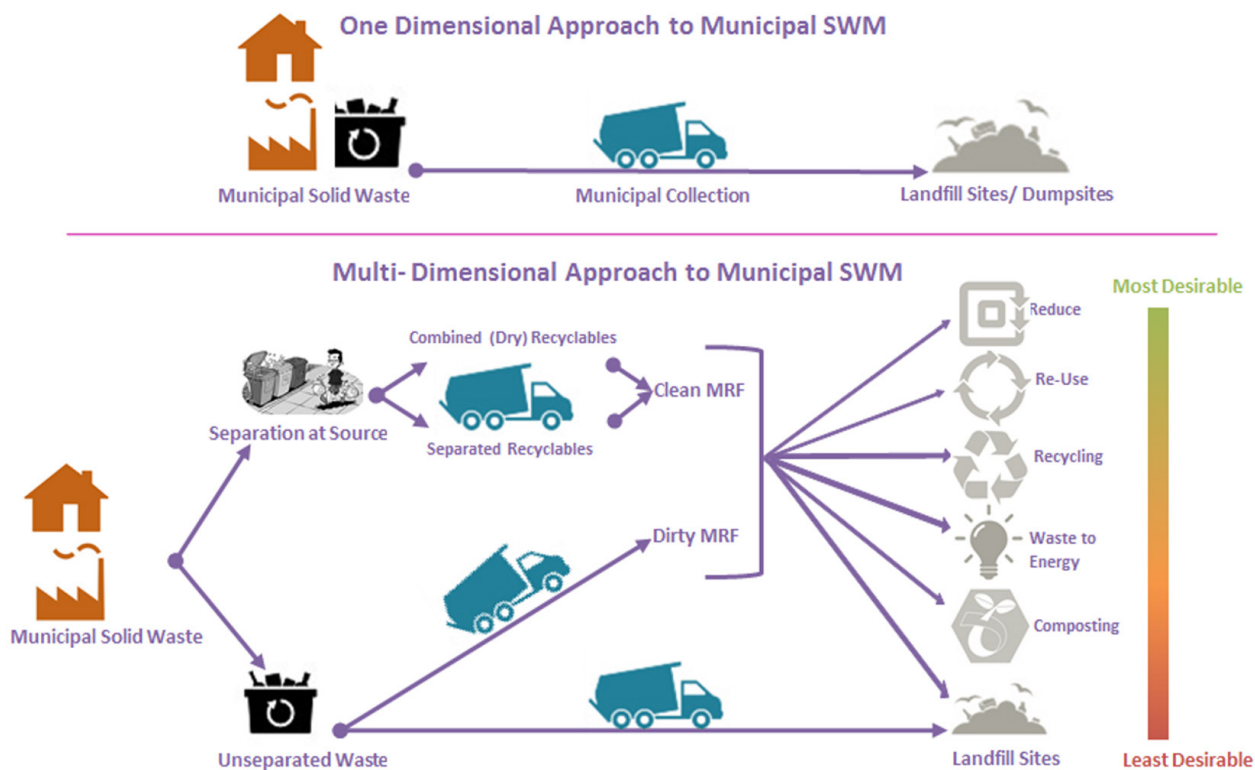


Figure 2. One-dimensional versus multi-dimensional approach to municipal SWM

(Source: Adapted from DEA 2012:18)

## 1.4 Perspectives on involving the informal waste sector

Irrespective of the remaining landfill capacity, for municipalities to meet the goals set in the National Waste Management Strategy (NWMS), they will have to shift practices towards multi-dimensional AISWM. This, in turn, requires a paradigm shift in the way we think about waste and resource management. It requires serious consideration of how existing waste management systems and practices can be changed and improved.

Waste management systems are often complex, not necessarily technologically, but in terms of social and economic dimensions. Working inside the system are diverse actors and stakeholders, each playing different roles and, crucially, sometimes competing for the valuable materials in the waste stream. A new waste management system must shape the way in which materials are managed. A new facility or technology in that system must receive sufficient feedstock to meet its purpose and assure its viability.

Ensuring that what is planned can be implemented in reality is the art of the waste management practitioner. Good planning requires participatory and inclusive approaches that consider all the dynamics and different stakeholder perspectives, whilst providing an attractive climate for investment in new systems and facilities.

The IWS is a key stakeholder group in the overall waste sector. The IWS is often unseen or disregarded in the planning process for waste management. However, informal waste management contributes significantly to existing levels of landfill diversion and recycling, and is much more deeply embedded in the existing systems than many might think.

Ignoring the IWS in the planning and implementation of new, more technologically advanced SWM systems is perilous. The IWS is very active and dynamic, driven by basic survival needs that act as a very powerful incentive to get to the valuable materials before anyone else. On numerous occasions, well-meaning waste management projects have failed as their planning did not take into account the existence of the IWS.

Investment projects that rely for their financial sustainability on revenues from recyclables or on capturing the higher-calorific value materials and converting them into fuel or energy need to think very carefully about the supply chain for these materials. To the serious investor, therefore, it is an obvious advantage to work together with stakeholders in the supply chain, and in the waste management business that means engaging with, or at least recognising, the IWS.

Once a decision is taken to involve the IWS in a more advanced waste management system, the next step is on building on an existing recycling system in a way that incentivises the type of change desired.

To the investor, new AWT facilities need the feedstock they are designed to receive, so the key is to capture the materials and ensure that the supply chain is reliable and dependable at stable cost. To the policymaker, the social dynamic offers a chance to improve livelihood opportunities, promoting entrepreneurship and creating decent jobs.

#### **Key socio-economic questions:**

**The selection of best options for including the IWS in AISWM needs careful assessment.**

**Municipalities have to address key SOCIO-ECONOMIC questions:**

- How big is the IWS and what activities does it perform?
- Should the IWS be included, absorbed, integrated or formalised? If so, how?
- What conditions are required for integrating the IWS?
- How can socio-economic conditions of the IWS be enhanced?
- What are the risks and opportunities involved in integrating the IWS?
- What contributions are expected from the municipality?
- Are there benefits and do they outweigh the costs?
- Can the IWS be a valuable and significant partner in SWM service provision?
- Which underlying socio-economic structures (social/ethnic groupings, child/adult, men/women, etc.) and business dynamics (middle-men, dependency on transport/logistics, price fluctuations, objectives of buy-back centres, capital and infrastructure support, etc.) impact the performance of the IWS?
- Where in the value-chain do the recyclers/reclaimers and other members of the IWS operate, should all be retained, and where are they likely to be most effective?

Exploring solutions to these questions is crucial given that survival strategies of IWS depend on their ability to collect and trade recyclable materials with market value to earn daily income. These people are among the most vulnerable members of society and often have very few, if any, alternative livelihood options.

Municipalities increasingly want to include informal waste reclaimers, but they have minimal knowledge of what should be done, how it should be done and what options exist.

## 1.5 Focus of this knowledge product

KP3 covers a wide range of issues, from understanding the working conditions of informal waste reclaimers to recognising their benefits, and possible suggestions for municipalities to include the IWS in advancing SWM practices and reducing dependency on landfill.

The insights offered are based on a review of several mainstream studies, experiences in the two partner municipalities, cases elsewhere in South Africa and internationally. Consultations were undertaken with specialists with relevant experience of informal sector integration in the South African waste management sector.

Exploring the possible contribution of the IWS in modern waste management systems is challenging. Whilst there is increasing recognition globally of the importance to support the IWS, and the need to design new SWM systems around existing systems, rather than to replace them, it is an emotive subject on which there has been very little substantive research and that is lacking quantitative data.

KP3, therefore, attempts to capture and distil the best available information on the subject, in the hope that greater understanding will lead to pragmatic decision-making and more practical and resilient AISWM systems.

**The aim of this document is to consider whether to include, recognise, organise or formalise the IWS (in AWT and AISWM), currently functioning without proper structure, and suggest how this can be successfully undertaken.**



## 1.6 International IWS integration models

To have a clear view of available integration models, several international and national case studies were reviewed to find and understand **integration options**, **lessons** to be learnt and **benefits** of IWS integration. Five international case studies are presented in this KP, interspersed through the text.

### *International IWS integration models*



**1. Costa Rica – Strategic Action Informal Sector Integration**  
*Ensure continued employment for informal workers in a renewed SWM system*

**2. Brazil – CEMPRE (Business Commitment for Recycling) Non-Profit Model**  
*Social inclusion through recycling*

**3. Philippines – Iloilo City**  
*Inclusive and efficient model for organising waste reclaimers*

**4. Philippines – Linis Ganda**  
*Social inclusion and protection of informal waste pickers and recyclers*

**5. India – Kagad Kach Patra Kashtakar Panchayat (KKPKP) and Solid Waste Collection and Handling (SWACH)**  
*Waste reclaiming as a socially relevant, economically productive and environmentally beneficial activity*





## Chapter No. 2

# THE INFORMAL WASTE SECTOR IN SOUTH AFRICA



## 2 The informal waste sector in South Africa

### 2.1 Defining the informal waste sector

The IWS has played an important role in SWM for centuries. Informal recyclers extract materials with a positive market value from different parts of the waste management system and form an integral part of the value chain for these materials.

Their work represents a net saving to municipal budgets, through diversion of waste away from landfills, as the management of extracted materials is a financial cost to municipalities. Nevertheless, the activities of the IWS currently fall outside of the tax-net of society, and therefore the direct financial contribution to municipal balance sheets is negligible.

The indirect social and economic contribution of the IWS is hotly debated. Some consider the informal waste economy a poverty trap that needs to be eradicated in a modernising economy. Others maintain that informal reclamation provides an accessible livelihood opportunity for the poor, which is needed to enable people to earn a living and provide for their families.

The National Waste Management Strategy (NWMS) of 1999 tried to eliminate informal salvaging at landfills. There is now recognition that the government has a growing social responsibility to try and support the IWS to sustain livelihoods.

#### So what actually is the informal waste sector?

In simple terms, the IWS can be defined as: 'individuals, families or (informal) small private sector entities whose activities are neither "organised", sponsored, financed, contracted, recognised, managed, taxed nor reported upon by the formal solid waste authorities'.

Another definition for the IWS is 'individuals or (informal) small and micro-enterprises that intervene in waste management without being registered and without being formally charged with providing waste management services'.

*(Source: GIZ 2011:8 and Medina From GIZ 2011:8)*

The informal sector is a part of an economy that is not sponsored or monitored by any form of government, nor taxed, nor included into the gross domestic product, unlike the formal economy. The majority of the IWS consists of self-employed waste reclaimers working individually, as groups or as families.

Informal work provides crucial livelihood opportunities for the poor, alleviates poverty and functions as a buffer between employment and unemployment. Most people working as small farmers, street vendors/hawkers/traders, micro-entrepreneurs, home-based workers, street reclaimers and artisans belong to the informal sector.



## 2.2 Background on the informal waste sector in South Africa

The waste sector, like many other commercial sectors in South Africa and other middle income countries around the world, has a very active informal sector that has been reclaiming and recognising 'waste' as a resource for decades.

The IWS does function, at times, with a surprising degree of internal co-operation. On the working face of a landfill site, for example, there is often some form of order within apparent chaos. Division of access rights to materials is common, which reflects on the status of the reclaimer within the social group, and the business relationships each individual has within the recycling value chain. On the streets, different informal reclaimers often concentrate on different materials based on their commercial relationships within the supply chain networks they serve.

### 2.2.1 Activities of the IWS

**The IWS can be categorised according to four types of activities it performs<sup>1</sup>:**

1. **Waste collection and transport:** Occurs in low-income areas not served by municipal waste collection services. Entrepreneurs provide this service and might charge a pick-up fee to residents. Long distances and the lack of transport are key stumbling blocks and tend to prevent the IWS from growing organically and financially.
2. **Cleaning services:** Sometimes informal workers perform other waste-related services such as street sweeping and cleaning of public facilities.
3. **Recovery of recyclables:** The most common activity in South Africa in which itinerant waste buyers go door-to-door, collecting, buying or bartering for valuable materials, prior to formal collection, or "cherry picking" of materials (ie extracting the most highly valued materials) from landfills or bins and bags placed out on streets prior to municipal collection for reuse or recycling.
4. **Manufacturing activities:** Individuals or informal enterprises sometimes make use of unprocessed recovered material as raw materials (e.g. aluminium and textile waste). This may include formal enterprises that have contracts with businesses. Businesses now regard the waste hierarchy as a means of improving their bottom lines.

Informal waste collection and transport (item 1 above) and the provision of other waste related services (item 2) are referred to as the informal service sector and these activities are found mostly in unserved areas (including rural, urban and informal settlements) in South Africa. The recovery of recyclables (item 3) is the largest informal waste activity in the country, whilst manufacturing activities (item 4) occurs sporadically. Whilst the IWS is involved with all of the earlier-mentioned activities, the most relevant activity for many municipalities is item 3, recovery of recyclables, and this is also the focus of KP3.

Informal reclaimers extract solid waste with value for either personal or commercial re-use, re-use with repair, recycling or composting. By engaging in these activities, the IWS creates environmental and

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<sup>1</sup>Source: Adopted from GIZ 2010

financial benefits for municipal authorities, helping them to reach recycling targets, minimise the need for waste collection and disposal and save valuable and expensive landfill space. No relevant data is available, but global research has shown that the IWS can save up to 20% of a municipality's SWM budget<sup>2</sup>.

The informal sector in general makes up a significant portion of the economy in South Africa, and employs approximately 2.5 million people (18%) of the labour force (Statistics South Africa, 2014). The full extent of the specific IWS activities is hard to quantify due to lack of proper data.

Nonetheless, considering the global benchmark estimate for low- and middle-income countries<sup>3</sup>, that 1% of the urban population in developing countries survives by reclaiming recycled material from waste, the IWS in South Africa is conservatively estimated at approximately 150 000 people<sup>4</sup> (approximately 0.4% of the total urban population, or 6% of the total informal sector).

### 2.2.2 Where the IWS operates

Recyclables in South Africa are recovered from four main sources: Landfill sites, dumpsites, kerbside (household or communal bins) and businesses. Cherry picking often occurs. This entails the selective picking of the most valuable materials. Street picking by the IWS is often associated with littering, as the reclaimers sift through valuable waste, which in turn increases the municipal workload and associated collection and street cleaning costs.

Despite recycling efforts by formal companies and informal waste reclaimers, 90% of solid waste in South Africa, for which data is collected, still arrives as mixed waste on landfill sites. The IWS is, therefore, attracted to landfills, and often live on or next to landfill sites. When the IWS operates from the working cell of a landfill, especially in busy city landfills using heavy machinery, the recyclers encounter significant health and safety hazards and impede site operations.

### 2.2.3 Factors driving the IWS

The IWS in South Africa is driven purely by financial or economic incentives. For some reclaimers, it is the only income possibility, while for others it remains a first choice given the low entry barriers, low skill requirements and relative freedom of the sector. The IWS collects recyclables and sells them to brokers or private recycling companies for a daily income. Informal waste reclaimers are typically poor South Africans and illegal immigrants.



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<sup>2</sup> UN Habitat 2010: 1

<sup>3</sup> UN Habitat 2010: 1

<sup>4</sup> This is a rough estimate based on field observations of numbers of landfill recyclers, and the application of a ratio of 1:2 for landfill recyclers to collection recyclers. This is a conservative estimate as it focuses only on the recyclers and not on other parts of the IWS (i.e. service providers and cleaners). However, more structured and extensive analysis would be required for a more accurate figure.

## Case Study 1 — Brazil – CEMPRE NPO Model

Brazil has approximately one million people working in the recycling sector (formal and informal). Only 10% of informal waste reclaimers are well organised and the majority work and live under very poor conditions. With the establishment of the National Solid Waste Policy, the situation changed. The policy supports recycling with the participation of informal waste reclaimers in cooperatives or as associations – a model that is currently implemented in many countries.

The goal was to mobilise waste reclaimers and equip them and the waste picker cooperatives to exercise the role they have in the new SWM system. The cooperatives are responsible for the sorting and preparing of recyclables for advanced recycling processes further down in the value chain. The new SWM system limits opportunities for exploitation by traders, reduces risks, increases income for waste reclaimers and increases the quantity and quality of recyclables. Workers are also trained and qualified.

*Sorting of waste in Brazil*



(Source: CEMPRE 2010: 3)

### 2.2.4 Misconceptions

The existence of the IWS is undervalued and largely ignored by society. Its contribution to the formal SWM system is associated with several misconceptions, as described in Table 1.

Table 1: Misconceptions of informal waste reclaimers

Misconception	Reality
<b>Informal waste reclamation and recycling are recent phenomena</b>	Internationally, the IWS has been in existence for thousands of years. Indeed, the whole topic of waste management was largely informal everywhere up until recent modern times. For centuries, people have melted leftover gold, copper and bronze to make new objects. In South Africa, the fact that the IWS was addressed as a concern in the 1999 NWMS suggests that the existence of the IWS has been officially recognised for at least 20 years.

Misconception	Reality
<b>All informal waste reclaimers are indigent and extremely poor</b>	Informal waste reclaimers are often misjudged due to their appearance and lack of hygiene, which is caused by the nature of their work. Although some informal waste reclaimers are extremely poor and earn less than the minimum wage, others earn more than a minimum wage, and some can be quite wealthy. Being an unregulated sector, traders or other intermediary agents often exploit frontline reclaimers, and underworld hierarchies thrive.
<b>Informal reclamation and recycling are insignificant activities</b>	Informal waste reclamation plays a significant role in supplying raw materials for industries. Many downstream industries depend on materials extracted by the IWS. Data for South Africa shows that 70%-90% of glass, plastic and paper is recovered by the informal sector for recycling (BMI, 2013).
<b>Recycling cooperatives are not involved in providing SWM services</b>	Recycling cooperatives are becoming increasingly active in selected services. Often they are not working on the basis of a structured procurement contract. Hence, they can be vulnerable to manipulation and control of those that want to profit from unregulated working practices. By their structure, cooperatives in general are open to conflict, dissent and disagreement and are, therefore, not strongly placed in positions demanding efficiency, entrepreneurship, strong leadership and toughness in negotiations.
<b>Informal waste reclamation and recycling are disorganised activities</b>	Even though most informal waste reclaimers are not affiliated to a formal organisation, they have specialised systems of division – territorial divisions and agreements with residents, stores and industries. They also work in groups depending on the types of materials they collect. Sometimes entire families work in this sector, and have done so for generations.
<b>Informal waste reclamation and recycling have minimal economic impact</b>	The economic impact has not been accurately quantified, but the financial footprint is larger than anticipated due to the sheer quantities of waste extracted and recycled. In Brazil, the IWS is estimated to have an annual turnover of more than \$3 billion. The World Bank estimates that more than 15 million people in urban areas in developing countries are active in the IWS.
<b>Informal waste reclaimers are a nuisance that must be eliminated</b>	Informal waste reclaimers can leave a messy trail. However, their livelihoods depend on their activities and efforts to replace them in formal recycling schemes often fail. An unregulated IWS will <b>always</b> get to the valuable materials before the formal collections, regardless of what measures are taken to prevent them from doing so. Currently, the IWS is permitted on sanitary landfills, but this practice is extremely hazardous and disruptive to daily operations. As regulatory controls become stricter and AISWM systems are implemented, there will be fewer “rich pickings” on the landfill and the practice of dumpsite picking will gradually reduce.
<b>Informal waste reclamation and recycling have no place in modern waste management systems</b>	Even if AWT techniques are adopted, the role of informal waste reclaimers will remain important. The IWS provides a low-cost, labour-intensive approach to AWT systems and income opportunities to those who may not wish to be formalised. Informal waste activities should be taken into consideration in the design and implementation of waste management systems, or there is no guarantee that new systems will work as envisaged.
<b>Informal waste reclaimers would prefer a higher income paid monthly or weekly</b>	Most informal waste reclaimers prefer receiving income daily rather than weekly or monthly – they depend on cash in hand for day-to-day living. Many also note the benefit of flexible working hours when they work for themselves. Some informal waste reclaimers are reluctant to take part in a system where their income patterns will change and they will become dependent on employers.

(Source: Adapted from Medina undated from GIZ 2011)

## 2.3 Overview of the South African solid waste management sector

The existing SWM process flow in a “typical” South African municipality is shown in Figure 3.

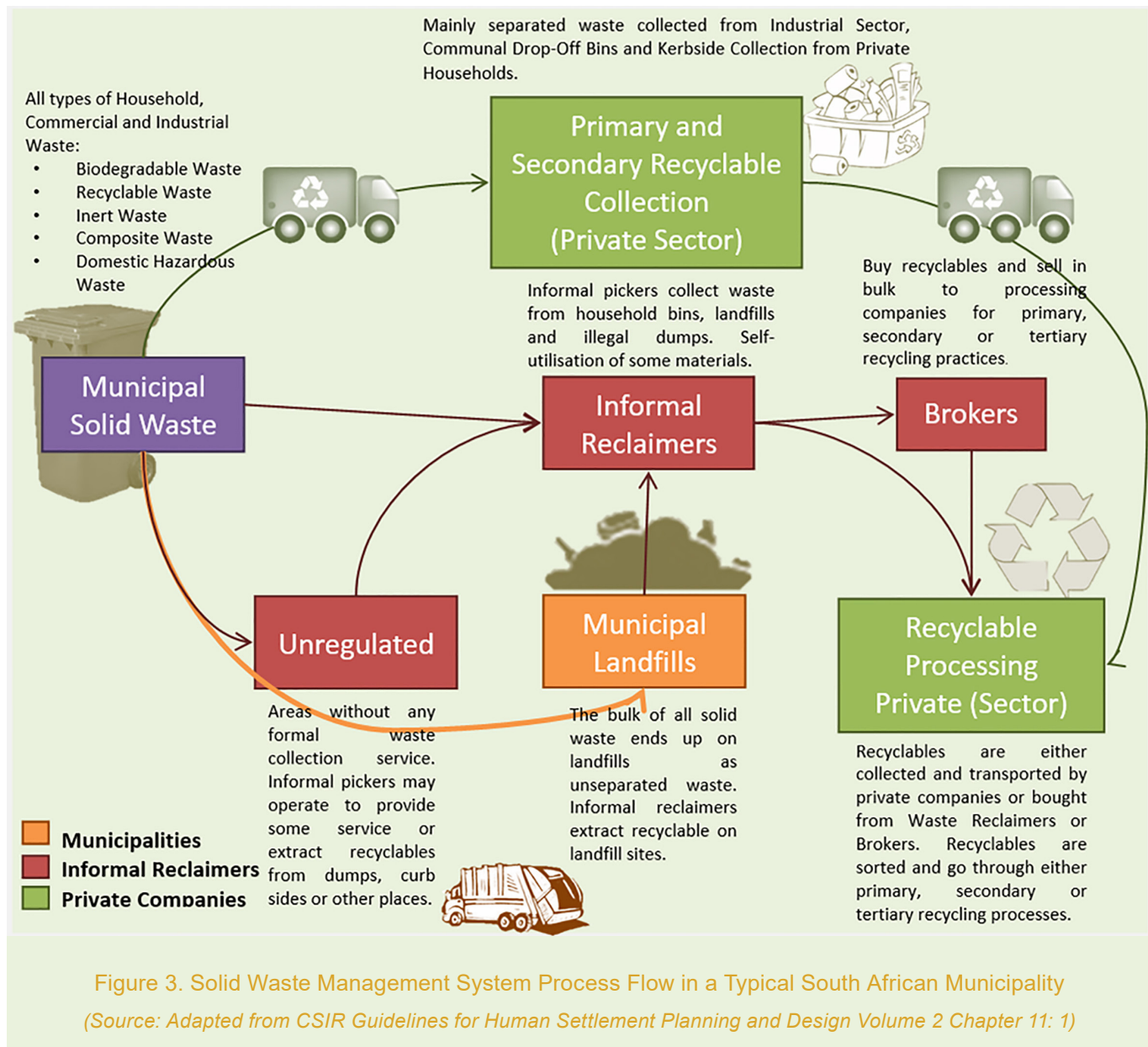


Figure 3. Solid Waste Management System Process Flow in a Typical South African Municipality  
(Source: Adapted from CSIR Guidelines for Human Settlement Planning and Design Volume 2 Chapter 11: 1)

In most municipalities in South Africa, solid waste is not being separated at source, resulting in reduced market value for extracted “dirty” recyclables from the mixed waste stream. After the waste generation point, there are three key players that influence and define the specificities of the SWM system: Municipalities, formal waste management operators and the IWS. The roles of these three entities are described below.

### 2.3.1 Municipalities

Legislation prescribes SWM as the responsibility of municipalities. Despite enactment of the NEMWA, the SWM system in many parts of South Africa remain similar to that of a typical developing country. The Act urges municipalities to implement the waste hierarchy, but in practice municipalities are compelled by the constitution only to ensure waste collection and disposal, a de facto one-dimensional approach to municipal SWM that focuses on the collection of solid waste from source and transport to landfill sites.



Figure 4. Municipal solid waste collection by Pikitup in the City of Johannesburg

(Source: [www.joburg.org.za](http://www.joburg.org.za); [www.pikitup.co.za](http://www.pikitup.co.za))

Currently, the majority of MSW still ends up on landfill sites or dumpsites, with very few alternative formal systems for diverting materials (reduce, reuse, recycle) in place to manage solid waste.

A select number of municipalities do, however, have small-scale recycling systems, but these are mostly in their infancy. Waste sorting and recycling are entrusted to formal recycling companies in the private sector and the IWS.



### 2.3.2 Formal recycling companies

After collection, recyclable materials are taken mostly to private facilities for further sorting and processing. Once recyclables are processed, they re-enter the production economy as input materials.

In some cases, solid waste goes through a material recovery facility (MRF), which is a mechanical or manual separation plant, specialising in extracting recyclables. A distinction is made between a “clean MRF”, which accepts waste streams that have already been separated at source (e.g. recyclables and non-recyclables), and a “dirty MRF”, where mixed municipal waste arrives at the facility. MRFs are developed mostly by formal recycling companies, but selected municipalities in South Africa already have MRFs or are establishing them.

### 2.3.3 Informal waste sector

The IWS collects recyclables mainly from landfills, dumpsites and waste containers.

## Informal waste pickers

**LANDFILLS:**  
Informal waste pickers sort through unseparated mixed waste streams at landfills to find recyclables.

**ILLEGAL DUMPING SITES:**  
Illegal dumping sites are a major source of recyclables for informal waste pickers.

**HOUSEHOLD AND INDUSTRIAL BINS:**  
Informal waste pickers pick waste from household and industrial bins.

The IWS in South Africa can be seen as a by-product of South Africa's economy, which is currently unable to meet the employment needs of society, prompting individuals and communities to seek income from valuable materials in the waste.

Due to the large number of informal waste reclaimers in the sector, the quantity of materials collected by the IWS is by no means minimal. The recyclables are either self-used or sold directly to private recycling companies or to traders such as recycling brokers, dealers or wholesalers. These recyclables then follow the processing and production cycle in Figure 3.



Figure 5. Informal waste reclaimers in the City of Johannesburg  
(Source: Kayamandi 2013)

### 2.4 Socio-economic realities of the informal waste sector

Perspectives on the socio-economic realities of the IWS differ. Table 2 provides general comments to six different socio-economic factors from the perspectives of IWS members, municipal leaders/managers and the general public. The responses are simplified and partly stereotypical, but provide a useful basis for understanding the differing views and positions of these key stakeholder groups towards the IWS.

Table 2: Differing perspectives of socio-economic realities of the IWS

FACTORS	IWS	MUNICIPALITIES	PUBLIC
LIVELIHOODS AND EMPLOYMENT	<p>Attractive livelihood because of ease of entry.</p> <p>Limited “other” opportunities because of limited skills.</p> <p>Work for themselves with freedom of movement.</p> <p>Appetite for risk is low with low rate of job change often following lead of family.</p>	<p>Where informal waste reclaimers collect waste, they don’t provide a reliable service- leaving the municipality to clean up after them.</p> <p>The IWS has no access to unions or regulatory bodies.</p> <p>Due to the informal nature, taxpaying jobs and taxpaying businesses are unable to compete with the IWS.</p>	<p>Want reliable waste collection service delivery.</p> <p>See informal waste reclaimers as a nuisance because they can leave a mess.</p> <p>Perceive IWS to be linked to criminal activities such as housebreaking.</p>
HEALTH AND SAFETY	<p>Unhygienic and dangerous conditions, exacerbated by the public habit of mixing dirty waste with valuable materials.</p> <p>Health issues from poor and harsh working conditions.</p> <p>IWS unaware of health risks and potential for lower life expectancy.</p>	<p>Aware of unhealthy, dangerous and unhygienic living environments.</p> <p>Safety at landfills has a major impact on landfill operations and risk/liability to the municipality.</p> <p>Waste reclaimers often blamed for vandalism (breaking down of fences, theft of infrastructure).</p>	<p>Perceive landfills and drop-offs as unsafe and use these public areas with caution.</p> <p>Informal reclaimers are seen as a threat to health and safety due to nuisance from cherry picking.</p> <p>Perceive kerbside collectors as introducing crime into suburbs.</p> <p>Unaware of the long-term benefits to themselves or the IWS.</p>
WORKING CONDITIONS	<p>Intense physical labour under harsh conditions (sun, heat, rain).</p> <p>Long hours (early mornings and into the night), often to avoid persecution or the elements.</p> <p>Great distances to walk to collect and sell recyclables.</p>	<p>Cause operating problems for landfill managers.</p> <p>Realise lack of regulation/legislation on working conditions. Wants to regulate activities at landfills, but can’t easily control access and does not want to impede on livelihoods.</p>	<p>The public choose not to see working conditions – oblivious to the working conditions of the poor.</p> <p>Public perception of working conditions of the IWS is limited mostly to street reclaimers.</p>
LIVING CONDITIONS	<p>Live on landfill sites, informal settlements or on the streets as close as possible to their source of livelihood (waste).</p> <p>Shelter often constructed from waste materials.</p> <p>Often no distinction between working and living environment.</p> <p>Often have right of tenure on the landfills but experience increasing opposition.</p>	<p>The government has a constitutional responsibility to improve living conditions and provide access to decent housing.</p> <p>Legislation makes no provision for reclaimers on landfill.</p>	<p>The public are oblivious to people living in and among waste at landfills in makeshift housing made from waste.</p> <p>Informal waste reclaimers sleep in the streets, under boxes, wherever they can, and cause a nuisance and an eyesore .</p> <p>The public is not aware that reclaiming is an often a consequence of poverty or homelessness.</p>



FACTORS	IWS	MUNICIPALITIES	PUBLIC
DEMOGRAPHICS	<p>Complete families, women and children are involved. Men are often involved in the more manual labour such as pushing heavy street trolleys. Women can, however, work equally hard (if not harder). Women can work and earn an income, while taking care of children and other household tasks. Attracts many immigrants due to absence of systematic checks on working visas.</p>	<p>Municipal officials have very little status quo information on the IWS. Often turn a blind eye to aspects such as child labour. Immigrants cause havoc, upheaval and social tension in communities.</p>	<p>The public misjudge waste reclaimers due to the way they look and lack of hygiene. Perceptions limited to what is seen in the streets - trolley pushers, homeless, etc. Often unaware that women and children are involved, or turn a blind eye. Child labour is frowned upon by the general public.</p>
VULNERABILITY AND OBSTACLES	<p>Informal recyclers are, to a large extent, poor and low skilled. They do not have the financial means or technology to advance on their own in the recycling sector. Informal recyclers are prone to economic fluctuations given that solid waste is linked to consumption, and the value chain linked to global commodity prices. Limited transport capabilities, therefore reclaim only material that takes up the least space and will give them the most money.</p>	<p>Do not know how best to deal with the IWS. Have very little information and data of the IWS and thus a vague understanding of the sector dynamics. Reluctant to acknowledge and accept the reality of the socio-economic conditions faced as this requires implementation of policy actions to address/integrate/include the IWS.</p>	<p>The general public perceives trolley brigades as a nuisance to drivers, as they take up space on the roads and cause traffic hazards.</p>



## Case Study 2 — Costa Rica – Strategic Action Informal Sector Integration

The integration of the informal sector was chosen as a priority area in the country's newly developed Solid Waste Management Strategy – especially the facilitation of recycling systems in municipalities. The economic feasibility of recycling facilities was carefully considered in each municipality before several buyback, sorting and recycling centres were established, which are managed by small enterprises consisting of former informal waste reclaimers. Informal waste reclaimers also benefited from public and private social programmes.

Best practices include:

- ▣ Integration of enterprises in the overall municipal SWM systems.
- ▣ Establishment of social programmes aimed at creating special productive linkages.
- ▣ Gives support to innovative activities of micro-enterprises.
- ▣ Creation of alternative employment programmes.

*Micro-enterprises in Costa Rica*



(Source: GIZ 2011: 28)

### 2.5 Formal vs. informal differences

The IWS in South Africa is unofficially accepted or at least tolerated as part of the current SWM system. However, harsh realities and inequalities are noted when comparing it to the formal sector. Key differences are summarised in Table 3.

Table 3: Formal versus informal Waste Sector differences

Attribute	Informal Sector	Formal Sector
<b>Demographics</b>	<p>No restrictions on participants. Profile typically includes: Illegal immigrants, migrants from neighbouring countries or rural areas, children, laid-off workers, elderly, who do not receive enough pension, disabled, who cannot find regular employment, etc. Consists of either families working together or individuals (Source: GIZ 2011). Can also include community groups that want to see their areas clean.</p>	<p>Participation is regulated by labour law and all employees must be of working age. Immigrants must have work permits.</p>
<b>Entry Barriers</b>	<p>No formal barriers to entry, any individual/group can get involved. There is, however, a pecking order. Obstacles to entry include: Low market prices, long distances and limited transport, exploitation by middle men, and limited access to buyback centres.</p>	<p>Must have a formal agreement or contract in place.</p>
<b>Logistics</b>	<p>No or poor transport means dependence on intermediate traders for transport of materials over long distances.</p>	<p>Have typically invested in good logistics systems as this is key to their business.</p>
<b>Skills</b>	<p>Use self-accumulated, streetwise skills not part of formal schooling system. Highly skilled in various waste streams, knowledge of locality, politics, pecking order, etc.</p>	<p>May have more advanced skills and/or formal qualifications. Labour is organised and costly.</p>

Attribute	Informal Sector	Formal Sector
<b>Health and Safety</b>	Participants face high risk accompanied with low life expectancy. No regulations or health and safety measures. Workers are often ill-informed regarding hazards. Usually they receive no vaccination and no health checks.	High cost of implementing health and safety measures. Low risk of health and safety due to regulated circumstances as well as safety and health measures required by law. Access to personal protective equipment (PPE).
<b>Living Conditions</b>	Informal reclaimers often reside on or adjacent to landfill sites or illegal dumping sites with precarious living conditions and limited to no access to basic services.	Improved living conditions in general.
<b>Vulnerability</b>	Highly vulnerable to social and economic conditions. Operate individually. Limited or no access to social security schemes and no professional recognition.	Less vulnerable to shocks with more social and economic certainty. Work collectively with a pool of resources available. Can, however, be vulnerable as have invested considerable funds into business.
<b>Market Prices</b>	The market is highly unregulated. Informal sector is often exploited by middlemen and formal recycling companies and often has to accept the lowest non-market related prices.	Formal players have greater ease of access to more diversified markets to negotiate better market prices based on economies of scale and prospects for direct sales to recycling companies.
<b>Income</b>	They gain relatively low and/or irregular income. It does, however, constitute a livelihood and survivalist strategy with minimal to no operating costs.	Formal employment is associated with more regular and reasonable levels of income, but higher costs of operation.

Attribute	Informal Sector	Formal Sector
<b>Competition</b>	Competition for valuable materials among themselves and with other individuals in the informal market as well as from the formal market.	Competition is lessened since formal players work collectively. Workers still compete with the IWS for valuable materials to earn an extra income. Can easily access funds.
<b>Technologies</b>	Manual, labour intensive methods are employed by informal workers. They lack working- and PPE. More effective, efficient or productive in collection at lower cost.	Formal sector uses a combination of labour and technology. More advanced collection and transport equipment. More costly, more overheads, lower productivity.
<b>Working Conditions</b>	Poor working conditions in unpleasant and dangerous conditions. Irregular, long and sporadic working hours.	Average conditions with work hours regulated by South African labour law.
<b>Legislation</b>	Informal players are unprotected by labour legislation.	Formal players have legal protection.

The attributes of the informal and formal recycling sectors are, in many cases, starkly different. Entry into the IWS is unrestricted, health and safety measures are unregulated, income is irregular and working hours are sporadic, to name but a few.





# Chapter No. 3

## APPROACHES TO AND BENEFITS OF INTEGRATING THE IWS IN AISWM SYSTEMS



## 3 Approaches to benefits of integrating the IWS in AISWM systems

### 3.1 What is meant by IWS integration?

Competition for recyclables in low-and middle-income countries around the world between the IWS and formal waste management systems, and specifically between informal recyclers and the public sector service chain and private waste management companies, often trigger interventions based on the concepts of *integration* or *formalisation*.

The most widely adopted **generic types of integration approaches**, each with a subtly different aim (with the exception of formalisation), are:

- ▣ **Welfare-based interventions:** Aimed at improving day-to-day socio-economic conditions, such as focusing on daily needs of waste reclaimers and their children. The political and social forces that influence waste reclaimers' position are, however, not addressed.
- ▣ **Human rights interventions:** Aimed at addressing the most basic human rights, such as the right to work in a safe environment, or the right to have access to basic services.
- ▣ **Adaptation interventions:** Aimed at advancing and improving IWS activities in SWM systems and making the SWM system more efficient. One example is the municipal adaptation of by-laws/ regulations and incentivisation of formal recyclers that partner with the IWS.
- ▣ **Business-to-business value chain interventions:** Supporting value-adding activities such as the production of final goods from recycled waste.
- ▣ **Professionalisation interventions:** Aimed at providing professional skills to the IWS and helping informal waste reclaimers to advance their position. An example is assistance with setting up contracts or partnerships between the formal and informal sector.
- ▣ **Formalisation interventions:** Aimed at legalising the IWS and ensuring compliance with business regulations, tax laws, etc., such as establishing a formal cooperative.

Integration initiatives have been implemented through various interventions from national and international organisations. Projects with a long and sometimes successful history can be found in many parts of the world and are starting to become more common in South Africa.

#### Integration equals recognition

Integration means to provide reclaimers and other members of the IWS with recognition for the role they play in SWM and to involve them more greatly. Recognition is often guided indirectly by the rights of workers in the formal recycling sector, which include a stable labour programme and conditions, income security, social protection and the right to associate and organise.

*(Source: WIEGO 2010)*

Whatever the approach, multiple and meaningful choices need to be offered to the IWS. Informal waste reclaimers have different skills sets, personal needs, circumstances and aspirations. Furthermore, not all waste reclaimers can or wish to be “integrated”. Interventions, therefore, require a combination of approaches, with the selection process driven by the reclaimers themselves.

An understanding and a measurement of the informal sector activities are imperative. A useful first step is to register reclaimers on a municipal database to enable the municipality to gather information on recyclables in the development of accurate waste information systems.

Once a decision has been made to pursue an AWT project, the role of the IWS in the eventual ISWM system should be considered. Competition between the IWS and formal waste management systems, and specifically among informal recyclers, the public sector service chain and private waste management companies, needs to be considered in project design. Studies can be integrated in the project planning process to build the understanding and essential data required during initial conceptualisation and more detailed feasibility stages of project preparation.

Whilst analysing the current situation, understanding the inter-relationships between different parts of the system is critical. In the end, all parts are related to one system, and the interventions designed for one specific part will affect all other parts as well.

There is no one solution that fits all. Integration initiatives need to be tailored to the local situation. Win-win solutions are needed that benefit municipalities, the formal recycling sector, the local community and informal reclaimers.

Progress often depends on who controls the integration initiative; who “owns” the process, and how it is “framed”. Analytical questions that can be raised include:

- What is the desired change in the service and value chains?
- Will there be reduced or restricted access to recyclable materials?
- Which materials need to flow where to make the project work?
- Are there safeguards in place to assure that the materials required for a certain AWT project will actually flow in the desired direction? Are these realistic?
- Which stakeholders are likely to benefit and which will be put at risk?
- Have the potential contributions and needs of waste reclaimers been considered?
- How will the change be implemented and measured?

Integration initiatives need to be professionally managed, drawing on past experiences. As time progresses, these interventions can be adapted to better fit **local dynamics** and experiences of what works and what does not work. The bottom line is that specific local solutions have to be found for existing problems and objectives. Figure 6 illustrates the IWS at work: Existing vs. improved working conditions.



### Case Study 3 — Philippines – Iloilo City

The Iloilo City Municipality and the GIZ re-energised an informal waste reclaimers group at a disposal site in Iloilo. They assisted the group of 140 reclaimers with registering as a formal incorporated association, called Uswag Calahunan Livelihood Association, Iloilo (UCLA). Group members received training in the sorting of alternative fuel resources in cooperation with the cement manufacturer HOLCIM, and in sewing recycled bags together with alternative self-initiated livelihood activities.

The group initiated other income-generating activities and also established a training centre, through which it was also able to provide social facilities such as childcare and health checks.

Best practices included:

- Trust-building efforts (IWS, municipality, private sector).
- Good communication, consensus and frequent meetings.

*Sorting waste in the Philippines*



(Source: GIZ 2011: 33)



Figure 6 illustrates unimproved vs. improved working conditions



Figure 6. Existing vs. improved working conditions at a material recovery cooperative

(Source: [www.joburg.org.za](http://www.joburg.org.za); Kayamandi 2014)

## 3.2 Benefits of including the IWS in AISWM systems

The IWS is very active and effective in recovering and valorising resources, in many cases more so than the formal sector. **The IWS can implement recycling activities at a much lower financial cost than the formal sector.**

As a result of their established role in the industrial value chain, informal entrepreneurs have considerable experience and can relatively easily learn to divert and process whatever material is not already claimed and valorised. The IWS has a high degree of specific knowledge about identifying the value of materials, marketing and making use of them in a flexible manner.

### Job creation potential

According to research carried out in the Mokattam District of Cairo, Egypt, where the Zabaleen community recycles part of the city's waste, a daily ton of waste can produce up to seven direct, indirect, and induced jobs. This is driven by the larger number of jobs created per ton of material that can be recycled, traded and used for downstream manufacturing of products.

### Social, environmental and economic benefits of IWS

#### Social benefits

- ▣ Improved working conditions, decreased health and safety risks and increased productivity.
- ▣ More regular and stable income.
- ▣ Improved living conditions for informal waste reclaimers and their families.
- ▣ Reduced opportunity for exploitation.
- ▣ Better access to healthcare facilities.
- ▣ Increased identity and self-worth.
- ▣ Access to microfinance, enabling small, medium and micro enterprises (SMMEs) to form and grow.
- ▣ Personal development and career prospects.

#### Economic benefits (to society)

- ▣ Saving on public budgets from avoided waste collection and downstream (formal) recycling, treatment and disposal.
- ▣ More customer-responsive source separation services.
- ▣ Increased quality and value of recyclables.
- ▣ Stimulated downstream manufacturing economy.
- ▣ Contribution to the government's economic growth, development and employment goals.

#### Environmental benefits

- ▣ Reduced dependency on landfill, with associated reduction in environmental impacts.
- ▣ Reduced CO<sub>2</sub> equivalent emissions through reduced demand on virgin resources.
- ▣ Recycling services brought closer to the community catalysing environmental awareness.

Various approaches can be taken to integrate the IWS into the SWM system, and these can bring social, economic and environmental **benefits**. As previously presented, **the integration of IWS activities into AISWM systems is worthwhile, if not essential**. Possible benefits are summarised as follows:

### 3.3 SWOT analysis on IWS integration

A municipality has to consider the route of integrating the informal sector, particularly key **Strengths**, **Weakness**, **Opportunities** and **Threats** (SWOT). Table 4 elaborates on the IWS through a SWOT analysis.

Table 4: SWOT analysis of intergrating the IWS

	BENEFICIAL ASPECTS	HARMFUL ASPECTS
	STRENGTHS OF INTEGRATION	WEAKNESSES OF INTEGRATION
INTERNAL ORIGIN	• Collective skills and exchange of knowledge.	• Prefer self-employment ('I want to be my own boss').
	• Shared vision and decision-making.	• Little regulation and few rules in informal sector.
	• Pooled resources and increased capacity.	• Revenue and profits need to be shared.
	• Enhancement of skills and knowledge.	• Increased overhead cost.
	• Overcoming individual limitation.	• More discipline and less freedom.
	• More resources (labour, equipment) available.	• Potential for disagreement, disputes, conflict.
	• Protected by labour law.	• Irregular waste collection.
	• Regulated and organised activities.	• Potential housing issues (many waste reclaimers live on landfills).
	• Higher/regular/more stable income.	• Stifling effectiveness or efficiency by regulation.
	• Improved working conditions.	• Poor business acumen threatens sustainability, which threatens service delivery.
	• Improved social protection and healthcare.	
	• More efficient system.	
	OPPORTUNITIES OF INTEGRATION	THREATS OF INTEGRATION
EXTERNAL ORIGIN	• Improved bargaining and negotiation powers.	• Global recession and fluctuating markets.
	• Improved market access.	• Competition between formal and remaining informal, with cherry picking of waste.
	• Access to new market segments.	• "Underworld" and informal hierarchies.
	• Less exploitation.	• Shortage of entrepreneurial skills to develop potential marketable items from waste.
	• Diversification of SWM activities.	• Mechanisation (high-tech, low-labour means of minimising waste).
	• Improved livelihoods.	
	• Reduced poverty levels.	
	• Less conflict and competition.	
	• More awareness of peers and public benefactors.	
	• Provides a low-cost, labour-intensive approach to AWT.	

Municipalities need to be mindful of potential weaknesses and threats from integrating the IWS and safeguard that these harmful aspects do not outweigh potential benefits.

## Case Study 4 — City of Johannesburg Metropolitan Municipality

Food for Waste and Separation at Source - Pikitup, the company responsible for the City of Johannesburg's SWM, is implementing Food for Waste and Separation at Source projects, both with a strong approach on empowering the poor and marginalised.

Food for Waste is a SWM project aimed at reducing household waste collection backlogs, while creating work opportunities to reduce poverty. Beneficiaries of the project collect recyclables and exchange them for a daily food parcel. Food for Waste's focus is on clearing illegal dumping sites in informal settlements in the municipal area, while addressing food security issues and, ultimately, converting cleaned sites into community food gardens where possible. The beneficiaries are drawn from the city's Expanded Social Package Register (database of indigent/vulnerable households in the municipal area).

Separation at Source is aimed at diverting recyclable waste away from landfills/dumpsites to save valuable airspace, reduce transportation cost of waste, reduce littering and illegal dumping, contribute to the city's poverty alleviation efforts and promote active citizenship. The business model clearly distinguishes between the extension of the separation of recyclable waste at source to middle- and high-income areas, and low-income areas and informal settlements.

Informal waste reclaimers in lower-income areas receive capacitation through the establishment of cooperatives/non-profit organisations, construction and allocation of satellite sorting/buyback facilities. The cooperatives collect recyclable waste from households in the Separation at Source project areas, and collect waste from designated areas. Pikitup supplies the buyback centres managed by cooperatives with caged waste collection vehicles, as well as PPE. The collected recyclables are sorted into different wastestreams at the buyback centre/cooperative facility, from where the waste processed (baled or palletised) and sold directly to large recyclers.



*Clean MRF in the City of Johannesburg following Separation at Source by households*



(Source: [www.pikitup.co.za](http://www.pikitup.co.za))



# Chapter No. 4

## INCLUSION OF THE FORMAL WASTE SECTOR



# 4 Inclusion of the IWS

## 4.1 Mobilise the IWS

Section four offers numerous suggestions to assist with including the IWS in an AISWM system. The first step is to mobilise the IWS.

The best functioning SWM systems across the world involve multiple stakeholders in the planning, implementation and operations of projects or interventions.

When integrating the IWS into an AISWM system, members of the informal sector are key stakeholders and should have a voice in determining their own future. A participatory approach requires consultations during planning, implementation and operations phases. The goal and subsequent method of communication with the IWS will differ during these phases:

- **Planning and implementation phase:** Information required to make decisions. The goal is to gain knowledge of the local context, which will entail more detailed enumeration of the demographics, livelihoods, and the current and future needs and desires of the IWS.
- **Operations phase:** Information required to monitor and adapt decisions. The goal is to continuously monitor progress in integration and to understand the successes, challenges, opportunities and potential threats.

### 4.1.1 Planning and implementation phase - mobilisation

The principles of SWM systems across the world are similar, but every SWM system is unique. Even though it is not necessary to reinvent the wheel when choosing an integration approach and method, it is important to understand the local context and circumstances, and adapt accordingly. Potential methods of consultation with members of the IWS (and other stakeholders) in the SWM system include general assemblies, focus groups and one-on-one meetings and enumeration.

General assemblies	Focus groups	One-on-one meetings and enumeration
General assemblies allow for an unlimited number of informal recyclers to come together, be briefed and share broad information on a topic. General assemblies are often followed by more detailed inquiries with smaller groups of individuals. The idea is to obtain general information that will help with a more detailed investigation later.	Carefully chosen representatives of the different groups of informal reclaimers come together for detailed discussions about a topic. These meetings help with understanding qualitative issues based on the different perspectives of the informal reclaimers. Focus groups help with creating an in-depth understanding of the status quo as perceived by the IWS.	One-on-one meetings are conducted when highly detailed information is required. This involves interviewing either a sampled number of informal reclaimers or a whole population of informal reclaimers. Municipalities may find it useful to develop a database of reclaimers.

Figure 7 emphasises the importance of seeing informal waste reclaimers as the “expert” in the integration process.



Figure 7. Speak to the expert  
(Source: Adapted from Reinhold undated GIZ) 2011: 29)



#### 4.1.2 Operations phase - continued consultation

Consultation with the IWS is not a once-off activity conducted during the data-gathering phases. The long-term sustainability and efficiency of integration depends on continuous consultation with all key stakeholders and the IWS.

A typical method of communication in this instance would be representative councils and forums.

##### Representative councils and forums

Representative councils and forums are usually long-term bodies elected to represent all stakeholders. The goal is to continuously discuss issues and challenges and to keep track of progress, changes and opportunities. These councils are a type of “support-group” for members in a specific sector, which facilitate communication among members.

Establishing collaboration with the informal sector could be challenging. It creates a dilemma since cooperation may be interpreted as accepting the actions of the informal sector that contravene existing rules and regulations while, on the other hand, it is an important aspect of a democratic governance approach. It is also a challenge to determine exactly who are legitimate representatives of the many diverse members of the IWS.

### Challenges in collaborating with the IWS

- Managing the expectations of the IWS.
- The IWS may resist any change.
- The IWS might have been consulted many times and not interested in participating.
- Representatives of the IWS might provide misleading perceptions.
- The IWS might be controlled by certain power structures that do not “allow” members to participate.
- The IWS might be wary of working with political leaders and members of another social class.

Despite the challenges, collaboration with the IWS can bring about significant advantages and ensure better decision-making.

## 4.2 Coordinate the activities of the public, the IWS and the formal recycling sector

The SWM system should be streamlined and the activities of the different roleplayers coordinated to ensure mutually beneficial relationships that are sustainable and efficient.

### 4.2.1 Coordinate recycling activities of the general public with the informal and formal recycling sectors

The recycling activities of the public should support the activities of the IWS and the formal recycling sector. This would typically involve the separation of recyclables at source, which retains the value of recyclables and, thus, benefits both the formal sector and the IWS.

### 4.2.2 Coordinate activities of the IWS with activities of the formal recycling sector

It is important to create links between the IWS and the formal recycling sector. Once opportunities have been identified to organise informal waste reclaimers along the solid waste value chain, a structural relationship should be created between the opportunities and the formal waste sector — before implementation. The output of the IWS should be absorbed somewhere along the value chain to be processed where necessary and to re-enter the economy. For example, links should be created between:

- Valorisation opportunities and drop-off, buyback and sorting facilities.
- Drop-off, buyback, sorting facilities and AWT processing facilities.



Identifying markets and securing agreements with drop-off, buyback and sorting facilities are crucial, as are meeting buyer specification by finding an outlet for the recyclable materials.

Most IWS reclaimers interact with buyers of recyclable material (buyback centres). By focusing on buyback centres, an opportunity will be created to interact with the IWS where it matters most (price for the goods).

### Case Study 5 — Ekurhuleni Metropolitan Municipality

#### Promoting job creation through community-based waste collection and recycling

Prior to the implementation of the Vukuzenzele and Nkoza drop-off and sorting cooperative pilot project, the Ekurhuleni Metropolitan Municipality (EMM) did not engage informal waste reclaimers in any recycling activities. Recycling was driven on a small scale by private companies and the IWS. Informal waste reclaimers operated on landfill sites/dumpsites and picked waste from kerbside and commercial bins. The pilot project aimed at developing an ISWM strategy for community-based recycling to foster job opportunities for disadvantaged groups in Wadeville and Actonville, two bordering lower-income neighbourhoods in Benoni, through:

- Development of an operative plan to integrate recycling as a service assigned to co-operatives at no cost to EMM.
- Selection and training of community-based cooperatives.
- Building a drop-off centre for waste recycling, entrusted to cooperative with service-level agreements.
- Awareness raising in target communities.

This waste collection and recycling project is one of several pilot projects driven by Netsafrica ([www.netsafrica.org](http://www.netsafrica.org)), a networking agreement between Italian and South African local authorities aiming to improve community participation in initiatives to reduce poverty and provide access to basic services. The pilot project is expected to be duplicated across the metro jurisdiction. Since the implementation of the project, a shift in the development of micro-enterprises has been observed in the municipality due to a pro-poor approach in solid waste management.

EMM provided a property for the Vukuzenzele and Nkoza drop-off and sorting cooperative and the programme provided infrastructure (facilities, buildings, machinery and bicycles). Recyclables are collected in nearby neighbourhoods by members equipped with specially adapted bicycles. Households are provided with reusable recycling bags to be filled for pick up once a week. The cooperative, which has received several awards, has recorded the following integration achievements:

- Establishment of a training unit in the EMM.
- Assistance, training and ongoing mentoring.
- Incorporating advice from Italian local authorities with past experience in solid waste management.

*Vukuzenzele and Nkoza Drop-off and Sorting Cooperative in Ekurhuleni Metropolitan Municipality*



Source: Kayamandi 2014 site visit interview with cooperative members and Netsafrica 2012: 9 and 46-51

### 4.2.3 Appointing a liaison officer

The SWM system functions as a whole and changes in one component of the sector may severely affect other stakeholders.

To ensure efficient and sustainable functioning of the AISWM system, the municipality can appoint a liaison officer to coordinate and streamline the activities of the formal and informal sectors and be the interface between the sectors and the municipality. The text box below details the job description of the liaison officer.

#### Job description for Liaison Officer:

- Implementing the IWS integration initiative.
- Identifying potential stakeholders and beneficiaries.
- Identifying productive synergies between the formal and informal recycling sectors.
- Liaising and communicating with the stakeholders to build trust.
- Facilitating agreements (where possible).
- Being the interface between the municipality and service providers, capturing experiences and feeding back into municipal planning and decision-making.
- Providing support to SMME start-ups.
- Providing support on technical and logistical issues, including business planning.
- Identifying and facilitating sources of funds to support initiatives.
- Tracking progress, capturing data and reporting.

Communication will be streamlined if the liaison officer communicates with representatives from the formal sector, informal sector and the public. Figure 8 illustrates the role.

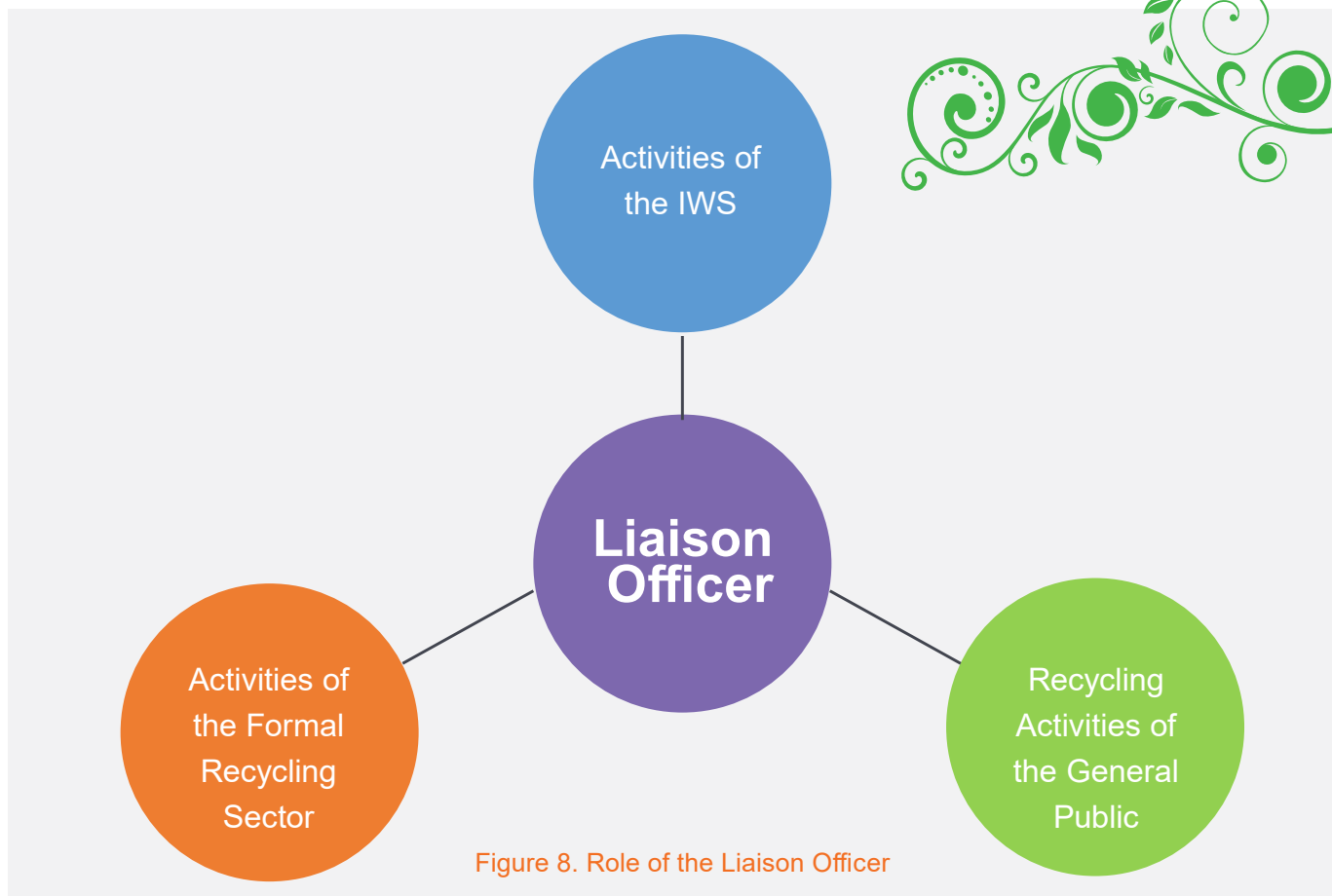


Figure 8. Role of the Liaison Officer

#### 4.2.4 Facilitate a recycling forum

A recycling forum provides opportunity for discussions and debates. Forum stakeholders could include:

- ▣ Informal waste reclaimers.
- ▣ Buyback centres and recyclables traders.
- ▣ Processing and treatment centres.
- ▣ Municipal SWM representatives (e.g. liaison officer).
- ▣ Formal recycling companies.
- ▣ Local industries and businesses.
- ▣ Other civil organisations.

In the box below an example of a recycling forum in Brazil is discussed

#### **Municipal Waste and Citizenship Forum: A platform for social inclusion in participation - Brazil**

In 1998, under the leadership of the United Nations Children’s Fund (UNICEF), the National Waste and Citizenship Forum (FNLC) was launched in Brazil with the following objectives: Eradication of child and adolescent labour in open dumps, elimination of open dumps, reclamation of degraded areas and implementation of landfills. The FNLC also promoted partnerships between local governments and organisations of (informal) recyclers in recycling programmes.

The size of Brazil and its regional peculiarities led to the creation of national, state and city forums on which different governmental and non-governmental organisations could coordinate their actions. The FNLC, at its peak, brought together 56 institutions. In 2003, a federal interministerial committee for social inclusion of waste reclaimers (CIISC in Portuguese) was created. This committee comprised representatives of several ministries (e.g. social development, employment, science and technology, environment). CIISC holds regular meetings with representatives of the National Movement of Recyclers. Soon after the creation of CIISC, the FNLC became less active and eventually ceased to exist. However, there are still some forums on solid waste and citizen participation in many states and cities throughout the country. Some participatory bodies on solid waste management issues have adopted principles formulated by the FNLC, albeit with other abbreviations, such as the *Conselhos Municipais de Desenvolvimento Ambiental de Minas Gerais (CODEMAS)*.

Important gains can be attributed to social mobilisation initiated by the FNLC, among them the creation of a national law legitimising the activities of recyclers as service providers of recovering recyclable materials, support for the process of organisation of recyclers, and the development of public policies for inclusion of cooperatives in formal solid waste management systems. Many of the achievements related to the integration of waste reclaimers in the formal management of solid waste over the past years in Brazil, as well as increased social activism of recyclers, have been attributed to the existence of a new approach started by the waste and citizenship forums. This platform has legitimised the claims of recyclers to guarantee access to recyclable as a “right to the city”.

*(Source: Directly from Cohen: 2013)*

The goals of the forum could include:

- Disseminating and communicating knowledge and experience.
- Identifying opportunities to enhance recycling, building local markets and creating jobs.
- Networking among the different stakeholders.
- Encouraging the community to recycle.

The agenda could include slot discussions of how the management of solid waste can ensure the rights of recyclers to gain a livelihood from gathering and processing recyclables as well as the improvements of their working conditions<sup>5</sup>. To keep administrative and financial issues to the minimum, and retain openness and flexibility, a recycling forum would not be constituted as a legal entity.

Municipalities could consider attracting some core financing from local businesses as part of their corporate social responsibility programmes. These industries may support the IWS in numerous ways, potentially including financial assistance to be used for infrastructure, equipment as well as skills training and development.

The municipality could initiate the following actions to establish a municipal recycling forum:

- Undertake initial discussions with all the key stakeholder groups.
- Obtain agreement in principle from stakeholders for such a forum.
- Enlist one key stakeholder to spearhead and lead the forum.
- Agree on the objectives of the forum.
- Identify key projects to be addressed by the forum, such as skills development, integration options/location.
- Provide support to face challenges as and when they arise.

### 4.3 Include the IWS in a stepwise manner

The type of integration intervention will depend on several factors, but it should be undertaken in small increments (following a gradual, phased approach). Informal waste reclaimers cannot be bombarded with a complex business model or advanced processing plants without experience and training. Furthermore, the IWS cannot merely register as individuals or organisations. A well thought-out strategy with goals, and methods to achieve these goals, is required.

#### Factors determining the type of integration intervention or local opportunities

- Available skills and knowledge.
- Needs and preferences of the IWS.
- Available resources.

At first, **simple** (to implement, execute and maintain), **low-cost** (both start-up and maintenance) and **low-tech** (more easily managed by the recyclers themselves) approaches should be implemented aimed at merely regulating and assisting the IWS. This includes recognition, light regulation, enhancing activity and limiting exploitation. These approaches should go hand in hand with training and developing the skills of the IWS to prepare it for more advanced integration.



<sup>5</sup> Cohen 2013: 108

Once the initial integration efforts are successfully implemented, more advanced approaches can be considered, such as forming legal entities and possibly using high-tech processes. If there is an intention to use high-tech processes in the longer term, this needs to be transparently communicated upfront.

Informal waste reclaimers may initially be wary of joining in the initiative, due to the many reasons outlined earlier. Reclaimers who may not want to join may have chosen a “wait-and-see” approach, to understand what the risks and benefits are before committing themselves. Others may choose to withdraw from the process, but should be encouraged to realise that they will continue, unsupported, with their individual capacities.

Creating quick-wins through well-targeted and meaningful pilot projects will help to build trust and keep as many members of the IWS as possible in the process.

#### 4.4 Facilitate housing relocation assistance

In many instances, informal waste reclaimers live illegally in poor conditions on landfill sites and in “makeshift” housing on the streets. Initiatives aimed at IWS integration should also consider the issue of housing. Municipalities should engage with the Department of Human Settlements on the implementation of the Emergency Housing Programme.

#### 4.5 Low-cost, short-term integration approaches

Initial solutions for integrating the IWS in an AISWM system should be based on addressing the key limitations prohibiting the IWS from integrating. **Low-cost and low-tech approaches can be targeted, such as:**

- Access to dedicated land/property where waste can be sorted.
- Sorting facilities for reclaimers to sort their recyclables under controlled conditions.
- Equipment and infrastructure to add value, including handbailers, storage lockers/containers where trollies and belongings can be locked up and collection bikes or trollies adapted to carry half a ton with shading.
- Reduced distance reclaimers have to drag their one-ton bags or wheelie bins.
- Smartphone applications (apps) to share market price information.
- Communication mechanisms to call for forum meetings and general discussion platforms. These should be coordinated by the liaison officer/s and communicated to IWS entities.
- Providing PPE (gloves, masks, etc.), reflective jackets and nametags.
- Training on maintaining the quality of recyclables and sorting the recyclables.
- Providing e-wallet systems so that recyclers do not have to carry cash.
- Providing durable bags or sacks for recyclables, which the IWS can pick up from door to door.
- Providing durable trollies or other primary collection equipment for transporting recyclables short distances.

**Constraints on IWS integration**

- Little capacity.
- No equipment.
- Lack of funds.
- No sorting facility.
- Exploitation.
- Lack of knowledge and skills.

Great inroads to limitations faced by the IWS can be achieved with affordable quick-win solutions.

## Case Study 6 — Philippines - Linis Ganda Initiative

Linis Ganda, which means “clean and beautiful city”, is a non-government organisation (NGO) founded in 1983 and is currently active in all 17 cities that comprise the Manila Metropolitan region - one of the most populated metropolitans in the world. The metro has a population of approximately 12 million people, 50 000 to 150 000 of whom are informal waste reclaimers.

Linis Ganda was initiated to improve waste collection, to enhance cleaning up of the metro, to recognise the importance of waste reclaimers and to improve their working and living conditions. This was done by:

- Improving links between middle dealers and itinerant buyers.
- Organising recycling groups into cooperatives.
- Formalising scavenging and promoting recycling among schools and households.
- Promoting information campaigns that support recycling.
- Providing funding assistance for the informal sector.

The Linis Ganda operational model was designed with 17 junkshop cooperatives, one shop in each city. These junkshops are the middle dealers that buy recyclables from eco-aides, who are registered informal reclaimers collecting and buying waste from households with money given to them daily by the cooperatives. Linis Ganda then identifies local and foreign enterprises to which these recyclables can be sold. It also provides loans and equipment to the cooperatives.

Strengths of the Linis Ganda model include:

- The ability to incorporate as many actors as possible in the recycling chain.
- Large contribution to economic output, employment and income.
- The provision of loans considering different equity options to cooperatives at short notice.
- Eco-aides being free to participate in junkshop training sessions.
- Facilitation between cooperatives and eco-aides, resulting in less exploitation and price manipulation.
- The ability to include the whole spectrum of recyclable materials.

*(Source: IWP/AR undated) The integration of the informal sector was chosen as a priority in the country's newly developed Solid Waste Management Strategy – especially the facilitation of recycling systems*

### 4.6 Facilitate procurement and ease of business

#### 4.6.1 Municipal actions threatening the IWS

To assist the successful integration of IWS into AISWM systems, municipalities should foster ease of business for IWS activities. Current laws and regulations and other red-tape issues in some municipalities are not pro-IWS:

- Many municipalities have bylaws regulating waste ownership. The collection of recyclables is often subjected to municipal procurement processes and outsourced to established service providers.
- Linked to issues of procurement, supply-chain regulations do not support municipalities to conduct business with the IWS, unless they are formally registered with a track record or company profile.

## 4.6.2 Facilitate a conducive business environment

Municipalities should facilitate a favourable business environment for the IWS to either conduct business with the municipalities as part of the AISWM system or to merely secure start-up business support. The following interventions may support the activities of the IWS in the municipality:

- ▣ Identifying and locating all IWS members in the municipality and invite/compel registration.
- ▣ Developing a support system for a special new stream of business that may remain informal, but operates under an agreement with the municipality, and hence needs to be monitored for certain compliance aspects, such as health and safety.
- ▣ Updating bylaws to accommodate the organised IWS.
- ▣ Identifying and addressing regulatory constraints (i.e. red tape) that impede business relationships with municipalities. Partnering with business forums or support organisations to identify and prioritise constraints in the local business environment.
- ▣ Communicating business-related information and procurement processes and regulations.
- ▣ Limiting direct and indirect transaction costs associated with registration and compliance for SMMEs involved in the recycling sector.
- ▣ Assisting with the establishment of formal businesses.
- ▣ Establishing a “buy local” campaign, which is a preferential public procurement strategy to improve government supply chain procurement and, more importantly, to support economic growth through incentivising local sourcing and content.
- ▣ Considering subsidising the recycling sector through deferred savings from landfill costs.
- ▣ Creating internship opportunities in the municipality’s SWM system.
- ▣ Linking the organised IWS that is awarded contracts/franchises with support organisations to increase their likelihood of success.
- ▣ Providing advice and training courses.
- ▣ Establishing links with end of pipe recyclers to secure/guarantee the IWS better prices and avoid/minimise middleman exploitation.

By facilitating a conducive business environment, municipalities can actively support localised manufacturing, procurement and consumption.

## 4.6.3 Building organisational capacity of the IWS

Organisational capacity refers to measures that support the development of organisations. The Brazilian integration scenario (further elaborated on in Chapter 2, along with other models) is a demonstrative model that has been adopted in countries across the world. There are six types of interventions that support informal recyclers. The following are interventions used elsewhere that could be adapted for South Africa:

- ▣ **Policy:** Formally recognise informal recyclers in the ISWM policies and plans of municipalities, and encourage municipalities to consider IWS integration.
- ▣ **Incentives:** Fiscal and financial incentives geared to support recycling.
- ▣ **Procurement:** Design procurement policies and bidding clauses that fit the low organisational and financial capacity of the IWS, and encourage bidders to demonstrate integrated IWS approaches.
- ▣ **Level playing field:** Registered SMMEs would have free access to recyclables through

having their access rights protected by simple and legally enforceable contract/franchise agreements.

- ▣ **Communication:** Communication channels, including representative forums for stakeholders in the SWM sector – both formal and informal sectors.
- ▣ **Capacity-building:** Establishing capacity-building initiatives targeted at the IWS, including business planning, legal support and health and safety training.

#### 4.7 Training and skills development

Training and skills development are crucial for the integration of the IWS into an AISWM system. A skills audit can be undertaken to identify gaps in the knowledge and skills of informal recyclers. Some general fields of training that might be required include:

- ▣ Basic reading, writing and comprehension skills.
- ▣ Waste management collection and recycling value chain.
- ▣ Understanding the AISWM system and the opportunities it presents.
- ▣ Health, safety and environmental standards.
- ▣ Understanding business models and commercial law and contracts.
- ▣ Aspects relating to competition in the waste recycling industry.
- ▣ Business and financial management.
- ▣ Municipal procurement processes and regulations.
- ▣ Legal requirements and formalisation procedures.
- ▣ Access to credit.
- ▣ Networking with stakeholders from the formal sector.

Actions required for education and training, include:

- ▣ Skills base assessment
  - Vocational skills: Core skills required for recycling services.
  - Business skills: Non-core skills enabling an SMME to conduct its core activity.
- ▣ Identify skills gaps.
- ▣ Map out sources of education and training, and costs involved.
- ▣ Identify positions per operational area.

The type and level of skills development will depend on the type of intervention (light regulation or formal entities).

#### 4.8 Developing outlets for reclaimed materials

Identifying markets, securing agreements with material brokers and end-users and meeting buyer specifications are some of the most difficult, yet important, tasks. **Finding an outlet for recyclable materials collected is crucial to support integration of the IWS.** Market analysis needs to be both a planning and ongoing activity as even the most successful recycling programs can be severely affected by market fluctuations.

Outlets for recyclable materials include:



- Public drop-off sites.
- Recycling kiosks or buyback centres.
- MRFs.
- Processing companies for recycling materials in the longer term.

Many collection/sorting initiatives are not viable on their own and need to integrate/link with related up/downstream revenue-generating opportunities, and/or rely on subsidies/incentives. At industry level, this calls for local market development for the uptake of recyclables. The drive should be to meet manufacturers' requirements for accepting recycled materials as inputs to production – for example, constant supply needs to be guaranteed.

The IWS reclaimers sometimes transport their recyclables over long distances and their income opportunities may be limited to the daily load they can manage. Decentralised or mobile manual sorting buyback centres can provide opportunities for the IWS reclaimers to collect a second or multiple loads and enhance their income. Members of the IWS may also chose to upscale their activities by setting up buyback centres of their own.

The municipality can assist by:

- Linking ISWM planning with wider economic development planning, and recognising that the two are interlinked.
- Establishing a central register of SMMEs that can be invited to participate in waste-related service contracts.
- Encouraging strategic partnership agreements between assisted IWS members and existing private sector organisations to encourage capacity building with partners for mutual benefit.
- Supporting entities to link members to regional networks focusing on specific activities, for example collection and refurbishment of furniture/small implements to offer scaled-up services.
- Nurturing local community innovation and identifying opportunities for pro-poor recycling services.
- Constructing decentralised sorting buyback centres.

## **Case Study 7 — Rustenburg Local Municipality**

### **1. Background on the AISWM system for Rustenburg Local Municipality**

As part of the South African-German cooperation, the Rustenburg Local Municipality (RLM) is currently exploring the feasibility of an AISWM system. A feasibility study was undertaken during 2008/09 to develop and evaluate various waste treatment options and identified the most likely solution as a clean MRF with separation at source paired with a mechanical biological treatment (MBT) facility with a biological drying process to produce refuse-derived fuel.

In 2013, the KfW Development Bank, through the DEA, extended financial support to RLM to improve the efficiency of municipal SWM services through an AISWM system and to implement the MRF and MBT in support of a broader AISWM system.

The assistance is centred on the construction of the new Waterval Sanitary Landfill to replace

the Townlands Landfill site and several communal landfills/dumpsites. The proposed advanced waste treatment facilities will be located at the new landfill site. Currently, Rustenburg has a large IWS with many households' livelihoods dependent on the collection and selling of recyclables. Once the Townlands Landfill site is decommissioned, members of the IWS will be left jobless. Therefore, the project is also addressing the possible integration of the large IWS into the proposed AISWM system.

## 2. Informal waste reclaimers in RLM

Currently, waste picking by separation of recyclables takes place in the streets and settlements of Rustenburg, at the current landfill site and at some smaller dumpsites. While some reclaimers separate recyclables from municipal waste provided by households and businesses along the streets for collection by the municipal waste trucks, the majority sort waste at the current landfill site. It is estimated that between 1 000 and 1 200 reclaimers work permanently or temporarily at the landfill. There are about 700 local residents (70% females and 30% males) and 500 immigrants (80% males and 20% females) working on the landfill site, the majority of whom have worked there for five to 10 years.

Reclaimers work jointly based on their nationality.

Approximately 85% live next to the landfill in formal or informal settlements, while an estimated 15% live directly on the site.

The collected recyclables are sold either to traders who come directly to the landfill or to buyback centres in the town. The activities of the reclaimers on the landfill and those recovering recyclables from households and shops, indicate that there is a well-established market for various kinds of recyclables in Rustenburg. This is true not only for common materials such as scrap metal, glass, plastic and paper/cardboard, but for wood, food waste and specific items such as printer cartridges.

The informal reclaimers describe their working and living situation as quite difficult, characterised by exposure to violence (within the IWS community) and:

- Security concerns (theft of collected material, personal goods and/or money).
- Challenges experienced with buyers (buyers do not pay well and refuse to buy from some groups or people).
- Issues of gender (men push women away from the trucks or from good sources of recyclable material).
- Issues of ethnicity (reclaimers from Zimbabwe and Mozambique feel discriminated against by the other groups).

Despite these concerns, picking recyclables at the landfills forms the centre of their working and private lives.

Once the new sanitary landfill site is operational and the existing landfill site is decommissioned, most of the reclaimers will not only lose their livelihood but a select number of those who live on or next to the site will also lose their homes. If some of the affected waste reclaimers transfer their activities to areas where other waste reclaimers are currently active, there could be potential for conflict.

### 3. Informal sector integration options for RLM

The waste reclaimers may play an important role in any future waste management scenario, but to effectively manage and control the extent of SWM services assigned, they will need to undergo a registration and formalisation process.

The municipality has deliberated on a potential proposal for individual reclaimers to continue to work as independent “entrepreneurs”. This may require the issuing of licences and authorisation to conduct their activities. For example, certain areas of the town shall be allocated to them to collect recyclables. While some waste reclaimers may continue to work individually, others will need to form some kind of organisational structure, e.g. cooperatives, to render effective services. The legal status of each waste picker is of concern. However, the municipality will consider the involvement only of South Africans and/or those with a residence or work permit.

Options for involvement of waste reclaimers are outlined in the table below.

Table 5: Different levels and locations of integration opportunities

Location	Description and level of potential job opportunities
<b>Rustenburg Municipality</b>	Individual street collectors/cooperatives serving entire townships. Recyclable transporters (truck recyclers). Buyback centres. Processing companies for recycling material.
<b>Closed Townlands Landfill Site</b>	Rehabilitation contractors required to employ reclaimers temporarily. Composting plant to be established.
<b>MRF/MBT at the New Waterval Sanitary Landfill Site</b>	RLM is considering the establishing an MRF/MBT at the new Waterval Sanitary Landfill Site. Workers for the MRF may be recruited from the group of former landfill reclaimers.

### 4. Implementation principles

The following guiding principles for the implementation of an operational plan have been identified:

- ▣ Start negotiations and discussions with the IWS early enough before initiating operations at the Waterval landfill.
- ▣ Integrate the project with all other related projects.
- ▣ Constantly engage with informal reclaimers.
- ▣ Obtain good data to make solid decisions.
- ▣ Know what is being lost in terms of the current SWM system.
- ▣ Compensate in kind, especially where housing is lost.
- ▣ Offer multiple and meaningful choices.

The following initial actions are envisaged:

- ▣ Investigate waste reclaimers’ structures and situations.
- ▣ Consult the IWS and assist with registration and permits.
- ▣ Address housing and social issues.
- ▣ Assist IWS in forming cooperatives.



#### 4.9 Possible long-term integration and formalisation models

Plans, initiatives and opportunities for improving the recovery of recyclables from waste, and plans to boost involvement of the poor, need careful coordination and integration.

As mentioned, IWS integration initiatives should be guided by a liaison officer to allow for both bottom-up and top-down approaches. Experience has shown that the modernisation and integration of ISWM systems cannot be sustainable, fair and efficient if the IWS does not form part of this modernisation process. This will enable the systematic restructuring of the recycling sector to initiate identification and facilitation of recognition, integration, formalisation and job creation.

Formalised businesses (SMMEs) should be able to deliver in bulk to buyback centres and negotiate better prices, or even deliver directly to recycling companies. The entities could also be involved in processing reclaimed materials, adding value to the collected materials and securing better market prices.

The opportunities for integrating the IWS are detailed in Figure 9, as aligned to the process flow of waste and recyclables. The figure presents the formal and informal steps in SWM, the key players and how the processes interact across sectors. This view of solid waste and recycling systems provides a basis for understanding a modernisation model where **recognition and integration of the informal sector is simply one more variation that leads to the optimal functioning of the whole system.**

The individual steps and opportunities for IWS integration as shown in Figure 9 are further elaborated on in Table 6.

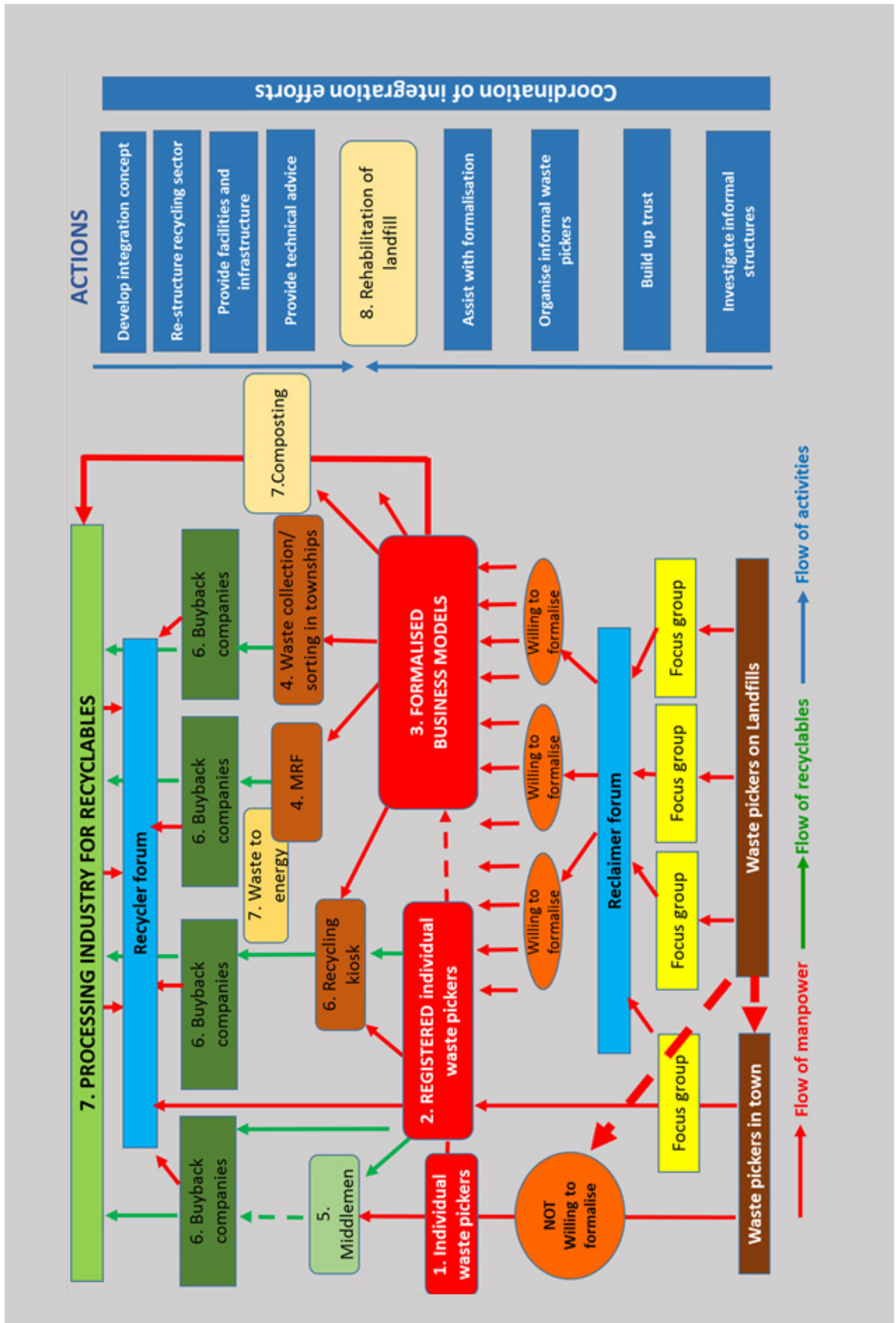


Figure 9. Opportunities for integrating the IWS in an AISWM system

Typical integration models, from mere recognition to formalisation (which require registration), are captured in Table 6.

Table 6: Opportunities for integrating the IWS in an AISWM system

Number	Opportunity	Description
1	<b>Individual informal waste reclaimers</b>	Informal waste reclaimers not interested in organising or formalising can operate on their own as usual. Recyclables can be sold to traders or directly to buyback companies.
2	<b>Registered individual informal waste reclaimers</b>	Informal recyclers wishing to be more organised can register as waste reclaimers, but still work individually. Designated collection areas can be demarcated. Recyclables can be sold to traders or buyback companies.
3	<b>Informal waste reclaimers in formal business model</b>	Informal waste reclaimers can work collectively in formalised business models, such as cooperatives. Formalised entities or registered individuals can serve entire township areas that are not served by municipal waste collection systems. Recyclable transporters (truck recyclers) can also be established.
4	<b>Formal waste collection and sorting MRFs</b>	Entities based on formal business models can collect recyclables and then sort them. A clean (mechanical and manual) or dirty MRF can be established. Activities can include, separation, sorting, grading, cleaning, baling, etc.
5	<b>Traders</b>	Opportunities for individual or collective informal waste reclaimers as traders between registered individual waste reclaimers, formal business models and buyback companies.
6	<b>Buyback companies or recycling kiosks</b>	Informal waste reclaimers can be assisted to establish buyback centres. Formal entities can be supported to open up recycling kiosks (small buyback centres) at public drop-off facilities or in designated areas that can also specialise in buying recyclables.
7	<b>Processing</b>	Involvement in recyclable processing companies, such as: <ol style="list-style-type: none"> <li>1. Composting.</li> <li>2. Dismantling of electronic waste.</li> <li>3. Recycling of waste tyres.</li> <li>4. Refurbishment of furniture/bicycles/small equipment.</li> <li>5. Repair of electrical devices (ovens, refrigerators, heaters, etc.)</li> <li>6. Rubble crushing and crushing of colour-sorted glass.</li> <li>7. Paper choppers, paper briquettes, egg and fruit trays from wastepaper.</li> <li>8. Production of clean and sorted PET chips and PE/PP regranulate.</li> <li>9. Extrusion of waste bags from recycled plastic.</li> <li>10. Waste to energy.</li> <li>11. Composting.</li> </ol>
8	<b>Rehabilitate landfills and city cleaning services</b>	Informal waste reclaimers can be subcontracted temporarily to assist with the mining of landfills, landfill rehabilitation, clearing and construction related components. Municipalities may contract collective reclaimers to assist with city cleansing, clear illegal dumping sites and oversee cleanliness at communal drop-off facilities.

Table 7: Models of IWS integration

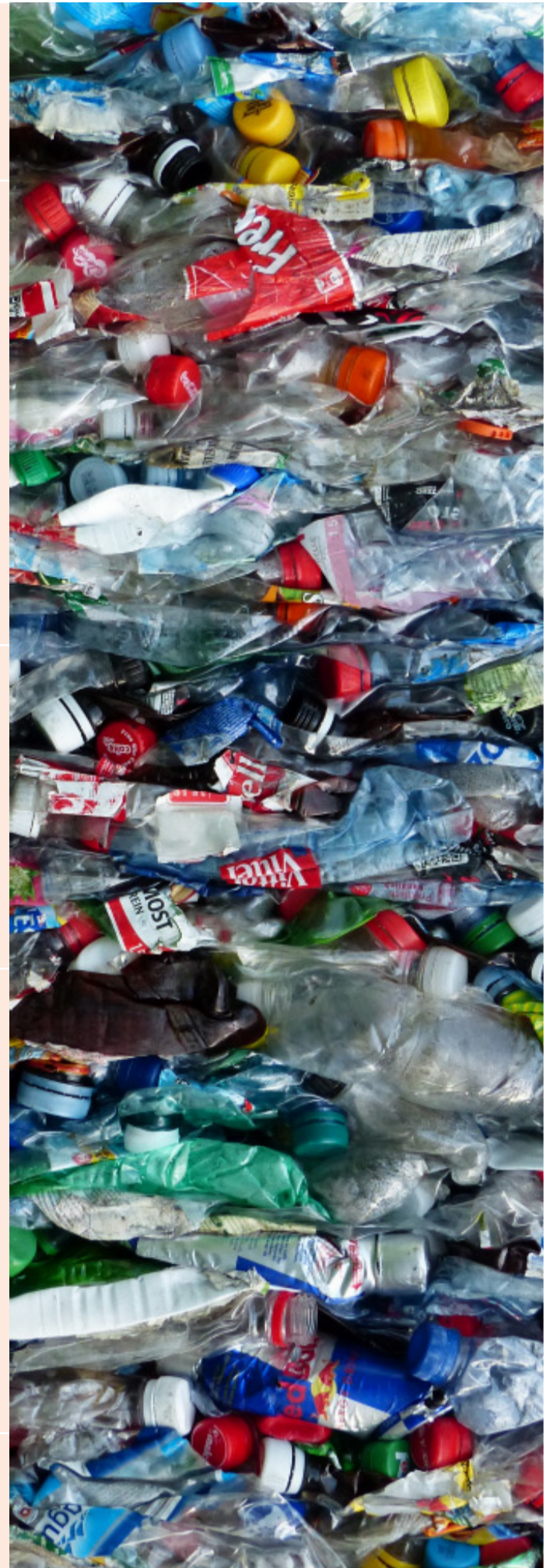
Model	Description	Advantages	Disadvantages	Registration
1. Recognition	Recognition refers to any activity aimed at dignifying informal recycling as a profession, even though it remains informal in nature. Such actions can include provision of identity cards or nametags, reflective clothing, improved collection equipment, and changing policy to address job security, income security, working conditions, social protection, etc.	Low cost intervention. More control over waste reclaiming with limited status quo alteration. Address a large number of waste reclaimers at the same time.	Perceived municipal acceptance of informal waste-reclaiming activities. Such recognition might attract more informal waste reclaimers. Does not address the “informality” of informal reclaimers. No direct potential for advancing career.	
2. Informal agreements	Agreements can be made between municipalities and informal waste reclaimers. Informal waste reclaimers can be assigned to certain areas, townships and informal settlements to freely collect recyclables and sell them. Agreements can be made between businesses, industries and municipalities to give all recyclables to informal waste reclaimers for selling. Also, informal agreements can be made with large recycling companies to buy recyclables from informal waste reclaimers at market-related prices.	No legal requirements or contracts – informal waste reclaimers remain self-employed. Municipal collection backlogs might be improved as well as collection costs.	The IWS remains uncontrolled. There is no contract forcing stakeholders to adhere to the agreements. Working conditions of informal waste reclaimers are not necessarily improved.	
3. Social agreements or social impact bonds	Social impact bonds can be implemented, whereby the municipality remunerates informal waste reclaimers for the money their activities save the municipality, including reduced waste collection costs and space saved at landfills. Other social agreements could include remuneration in the form of food parcels, vouchers, grants, etc.	This intervention directly addresses social issues such as income and livelihoods. Municipal waste and social issues are addressed through one intervention.	This might be an expensive exercise, as municipalities need to pay reclaimers with funds they might not have. Working conditions are not improved	

Model	Description	Advantages	Disadvantages	Registration
4. Associations	An association is any group of people who have joined together under some agreement or constitution or set of rules to carry out a common objective. Associations are groups that represent the interests of members according to a defined constitution and are non-profit businesses.	The association has a constitution regulating member activities and representing members' interests through lobbying.	An association is not a legal person/entity and, thus, has limited capabilities. The association itself cannot benefit from formal government procurement contracts.	
5. Formal business models	A formal business or an SMME is an often-profit-driven organisation structured according to legal requirements. The type of business or SMME will depend on the number of members involved, the objectives of the members and the type of activity.	Formal businesses or SMMEs are more organised and work conditions are regulated. Members have improved income stability, job security and social protection. The business has potential to expand its activities and advance the careers of informal waste reclaimers.	Generally, more management and business experience is needed to establish a business or a SMME. Many reclaimers do not have these skills or knowledge. The capitalistic nature of some businesses may not be applicable for reclaimers.	
5.1 Partnerships	A partnership exists where two or more people agree to work together, and share their profits and losses. It is, thus, the simplest way in which people can work together, in that it is not even necessary to have a written agreement to constitute a partnership. In return, municipalities can assist these businesses to conduct their activities by capacitation and/or training.	An easy way in which people can formally work together. The IWS will have a more sustainable income, while the capacity of the formal sector could increase. Less competition. Improved municipal service delivery.	Partnerships are not suitable for large organisations. All partners are individually and severally responsible for debt and responsibilities. The formal sector is often reluctant to partner with the informal sector. Once a partnership is ended, the specific business may close down.	



Model	Description	Advantages	Disadvantages	Registration
5.2 Cooperatives	<p>A cooperative is an association that operates as a business or enterprise in accordance with cooperative principles flowing from cooperation rather than competition among members. Cooperative principles are set out and adopted by the international cooperative movement: Concern for community; cooperation among cooperatives; education, training and information; autonomy and independence; member economic participation; democratic member control; voluntary and open membership. <i>The Cooperatives Act, No 14 of 2005</i>, provides for the registration of cooperatives that have adopted a constitution that complies with cooperative principles. Various forms exist: Worker cooperatives, services cooperatives, primary and secondary cooperatives, etc.</p>	<p>A cooperative is focused on the needs and capabilities of its members. Members are directly responsible for their earnings. Cooperatives are easy to register and the capital contribution is flexible to the needs of its members. Greater bargaining power than an association. One member has one vote regardless of capital contribution. Easier to gain funding and procurement contracts with municipalities.</p>	<p>A cooperative can become difficult to manage, especially when it has a large number of members. Management and business skills are required. Disagreements between members can easily break up the cooperative.</p>	
5.3 Social enterprise	<p>A social enterprise is a non-profit or profit organisation whose aim is to improve the social conditions of their employees. Such organisations often include NGOs aimed at providing services or products to a community to improve the livelihoods of members or employees. Depending on the type of social enterprise, registration as a formal business or an SMME might be required.</p>	<p>Work conditions and the dignity of informal waste reclaimers are restored. Improved job security, income security and social protection.</p>	<p>Reclaimers may not find this option attractive as they will be only employees in the organisation and recipients of benefits. Legal requirements are difficult to manage. Social enterprises have to adhere to strict rules and regulations. They will have less freedom.</p>	

Model	Description	Advantages	Disadvantages	Registration
5.4 Companies	<p>A company is an entity registered in terms of the <i>Companies Act, 2008 (Act No 71 of 2008)</i>. The Act provides for various kinds of companies, including non-profit organisations wishing to register as a company, private companies, state-owned companies and public companies (shares traded on the stock exchange). According to the Act, the purpose of a company is 'for the aggregation of capital for productive purposes, and for the investment of that capital in enterprises...' A share gives a member the right to interest in the company, assets and dividends. The company is managed by a board of directors, while shareholders make decisions (control) at an annual general meeting.</p>	<p>A memorandum of association, which is the company's constitution, can easily be established to regulate activities. Up to 50 shareholders. A company is a legal person that can act on its own behalf separate from its shareholders. Shareholders risk losing only their shares and no personal assets.</p>	<p>Rights of members to transfer shares are restricted. Many legal requirements, which might be beyond the capability of reclaimers. Decisions can be made by a majority shareholder, which might influence other shareholders negatively.</p>	



All formal business models require business registration, with the exception of a partnership, since it entails a formal agreement or relationship. Nonetheless, pro-poor Public Private Partnerships (PPP) can be established between businesses, the public sector, and the IWS to clean-up and collect recyclables in townships, informal settlements or poor communities.

#### 4.10 Considerations for facilitating formalised business models

Past experience has shown that bottom-up, organically grown businesses are more likely to succeed than top-down, artificially established businesses. Therefore, existing organisational structures should be strengthened rather than new formalised business models created.

Care needs to be taken not to push informal waste reclaimers into an organisational (operator) model without the business skills to survive. An entity/organisation model that is imposed on an informal group is unlikely to succeed without support and training initially in organisational development.

Ultimately, a municipality's intention should be to provide the tools and framework to facilitate the sustainable transition of individuals and small groups of informal reclaimers out of the IWS into the formal recycling/SWM sector.

##### 4.10.1 Deciding on type of formal business model

Formal business models involve a lot of hard work and discipline, and often require more skilled members managing the business. The type of business model chosen, such as partnerships, companies or cooperatives, should be determined through stakeholder consultation. The decision to organise the IWS into formalised businesses should be based on a sound understanding of the dynamics and the following key questions asked:

- Do proposed members understand the details and essentials of the proposed business?
- Is the proposed business profit driven or not?
- Are proposed members aware of the positive and negative aspects of forming a formal business?
- Are the proposed members considering the business voluntarily or are they being forced?
- Are the proposed members aware that they will have to commit to the skills and expertise of other members?
- Are proposed members aware of and do they agree with how remuneration will take place?
- Are there any entrepreneurial and management skills among the proposed members? What capacity and skills are available?
- How many proposed members will be involved?
- Are there any additional costs and taxes involved?
- Are the proposed members aware of the greater responsibility involved in the business?
- Is there a market for the business to survive?



## Case Study 8 — India – KKPKP and SWaCH

Kagad Kach Patra Kashtakari Panchayat (KKPKP) is a waste picker trade union established in 1993. KKPKP has 6 000 to 8 000 registered current members, all from Pune and Pimpri. Since inception, the union has assisted 11 000 reclaimers and has established the Solid Waste Collection and Handling Co-operative (SWaCH) of 3 500 members, which has increased by 31% diversion rates in the two cities.

KKPKP provides the IWS in Pune and Pimpri, which consists of 70% uneducated women and children (the poorest of the poor), with a voluntary trade union with the capacity to work towards providing informal reclaimers with the same benefits enjoyed by workers in the formal sector. Although KKPKP is women-centric, it is open to all waste reclaimers, regardless of race or religion.

SWaCH was established as a pilot project in 2006 and aims at improving the livelihoods of reclaimers and to build better relationships among reclaimers, households and the municipality. It also supports continuous training and education of members, especially women. Members operate in teams of two reclaimers and one driver (motorcycle-like vehicles), who collect recyclables from households in designated areas for sorting at recycling shelters provided by the municipality and sale to scrap shops, of which KKPKP owns three.

Strengths of the KKPKP and SWaCH model include:

- Provision of a sense of community and restoration of dignity and respect of informal reclaimers.
- The results of research being incorporated and used as bargaining chips to argue for better work and living conditions.
- Provision of educational and work opportunities for children of informal reclaimers in more advanced stages of waste collection.
- Informal reclaimers being involved in the whole value chain – from reclaiming to transport, sorting and selling.
- Driving waste picker trucks provide women with a sense of empowerment.
- Organised demonstrations to highlight the plight of the informal waste sector.
- Reduced child labour.

*(Source: IWPAR undated)*



#### 4.10.2 Key success factors of a formalised business model

Preliminary planning is crucial to the success of formal businesses and should be conducted before the business is established. There is usually a leader or a group of people initiating the establishment of a formal business. Once the potential members of the business are identified, the objectives, principles and plan for the business should be collectively discussed.

These operational guidelines are key to the success of the business and should include the following:

- ▣ **Principles**
- ▣ **Objectives**
- ▣ **SWOT**
- ▣ **Plan**

The text boxes elaborate further on the key elements.

##### **Principles**

Principles describe how the business will operate and are closely related to the objectives. The principles guide the operations of the business and the behaviour of its members, including how they conduct business, who may join the business, how members are treated, etc. The principles should be democratic and drawn up collectively.

##### **Objectives**

A collective decision should be made on the objective of the formal business. To ensure commitment, the objective should support the interests of all proposed members. The objective should clarify the type of activity, with whom will business be done and profit/remuneration issues.

##### **SWOT**

Determining the strengths, weaknesses, opportunities and threats of the business assists members with proactive decisions, puts precautionary measures in place and allows the business to capitalise on advantages.

##### **Plan**

A plan or strategy should be developed detailing the objectives, principles and operations of the business. The plan is not a legal requirement but constitutes a central document to assist the business owners with making decisions and solving potential issues. The plan is also useful in marketing, and is essential in obtaining any external financing. Apart from the principles, the plans should be flexible.

#### 4.10.3 Getting assistance to establish a formal business

Establishing a formal business is not easy and a third party could be appointed to assist. The municipality has an essential role to play as promoter, facilitator and coordinator and this role must be clearly defined.

A decision is needed on whether the integration effort will be initiated:

- ▣ Internal/in-house by the **municipality**: By training and/or reallocating existing personnel.
- ▣ **External**: Through contracting a team of facilitators or experts, or an association or parastatal, e.g. the South African National Association of Cooperatives (SANACO).

Expertise required for an IWS integration initiative can include:

- ▣ Coordination and administration.
- ▣ Local social specialist with cultural and informal livelihoods knowledge.
- ▣ Public participation expert with conflict-resolution experience.
- ▣ Waste management and/or recycling specialist.
- ▣ Small business development expert.
- ▣ Environmental education specialist.
- ▣ Health and safety specialist.
- ▣ Legal specialist.
- ▣ Accounting specialist.
- ▣ Awareness raising and communication expert.

#### 4.10.4 Gaining business support

As a formal business, it is easier to obtain funding from the government, NGOs and other formal entities as part of their corporate social responsibility. Funding is often a major constraint in start-up businesses and directly influences the expansion and advancement of the business.

Business support can also be obtained through partnerships between informal recyclers and their support organisations on the one hand, and brand owners, compliance schemes under extended producer responsibility and product stewardship initiatives, on the other hand. In general, the goals of such partnerships are to:

- ▣ Improve recycling and reuse performance, and meet global recycling targets for products and packaging.
- ▣ Improve working conditions and health and safety provisions, ensure recognition for informal recyclers, and stabilise their livelihoods as recycling entrepreneurs.
- ▣ Preserve or strengthen the positive impacts of informal reclamation and recycling.
- ▣ Improve resource efficiency and streamline marketing of secondary resources.



## Case Study 9 — uMgungundlovu District Municipality (UMDM)

### 1. AISWM systems in uMgungundlovu

As part of the South African-German cooperation, uMgungundlovu District Municipality (UMDM) and local municipalities (LMs) in the district collaborate closely to implement AWT projects.

Despite there being six landfill sites in the district, in Mooi River, Richmond, New England Road, Curry's Post, Impendle and uMshwathi, the district still has a relatively low refuse collection rate. Approximately 47% of the total solid waste is collected by the municipalities, 7% of which is recycled, with the remainder landfilled. The uncollected solid waste is illegally dumped or burnt.

### 2. Informal waste reclaimers at UMDM

The district has about 1 000 active waste reclaimers, ranging from kerbside reclaimers to those at landfills and illegal dumpsites, who sell their recyclables to buyback centres, private recycling companies and traders.

Private recycling companies are also active. An estimated 70 000 tons of recyclables are generated annually, with only 22 000 tons collected and recycled. Approximately 8 000 tons of these recyclables are collected, recovered and sorted under the UMDM Small Recyclers Support Programme.

The programme supports formalisation of informal reclaimers by:

- Building unity and organising small recyclers into trading associations.
- Lobbying for policy change.
- Providing greater transparency in pricing among small recyclers and buyers.

### 3. UMDM Small Recyclers Support Programme model

The programme is based on the following model:

- Introduction of household, public and business source separation.
- Assistance to small-scale recyclers (typical waste reclaimers) to collect recyclables.
- Waste reclaimer cooperatives to separate and package waste for sale to end-users, which may include former informal reclaimers.
- The local municipality supplies clear plastic bags for collection and separation of recyclables.
- Small recyclers supply waste picker cooperatives.
- Income from the sale of recyclables is paid to waste picker cooperatives.
- Local municipality will subsidise costs of electricity, water, fuel and maintenance for an MRF if and when operational.



## Founding principles for IWS integration could include:

<b>Recognition</b>	Recognise the presence of the IWS and its role as the base of the recycling value chain as these informal recyclers are responsible for most of the materials that are captured, processed and sold into the value chain.
<b>Competence</b>	The IWS has the practical experience and knowledge to maximise recycling under local (market) conditions, and to adapt quickly to new value chains and market opportunities
<b>Participation</b>	Treat informal sector recyclers as subjects, not objects, of interventions. They have opinions, expertise and experience. Acknowledge them as key stakeholders in the design, monitoring and evaluation of recycling and valorisation systems, and the definition of quality standards. Always keep in mind “ <b>nothing about us without us</b> ”.
<b>Source separation</b>	Assume source separation is feasible, if well designed. Build on, or introduce, upstream separation of recyclables, organics and residuals at households or businesses.
<b>Find what is working</b>	Build on existing recycling systems, rather than assuming that everything has to be built from scratch, or replace existing informal systems with parallel formal ones. Work with informal recyclers to collect data on both waste generation and recycling rates.
<b>Safe and dignified working conditions</b>	Bring insights and ambitions of informal recyclers together with global ideas of sound practice to achieve practical, feasible and context-sensitive improvements in environmental, health and safety working conditions of informal recyclers. Promote dignified working conditions along with improvements in productivity and earnings.
<b>Eliminating child labour</b>	Work with informal recyclers who are parents, and with their children, to ensure that children go to school, and that recycling activities by children under the legal age of adulthood in the country are constrained, supervised, reduced or eliminated.
<b>Improving recyclability</b>	Prioritise and intervene to improve marketability of difficult materials, to strengthen local markets, and where existing recycling processes are dangerous, polluting or illegal.
<b>Business-to-business before private public partnership (PPP)</b>	Involve informal and SMME recycling enterprises as competent business partners; give priority to business-to-business initiatives over PPPs that involve the government other than as a host community. A formal business is more likely to receive procurement contracts from municipalities, given that current procurement and supply-chain processes are not designed to deal with the informal sector.
<b>Transfer experiences and good practices</b>	Disseminate and transfer sound practices of partnership with informal recyclers.



## 4.11 Monitoring and evaluation rollout of pilot integration model

The monitoring and evaluation of the integration model are crucial to inform the implementers of progress, challenges, successes and potential changes needed. Feedback should then be given to all stakeholders, while lessons learnt should be considered for future rollout.

### 4.11.1 Monitoring during pilot project integration

Pilot project design can usefully include:

- A set of clear, relevant and easily measurable indicators.
- Procedures for measuring indicators.
- The types of data to be collected and methodology to be employed.
- A strategy for follow-up and recording of progress, results and problems.
- Institutional roles and responsibilities.
- Implementation timetable.
- Reporting arrangements.
- Procedures and timeline for sharing results with key stakeholders.
- Budget.

Internal monitoring procedures should be in place to allow implementers to compare the actual progress of the intervention to the targets, milestones and timetables in the implementation plan.

### Case Study 10 — *Wildlands Wastepreneurs programme*

The National Green Fund approved R60 547 930 to support the three-year Wildlands Wastepreneurs programme, which facilitates and funds community waste collection in KwaZulu-Natal and Gauteng (encroaching into Mpumalanga). It also provides capacity development for participants on best practice methods of collection and sorting various environment-polluting waste streams.

The programme builds on a pilot undertaken in 2010 in the Msunduzi Local Municipality, which demonstrated that unemployed community members could be motivated to collect a range of recycling materials in exchange for credit notes or barter items such as bicycles, building materials and other livelihood support items of their choice. The model has since been further developed and now issues credit notes or cash (deposited into bank accounts), which can be used at selected stores.

The Wildlands Wastepreneurs project, developed by the Wildlands Conservation Trust (WCT), is managed by regional managers and facilitators who work closely with drivers, loaders and waste sorters. The programme targets were the avoidance of 20,500 tCO<sub>2</sub>e emissions and collection of 13 200 000 kg of recyclable waste over four years. The programme has exceeded its targets, avoiding 19 256 tCO<sub>2</sub>e emissions to date and recycling 26 263 907 kg between January 2014 and July 2016. Furthermore, the programme has empowered 7 815 wastepreneurs, 17 full-time drivers, and 104 permanently employed individuals against targets of 4 400 wastepreneurs, 14 full-time drivers and 93 individuals and against a target of 38 loaders/sorters, 154 have been appointed. The project is popular in the communities, with 92 schools participating in waste separation at source and further recycling.

It is also contributing to alleviating the pressure on service delivery from municipalities for waste collection in unserved areas, while creating employment opportunities for local communities.

National Green Fund funding has been used to leverage other corporate funding, which has boosted the sustainability of the programme, allowing it to continue to grow the network of wastepreneurs and undertake waste sorting and recycling activities, while providing relevant training to project staff and beneficiaries.



(Source: Department of Environmental Affairs, 2015)

Pictures courtesy of Wildlands Conservation Trust

#### 4.11.2 Integration impact evaluation

Following the implementation of the chosen pilot intervention, a focused socioeconomic impact assessment (SEIA) should be conducted to evaluate the impact on the IWS, the economy and other stakeholders. Identified impacts, both positive and negative, should be assessed in terms of nature, extent, duration, intensity, frequency and probability of occurrence. The SEIA should include:

- **Impact on households:** Long-term savings on refuse removal costs, educational value and increased awareness of reuse and recycling/reduction of waste.
- **Impact on integrated (former) informal waste reclaimers:** Sustainable employment, skills transfer, income levels, women and youth development initiatives, business growth and entrepreneurship, new business development and food security.
- **Impacts on informal waste reclaimers not integrated:** Income, livelihoods and quantity of recyclables collected.
- **Impact on formal recycling companies:** Change in profits and employment.
- **Impact on community and environment:** Health, clean environment and awareness/educational value.
- **Impact on other important stakeholders.**

Lack of appropriate post-implementation support is a key reason why many entities struggle on survivalist margins due to no or limited access to services, support, finance, credit, suppliers, markets, skills and information. Most entities require multidimensional support, the nature and degree of which will vary. However, it is advised that continuous improvement after initial integration be fostered, which may include:

- Troubleshooting and problem solving.
- Follow-up and reporting on progress.
- Development of key performance indicators to measure successes and failures, to be monitored regularly, with intermittent debriefing.

- Provision of ongoing advice and technical support to ensure sustainable outcomes.
- Development of an exit support strategy to gradually reduce the intensity of support, while fostering sustainability.

Post-implementation support to assist with efficiency, productivity and profitability could entail, *inter alia*:

- Expanding the client base and extending existing activities by helping to find new buyers and negotiating agreements.
- Raising productivity through improved organisation, division of labour, etc.
- Increasing economies of scale by assisting to organise individual activities into collective arrangements.
- Diversifying business lines such as composting.
- Bypassing intermediaries by promoting collective selling, negotiating agreements with buyers and sellers, providing storage spaces, taking actions to defend rights, etc.
- Using technology, such as adapted trolleys, purpose designed collection bags and community storage spaces.
- Enhancing transport economics for reclaimers.

Care needs to be taken to not create dependency relations between the previous informal waste reclaimers and the liaison officer, as the reclaimers in the newly formalised structure may not develop autonomy and capacity for independence.





## Chapter No. 5 CONCLUDING REMARKS



## 5 Concluding remarks

The NWMS promotes waste management practices up the hierarchy, setting recycling targets to drive the process. South African waste management practices are being adapted to a new, more sustainable paradigm, where dependency on landfilling is reduced, and energy generation, recycling, composting, reuse and reduction are encouraged.

Parallel to this process, there is a need for significant funds for continued modernisation of waste management infrastructure and services across the country. Part of the challenge is working with the IWS in a “fair deal” where materials are directed away from landfills, while preserving livelihood opportunities, improving health and safety conditions and ensuring dignity of work.

The need for integration of the IWS with mainstream waste management systems is being increasingly recognised, as the IWS plays a significant role in diverting materials away from landfill, contributing to recycling targets, providing livelihood opportunities for poorer communities, and feeding the downstream manufacturing industry with high-quality source-separated material. All this happens at no financial cost to society. On the contrary, the IWS saves South African municipalities (and, therefore, citizens) money that would otherwise have to be spent on collecting, transporting and disposing recyclable materials.

The IWS, however, operates in an unregulated world where personal injury, poor health, violence and profiteering are commonplace. The commercial relationships for materials trading through the value chain can be sophisticated, and what can seem to be an unorganised low-value business can actually have surprisingly high levels of organisation and differentiation, akin to an industry.

More than 150 000 reclaimers are estimated to be active in the South African IWS<sup>6</sup>, working within and parallel to the formal waste management system. This is a significant workforce, and one that until now has not been officially recognised in national statistics. Very little research has been carried out on the IWS, and data on the quantities of materials extracted and valorised by this sector are completely lacking.

It is anticipated that there will be some resistance to formalisation from the IWS. Therefore, trust needs to be built from the bottom up, which will take significant time and effort. However, there seems to be no pragmatic alternative. After all, without recognising and understanding the IWS, how can we be sure that new AWT facilities will actually receive the expected feedstock materials?

They may resist while the political pressure is on, but over time the market prevails, and materials will tend to flow in the direction of most benefit to the front-line collectors and reclaimers, and the traders working through the recycling value chain. In conclusion, working with the IWS is an essential part of good project planning and implementation.



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<sup>6</sup>The global benchmark estimate for low- and middle-income countries (UN Habitat 2010: 1) is that 1% of the urban population in developing countries survives by reclaiming recycled material from waste. The IWS in South Africa is conservatively estimated at 150 000 people (approximately 0.4% of the total urban population, or 6% of the total informal sector).

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- UMDM. 2014.** *Advanced Solid Waste Management uMgungundlovu: Monthly Progress Report 1.*
- UMDM. 2014.** *Advanced Solid Waste Management uMgungundlovu: Workshop Report.*
- UN Habitat. 2010.** *Solid Waste Management in the World's Cities.*
- Vest, H. 2014.** *Assisting Informal Sector Activities within the Rustenburg Local Municipality AISWM System: With a Particular Focus on the Reclaimers of the Townlands Landfill Site.*
- WIEGO. 2009.** *Refusing to be Cast Aside: Waste Reclaimers Organising Around the World.*
- WIEGO. 2010.** *Options for Organising Waste Reclaimers in South Africa.*

## Website

[www.joburg.org.za](http://www.joburg.org.za)

[www.pikitup.co.za](http://www.pikitup.co.za)

[www.iwpar.org](http://www.iwpar.org) - *Informal Waste Pickers and Recyclers*

[www.wiego.org](http://www.wiego.org) - *Women in Informal Employment Globalising and Organising*

## Useful publications

**CSIR.2011.** *Municipal Waste Management: Good Practices.*

**GIZ 2011.** *The Economics of the Informal Sector in Solid Waste Management,*

**GIZ. 2012.** *Recovering Resources, Creating Opportunities: Integrating the Informal Sector into Solid-Waste Management.*

**Netsafrica. 2012.** *Guidebook – Learning from Practice: Experience of Netsafrica Programme to Enhance Local Development in South Africa.*

**UN Habitat. 2010.** *Solid Waste Management in the World's Cities.*

**WIEGO. 2010.** *Options for Organising Waste Reclaimers in South Africa.*



## Annexure 1 Where to go for assistance and support?

A municipality cannot realistically integrate the IWS on its own. This annex lists several business support organisations, sector support partners and useful publications that can help municipalities to further unpack the process of engagement with other stakeholders and methods of securing buy-in from various umbrella organisations.

### 1. Business support organisations

Relevant business support organisations in South Africa include:

- Cooperative and Policy Alternative Centre (COPAC) – An NGO providing training and advice on establishing cooperatives.
- DGRV South Africa – a project of the German cooperative federation, the DGRV, provides training and advice on managing cooperatives.
- Funda Education and Training Cooperative – education and training for cooperatives.
- groundWork – an NGO working specifically with recycling and SWM.
- Small Enterprise Development Agency (SEDA) – agency of the Department of Trade and Industry (dti). SEDA develops, supports and promotes small enterprises throughout South Africa, ensuring their growth and sustainability in collaboration with various roleplayers, including global partners to avail international best practices to local entrepreneurs.
- Tembeka Social Investment Company – assistance to various initiatives to empower people from poor communities.

### 2. Sector support partners

Municipalities have infrastructure backlogs and may not have the sufficient time or funds to pursue an IWS integration initiative. There are various NGOs or donor support organisations that may be able to provide support. Other than local NGOs and donors, some other supporters include:

- African Centre for Migration and Society.
- Alive2Green.
- Collection and Transport Interest Group.
- Institute of Waste Management of Southern Africa.
- National Recycling Forum.
- Socio-Economic Rights Institute of South Africa.
- South African Waste Information Centre.
- South African Waste Reclaimers Association.
- Waste Management Bureau.
- Waste Management Section of Women in Informal Employment, Globalising and Organising (WIEGO).

