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SWEEPNET
The Regional Solid Waste Exchange of Information and Expertise Network in the Maghreb and Mashreq countries

Valuing Informal Integration : Inclusive Recycling in North Africa and the Middle East

June 2015

الوكالة الوطنية للتصرف في النفايات
ANGed

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Springloop Coöperatie U.A.

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List of acronyms

3Rs	Reduce, reuse, recycle
APE	Association for the Protection of the Environment
B2B	Business to Business
C2C	Cradle to Cradle
CBE	Community Based Enterprise
CBO	Community Based Organisation
C&D	Construction and Demolition Waste
CSR	Corporate Social Responsibility
CTB / BTC	Coopération Technique de la Belge/Belgian Technical Coöperation
CWG	The Collaborative Working Group on Solid Waste Management in Low- and Middle-income Countries, a global practitioners' platform with its secretariat at SKAT in St. Gallen, Switzerland
DEEE	Déchets des Equipements Electriques et Electroniques
EPR	Extended Producer Responsibility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GNI	Gross National Income (per capita) (sometimes referred to as GINI in the literature)
HCW	Health Care Waste
HDPE	High Density Polyethylene, a rigid polyolefin used for packaging milk, detergents, and dairy products
HHW	Household Hazardous Waste
IFC	International Finance Corporation
ILO	International Labour Organisation
IPC	Intermediate Processing Centre
IPF	Intermediate Processing Facility
IRS	Informal Recycling Sector
ISWM	Integrated Sustainable Waste Management
IWB	Itinerant Waste Buyer
IWC	Itinerant Waste Collector
IWMS	Informal Waste Management Sector
LDPE	Flexible polyolefin film, sometimes called "nylon," that is used to make plastic bags, wrappers, and other soft packages. It is not the same as laminates or multi-layer

	packages
L.E.	Egyptian Pound
MBO	Membership-based Organisation
MRF	Materials Recovery Facility
MSE	Micro and Small Enterprises
MSW	Municipal Solid Waste, sometimes referred to as household waste and similar
NGO	Non governmental Organisation
NHWTC	Nasreya Hazardous Waste Treatment Centre
NSWMP	National Solid Waste Management Programme
OECD	Organisation of Economic Cooperation and Development
PET	Polyesther Terephthalate, a clear or coloured polyolefin package used for soft-drinks and water
PGIRS	Integrated Solid Waste Management Plan (Spanish, Used in Peru and Colombia)
PS	Product Stewardship
PSP	Private sector participation
PAYT	Pay-As-You-Throw
PP	Polypropylene, a rigid plastic packaging in the family of polyolefin
PPP	Public Private Partnership
PPSI	Private Public Sector Industry package
PSP	Private Sector Participation
RDF	Refuse Derived Fuel
RWA	Resources and Waste Advisory Group - the company working with GIZ on Structural Integration
SME	Small and Medium Enterprises
SNPC	SWEEP-Net Partner Countries
SOY	Spirit of Youth, a Zabaleen NGO that focuses in innovation in recycling and working with youth
SWDS	Solid Waste Disposal Sites
SWEEP-Net	Regional Solid Waste Exchange of information and Expertise Network in Mashreq and Maghreb countries
SWM	Solid Waste Management
UBC	Used Beverage Containers
UNDP	United Nation Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and Pacific
UNIDO	United Nations Industrial Development Organisation
WASTE	WASTE, Advisers on Urban Environment and Development, a Dutch NGO

WB	World Bank or WBG World Bank Group
WEEE	Waste from Electrical and Electronic Equipment
WM	Waste Management
Zabaleen	An ethnic minority of Orthodox Christians in Cairo, many of whom are informal garbage collectors

Preface

It is an honour to be able to contribute the Preface to what is in fact the latest in a series of landmark publications by GIZ on the solid waste informal sector. Having worked for several international development institutions and never for GIZ, I feel I can say without bias that no institution has contributed more to advancing informal sector integration in the waste sector than GIZ. And, although I have never formally worked with her either, Anne Scheinberg has been a resource, a model, and mentor to me – as she has to so many in this field. I have seen first-hand the impact of her work, through WASTE, CWG (the Collective Working Group on solid waste management in low- and middle-income countries), and SWEEP-Net, on some of the world's leading development institutions. Rachel Savain is also someone I had the pleasure of knowing in my years of work in Haiti and whose excellent Masters thesis and generous informal advice and guidance were important resources in our work with the World Bank and the Inter-American Development Bank (IDB).

Thanks to the World Bank (as well as UN-HABITAT and the CWG in the case of Egypt), I have also had some involvement with the governments and other solid waste actors in of all the countries described in this book, and with the policies and interventions it describes: I have had the opportunity to meet with the authorities, NGOs, waste pickers and other actors in Egypt who have been fighting for the incorporation of the Zabaleen and the development of more inclusive policies; I had the pleasure of hosting a very accomplished team from the Government of Morocco on a study tour in Brazil focused on comparing the waste policies and practices of the two countries and of doing some work on the national sectorial reform operation there. I was lucky enough to work with the Government of Tunisia during the post Arab-Spring transition on the initial design of the informal integration process described in this book; and finally, I had the singular honour of being a part of the Palestine experience described by my much admired colleague Yasser Dweik, and of seeing first-hand the literally heroic efforts the Palestinian Authority went to ensure a best practice standard of inclusivity and fairness in a broader context marked by the most extraordinary challenges.

Informal waste sector integration is extremely difficult work, because there are so many variables to account for and so many interests to balance. Having a good understanding of the context in each particular case is essential, as is having a good analytical framework within

which to gather and analyse the data and maintaining productive relations with the various stakeholder groups. The sophisticated, grounded and highly practical approach set forth in this book is the result of many years of on-the-ground experience and represents the best of what informal sector integration as a body practice has to offer at this point. This, coupled with the detailed presentation of concrete practical experiences, provides enough specificity to help in the application of the principles to new cases elsewhere.

This publication comes at a time when global attitudes toward both waste and the informal waste sector are changing. Ten years ago, most people were completely unaware of the existence of "waste pickers" and those that were aware often had negative attitudes toward these informal workers. Yet growing media exposure, though films such as Slum Dog Millionaire (2008), Garbage Dreams (2009), and Waste Land (2010); actions by the recyclers themselves, including the birth of national movements in Colombia, Brazil, South Africa and elsewhere; regional movements, such as the Latin American Network of Informal Recyclers (Red LACRE), and the Global Alliance of Waste Pickers; and the actions of institutions such as GIZ, as well as individuals, such as the authors of this book, have resulted in a sharp increase in public awareness on and improvement in attitudes toward waste pickers, as well as a noticeably greater willingness of governments to engage and collaborate with them. Ten years ago, the informal sector was rarely on the radar of solid waste planners or the institutions with which they worked; today it is standard good practice to include informal actors in both technical and policy interventions.

This is also a very timely moment to focus on the MENA region – a region brimming both with challenges and with talent and possibilities. Some of the work currently being done in these countries, on both a policy and an operational level, is among the most progressive, inclusive, well-designed and well-executed being done anywhere.

Finally, this is a time when both public perceptions and technical and policy discussions on waste itself are undergoing a profound transformation. From melting icecaps to mid-ocean garbage patches, we are all being forced to recognize that our actions on this globe are intertwined. The carbon molecules from our local dumps mix as one in the atmosphere to trap heat and the various plastics from our millions of water bottles mix as one in the seas. More of our land is given over to landfilling and more of our atmosphere to the emissions of incinerators. At the same time, awareness of this very interconnectivity and of our own responsibility as individuals to the global health of our world is also growing, and interest in and commitment to recycling and composting, Integrated Solid Waste Management, Extended Producer Responsibility and increasingly, the move toward a Circular Economy, is forming. There is a growing realization

that we need to behave more as Nature does; that rather than solving problems individually in a decontextualized way that only generates new problems, we need to begin birthing solutions that respond simultaneously to many quite different needs. Informal waste sector integration somehow seems to be a natural entry point for precisely this kind of thinking, because it demands the search for the vantage point from which waste management, environmental protection and social inclusion can all be seen, not as unrelated questions to be bundled together in a "package," but as facets of a single phenomenon. And it is exactly the sort of pioneering work found in this book that illuminates our way forward on this path.

But, to close the loop of this Preface by returning to our main theme of informal recycler integration, I would like to note that one of the most fascinating things in doing this work on the ground is being able to observe how local perceptions – including those of government authorities – can change through the experience. Time after time, we see informal recyclers move from being seen as a risk to being the most successful part of projects and a source of pride for local and national governments. To give one personal example from my own experience in one of the projects discussed in this book, I remember being on a landfill with local and national government officials discussing the key issues at the site. These included the absence of a barrier fence, weak enforcement by police, an uncontrolled influx of newcomers, and the need to remove minors from the site. At one point, I suggested calling in the recycler leaders to join the meeting. There was an uncomfortable silence and obvious trepidation at the idea but, after some discussion, the recyclers were finally called in. They arrived, fresh from the tipping face in their work clothes, looking both bemused and pleasantly surprised at the unexpected invitation. The floor was opened for them to share their main concerns, which of course turned out to be the absence of a barrier fence, weak enforcement by police, an uncontrolled influx of newcomers, and the need to remove minors from the site. Their initial exposition ended, one could feel a palpable sense of relief in the room and by the end of the meeting, a deal had been struck for the various parties to collaborate on resolving these issues. Our fates are linked, our waste is linked, our survival is linked and ultimately, we are linked.

So may the reader get as much out of this rich, thought-provoking and eminently practical publication as I have, as well as ample opportunity to apply its ideas in practice; and may this turn out to be but the next in an on-going series of defining texts for the emerging field of solid waste informal sector integration, Insha'Allah.

Peter Cohen
1 June, 2015

Chapter 1. Introduction

Middle-income countries' rapidly growing material well-being is good news for their citizens, but often a disaster for the environment. The growth in volume, variety, and toxicity of waste in rapidly expanding cities of emerging economies puts such cities at the forefront of the world's struggle to maintain public health and protect the environment. Many of these cities are striving to achieve an "integrated waste management" system model, which evolved in OECD countries during the 1980s. They want the same clean streets, modern collection, and sanitary disposal that their citizens see when they visit or emigrate to Paris, New York, Copenhagen, Sydney, Tokyo, or Dubai (Wilson *et al* 2013, Soos *et al* 2013).

While waste streams in middle-income cities are beginning to resemble ones of high-GNI countries, the economic, institutional, social, and governance situation is quite different. Taxpayers in wealthier countries usually finance public-sector investment, whereas in middle-income countries, there is still a strong reliance on external donor financing. Households in middle-income countries have lower levels of disposable income, and politicians are less inclined to require the population to pay for public services. More private sector enterprises – many of them very small – are involved in materials recovery. *Valorisation* in these countries includes many activities in the informal economy, such as: grazing livestock on open dumps; feeding waste to chickens, goats, or pigs; producing household energy; salvaging useful materials for storage or construction purposes; or recovering metals, plastics, paper, glass and textiles for sale to the local recycling industry.

Solid waste and environmental officials and public institutions in middle-income countries – including many in the SWEEP-Net partner countries (SPNCs) – will often label these small valorisation enterprises as "informal"; meaning that they are neither sponsored, nor paid, nor recognised, nor in some cases even "seen" by the formal solid waste authorities and their contractors. In some cases, these enterprises in the *informal waste management sector* (IWMS, informal sector) are registered in other sectors, such as transport or construction. However, they mostly operate as individuals, and are not legal persons.[1]

1. Many informal recyclers are internal migrants or belong to minorities and have no identity papers, so they cannot register as individuals nor can they register their micro-enterprises. In some cases, they make a choice not to register because they want to avoid paying taxes or losing welfare payments. The question of registration and payment of taxes is complex and very location-specific. In Tunisia, for example, most Barbéchas are legal persons but cannot claim social security or health benefits because their occupation is not registered.

Informal recycling often receives negative attention when solid waste systems are being upgraded, modernised, or reformed. Municipalities may see members of the informal recycling sector ("waste pickers," or "recyclers") as a nuisance, a public disturbance or, in some cases, as competition for the newly created activity of "municipal recycling." Until recently, the public sector response was criminalisation or, following the practice in North American and European cities in the 1980s, passage of laws prohibiting "scavenging." A more recent response of cities in middle-income countries has been to promote "informal sector integration," a collection of measures designed to bring informal actors into the solid waste system, either as members of a workforce or as co-operating enterprises.

In October 2014, the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), in partnership with the SWEEP-Net secretariat (regional solid waste exchange of information and expertise network in Mashreq and Maghreb countries), contracted a desktop (literature and telephone) study of the state of informal integration, and the nature of its experiences, in the nine SWEEP-Net Partner Countries (SNPCs). This study was financed by the German Federal Ministry for Economic Cooperation and Development (BMZ). The goal of the study, entitled *Regional study on data on the informal waste management sector in SWEEP-Net countries,* was to identify those SNPCs with substantial levels of activity in informal integration, and to prioritise up to five countries for additional study. This research identified four countries with interesting levels of informal integration activity, but it also showed that the level of *published* or *formal* information was too low to support further deepening within a conventional report framework. There was a great deal of interesting information, but only in "grey literature" or personal experience. Rather than produce a better report, the authors proposed, and GIZ/SWEEP-Net accepted, the idea of a small book with space for practitioners and/or participants in informal integration to tell their own experience, and to give voice to the informal recyclers they know and have worked with. This short book picks up where the Phase 1 Study finished, and presents three portraits of informal integration, and one sketch. The goal is to share information and experience, in service to better practices in the region, and an improvement of the situation with informal recycling, and the position of informal recyclers.

Three North African SNPCs, Morocco, Tunisia, and Egypt, have large informal solid waste and/or recycling sectors that are in some sense in conflict or competition with the formal waste systems in their home cities, regions, and/or countries. In these three lower-middle-income countries, integration of the informal sector has become a key element of modernising solid waste management. While the idea of accepting the informal sector as legitimate partners in solid waste remains controversial, the experiences in these three countries suggest a certain

evolution in thinking and practice about how to support and increase recycling in large cities in middle-income countries. In part, because of the linguistic divide between the English- and French-language worlds of professional solid waste management, these accomplishments – and the attendant challenges – are little known outside the region, or even among professionals in the three countries. The core of this book is a chapter portrait of informal integration in each of these three countries, written by or with information provided by informal recyclers or the organisations, institutions, or individuals working directly with them.

The middle-income SWEEP-Net partners in the Middle East, by contrast, have chosen to embrace a technological, disposal-intensive path toward solid waste modernisation. In Jordan, Lebanon, and Palestine, there is a strong policy commitment to sanitary landfilling. The informal recycling sector in these countries has become a source of official embarrassment, and the tendency is to focus only on the social and legal problems, ignore or prohibit their activities, but seldom, if ever, to treat them as partners in waste management or recycling.

One Joint Service Council (JSC) in Palestine, the JSC for Bethlehem and Hebron, has challenged this dominant solid waste discourse, and worked with informal recyclers to integrate them into formal landfill and formal recycling operations. The experience itself is very interesting, and is included as a short case study written by the forward-thinking public official who designed the experiment.

1.1. Creating value: informal sectors' positive contributions

Informal recyclers are increasingly recognised for creating value for their cities. Local authorities reap benefits from informal sector activity without paying for them, and often without realising the value they are receiving from "those dirty people." The contributions include: lowering the quantities of waste requiring disposal; conserving resources; lowering the CO2 contribution of the waste management system, and supplying the value chains with locally available materials. Specifically, informal recyclers are usually responsible for most if not all recycling in their cities, thereby keeping significant amounts of waste out of landfills. Informal recycling secures livelihoods for a large number of semi-skilled, often illiterate, individuals, and provides the urban poor with professional development opportunities. Informal or semi-formal activity in waste management often provides the only waste services in poor or marginal areas, or in difficult-to-reach parts of cities. And informal recyclers and waste collectors benefit their cities and create income for themselves and their families through honest work, rather than relying on public welfare or criminal activities. For this reason, we can say that informal enterprises

are generating *positive environmental externalities* (Gunsilius, Chaturvedi and Scheinberg 2011; Dias, 2006; Savain, 2012, Chaturvedi 2009, Scheinberg, Simpson and Gupt 2010).

Since the GIZ study, "Economic Aspects of the Informal Sector in Solid Waste" in 2006/2007, and the resulting publications in 2010 and 2011, the number of interventions that aim to analyse informal recycling, and to *integrate* recyclers into formal solid waste systems, has grown exponentially. For instance, in 2007, the informal waste sector was considered a social issue, unsuitable for professional discussions at the meetings the International Solid Waste Association (ISWA). By 2014, ISWA's World Congress had changed their position: the programme dedicated a series of sessions to the topic and it was also included it in the working groups on Globalisation and Waste. In 2013, the Regional Initiative for Inclusive Recycling (IRR), a consortium of the Inter-American Development Bank (IDB), the Multi-Lateral Investment Fund (MIF), AVINA and the Coca-Cola Company, with support from the Bill and Melinda Gates Foundation, in partnership with the Latin American Network of Recyclers (Red LACRE) published the first detailed operational guide on the development of integration plans for informal recyclers displaced during the upgrading of landfills and other waste infrastructure.

Informal integration is the term increasingly used to describe interventions that connect informal recyclers to the solid waste institutions in their cities, and strengthen their access to value chain markets for materials. The broad goal is to develop modern, high-performance inclusive urban recycling systems, which rest on co-operation between the informal sector and local solid waste authorities (Schmied *et al.* 2011, Velis *et al.* 2012, ISWA 2014, Cohen, IJgosse, and Sturzenegger 2013).

One of the reasons for writing this book is the project *Structural Integration of the Informal Sector* (hereafter referred to as "*Structural integration*", that has been financed by BMZ and GIZ in Tunis. Informal recyclers in two areas in Greater Tunis worked with a team of national and international experts to form associations, elaborate goals for social and technical integration, and implement different forms of formalised recycling and waste management activity. Additional information is available from the SWEEP-Net website, www.sweep-net.org.

1.2. Recycling frameworks, drivers, and stakeholder relations

Informal integration is not simple, and there are variations, depending on the situation. Guiding questions for designing an intervention are:

- Who is pushing integration, and what problem(s) is it intended to solve?
- What is the goal? To reduce solid waste, raise recycling levels, improve capture of packaging waste to meet producer targets, more compost or recyclables for value chains, or create fairer and more stable development in an area where there is a new landfill?
- What does the solid waste situation look like? Does it include a modern landfill with priced disposal, door-to-door collection, and transparent budgeting? Do the waste collection fees collected cover costs?

To answer these and other questions, we use *Recycling Framework Diagrams*, schematic presentations of the relationship between institutions in the service chain and value chains, to analyse the place of informal activities in the broader solid waste systems of which they are a part.

For solid waste authorities, the very existence of an informal waste sector may be seen as the problem. When local authorities face the fiscal challenges of priced disposal or a new solid waste law, the problem may be low recycling rates and non-compliance with planning requirements. When informal recyclers own the problem, they most likely protest low prices, harassment, livelihood vulnerability, or lack of knowledge, power, or access to materials. "Where you stand depends on where you sit" is an English proverb that describes the importance of understanding who is pushing for integration, and why. Other possible "owners" include donors, such as the World Bank and the six regional multilateral banks, whose policies require the recording and mitigation of the social impacts of development projects, and producer responsibility organisations or global consumer goods companies that have internal targets for recycling their products or packages. Integration approaches vary depending on who is financing them, how the service and value chains are organised, and what the introducers of the intervention hope to achieve.

1.3. About this Book

The goal of this book is to present first-hand social, technical, and operational integration in Morocco, Tunisia, Egypt, and Palestine. Information from the Phase 1 report. entitled: *Regional study on data on the informal waste management sector in SWEEP-Net countries "SWEEP-Net Informal Sector Study Phase 1"* (www.sweep-net.org) complements the specific country chapters and cases. The focus is broad and looks at integration in the service chain, industrial and agricultural value chains, and potentially, in the energy sector as well.

Following this introduction, Chapter 2 is designed to create a common vocabulary for the reader, which can further the understanding of informal integration. Chapter 3 summarises and reflects on the results of the SWEEP-Net desktop study. Chapter 4 is a sketch of the experience in Palestine with a landfill-based integration intervention. Chapters 5, 6, and 7 are more detailed and extensive "portraits" of informal sector integration in Tunisia, Morocco, and Egypt. These externally authored chapters are based on a collation of primary sources, interviews, field visits and conversations with informal recyclers, and each author's (or informant's) own direct knowledge, observation, or experience. They are designed to bring these significant explorations and experiments into the formal literature. Chapter 8 closes the book with reflections, conclusions, and challenges for the future, and Chapter 9 is a short decision-makers' guide, focusing on the "why" and the "how" of integrating informal recyclers.

Chapter 2. Key Concepts, Approaches, and Methods

This chapter prepares the reader for the country chapters, by explaining some key solid waste management concepts and types of solid waste systems. A second goal of this chapter is to contribute to building a *vocabulary* around the institutional concepts and relationships that describe processes of solid waste modernisation and upgrading. Key to this are the basic concepts of service and value chains.

Informal integration is one of many approaches to *social and economic inclusion* in low- and middle-income countries. *Inclusive recycling* and *inclusive waste management* are evolving as general terms for many different approaches to integrating the informal sector. The first generation of these approaches were analysed in the 2012 InteRa study (www.wiego.org, Velis, Wilson and Cheeseman 2012).

Inclusive waste systems consider how to incorporate all relevant actors into the decision-making and operational processes. On the one hand, user inclusivity, refers to the importance of involving households and businesses in decisions about services, and/or in feedback on how the services are working. *Provider inclusivity*, on the other hand, opens economic niches in the service and value chains to informal recyclers and micro and small enterprises (MSEs), and works towards creating fairer rules of engagement between small and large enterprises.

2.1. Policy drivers and modernisation of the solid waste service chain

Modernisation of waste management has occurred many times in urbanisation history, but the most recent wave of modernisation is most closely associated with the urban environmental policies in OECD countries in the 1970s and 1980s (Scheinberg 2003, Velis Wilson and Cheeseman 2009, Wilson 2007; Scheinberg, Wilson and Rodic 2010). Modernisation in the solid waste sector (as in other areas of society) occurs for a variety of reasons: the old systems stop functioning; new information on environment or technology becomes available, or new socio-economic situations arise that change ideas about what is necessary and affordable. In relation to solid waste, David Wilson (2007) has identified three policy drivers, or political ideas, which have pushed changes in solid waste systems. The public health driver was associated with 19th century urban sanitation,

growing understanding of germ theory, and the dominance of the idea that removing filth would slow the spread of diseases like cholera. The technical result was introduction of door-to-door and other forms of waste collection, along with street sweeping and litter control. These services are still the most visible and widespread part of waste management. (Poulusson 1987, de Swaan, 1988).

The environmental protection driver arose with the wave of environmental research and legislation starting in the 1970s, when the first generation of environmental scientists figured out that dumps were responsible for polluting the groundwater. Its primary focus was inventing and introducing improvements in dumpsites that would control entry and keep waste away from ground and surface water. The regional sanitary landfill represents a major change in waste management because of these developments. (Wilson 1997, Scheinberg 2011, Scheinberg, Wilson and Rodic 2010).

The resource management driver is more complex, as the economic demand for used or discarded materials has been important at many points in urbanisation history. The value-chain "pulls" private entrepreneurs to find valuable materials and sell them to recycling industries, and this real economic demand drives most recycling – including informal recycling. But there is also a service-chain "push" to divert materials from disposal, especially when regional sanitary landfill prices exceed US$25-40 per tonne. Taken together, identifying the active policy drivers helps predict the sequence of development transitions from: crises, priority-setting, infrastructure introduction, and implementation of new procedures and practices. SWEEP-Net also has adopted the policy driver framework in its 2013 regional report (D-WASTE for SWEEP-Net, 2013; Strasser 1989, Scheinberg 2011; Wilson 2007; Wilson, Velis, Cheeseman 2009; Wilson et al 2010; Scheinberg 2011).

2.2. Service chain and value chains

Modern integrated (sustainable) waste management (ISWM) consists of two quite different sectors. They are:

- The public services of urban cleansing, street sweeping, public space management, waste collection, transport and disposal, referred to as service chain.
- The micro, medium, large, and multi-national commodities businesses in the value chain. We can make a distinction between the industrial value chain, handling recyclables; the agricultural value chain, through which kitchen, garden, and food processing wastes are valorised as animal feed or soil conditioner/fertiliser; the re-use or second-hand goods

system, a sector emerging as important in upper-middle-income countries; and the energy value chain, which transfers materials from the industrial or agricultural chain to the production of energy through bio-gasification or combustion.

The conceptual relationships of service and value chain to each other are shown in Figure 1.

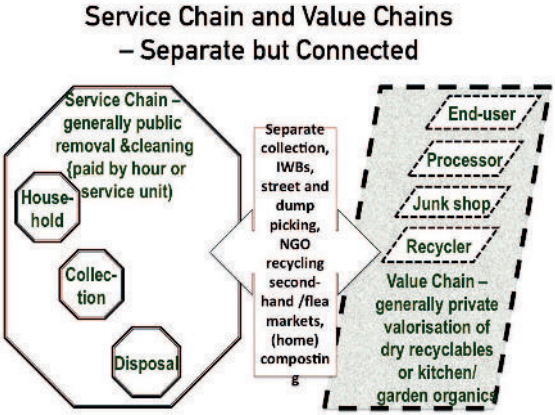


Figure 1. Service chain and value chains.

Source: Elaborated by the authors

The relationship between the service chain and the value chain changes along with the influence of the policy drivers in the evolution and change of a solid waste system. Valorisation of organic wastes and excreta "drove" urban waste management until the 19th century, when cholera and other epidemics of industrial urbanisation created public health emergencies, which in turn pushed "urban sanitation" development. The value chain relationship was broken by the 1890s sanitarian movement, and new ideas about hygiene kept the service chain largely separate from the value chain until the rise of the environmental movements in the 1970s (Poulussen 1987, van Zon 2004).

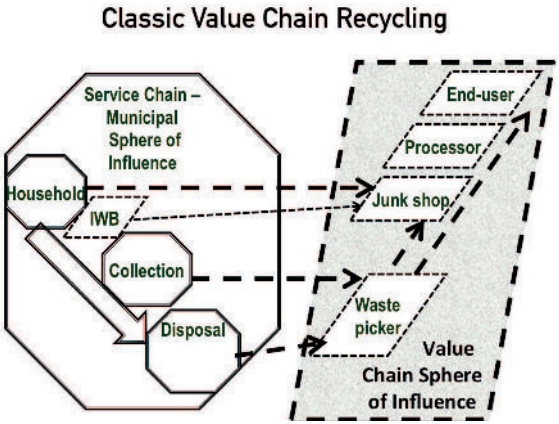


Figure 2. Value Chain Recycling Framework

Source: Elaborated by the authors

Figure 2 shows the dominant paradigm for value chain recycling, where informal and formal private sector recyclers collect materials and commercialise them in the value chain. The service chain, showed on the left, is in the municipal sphere of influence, and ignores the small amounts of material that are extracted, often by sanitation workers themselves, and moved via the dashed value chain arrows to the industrial value chain. This is the situation in many low- and middle-income countries, just as it was in high-income countries with a value chain until the rise of environmental legislation and standards in the 1980s (Wilson 2007, Scheinberg 2011).

"Classic" value chain recycling, as shown in Figure 2, operates in many low-income countries. The only movement of recyclables from households and businesses to the value chains is through private, unauthorised informal recyclers' activities, selling to the value chain. Waste pickers are located and fully anchored in the value chain, where they still supply 90% of all materials in countries like Brazil. This is the situation in Mauritania and Yemen; the least economically developed SWEEP-Net countries. (Scheinberg, van den Berg, Lifuka and Labarca 2012).

Unlike value chain recycling in Figure 2, municipal recycling, shown in Figure 3, is motivated by the "push" to avoid disposal. This defines municipal recycling as a service chain activity, because it is motivated by environmental protection, and also because the money for investment and operations comes from municipal service chain institutions and budgets. This is true even though all recycling depends on the willingness of the value chain to absorb materials and serve as a market.

Classic municipal recycling was created in North America and Europe in response to high disposal costs of regionalised sanitary landfilling. The market prices generated from the value chain in Figure 3 will cover, in practice, about 40% of the costs to organise separate collection and other operations in municipal recycling. As long as the main motivation for developing is to avoid disposal and serve as an alternative destination for municipal waste, this works and everyone is satisfied. In the SWEEP-net countries this model is questionable, as it only works when disposal prices rises above US$25-40 per tonne. The four SWEEP-Net countries featured in this book are somewhere in transition between value chain recycling and some variant of municipal recycling. The push to integrate the informal sector also comes from a need to avoid disposal, but is responding to different baseline conditions, as the country chapters explain (Scheinberg 2011, Scheinberg, Wilson and Rodic 2010, UNEP GWMO in press, IJgosse and Scheinberg 2004).

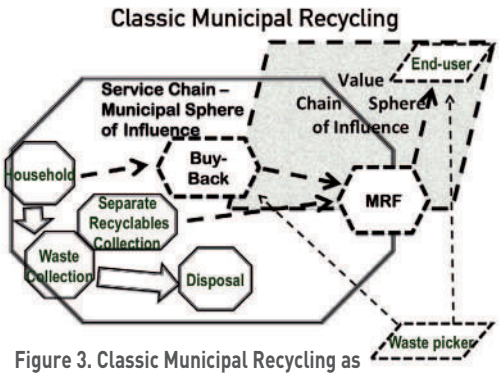


Figure 3. Classic Municipal Recycling as Developed in the 1980s in the USA and Canada.

Source: elaborated by the authors.

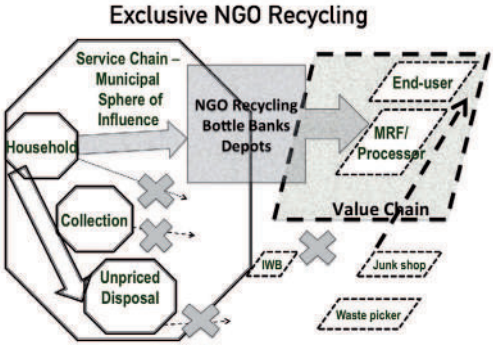
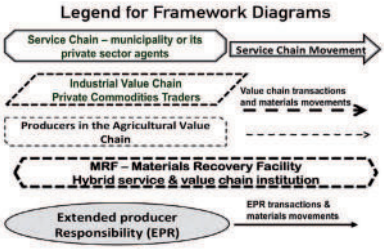


Figure 4. Exclusive NGO Recycling in some countries.

Source: elaborated by the authors.



The municipal sphere of influence shown in Figure 3 expands through the creation of public-sector depots, buy-back centres, and materials recovery facilities (MRFs). The buy-back centre replaces small junk shops, and the MRF introduces a new function, of post-collection separation of commingled recyclables, at the same level as a mid-level value chain dealer or intermediate processing facility (IPF). These two institutions combined with public-sector separate collection of recyclables, extracting large volume of clean recyclables from households. These approaches rely on households' behavioural changes, heightened communications systems and household storage technology (Scheinberg 2011). As a consequence, the value chain's sphere of influence is greatly reduced in comparison to Figure 2. There is little connection between waste pickers and the value chain, and professional waste pickers may have been absorbed into the service chain as workers. None of the four featured countries here show this classic municipal recycling system, but in all of them, understanding this framework helps to contextualise interventions in reforming and developing solid waste systems.

One of the unfortunate consequences of globalisation is that the idea of "recycling" is often picked up by NGO stakeholders in middle-income countries, without their fully understanding the context. Figure 4 shows the implications of these interventions on the service chain and value chains. During several of the stakeholder meetings for *Structural Integration* in Tunis, members of the Tunisian NGO sector participated and contributed their experiences with recycling to

the discussion on informal sector integration. In this discussion some of the main distinctions between civil society recycling and inclusive recycling became clear. Looking back to Figure 2, "Value Chain Recycling", it is clear that waste pickers and the rest of the value chain are in charge of recycling, and also getting the benefits.

In the nine SWEEP-Net countries, there are several instances of NGO activity, but these are seldom inclusive. Many of the NGO recycling projects, including those in Lebanon, Palestine, and some of the ones in Tunisia, appear to conflict rather than co-operate with the informal sector, and they represent a distinctly different reality. For example, a Lebanese NGO uses recycling revenues to fund social services, such as wheelchair construction (SWEEP-Net Lebanon Country Report, 2014). This intervention is exclusive: informal recyclers must directly compete with the NGO for materials, and this threatens their earning potential. The NGO recycling centres or depots interrupt the value chain, especially when the local authority prefers them to the informal private recycling sector. Exclusive NGO recycling, as shown in Figure 4, is not an integration intervention. In contrast, the Moroccan initiative in Rabat that created the Attawafouk Cooperative (in cooperation with CARE, an international NGO) was clearly an inclusive integration intervention, and prioritised entrepreneurial training, income retention, and transferring 150 families from the informal to the formal sector.

Some kinds of inclusive NGO recycling projects may improve the condition or income of a small number of informal recyclers, but it is questionable whether they can have long-term structural impacts. (SWEEP-Net Country Report Morocco, 2014). This explains why many informal recyclers – including some contacted in the stakeholder mobilisation phases of Structural Integration, prefer not to ally themselves with such projects. They are afraid that short-term income improvement may threaten their long-term livelihoods, because they could "become visible" to public authorities who are hostile to informal recycling. The civil society NGO question remains a challenge.

2.3. Types of informal integration interventions

This section explains the types of interventions based on their goals.

2.3.1. Service-chain driven interventions to integrate informal recyclers

Service chain interventions to integrate informal recyclers do not usually occur until solid waste modernisation begins. The 2008 Moroccan report "Analyse des Impacts Sociaux et Sur la Pauvreté de la Réforme du Secteur des Déchets Ménagers au Maroc" (Belghazi, 2008) provides

one of the clearest possible explanations of why this is, and why reform of the solid waste sector can threaten informal recycler's social and economic position. It is only when high technology landfills have been built, that the local and national authorities are confronted with the presence of informal recyclers, and their potential to disrupt landfill operations. This in combination with the high costs of operating modern disposal facilities, often results in a policy decision to prohibit waste pickers on the landfill and on the streets. An additional factor is that under these circumstances, local authorities often prefer to position themselves to direct any revenues from materials into municipal coffers. The decision of local authorities to organise their own recycling projects has a tendency to result in criminalisation of informal recycling competition, rather than co-operation, between municipal recycling and value chain recycling.

The World Bank and the Inter-American Development Bank (IDB) have taken the global lead in designing integration of informal recyclers and social impact mitigation measures. In 2013, the IDB published a guide designed to set out basic principles and procedures for recipients of investment loans in the waste sector to integrate informal recyclers in the service chain or compensate them for income losses (Cohen, IJgosse and Stürzenegger 2013). Service chain integration usually means that some dump pickers are offered jobs working at the landfill, perhaps in a newly constructed sorting centre or MRF, while the street pickers may be absorbed into formal collection crews or work as subcontractors under formal waste collection companies. In these kind of interventions, there is not usually enough salaried work for all waste pickers to be integrated, and some receive support to complete their education or exit recycling for other professions. The experience in Palestine in Chapter 4 is an example of an integration activity supported by the World Bank and following its guidance.

2.3.2. Value chain interventions

Strengthening informal recyclers' position in the value chain results in interventions to improve the collectability, marketability and economic value of certain types of materials. Value-chain driven interventions are often communicated as "improvement of storage and processing infrastructure," "better technology," or "market development". Such interventions may include: forming co-operatives to pool materials for sale; organising collective storage and transport which have a better economy of scale; providing working capital; and shortening the time between delivery and payment for sales of materials. Provision of sorting lines, storage sheds and small processing equipment is the most common form of value chain intervention, but other forms include price supports, targeted market development, start-up subsidies for artisanal recycling, or improving transport and processing infrastructure.

B2B (business to business) value chain support may take the form of pre-financing inventory (an active strategy for collectors in Tunis) and/or providing infrastructure and equipment. The value chain's upper levels, such as end-users or large processors or exporters may offer their small-scale (informal) suppliers a small baling machine, a briquetter, a small chipper / PET shredder, or a tricycle for transport. In return, they may ask for a partial or complete exclusivity agreement. Other types of value chain interventions that relate to informal recyclers include price supports for certain materials, such as PET bottles (Costa Rica, Colombia) or multi-layer drink packages[2] (India), downcycled into multi-material board products[3]. Some types of fair trade or local production projects seek to increase artisanal recycling of difficult-to-market materials outside the value chain. Harvard University embarked on a different kind of value chain intervention in the 1990s in Jakarta, where they taught waste pickers how to be composting entrepreneurs, to develop a second source of income in addition to selling recyclables (Michael H. Simpson, Marguerite Robinson, personal communication 1997, verified 2014 by Michael H. Simpson).

2.3.3. Hybrid service and value chain interventions

Interventions in relation to E-waste or packaging are often framed as value chain-based, but on closer investigation, they prove to be more motivated by service chain considerations. These interventions seek to reduce pollution, restrict contamination, or protect public health from toxic or hazardous chemicals. The goal of hybrid interventions may be unclear, as they combine positive economic impact for waste pickers with health, safety, and environmental improvements of private recycling activities. Additionally, they may have aims to improve a process or product's environmental footprint, reduce toxics, create jobs, clean streets and parks, and ameliorate the health of communities.

2.3.4. Extended Producer Responsibility (EPR)-driven interventions

EPR-related interventions are motivated by the need of global and national consumer goods and packaging companies to comply with national legislation that requires them to take responsibility for the end-of-life management of their products and packages. While the motivation for EPR usually comes from a service chain problem, the stakeholders are usually private value chain actors, making EPR interventions a kind of hybrid. Certain currently operating EPR agreements for PET in Latin America offer producer-financed guarantees both for price and market for PET to informal recyclers who collect and process these materials correctly. This is close to what the

2 These drink boxes are sometimes referred to as "TetraPaks", for Tetra Pak is one of the largest global producers of these products.
3 "Downcyling" is a term that is used to denote a process – artisanal or industrial – whereby materials from the waste stream are used to create a lower-grade product or feedstock than the original. For example, instead of sorting mixed plastics into 6-10 sub-categories, a downcycling process may use them mixed to create plastic planks or poles. The result is a useful product or material but one that is no longer itself recyclable, due to the mixed character of the inputs.

Tunisian EcoLef achieves, but is organised without government intervention. Another example is the activist stance of the Pune union for waste pickers, KKPKP, in relation to bio-sanitary materials, that is, menstrual towels, disposable diapers, and adult incontinency materials. The waste pickers would like to recycle or compost these materials, and they are asking the producers to ensure that they are recyclable (as plastics) or compostable (by making them fully bio-degradable).

2.4. Classifying interventions

Table 1 presents and classifies most interventions of informal integration into seven categories. The first two dominated global practice until about 2004[4]; the others have been developing since the GIZ study in 2006-2007 (Gunsilius, Chaturvedi and Scheinberg 2011).

Table 1. Classifying Interventions to Integrate Informal Recyclers

Intervention Type	Description
Welfare-based interventions or *social integration*	• Focus on improving the socio-economic status of individuals and families involved in informal recycling • Based on the idea that waste pickers are poor, socially weak and have few options
Rights-based interventions including labour organising, sometimes also called *social integration*	• Support groups of waste pickers and their families to claim labour or citizenship rights • Build associations or unions that strengthen their claim • Often combined with providing informal recyclers with identity cards or formal papers • Main goal is *occupational recognition*
Technical integration or two-sided adaptation	• Create formal contracts or agreements between the service chain and informal recyclers including semi-formal operations • Reduce police harassment and/or formal authorities' corruption and blackmail of waste pickers • Legalise business relationships through formal registration of recycling businesses, payment of taxes, and compliance with zoning and traffic laws.

4 The 2004 desk review of the ILO initiative to eliminate child labour in scavenging can be identified as a turning point in the global discussion of informal recycling. Desk research indicated that neither welfare, nor rights, nor other development-cooperation-based approaches actually improved the socio-economic position of informal recyclers, because the high level of informal recycling income was not taken into account. Professionalisation, in contrast, improves the working conditions of "professional" full-time informal waste pickers (Barbechas is only used in Tunisia) and gives them recognition and stability.

Formalisation or one-sided compliance	• Focus on better knowledge of zoning, legal rules, tax law compliance and business norms by the waste pickers, informal recyclers, and small junk shops • Eliminate the illegal dimensions of activities such as trans-boundary movement of e-waste • Becomes possible when the formal system is open to accepting the compliance, and has "space" for informal participation under formalised conditions.
Professionalization and access to financing; one-sided adaptation of informal ways of working and earning	• Focus on demand-driven support to informal recyclers for training, better health and safety procedures, and an overall improvement of their functioning as workers or enterprises, • Organise support for the professional activities. • Occupational recognition is the basis of the professionalization agenda, which sees informal recyclers as micro- or family enterprises. • Activities strengthen knowledge, capacity, business skills, and access to materials and financing.
B2B Interventions and Value Chain Strengthening	• Concentrate on economic development and job creation. • Work within the value chains to improve stability and predictability of earning models • Leverage access to (micro-) financing and storage for materials
NGO Recycling Projects	• Prioritise job creation or improving socio-economic conditions of a small number of informal waste workers • Often work in a localised setting • Often have access to more capital for infrastructure

2.5. Interventions for informal integration

In 2008 WIEGO (Workers in the Informal Economy, Globalising, Organising) identified "empowering" waste pickers as workers, professionals, and enterprises the core of informal integration. Since then, organising has been viewed as the basis for all intervention types, and occupational recognition as the keystone for professionalization. Together they comprise strategies for changing the *status* and *position* of informal waste workers, by treating them as professionals, rather than social victims (www.wiego.org, Velis Wilson and Cheese man 2012).

2.5.1. Organizing informal recyclers

Organising is seen as necessary to empower informal recyclers to actively make choices about participating in informal integration. Labour union organising provides the models for organising informal recyclers as workers and providing social protection and professional recognition. Agricultural organising is often the model for forming co-operatives and organising B2B, professionalization, and value chain interventions.

Organising has a mixed history in the MENA region. In Egypt, the Zabaleen have some experience with labour unions, but the results are mixed (see also Chapter 7). They have had better success in developing strong leadership and reliable partners in social development and professionalization.

The 2008 Moroccan report *Analyse des Impacts Sociaux et Sur la Pauvreté de la Réforme du Secteur des Déchets Ménagers au Maroc* (Belghazi, 2008) bases its recommendations on an assumption of a certain level of organizing and social capital among informal recyclers. In contrast there is little evidence in the literature of attempts at organizing, and even less on the practical impacts on the lives and livelihoods of Moroccan waste pickers. Tunisia's *Structural Integration* project has an organizing component, but one that is primarily externally motivated by the need of the local authorities to talk to "leaders" and "representatives."

Professionalization is often the weakest component of an organising and/or occupational recognition agenda. These initiatives are challenging, because the burden of proof lies with informal workers and enterprises to "prove" that they can function as professionals – whether the environment and institutional landscape accepts them as such or not.

2.5.2. Occupations and occupational recognition

There is limited information about specific occupational recognition interventions. Moroccan sources classify informal occupations in the e-waste sector, and Tunisian occupations were analysed for *Structural Integration*.

2.5.3. Formalisation

Formalisation is one-sided adaptation of the informal sector into formal employment. The core idea of a full integration of the informal sector is that it works better for the formal waste system as a whole, and not only for the informal actors in it. The key is that inclusive waste management is an improvement on traditional private sector participation or privatisation, and especially when those practices are exclusive and/or monopolistic. True inclusivity returns operational

Infomal Occupation	Description	Locus of Work	Corresponding formal Occupation	Earning Model	Present in SNPCs
Informal WEEE Repairers and recyclers	repair at lower costs or recycle electronics	small junk shops, streets	formal WEEE-new sales and subscriptions	customers pay for service and parts	All SNPCs
Itinerant waste buyers (IWBs)	pay/ barter households or businesses for recyclables	households and businesses door to door	recycling business agents that collect door to door	selling recyclables to dealers or end users	Egypt, Morocco, Palestine, Tunisia
Itinerant Waste Collectors (IWCs)	collect recycables, dont pay	households and businesses door to door	2nd hand shops and charitable donations	selling recyclables to dealers or end users	All SNPCs
Itinerant collectors-food waste	Collect food waste to feed animals	households and businesses door to door	municipal organic waste collection	some sold to swine or polutry industry for animal feed	Egypt, Jordan, Tunisia
Herders	graze cows, pigs, goats, or other livestock	landfills, and informal sector's residence	enterprises raising fly larva for feeding chickens	family livelihood activity	Egypt
Street pickers/ container pickers	collect recyclables and bulky waste for formal collection	streets, private and public trash containers	recycling collection municipal crews	selling recyclables to dealers or end users	All SNPCs
Truck Pickers	formal waste crews skim valuables during collection	trucks and other waste collection equipment	collection crews; recycling center workers	tolerated by public sector to avoid paying living wage	All SNPCs except Algeria
Reusable pickers	formal workers that «steal» from municipal recycling centers	recycling centers; private and public trash containers	flea makert operators, 2nd hand shops	re-sale recyclabe to second hand traders	All SNPCs except Algeria, Yemen, and Egypt
Dump and landfill pickers	work and live on landfill, meet trucks and sort existing waste	landfills	landfill workers & equipment operators	re-sale to second hand traders	All SNPCs
Junk shop owners	buy materials from IWBs by kg or employ waste pickers	small and medium junk shops	recycling center workers, MRFs or IPCs	1st and 2nd level buyers; sell higher up in value chain	All SNPCs
Mobile Reusables Collectors	collect and resale electronics, furniture, etc	streets, public and private containers	2nd hand shops and charitable donations	re-sale to second hand traders	All SNPCs, except Mauritania
Second-hand Traders	buy and sell re-usables; often have market booths	small and medium junk shops	flea market operators, e-bay traders, 2nd hand shops	market re-usable for their value	Algeria, Egypt, Palestine
Second-hand Transporters and Processors	semi-formal companies that trade WEEE and used clothing	small and medium junk shops	formal traders, transporters & processors	move 2nd hand goods from richer to poorer countries	None of the SNPCs
Non-professional street collectors	occassional street pickers	streets, public and private containers	Not applicable	subsistence activity for food or shelter	Palestine

Figure 5 O ccupations of Informal Recyclers in the SWEEP-Net Countries[5].

Source: elaborated by the authors.

benefits, positive environmental externalities, and direct economic and socio-economic gains to the city where it occurs.

2.5.4. Examples of informal integration

Chapters 4 through 7, the so-called "country chapters," give examples of these interventions. Global examples of informal integration cases can also be found in the Phase 1 report, *Regional study on data on the informal waste management sector in SWEEP-Net countries, SWEEP-Net Informal Sector Study Phase 1*. (Scheinberg and Savain 2015)

2.6. Genesis of this Book

The idea for producing a book based on direct experience emerged from consultations in the SWEEP-Net Partner countries. While formal literature proved to be limited, the process brought the team into contact with a number of individuals with significant experience and deep knowledge of the informal sector in their countries, and a strong commitment to improving practice and outcomes of integration. The idea grew gradually, to invite these individuals and institutions to communicate their experience in the form of a book. Such a form would make a contribution to the written record, and preserve the richness and depth of SWEEP-Net integration experience, presented through a global lens. The goal is offer a real and significant addition to the scholarly articles, following precedents for this way of profiling informal sector experience[6].

A special strategy proved necessary to document the multi-track developments in Egypt, where recent donor activities, political reforms, and new policy and legal frameworks are creating multiple opportunities and openings for integration and formalisation. These exciting developments proved to be too complex for a single Egyptian author to capture, and this chapter has been written by the project team, based on direct information provided by a large number of "informants" in multiple public, private, formal and informal institutions and companies.

6 Three precedents were particularly influential. First, the "country partners" in the GIZ Informal Sector study were generally local experts working with the informal sector, and were excellently placed to collect and analyse data. Secondly, the 2009 WIEGO Publication by Melanie Samson, "Refusing to be Cast Aside: Waste Pickers Organising Around the World" succeeded brilliantly in bringing virtually unknown information to a broader public and enriched the community of practice. Thirdly, the UN-Habitat book Solid Waste Management in the World's Cities collected data from persons who were working in or had worked in the 20 cities.

Chapter 3. Summary and Reflections on the Information from the Regional Study

This chapter focuses on the summaries and reflections from the regional survey on the informal sector, that led to the selection of countries for focus in this booklet.

3.1. Solid waste systems in the nine SWEEP-Net Partner Countries

A comparison of the SNPCs and their middle-income counterparts in Asia, Africa, and Latin America suggest that the MENA region has fewer facilities and lower rates of controlled disposal and recycling. Within the region, collection coverage rates declined slightly from 2010 and 2013, even though waste generation per capita increased by 11% from 80 kg/yr. to 89 kg/yr. Analysts attribute the change to the after-effects of the Arab Spring, since performance increased in all of the countries, which had no clear political transition. For example, in Tunisia, a country heavily affected by the Arab Spring, waste collection decreased by 15.1%. However, in Yemen, a country that was less affected by the political movements until 2014, waste collection only decreased by 1.8%. (Ibid, 24-26, Wilson, 2013, ISWA Benchmarking presentation, p. 9).

Figure 6 analyses the performance and technical components of solid waste management. There appears to be only a light correlation between the GNI per capita and the number of sanitary landfills. For instance, the two highest GNI/capita countries, Lebanon and Algeria, are both in the top three for sanitary landfills, but number 2 for sanitary landfills, Morocco, is under the median in terms of GNI/capita. Statistical analysis would be useful to confirm these observations.

The literature search confirms the light hypothesis that the attitude and approach of formal authorities to the informal recycling sector in their countries is related to both GNI/capita and/or the degree of development and, investment in modernisation and reform of the solid waste system.

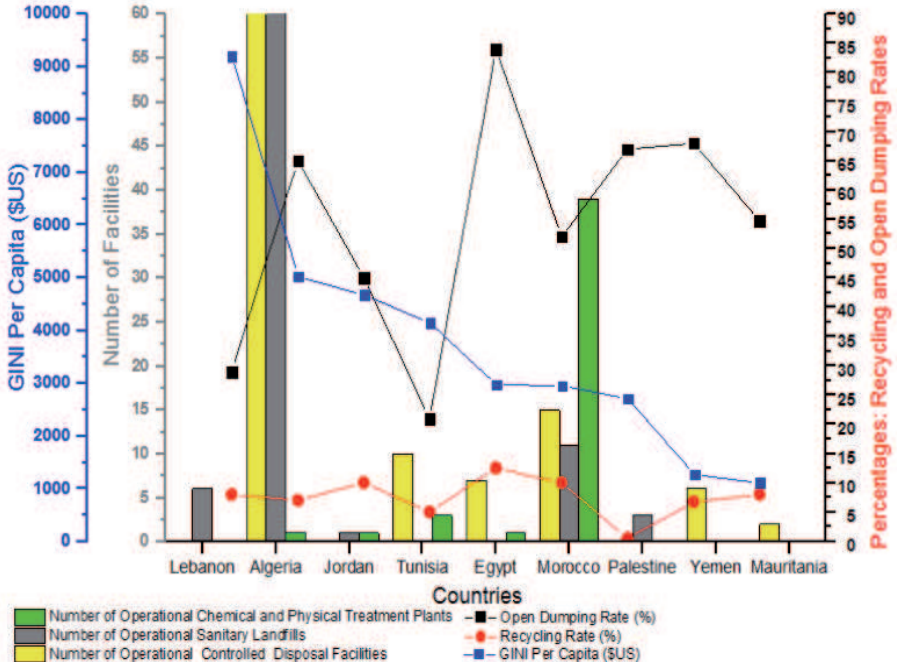


Figure 6. Technical Components of Solid Waste Management System in the Nine SWEEP-Net Partner Countries (SNPCs)

Source: elaborated by the authors based on sources: (1) Technical components were sourced from SWEEP-Net Country Profiles, 2014, pp. 1 of each profile, and (2) The GNI per capita is sourced from SWEEP-Net and D-Waste, 2014, Regional Report: Challenges and Opportunity in Solid Waste Management, in the Mashreq and Maghreb Region, 2014, pp. 17. (3) Recycling rates percentages are sourced from the D-Waste Atlas, 2014 at http://www.atlas.d-waste.com/ except for Egypt's rates, which comes from the SWEEP-Net Egypt Country Report, 2014. Reporting source makes a difference: D-Waste Atlas reports a 2.5% recycling rate in Egypt, which is far below SWEEP-Net's reported rate, and even further away from the 43% in the 2011 summary of the GTZ Informal Sector Study (Gunsilius, Chaturvedi and Scheinberg 2011).

Notes: Number of Chemical and Physical treatment plants include incinerators, medical waste incinerators, and MBT (mechanical-biological treatment) plants . The recycling rate refers to the reported percentage of municipal solid waste that is recovered for recycling and/or diverted from landfilling. The country definitions of recycling rate are not always consistent.

3.2. Informal integration, GNI, and solid waste system modernisation

There is a wide range of experience (or in many cases non-experience) with integrating the informal sector in the SNPCs. Where the modernisation process has yet to begin, as in Yemen and Mauritania, there is "not a problem" with the informal sector. In these countries, in some sense, there is not yet a formal sector, and especially not a formal recycling sector. Virtually all "recycling" is done for private gain by the private informal sector and recycling value chain. Yemen and Mauritania have the lowest GNI/capita of the nine SWEEP-Net countries, and also show extremely low levels of solid waste infrastructure and investment.

At the other end of the modernisation spectrum, Algeria, Lebanon, and Jordan have the highest GNI/capita, and the highest number of sanitary landfills. There is a strong policy commitment to landfilling all waste, as well as interest in incineration in Lebanon and Jordan. These are small, densely populated countries and landfilling space is limited. Municipal authorities and their private sector agents and contractors are the owners of all waste and recyclables. There is little or no discussion in the literature in these upper-middle-income countries about the role of informal recycling, nor is there a record of interest to integrate the informal sector into solid waste systems.

The four remaining countries lie between these two groups. Here we find an interesting and encouraging mix of experience, recognition, commitment, investment, legislation, interventions, projects, and policies.

- The largest informal recycling sector is in Lower Egypt, centred in Cairo. It consists of at least 120,000 persons and their families, who are involved in waste management and recycling. After years of a conflict-laden relationship with the Governorate and Municipal authorities, the political transition has produced a new National Solid Waste Management Programme, supported by GIZ, which includes a well-articulated but not yet specific commitment to inclusive recycling. This is a change to exclusive privatisation policies that previously dominated waste management decision-making in Cairo, Alexandria, and other major cities.
- Morocco has a longer and clearer history of establishing well-analysed inclusive policies. They are the only country in the region with official occupational recognition, especially for the e-waste sector. The documents show that an active relationship between informal recyclers and the industrial recycling value chain exists. There are several extremely well-researched and impeccably reasoned policy documents about mitigating social and poverty impacts of modernisation, that, if more broadly known, would elevate Morocco to the status of a global leader in informal integration discourse.

- Tunisia has a somewhat similar history, but the connection to national policy is, paradoxically, both more prominent and more restricted. The EcoLef programme has taken an inclusive approach to producer responsibility, but without consistent impact analysis. In some sense the two countries appear to be mirrors of each other: policy and principles in Morocco vs. pragmatism and a tendency to implement without evaluation or reflection in Tunisia. Documenting the experiences, results, impacts and outcomes in these two countries has the potential to make an important contribution to the informal integration discourse.
- Of the four middle-Eastern countries, only the (Occupied) Palestinian Territories has documented interventions to "integrate" informal recyclers into the formal waste service sector as employees. Chapter 4 documents informal integration in Palestine, and suggests that is more a practical implementation experiment than a structural activity, nor is it supported by a policy consensus or legislation.

3.3. Policy & legal framework, producer and user inclusivity

Realising long-term sustainability and stability of inclusive recycling initiatives requires policy integration on government level. Infrastructure and technology necessary for collection and disposal are obviously critical to solid waste system functioning, but so are the intangibles. Many waste experts agree that solid waste systems are more likely to fail due to problems with institutions, policies, and costs, rather than for technical reasons. Three key aspects of robust solid waste systems are political will, sound institutions, and financial sustainability, and these are also key ingredients of well-designed informal integration (Scheinberg, Wilson and Rodic 2010, GIZ Operator Models 2013).

Across the SNPCs, there is limited evidence of recognition of the informal waste sector in laws or policies, even though some of these countries have a goals or policies promoting recycling. Jordan, Yemen, and Lebanon are the only countries that designate waste ownership in their solid waste laws, and all three give local authorities a monopoly in management of the waste at every point along the service chain, which they also interpret to include recycling activities. Morocco, Algeria, Jordan, and Egypt all have opted to incorporate recycling into their solid waste systems, either through policy-making or through adoption of specific targets and goals. So while there is a moderate level of commitment to recycling, the inclusivity component is quite low.

The lack of occupational recognition contributes to the marginalisation of informal businesses and perpetuates their exclusion from participation in tenders or other formal sector opportunities. Provider inclusivity is not well developed, although there are a few clear instances where the

informal or semi-formal recycling sector has some access to tender for service contracts in waste or recycling.

Morocco is the only country with a law that clearly recognizes the informal sector as part of the private sector and authorises them to collect recyclables. A willingness to extend occupational recognition in Morocco, Palestine, and Egypt, and this is under discussion in Tunisia in relation to *Structural Integration*. Only a few of the countries actively harass or harm waste pickers through their laws or policies, most of them do this passively by simply ignoring their existence. Some sources mention practices of arresting and/or fining of those caught picking waste in Algeria and Jordan.

All countries in the region and the donors who are supporting them appear to be completely committed to building landfills. Conference papers and presentations in all countries have a dominant policy discourse that proudly presents numbers of sanitary landfills and controlled disposal sites as a major priority and/or accomplishment, while at the same time suggesting that integrated waste management, that is, also including composting and recycling, is the politically correct and desired development path.

3.4. Interventions and projects in SNPCs in relation to integration, formalisation, professionalisation (3.4)

This section reviews the integration initiatives and projects that were present in literature, presentations, and interviews.

In general, informal sector integration is not prominent in articles, outside of SWEEP-Net publications. It appears only occasionally in conference presentations that have their primary focus on developing landfills or testing the feasibility of incinerators. The informal sector is treated either as invisible, as a nuisance, or as a problem to be solved. Intentions to integrate or professionalise the informal sector tend to be presented in a small section on social impacts, and there are few examples of publications or presentations presenting plans or actions which lead toward changing the relationship between the informal and the formal solid waste systems.

Where conference presentations feature informal integration – or document the existence of the informal recycling sector – one often notices a discrepancy between the reality on the ground – where many activities remain informal or semi-formal – and ambitions for clean, high-technology, formal systems entirely in the formal sector. Where it is mentioned, integration

usually means only "formalisation," and refers to regularising informal working conditions and employing informal recyclers in the service chain, on the model of the Palestine case presented in Chapter 4.

Figure 7, and the following descriptions, presents and inventory of both *projects* – time-bound, with beginning, middle, end, and external financing - and *initiatives* which are in principle an action leading to a structural or permanent change. It is not always possible to know which is which, but this is indicated when it is clear from the sources. The interventions themselves are numbered consecutively within the headings, which identify the type of intervention and match the categories.

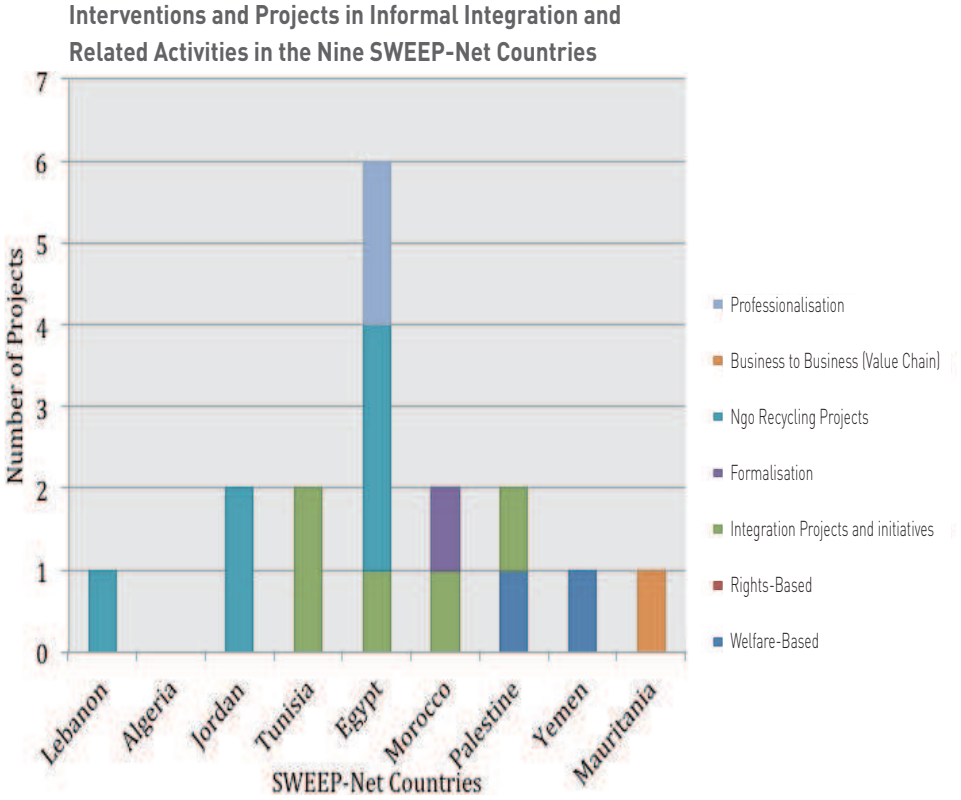


Figure 7. Overview of interventions in the nine SWEEP-Net countries.

Elaborated by authors based on interviews, email queries, and SWEEP-NET country reports

3.4.1. Welfare-Based "Social Integration" Interventions

One intervention in Yemen was identified which falls under the model of welfare-based support, sometimes referred to as social integration, with its primary focus on improving the socio-economic status of individuals and families involved in informal recycling, based on the idea that informal recyclers "need help" because they are poor, socially weak and have few options. We have classified this as social integration, although it is not clear whether the women beneficiaries are from waste-picking families, which would confirm this, or from the general population.

Interventions for social development in Egypt represent global examples of hybrid integration with a strong social component. Social integration is a successful component of Structural Integration in Tunisia. For more detail please see the country chapters for Egypt and Tunisia.

3.4.2. Rights-based interventions

There were no organising or rights-based interventions identified in the literature in any of the SWEEP-Net countries in the past five years.

3.4.3. NGO Recycling Projects

NGO recycling projects typify the higher-income countries and are also broadly represented in Egypt, which is a special case because of the long relationship between the NGOs CID and APE (Association for Protection of the Environment) and the Zabaleen.

Arc en Ciel, a Lebanese NGO, is implementing a recycling and work creation project with unclear relationship to the informal recycling sector. From the literature, it is not clear whether the "disadvantaged persons" who are presented as the beneficiaries include informal recyclers, or are comprised of members of other disadvantaged groups which then may compete with informal recyclers. The project promotes source separation and recycling in situations where the culture of resource conservation (recycling) is not widespread. More than 60,000 persons and 300 organizations are participating now to the network, including municipalities, refugee camps, jails, schools, universities, companies, and NGO. Each month, 30 tonnes of waste collected by Arc en Ciel is prepared for recycling. The processing takes place in two regional centres located in Beirut and in Bekaa, and the processed materials are sold to "recycling plants." The project reports the creation of 20 jobs "for people with difficulties". There is no information as to whether informal recyclers are considered to be eligible, nor whether they are participating.

The Jordanian NGO *Green Future for Sustainable Solutions* (GFSS). This NGO has established agreements with hotels and supermarkets for waste collection. Activities include raising

awareness, and creating youth training programs in partnership with the government and private sector.

In Jordan, three pilot separation-at-source projects are reported to be operated by the municipality of Greater Amman. Sources claim limited success, with some indications that the projects suffer fro lack of adequate management, awareness, and equipment. These appear to be exclusive projects, with no informal sector participation (SWEEP-Net country report, 2014).

3.4.4. Formalisation

There was only one project identified that appears to meet the definition of formalisation, which is to a certain extent the approach taken by *Structural Integration* in the pilot projects in the Greater Tunis municipalities of Ettadhamen-Mnihla and La Marsa.

3.4.5. Professionalization and/or access to financing

Egypt, like Morocco, has a large number of informal waste and recycling enterprises, who have had the benefit of years of support from the global and local NGO sector. The only professionalization initiative encountered focuses on capacity development and professionalization in relation to the recently started SME registration project in Egypt, profiled in Chapter 7.

The NGO initiative to create the Attawafouk Cooperative is an example of an NGO integration project focusing on dump pickers, formerly at the Akreuch dumpsite. Project documents report that: "150 families have retained their income while improving their working conditions and are in the process of transition from the informal sector to the formal sector."

3.4.6. B2B (business to business) value chain

The only project that seems to qualify for this is the Zazou recycling project in Mauritania. But it appears to be focused exclusively on economic development and strengthening livelihoods in the value chain, and there is no information as to its relationship to informal recycling – if there is informal recycling in Mauritania.

3.4.7. Integration Projects and Initiatives

Egypt has by far the most the service chain projects. Egyptian projects tend to be hybrids – with both service and value chain integration, or focused entirely in the service chain. Since the start of the post-transition generation of projects in the Ministry of Urban Renewal and Informal Settlements (MURIS), these project have both an institutional dimension – focused on registration as MSEs (micro and small enterprises), micro-contracting, and a strong technical integration component to improve the quality of door-to-door collection services.

The semi-inclusive EPR "EcoLef" system was created in Tunisia at the end of the 1990s. It levies an eco-tax on producers and importers and uses it to subsidize and finance recycling of a number of materials and waste streams. Its packaging focus is considered to be a strong example of inclusive Extended Producer Responsibility and is mentioned as a good example of inclusive private sector participation. The system works via authorised junk shops "collectors" with a "patent" that gives them the right to sell to EcoLef points for subsidised prices. Informal recyclers ("barbéchas" cannot sell directly to these points, so if they want subsidised prices, they have to go through a series of intermediaries. (Abdeljaoued 2014.) More about the EcoLef system – not a project, but a permanent way of operating – can be found in Chapter 5.

The Tunisian project "Structural Integration of the Informal Sector," in association with GIZ and SWEEP-Net, was perhaps the first project in the region with an ambition to bring about structural changes in the recycling sector. After a year of informal sector engagement, the project team designed participatory models for inclusive recycling in two Greater Tunis municipalities. It works on organising and formalising primarily street pickers "Barbechas" and small junk shop "collects". Some of these collects were co-financed to enter the recycling business by an earlier programme of enterprise development for school leavers.

Structural Integration works with barbéchas whose primary interest is in capturing and selling packaging materials and other dry recyclables. Although designed as a project-based intervention, the goal is to change the system and create sustainable pathways for legalisation, formalisation, and integration of barbéchas within the solid waste system. Although its main focus is on the value chain, Structural Integration has a service chain component, which looks at opportunities for Barbéchas to cross-register their enterprises for participation in waste collection in areas where there is currently no service provider. There is also a discussion about ways to make the formal service chains more efficient by reducing and sanctioning truck picking by formal waste collection crews. For the moment, the idea is to increase the accessible recyclables by household waste separation, so that there are enough materials for both systems.

Policy-level Integration in the region appears to exist only in Morocco, although the recent Solid Waste Directives in Egypt promise that it is coming there as well. The World Bank loan agreement (DPL) with the Kingdom of Morocco, stemming from 2008, included a number of policies to support the National Solid Waste program (PNDM). The DPL has suggested provisions that encourage inclusion initiatives to ensure that informal waste collectors and informal recyclers are systematically integrated into the solid waste sector (Belgazi 2008, 2014 interviews with Meryem Alaoui and Nicole Perkins). These policies and other features of Moroccan informal integration are presented in Chapter 6.

The Palestinian government had an initiative to register and tax SMEs—mainly metal itinerant buyers and informal junk shops. The initiative appears to be structural, and not a project, but there is little concrete information available (email queries. 2015; field interviews, 2014).

3.4.8. Inclusive Private Sector Participation (PSP) and the Service Chain

In Egypt, starting in 2002, many multinationals that received collection contracts hire waste pickers to collect waste door-to-door. Since waste pickers often do not find this arrangement profitable, there is a high turnover rate. Some multinationals subcontract or rent collection routes to the Zabaleen.

The northern Amman landfill is managed and operated by a private enterprise and owned by the government. The company hires waste pickers with 1-year contracts. About 100 waste pickers recover 3-4% of the waste, but do not have any official recognition or status.

3.4.9. Inclusive PSP and the Value Chain

All of the SWEEP-Net countries have existing value chains in which waste pickers, as employees or entrepreneurs sell metals, cardboard, electronics, plastics, and in some cases textiles. This is the baseline situation for value chain recycling. Where there is an intervention, it either strengthens the value chain relations, or introduces a service chain component to private sector participation, and considers the informal recyclers as private enterprises.

Recycling companies and other businesses view the waste pickers as entrepreneurs. Waste pickers regularly collect cardboard from shops. For example, 7,000 tonnes of cardboard is recovered and eventually exported annually. There is not yet any clear integration component.

Formal junk shops and large recycling companies hire waste pickers to extract recyclables from collection points. The formal paper industry monitors waste picker collection activities, which may be considered a form of integration.

The desktop survey suggest that Moroccan policymakers have the clearest understanding that the informal sector is private and belongs in the same category as the value chains. Integration is strongest within the E-waste sector, where indeed, informal enterprises are considered as private sector, and integration introduces some cross-overs to the service chain. (Diedro, 2012; Fahmi, 2010; Kuppinger, 2014; Elkheshen, 2014; Interviews, 2014; UNDP and ILO, 2013, Belghazi 2008, conversations Nicole Perkins and Meryem Alaoui)

3.4.10. Inclusive PSP and Extended Producer Responsibility/Product Stewardship:

Very few countries in the MENA region are clearly developing EPR policies and initiatives in both the value and service chain.

Tunisia has an inclusive EPR system called EcoLef, that focuses on packaging, waste oils, and some other materials. The EcoLef programme is financed by an eco-tax on imports, and the implementation is entirely the responsibility of the national environmental agency, ANGed. This calls into question whether it is truly an EPR system, but it has clear integration elements, which are important precedents in the region.

The NSWMP initiative in collaboration with the Egyptian Federation of Egyptian Industries, is supporting the government and private sector in developing a policy concept for inclusive EPR around packaging material and electronic products.

The Moroccan government is in the early stages of implementing eco-tax-based EPR policies. These policies work within the value chain on packaging material and e-waste. The tax, which came into force in 2014, requires producers to contribute to the National Environmental Fund. From the policy commitment to the informal sector in Morocco, it is probable that this is an inclusive system, but the team could not verify this. (Shaker, 2014b and email briefing 2015; Interviews with Alaoui and Perkins (Morocco), 2014; World Bank, 2014.)

Chapter 4. Sketch of Informal Integration in the Joint Service Council of Hebron and Bethlehem, in Palestine[7]

4.1. The context: solid waste management in Palestine

In Palestine, there are several central and local agencies involved in the Solid Waste Management (SWM) at different levels. These agencies include:

- the Ministry of Local Government (MoLG) which regulates and oversees local governments performance,
- the Environmental Quality Authority (EQA) who is responsible for ensuring environmental protection through regulating, licensing and monitoring major pollution, and
- the local government units who are responsible for solid waste management, and which include
  - Municipalities
  - Village councils (M/VCs), and
  - Joint Service Councils (JSCs) for solid waste management.

The main responsibilities of M/VCs and JSCs are street cleaning, waste collection, sorting and final disposal.

Private and informal sectors are also presented as stakeholders in the SWM chain. The responsibilities of the formal private sector are mainly recycling plastic, glass and non-ferrous metals. All other materials including paper, cardboard and steel, are sold to the value chain in Israel by some officially registered agents referred to as "commissioners".

4.2. The Informal Sector in Palestine

The informal sector in Palestine collects the recyclables, either for personal or artisanal use, or to sell via the private sector or via the "commissioners".

7 This sketch is designed to profile the only major integration effort documented in Palestine, and is written by the public manager who implemented it. It is shorter than the other chapters, because there are no national policies and no additional examples.

The occupations of the informal waste pickers active in Palestine are:

1. Street pickers
2. Container pickers
3. IWBs
4. Dump pickers
5. Small- and moderate-scale end-users and processors
6. Small junkshops for recyclables
7. Small second-hand traders


Figure 8. Collectors at the Yatta Dumpsite

4.2.1. Informal Sector Inclusion and Integration

The inclusion of the informal sector is very limited in Palestine. No strategy, for inclusion of the informal sector exists mainly because it is considered a minor sector and moreover, the main focus at the National Level is the inclusion of the private sector. This was clearly evident when the National Strategy for solid waste management in Palestine (2010-2014) was presented.

Despite the fact that no strategy for inclusion of the informal sector exists, it can be stated that the rules and regulations push the informal sector towards formalisation. The recycling enterprises are enforced to license their enterprises, register at the Tax departments and to comply with the environmental, health and safety conditions.

On the National Level there is no data for the informal sector in solid waste management.

The only case that can be considered as an attempt to include the waste pickers is the case in the Southern West Bank (Hebron & Bethlehem) Governorates conducted by the Joint Service

Council for Solid Waste Management of Hebron and Bethlehem Governorates JSC-H&B. Again, the idea was developed to solve a problem and does not constitute a strategic approach.

The experience began when the JSC-H&B in reference to the National Strategy for solid waste decided to construct a Sanitary Land Fill and to close and rehabilitate all the wild dumpsites. In the main wild dumpsite (Yatta dumpsite) there were around 86 informal waste pickers who depended mainly on waste picking as their sole source of income. Since this site was to be closed and since no informal waste picking in the new facility was to be allowed, so, those 86 were to lose their income. For this reason, a compensation scheme or a Resettlement Action Plan (RAP) was developed, and has been fully implemented.

The plan was designed and implemented in two phases:

1. Phase 1: Construction of the new landfill (the open dumpsite is still in operation)
2. Phase 2: Operation of the new landfill (the open dumpsite is closed).

4.2.2. Actions in the first phase

A comprehensive study on the 86 waste pickers was elaborated which determined the options and alternatives for the compensation scheme. The concept was based on the waste pickers' choices and the possibility to achieve their choices. During the consultation process, most of the waste pickers declared that they wanted to have official employment with the JSC -H&B for several reasons :

- To be preferred over informal waste picking which is a hard job with no health and safety conditions and no proper location.
- No stability in the market price for the recyclable materials and hence no stable income.

Figure 9. One of the consultation meetings.
Source: Joint Service Council of Hebron and Bethlehem, used with permission of those shown.

Figure 10. One University Students during graduation.
Source: Joint Service Council of Hebron and Bethlehem, used with permission of those shown.

- The community looks at them as wild, poor and not respectable people.
- Continuous competition among each other inside the working place (dumpsite) even conflicts between brothers and cousins.

As a general rule in Palestine, a permanent employment in the governmental or semi-governmental institutions is the dream for every person. This is mainly because of the political and economical conditions and the rapid lifestyle changes. Accordingly, for reasons of job security, most of the waste pickers chose the employment with the JSC –H&B. Nevertheless, for the following reasons, not all of them could integrate into the JSC-H&B:

- Limited capacity in the JSC-H&B to employ the 86 (not enough facilities).
- Some of the waste pickers have skills and experience in other fields and would just need some support to change to a different occupation (a push up).
- The university students have to get back to university.
- Some of the waste pickers have also other sources of income (like sheep) so they chose to enlarge that business.
- The non-adults (children) are not allowed to work and so vocational training is a good option for them.

The following list shows the agreed choices and alternatives:

- University student returned to universities, 2 persons
- Small income generating projects, 23 persons
- Sheep projects, 32 persons.
- Employees for JSC – H&B in solid waste activates including waste sorting, workers at the transfer stations, workers at the medical waste facility and guards, 29 persons.

Figure 11. One of the Beneficiaries «Grocery»
Source: Joint Service Council of Hebron and Bethlehem, used with permission of those shown.

Figure 12. One of the beneficiaries of Sheep projects
Source: Joint Service Council of Hebron and Bethlehem, used with permission of those shown.

Figure 13. Meeting with some of waste pickers after their employment in JSC
Source: Joint Service Council of Hebron and Bethlehem, used with permission of those shown.

4.2.3. Actions in the second phase

The second phase consisted of the implementation of the choices. Those who chose exit options were given the means to pursue their educational or economic goals. The 29 choosing employment were taken on as employees.

The integration of the waste pickers into the JSC workforce had clear benefits:

1. The on-site working conditions were improved by providing the waste pickers with health and safety tools, medical care and even training on good practices of waste picking and the chances to establish their own business.
2. The JSC-H&B supported them in establishing a union for waste pickers and the official registration of this union.
3. The JSC-H&B ensures the registration of the profession of waste pickers as an official profession.

Chapter 5. The integration of Barbechas in Post-Revolutionary Tunisia

5.1. The Barbéchas

At dawn, on a summer day, Samir, Abdallah, Aisha and other Barbechas[8] (waste pickers) begin roaming the streets in search of recyclables. They start early, before it gets too hot – but also to claim the valuable materials before the municipal workers pass, because these are their fierce competitors. They roam the various neighbourhoods, some equipped with bags, others pushing a dilapidated stroller; the lucky or better-off ones are riding a motorcycle with a large trailer. They rummage through trashcans and garbage piles at street corners, in search of re-usable or recyclable materials: PET bottles, various plastic containers (HDPE), an occasional aluminium can or other metal. Bystanders are condescending, suspicious and yet sometimes compassionate.

Dalila says: *"I have been doing this for years. Certainly, it is not pleasant to delve into garbage bins but I prefer to be " barbécha" (waste picker) than "beggar." People who see me are sometimes ruthless but I do not care as long as I earn my living and can hold my head up high. It's hard work, and many people believe that this business is easy. On the contrary! In addition to dirt and foul odours, we are continuously exposed to hazards. You're never safe from injury.[9]"*

8 We spoke with several collectors, and all have confirmed that the name barbécha, which means «excavator» in Tunisian Arabic, is not pejorative and they use it among themselves. Barbéch is singular and Barbéchas is used as the plural.
9 According to Rym Ben Arous in Le Temps, 6 March 2015

When the Barbechas have finished their day's work, they sometimes smile to see their mound of recyclables, but there is no smile when they collect nothing. The earnings vary with the seasons, their luck, and the market. At the end of their workday, Barbéchas usually take their recyclables to the best-paying local junk shop to sell.

The relationship between Barbécha and Collector (the Tunisian name for the junk shop owner who buys the materials recovered by the Barbechas) is complex. On the one hand, it is characterized by solidarity because they need each other. The collector often seeks to keep the loyalty of the Barbechas by providing big-bags or by guaranteeing loans or advancing cash during difficult times. On the other hand, relations are tinged with mistrust: this one suspects the other of fraud: the Barbechas by ballasting plastic bottles to increase the weight and the collector by manipulating the balance to decrease it. When one or other can no longer ignore their quarrels, the relationship can deteriorate, and even break down entirely, with each blaming the other.

The «roba vecchia»[10] or «kherdéji»[11], ancestors of today's Barbechas, used to stroll the streets of Tunis, to retrieve various recyclable materials: old clothes, used items, and scrap metal.

The profession returned in a new form twenty years later, boosted by new consumption patterns and a phenomenal increase of packaging. Now, there are many Barbechas who collect recyclables in the streets, and extract valuable materials from garbage bins or work at dumpsites and landfills.

5.2. What Bothers the Barbéchas: Their Issues

The problems of Barbechas are similar to those of other informal workers, whether in agriculture or in trade. Indeed, the Barbechas are considered second-class citizens due to the informal nature of their business, and their relationship to waste. The main problems include little access to healthcare, no ability to have social security, and lack of access to financial services, that would give them loans to buy equipment. Barbéchas have trouble obtaining loans or micro-credits, since a guarantee is required. Without investment capital, waste pickers and junk shop owners cannot buy equipment to make their transport and processing operations modern and efficient. For this reason, they are sometimes stuck in old ways of doing things, and have

10 "roba vecchia": from Italian meaning old goods. The "roba vecchia" collectors were also called "Sbaniour", meaning Spanish, or gypsy eventually

11 "Kherdeéji": one who takes care of "khorda": nonfunctional used objects – scrap metal

difficulties their improving their own productivity. For example, buying a baler would allow a junk shop to reduce their space needs and therefore their rental costs; buying a tricycle would allow a street picker to double or triple the length of their route, in order to have more materials to sell.

Informality is an issue in many ways. Outsiders assume that Barbechas and collectors will always try to avoid paying taxes, but for some, the problem lies in the opposite direction. Many junk shop owners and some Barbechas would actually prefer to have a license ("Patent") that would allow them to sell directly to the national producer responsibility system, Eco-Lef. However, obtaining the business license is difficult, and requires evidence of paying taxes. This in turn requires getting out of informality and gaining access to loans in order to purchase the machinery they need, to raise their revenues and begin to pay taxes. But given the fluctuations in price and the amounts collected, especially during the winter, it is not evident that waste pickers or junk shops break the cycle of the cash economy.

As everywhere in the world, where there are waste pickers there are health issues. Waste pickers report rheumatism and arthritis, light disabilities due to accidents, injuries, or poorly treated cuts and abrasions; hepatitis, and respiratory diseases – these are most caused by burning of plastics to clean wire and increase the value of metals. Medical access is uneven: in the Tunisian system a health card is connected to a profession, and the profession of "barbécha" does not formally exist. In spite of this, a surprising 60% of the Barbechas working on dumpsites report that they have a healthcare card granting them free or subsidised care in public hospitals (Jebel Chakir Study 2014). Yet Barbechas - even those who have access to medical services –do not regularly show up for the biannual health check-ups, and their vaccination records shows gaps, in spite of the fact they are required by the labour law.

Child labour is less prevalent than might be expected, but there are older children on the landfill. Often the Barbechas' children leave school early to help their parents or to earn pocket money for themselves. Child labour on the streets is marginal and seasonal, and is limited to school holidays and summer vacation.

5.3. Solid Waste and Recycling in the Tunisian Context

Tunisia has a population of 10,982,754 inhabitants and an area of 163,610 km². The country is divided into 24 governorates (regions) and 264 municipalities. The average annual income per capita is 6,535 dinars or about Euro 3000, putting Tunisia into the category of lower-middle-income country. The 2014 unemployment rate amounts to 15.2%, with 12.7% for men and

21.5% for women. The poverty rate is estimated at 15.2% of the population [10]. The country had moderate growth of 2.6% in 2013, which down from 3.7% in 2012, the first year following the revolution. Tunisia is ranked 94th out of 186 countries according to the UNDP Human Development Index (2013), and is considered as one of the high human development countries.

The amount of municipal solid waste (MSW) is estimated at 2,423,000 tonnes per year, with an annual growth rate estimated at 2.5%. More than two thirds, or 68%, organic waste, mostly from kitchens and gardens. The rest is divided between plastic (11%), paper / cardboard (10%), metals (4%), glass (2%) and unclassified. It is estimated that each inhabitant produces 0.815 kg waste per day in urban areas and 0.150 kg in rural areas.

Currently, about 70% of household and similar waste is being discharged in controlled landfills, 21% is dumped in uncontrolled landfills, 5% is composted and 4% is recycled. However, there is a deterioration since 2011 in waste management both at the levels of collection and processing. There are still about fifty dumps in areas not covered by controlled landfills.

The country has 10 sanitary landfills accepting MSW and 50 transfer centres that together receive 1.6 million tonnes per year from 120 municipalities, or 66% of the country's MSW. There are four additional controlled landfills in the Medjerda valley with a capacity of 62,000 tonnes/ year. The creation of 10 additional landfills and 120 additional transfer stations is planned for the coming years, to be able to cover 250 municipalities in total and receive approximately two million tonnes of household waste per year, or – 82%. In some cases, old closed landfills are being re-opened and operated as open dumps, when it is not possible to finance new landfills. This is reported to have happened in La Marsa.

According to the available information on the area of waste collection and recycling, the informal sector in Tunisia counts approximately 8,000 Barbechas.

For its part, the National Statistics Institute said in its five-year survey (2012) on micro enterprises that 385 micro enterprises (out of the 432,907 in all sectors) work in the sanitation sector, roads and waste management – which in this case means informal recyclers, micro waste haulers, an, small junk shops. These companies generally have a license to operate, but no formal bookkeeping, and their tax status remains unclear.

202 of these micro-enterprises are actually self-employed independent individual enterprises, 132 have 1-2 employees, 46 employ between 3 and 5, and 6 have more than 6 employees. The

total number of jobs is 706 (including 163 women); 377 have no education or a primary level education. The National Statistics Institute found that these micro enterprises reached a total turnover of 10.2 MTD in 2012, an added value of 6.3 MTD and a profit of 1.3 MTD. The average salary is 176 DT, which is not even half of the minimum wage (SMIG).

In 2005, the authorities created a national champion for solid waste management to overcome the shortcomings of the municipalities: the *Agence Nationale de Gestion des Déchets* (ANGed, English: National Waste Management Agency).

ANGed was created with a mandate and significant resources to:

- improve the disposal of household and hazardous waste, and
- to develop and stabilise waste valorisation processes.

Since its creation, ANGed has functioned as the public sector implementing authority of the Tunisian producer responsibility system. The agency is implementing the EPR scheme mainly for packaging waste but also for other types of waste as used crankcase oils, oil filters, batteries and WEEE.

The source of funds is a 5% environmental tax (ecotax) collected by the tax authorities from private businesses, based on the imported value and value-added of oils, plastics and other products used for packaging. The tax also applies to other product categories covered by the EPR system. This tax goes into a fund, FODEP, managed by the Ministry of Finance. ANGed gets part of that fund, for capitalising and operating several EcoLef centres. More importantly, the fund is used to subsidizes collection and transportation for a network of public sector junk shops, called "EcoLef points."

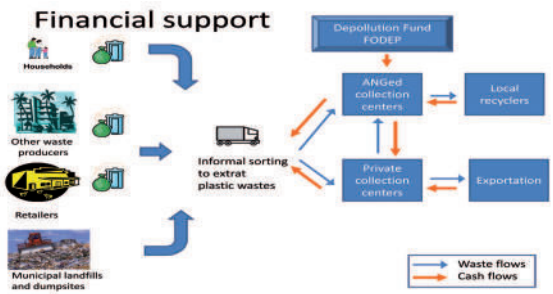


Figure 14. Overall structure of the EcoLef System.
Source: Abdeljaoued 2014.

Figure 14'. Authorised Purchase Point in the EcoLef System.
Source: Abdeljaoued 2014.

These points, located in residential neighbourhoods, purchase recyclable PET and HDPE packaging across the scale, store it, and transport it to markets in or outside of Tunisia. The revenues from the sale of materials return to ANGed.

The EcoLef points officially buy only from small traders who have a "patent," that gives them the right, but not the obligation, to sell to the ANGED system; some direct purchase from informal recyclers without patents has been reported and observed, but there is no way to confirm this or estimate the volumes or importance of this. In contrast, patented junk shops are free to sell outside of the EcoLef system and regularly do this when they can get better prices elsewhere. The patent system is a source of friction between patented and non-patented waste pickers and junk shops, and between the informal sector and ANGED.

According to the latest employment statistics available (INS [5]), the informal sector constitutes 37% of assets in the private sector, i.e. about 961,000 people. These informal workers are mainly employed in agriculture (30.6%), followed by trade, car repairs and goods industry.

In the environmental field, the informal sector is the key link of collection systems and recycling of paper / cardboard, plastic and metals (especially aluminium). Barbéchas, who are estimated at about 8,000 people[12], contribute by about half the total quantity of recyclable materials collected in Tunisia.

- About 8,400 tonnes of PET plastic are recycled annually in Tunisia (the figure was 15,700 tons in 2009), including 5,000 tonnes attributed to the Barbechas.
- About 250 PET recycling companies are active in Tunisia, a little than half i.e., 140 companies have a license to operate from the State[13]

Value chain recycling of paper, metal, and plastics, depend on the informal sector and function rather well, with or without the EcoLef system. Other material value chains, such as WEEE, waste from electrical and electronic equipment waste, are not operational yet. The informal sector is especially active in the collection of paper / cardboard, plastics and metals.

According to a 2014 presentation based on 2008 information, the EcoLef system has been successful in improving collection/ recycling of plastic packaging, and is also the most developed EPR system in the MENA region. The system has allowed the development of 318 EcoLef collection centres, which collected up to 15,300 tons of plastic packaging wastes in 2008. 70-90% of collected plastic waste is reported to be recycled through marketing agreements

12 ANGeD estimate
13 Source: ANGed

signed with private recyclers. Already in 2008, Eco-Lef had contributed to the creation of around 11,000 jobs and 1,900 collection micro-enterprises with the financial support of the National Employment Fund ("21-21 Fund")[14].

The value chain operates with commercial prices alongside of and in competition with the EcoLef system, trading a wider variety of materials. Traders without patents trade covered materials to EcoLef through patented junk shops, as long as the price there is better than the value chain price. For example, in June 2014, the rise of value chain prices for PET was driving those materials away from the EcoLef points.

An evaluation of the system suggests that the net impact of the FODEP subsidy on landfilling is to reduce municipal incentives to implement separation or sorting of municipal wastes. Moreover, the plastic price supports work against municipal efficiency in two ways. First, the informal collectors of plastic waste may dump containers to retrieve the plastic fraction, usually at the expense of street cleanliness. Secondly, the favourable purchase prices stimulate the public employees who are part of formal waste collection crews to spend time on the supplemental activity of truck picking, in place of collecting and disposing of the waste. This sometimes results in large-scale deviation from routes and schedules, as the truck crew seeks to maximise the income of its members by beating the informal waste collectors to the rich sources of recyclables allowing the low-paid crew to secure additional income (RWA internal sources, Abdeljaoued 2014).

There are some additional side effects of an EPR/PS system based primarily on developing a buy-buy-back infrastructure with price supports and price manipulation.

- the benefits go to individual junk shops and collectors who sell to them, but this does little to support organising or solidarity or cooperation among pickers, and it may contribute to the use of child and family labour and poor occupational health and safety conditions.
- possibly as a result of this one-sided focus on price supports, the EcoLef system has failed to improve collection infrastructure, develop source separation and sorting facilities, or organise sources of private capital for improvement of efficiency and innovation in source separation, collection, and/or processing.
- The system as a whole has not been supported, there are no general incentives for recycling, and the number of operators and level of competition keeps the size small and the economies of scale remain unfavourable. The net result appears to be a stagnation in development, and

14 The revolution in Tunisia may have made changes in the performance of the system, but more recent documents are not available.

increasing competition between individual junk shops or groups of packaging pickers and the public collection crews.
- There is a need to improve recycling efficiency, routing, operations, and distribution and operation of collection and transportation equipment, but the system does not seem to offer an easy route to do this.

In 2011, in the aftermath of the political transition, Tunisia witnessed the flowering social, political, and environmental consciousness. These led to new ideas, ambitions, which influence solid waste and social policy. This is a lively political discussion about the necessity to protect the environment and to pursue inclusive development that integrates the informal sector into the value chain. This discussion is changing the way civil society and public authorities look at and understand the informal recycling sector. This evolution has gone far enough, that certain employers' organizations, (such as CONECT), have begun to explore corporate social responsibility (CSR) and extended producer responsibility (EPR. This type of institution has the potential to create new opportunities for the informal recycling sector.

Apart from ANGed and solid waste and environmental strategies and laws, Tunisia has also developed a strategy oriented towards the informal economy, self-employment, and micro and small enterprises, with a core them of financing the sector and professionalizing employment. Although not specifically focused on Barbéchas or collectors, these interventions may benefit them and have the potential to co-finance integration. Specifically, there is some enterprise financing is available for eligible micro-enterprises, including Barbechas and collectors. Since 2005, the Tunisian Solidarity Bank (BTS) offers microloans to young entrepreneurs to set up enterprises, including in the field of waste management. Other private micro-funding institutions such as Taysir Microfinance and ENDA, are also active in Tunisia.

The National Employment Fund was created in 2000. The objective of this fund is to strengthen the pace of employment or self-employment creation by improving the employability of job seekers having different levels of education and the stimulation of entrepreneurship. This fund has helped to finance, among other mechanisms, specific contracts between micro-enterprises in the service chain and municipalities. Contracts have been executed for street sweeping, waste collection, and the management of green spaces.

5.4. The Informal Recycling Sector in Tunisia

In 2013, GIZ (German International Co-operation) and SWEEP-Net, co-operated to stimulate a

broad experiment in informal sector integration in Tunis. Many of the statistics and much of the information in this chapter has been elaborated in the course of the fact-finding phase of that project, entitled "Structural Integration in Tunisia". The field work reported on in this chapter was done in the course of the project, and focused on engaging the informal recyclers, the Barbechas in two so-called pilot municipalities, La Marsa and Ettadhamen-Mnihla, both within greater Tunis. Both of the authors of this chapter, and one of the main authors, participated as consultants in that project and some of the information comes from direct experience, or from project documents available from www.swpeep-net.org. The project itself is profiled in more detail, below.

5.4.1. Profile of informal sector actors in the Structural Integration project[15]

Most Barbechas interviewed were street Barbechas and their occupation is largely male-dominated (85%). The few women in this profession are widows or have a sick or disabled husband.

Contrary to popular belief, the project team did not encounter any children missing school to engage in recovery activities; children were encountered only during school, religious, or national holidays, strikes or vacation periods.

The 'barbèch' is usually a parent, older than 40, often illiterate or with a low educational level, and with dependents and a significant presence in the household of the sick or disabled. Their social situation is precarious: except for some, they have no social security coverage or health insurance. They are sometimes victims of road accidents or frequent cuts at the level of their hands caused by broken glass or metals. Most of them are from rural areas, mainly from the north and centre west of the country.

Since the revolution, precariousness has been growing and the number of Barbechas rising. We can distinguish four categories of Barbechas: professional Barbechas, semi-professionals Barbechas, casual Barbechas, and women Barbechas.

Professional Barbechas: they are veterans exercising the profession for over 10 years. They are generally well equipped and have a motorcycle with a large trailer. They have good knowledge

15 Overall, the fieldwork team met 153 persons working in the informal recycling sector, including those who participated in the interviews, 86 in Ettadhamen-Mnihla and 67 in La Marsa. Among them, 6 were landfill barbéchas, all in La Marsa (we did not visit a landfill in Ettadhamen-Mnihla, we only visited the transfer station where there were no barbéchas), there were 13 collectors, transporters or crushers including 8 in La Marsa and 5 in Ettadhamen. We met 22 women, 20 of them in Ettadhamen.

of the profession and the circuits. They have no relational problems; they are proud of doing this job and happy with what it brings to them: 30/40 dinars per day on average.

Figure 15. Professional Barbechas

Source: project files of Structural Integration. www.rwa-group.net

Semi-professional Barbechas:

They have between 2 and 10 years of experience, they make up about half of the Barbechas. They use motorcycles, bikes with trailers or simple hand carts. They have irregular gains of about 10 to 15 TND per day.

Casual or precarious Barbechas:

They are often elderly people, sometimes with disabilities or persons who are unable to make ends meet or people who have had temporary difficulties due to loss of employment (unemployment). This category only has shoestring means (old stroller, wheelbarrow) and earns between 5 and 10 dinars on average per day.

Figure 16. Casual or precarious Barbechas

Source: www.rwa-group.net

Women Barbechas:

They constitute a specific group, because even when they have more than 10 years of experience, they remain precarious in their recycling activity. Indeed, they have no motorized transportation, and they have often a stroller or even nothing at all. They rarely earn more than ten dinars a day. They find themselves forced to do this job because of the sickness or disability of the husband. Unlike other categories, what characterizes them is that they do not evolve and have little means to evolve.

Figure 17. Women Barbechas

Source: www.rwa-group.net

The landfill Barbechas: a separate category

The majority have more than 10 years of experience. We find in this group the senior barbéch Abdullah Sassi, also known as Boubou, who has been working in the landfill for 32 years. He used to work in the old landfill of La Marsa and is now working in the new one. He is the only one to reside on the landfill site from Monday to Friday, and returns home at the weekend. He is 51 years old.

Figure 18. Landfill Barbechas

Source: www.rwa-group.net

The other categories of the informal waste sector are the collectors, transporters and processors[16]. The collectors may or may not have a garage or fenced area and sometimes they use the street where they deposit the products they buy from the Barbechas. With some exceptions, they are not registered with ANGed, which means they cannot sell their goods to Eco-Lef points but only directly to processors or other intermediaries. They have relatively high costs, including the rental of the garage or the field, and wage subsidies. They do not seek to formalise their enterprises, which would crate space for integration, because the fee for the license (150 dinars per year, added to taxes) would be an additional burden to pay. Moreover, collectors always pay Barbechas in cash at the time of which means that every effort possible goes to securing sufficient working capital, as the buyers they sell to pay them only after three to six months.

Figure 19. Tools and equipment for recycling

Source: www.rwa-group.net

The essential tools of collectors are the balance and big bags which they use to pack plastic (PET and HDPE separately) and cans. Some of the junk shops try to secure the loyalty of Barbechas by lending them big bags.

The quantities of goods recovered daily greatly depend on liquidity and capacity in terms of the storage volume that collectors have. A press would allow them to reduce the volume and store more goods. This would also increase the price per ton.

The means of transport vary significantly, as illustrated in the following photos:

16 "processing" almost always consists of several types of physical changing of the materials: 1. densifying through pressing, shredding, or cutting the materials, , either by filling 1m3 big bags or gaylords (heavy 1 m3 cardboard boxes), by crushing glass, by milling or shredding wood or metal or paper; 2: packaging them for transport by baling or briquetting paper, plastics, or metals; by containerizing materials, or by palletizing smaller briquettes or boxes by strapping them to a pallet.

Figure 20. Means of transport

Source: www.rwa-group.net

5.4.2. Informal Occupations

The occupations of informal recyclers interviewed or contacted during the implementation of the "Structural Integration in Tunisia" project are listed below:

- Recyclable waste pickers: street Barbechas
- Sedentary Barbechas: in landfills
- Collectors
- Carriers / transporters
- Transformers: grinders (PET, HDPE) and compactors (cans)

5.5. Informal Integration in Tunisia

International actors such as UNDP, the World Bank, and some donors, together with ANGed, have a modest history of social integration interventions. UNDP has worked minimize the risks to the waste pickers' health by conducting free vaccination campaigns for the Barbechas working on the landfill of Jebel Chakir. The World Bank is working to integrate children of Barbechas' into the school system – and to eliminate child labour in the few cases where it exists. Some NGO economic development and micro-enterprise projects have also touched the Barbechas.

These initiatives have goals to improve the living and working conditions in the informal waste sector, they cannot really be considered as "integration," as they treat the Barbechas as social victims, and work on relieving symptoms, rather than on improving performance in the service chain and value chains. Their effectiveness has also been hampered by the lack of coordination between municipalities, value chain recycling companies, municipal cleaning and service chain institutions, citizens, national authorities, and the Barbechas themselves. An observer might

also remark on lack of communication and awareness raising of participating groups and the lack of incentive systems.

Unlike these social improvement programmes, there are hardly any documented interventions of stakeholders in Tunisia that have clear goals to modernise the solid waste system and/or to integrate the informal sector. Only one such initiative exists, deserves to be highlighted: the project «Structural Integration of the Informal Sector in Municipal Waste Management in Tunisia».

5.5.1. Structural Integration of the Informal Sector

Based on its expertise and contacts in the MENA region (including Egypt) and in Tunisia and with the support of ANGed and GIZ, the Regional Network for Integrated Waste Management (SWEEP-Net) initiated in 2014 a pilot project on the integration of the informal sector into the waste management system in Greater Tunis. This project, in some sense, allowed the Barbéchas to emerge from their hibernation and social isolation, and started the process of awakening and empowerment. Today, Barbechas are walking around the city, but not yet fully in charge of where they go or how they get there. They themselves think that they still need accompaniment for one or two years to take charge of the situation and direct the next set of changes.

As part of this project, a multi-stakeholder working group composed of representatives of ANGed, the Ministry of Vocational Training and Employment (MFPE), the Ministry of Social Affairs, the governorates of Tunis and Ariana, the municipalities of La Marsa and Ettadhamen-Mnihla and the NGO TAMSS was established to define a strategy and path for integration. Some options considered were to first focus on occupational recognition, or to have the first emphasis on organising and empowerment, or to have a primary focus on organising social protections and access to credit. During the project, a second working group on "access to finance" with representatives from ANGed, the MFPE, the governorates of Tunis and Ariana and micro-finance institutions (Taysir, ENDA, BTS), and TAMSS was formed to develop concrete actions: draw a profile of the beneficiaries, identify their funding needs, organize training sessions for the informal sector and associations (formalization and value chain notion). In addition, GIZ showed some interest to organize a reflection workshop on professional recognition and also to support the drafting of the ministerial order defining the terms of access to social security by Barbechas, but the time did not permit it. As an exit strategy, the MFPE is working on the Tunisian version of a social enterprise system, which could provide an interesting framework for integrating Barbechas into the formal economic system.

For their part, the Barbechas in the municipalities of La Marsa and Ettadhamen-Mnihla formed two associations. These two associations are active but still fragile and require support for at least one more year. Moreover, in these two pilot municipalities, the Barbechas who are in contact with different actors (private sector, municipalities, NGOs, etc.), have developed projects, cooperation, contract ideas, etc. Some examples: there is a project mobilising funds for the acquisition of one or more trucks for the Barbechas; there is an intention to cooperate with a company that develops solar panels (Green Alafco); and the Lions Club which has shown interest to finance a tuktuk (auto rickshaw). Moreover, the Green Alafco company is ready to act as a guarantor for the Barbechas to obtain micro-credits. More generally, the informal sector wants to do more to improve their access to high-paying markets in the recycling value chain, and to explore opportunities for increased productivity and efficiency gains.

Box 1. Empowered Barbéchas make change in their work and their lives

The Barbechas' association of Ettadhamen-Mnihla and that of La Marsa were created as part of the pilot project «Integration of the Informal Sector in the Municipal Waste Management in Tunisia.» The pilot project was initiated with the cooperation of the two municipalities, ANGed, GIZ, and SWEEP- Net.

In parallel, Barbechas collaborate in awareness raising campaigns, under the theme «Sorting is helping.» They go door to door to explain to citizens the nature of their work and encourage them to sort. Satisfactory results have been recorded following the first awareness campaigns. Some citizens now keep recyclables and put them aside until the passage of Barbechas every Sunday.

5.6. Tunisians vs Barbéchas

In Tunisia, many citizens and representatives of authorities have a negative perception of the Barbechas. They are seen as dirty, creators of street litter and disruptors of the formal solid waste management system. Some Tunisians advocate banning the Barbechas from the streets and dumps, and are the ones likely to harass or insult the Barbechas on their nightly collection rounds. Others are wary and fear for the safety of their neighbourhood. There is also a perception that they are earning a good living. Experience has also shown that, once the locals know get to know the Barbechas and their story better, they tend to accept them more and reserve recyclables for them or even give them some money. Some citizens, bring their recyclable to designated collection points for the Barbechas.

Table 2 shows the attitudes that the various relevant actors have towards the Barbechas, as well as the informal waste sectors view of themselves as stakeholders within the system. The table also highlights the respective challenges from each actor's view point.

Table 2. Attitudes towards Tunisian Barbéchas

Group Name	Problems / Attitude towards Barbéchas / Challenges
Barbéchas	They feel abandoned by public authorities and have to face the ups and downs related to their profession. In return for the environmental protection they ensure, the group asks for occupational recognition, social security, medical care, pensions, collection equipment, and reducing unfair competition with municipal workers. • Fluctuations in the amount of available recyclables limit their work opportunities, particularly in the winter. • The sector often experiences problems with neighbours because they work in residential zones
Collectors Junk Shop Owners	They lack storage space and recycling processing equipment, such as balers. Since they do not have access to capital, they ask for help to obtain loans and price subsidies.
Citizens / household members	The indifferent or contemptuous attitude of citizens does not foster a trusting and supportive relationship
NGOs and Associations	Generally, NGOs do not prioritize waste picker organization work.
Municipalities	Municipal employees think that the Barbechas scatter waste when they are scavenging for waste in containers, making the streets dirty. The municipality condones municipal workers collecting recyclables for their own account although it is an unfair competition that is carried out during working hours.
ANGed (National Waste Management Agency)	The agency is responsible for establishing a national recycling strategy. The integration of the informal sector is at its early stages.
Banks, MFIs BTS- ENDA	These are micro-credit banks and should be willing to offer credits to Barbechas, but they do not or cannot run the risk and require guarantees and collateral

In general, Barbéchas do not have good relationships with the municipalities. They are poorly received and their applications for licenses or permits are either ignored or their papers are lost

in a bureaucratic maze. Since the sector does not have a formally recognized status and little knowledge of administrative procedures, the Barbechas are often discouraged and avoid the administration.

Barbéchas consider municipal workers as unfair competitors. The relations between them are ruptured and dire. The workers complain that the Barbechas overthrow containers to look for recyclable materials, making their work more difficult. Barbéchas protest that the municipal workers take the most valuable recyclables during the formal waste collection, leaving nothing or dirty recyclables behind. The workers themselves have become de facto Barbechas. After the Revolution, there was the phenomenon of workers' tenure. While contract workers were paid about 250 dinars without health insurance before the revolution, tenured workers' pay increased to about 450 dinars in addition to social security. However, not all workers were granted tenure, which caused unequal treatment for the same work between tenured and non-tenured workers. Yet, given the increased cost of living, even tenured workers are struggling to make ends meet. Thus the municipality tolerates workers waste picking during working hours.

There are no systematic or regular relations with other stakeholders, such as micro-credit relevant associations, Eco-Lef points, and higher administrative services. Barbéchas do not have the right to sell directly to Eco-Lef points because the program only buys only from authorized recyclers. Instead the Barbechas sell their goods directly to a mill, increasing their revenue by about 100 millimes (one dinar equals 1000 millimes and one dinar equals 0.5 USD) per kilogram. Very few Barbechas have had relationships with charitable organisations, but these communication channels are now characterized by misunderstandings and mistrusts, such as unfulfilled promises inviting Barbechas to participate in litter campaigns or other community development and economic activities, but the relationships have not evolved to consider the structural changes that are necessary integration and productive cooperation.

5.7. Towards a vision of a sustainable future

Dalila told us: «Since I wear my blue dress and the badge of the association, I feel proud of this profession».

Hassan is *kherdéji* / barbéch from father to son. Thanks to his savings and his good knowledge of the ways of the profession, he became a collector and buys recyclable waste from the Barbechas in the surroundings. He sells materials to processors and other intermediaries and admits to making a good profit.

"I live well and my situation is stable. I could get married and start a family thanks to my work." Today, he is the treasurer of the Barbechas' association.

Among the proposed projects, Hassan explains that "the association is working on establishing a partnership with institutions offering microcredits for Barbechas so that they can, in the near future, buy tricycles that will facilitate the execution of their work. In the short run, we are working to organise a tetanus vaccination campaign for the benefit of all members of the association".

The progress made within the framework of the Structural Integration project shows the benefits of developing collaboration between Barbechas and municipalities to organise door-to-door collection in routes. To avoid social and environmental impacts, it is essential to define an inclusive organizational system (including transporters and wholesalers) that intercepts materials upstream, rather than extracting them through waste picking at the dumpsite. One idea is to build and install waste collection and sorting platforms, to be placed at transfer sites or between the gate and the working face of the landfill. Following decades of experience in Colombia and Brazil, and quite a few years in India, these facilities could be financed, owned, and managed by a cooperative or association of Barbechas.

The work of Barbechas benefits the environment, economy, and the society, and provides them with the means to support their families. This work deserves recognition. For this, it is necessary to recognise and certify their occupations, and grant them an occupational and civil status that would allow them to: obtain health insurance, have regular access to health care; attend occupational health, environmental hazard, and safety training, learn basic administration and learn about project installation and management. Furthermore, they strive for improvement of their working conditions through commitments within the Association to better and more widespread use of personal protective equipment, provision of visible security badges and construction an integrated workplace in the municipal collection system. To do this, it is more than necessary that Barbechas organize themselves to better voice their social and economic rights (association), and be able to benefit from easier access to microcredits to equip themselves. Finally, Barbechas who are too old or disabled – or pregnant or caring for small children – should be supported by social protection structures.

5.8.Conclusion

Social acceptance and reflection on the integration of the informal sector in Tunisia is just beginning, and faces persistent misunderstandings. Many public and private decision makers

still equate the informal sector to illegal activities and even smuggling. In these troubled times, some people even amalgamate and suspect an association with terrorism. This is why all initiatives in favour of the integration of Barbechas face difficulties despite the commendable efforts of several stakeholders.

The contribution of Barbechas in the recovery of recyclables in Tunisia and thereby in protecting the country's environment is undeniable. In return, they are entitled to a fair compensation. The Government, UTICA, CONECT, the Tunisian Federation of Hotels and other agencies should support, as part of their social responsibility (CSR), the integration and efforts to be undertaken by Barbechas and their emerging associations.

To borrow an image, the integration project initiated by SWEEP-Net, allowed the Barbechas to emerge to the surface. They started paddling so as not to drown but they still do not know how to swim, let alone navigate. They, therefore, need support for some more years to strengthen their empowerment, which could be achieved through the progressive realization of the below-mentioned actions. The support of technical and financial assistance of international cooperation remains necessary, for the moment, to assure implementation of the suggested actions. And solidarity is also important. Barbéchas can find support in the global informal sector organising movement, called Global Rec, as well as in exchanges with informal enterprises in many countries.

5.9. Notes

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Chapter 6. Focus on Value Chains: Integration of the Informal Sector in Morocco

6.1. The Materials and the Men

Today Mr Mbarek is wearing his beautiful festive robe, his *gandoura**. But it cannot disguise his grimy nails and the rough, calloused hands of a scrap merchant, that is, in his own words, of a *Bouaâri*, a digger or diver, a fisher of wastes.

"I took up this work, since the death of our late King Hassan II, in 1999. I had no choice. Before that I owned and ran a tent hire business, at a camping site in Sidi Abderrahmane, the great beach of Casablanca. One day we were robbed, we lost everything, and we lost the business.

"So here I am, 16 years later, *baiaamourtachayates**, a waste picker. But watch out! I have nothing to do with those "scavengers," those thieves. No, me, I built myself a trade." Mr. Mbarek stresses this last point.

"Me, I do not pick trash; I go where the waste calls me. I have my network of client companies, factories where they separate materials for me. I cover the areas of Bernoussi, Sidi Moumen, AïnSebaa, AïnBorja, Mohammedia and even Had Soualem, the whole region of Greater Casablanca.

"I have a car and a pickup truck, but I'm not a waste picker, I am a ferrous metal recycler. I have a business card, a phone number, a place of business. My customers call me whenever they need my services. They come to me via word of mouth, from other clients, because I do a good job.

"I took care of the waste of a large company for 12 years. They trusted me, I had a contract, and all that time, I was able to ensure adequate treatment depending on the type of waste, and I took full responsibility for the safe and legal end of life management. I even provided them with a certificate of destruction.

* At the end of this chapter, there is a glossary with all Moroccan words marked with an asterisk in Arabic, French, and English.

"After I got familiar with the trade, I was able to organise small premises, where I do the sorting and store the materials and where I have a small incinerator to burn what requires burning. I am very careful to avoid releasing pollution into nature, and my clients know this and I keep them at ease because they know I act responsibly."

Mr Mbarek has a keen awareness of the risks of uncontrolled release of certain wastes, and the impacts they can have on human health the environment. For him, his small incinerator represents the ultimate solution, there is no way to tell him about transfer of pollution from one medium to the other. He is proud to show his knowledge and expertise, of his safe handling of the waste, and of the professionalization of his ferrous scrap recycling business.

He considers himself to be a full-service provider. Alongside being a ferrous recycler, he is a service chain business with a full portfolio of options, which he customises for his clients. "Sometimes, the entire load of waste goes directly to the landfill, I pay the tipping fee, depending on weight and I get rid of it. This is the least interesting part of my business. The most interesting is when the waste is clean, especially when it requires no sorting, no cleaning or washing. Then I sell it by weight directly to other users in the value chains; it is clean secondary material such as plastic, cardboard, glass and metals. I especially like waste wood."

Figure 21: Examples of Mr. Mbarek's junk shop, equipped for sorting, light processing, and storage.
Source: Wincy.

"My son is in the business, he specialises in waste oils, and he an entire network of garages and mechanics. In the beginning it was Syrians or perhaps Turkish buyers who bought his products. Now I believe that they are Koreans and Chinese."

Mr Mbarek pauses before continuing. "The business has changed a lot. In the beginning, about

10 years ago, I was the only one who was willing to dispose of undesirables; no one asked any questions about the load or the destination. They weren't interested in what I did with their rejects, as long as I handled the disposal. I would come to their loading area, they showed me the stuff, I looked at it, weighed it, and made the deal. If it was valuable I paid for it or bartered, if it wasn't they paid me, and the rest of it was my responsibility. I was serving both the authorities and the community. Today, everyone in the company, from the guard at the door all the way up to the managing director, they are all interested in my load. It's now everyone's business, they are all aware of market prices. Now instead of taking away a sack of mixed items, they are negotiating with me for a range of grades of materials. There are more and more layers in the value chain, and not all of them really know the business. With amateurs and just too many intermediaries, our margins are shrinking.

My work is looking more and more like valorisation and processing, instead of simply trading what I pick up. The amateur scrap dealers are not only downgrading the business, but they represent a risk factor. Working with waste is not a game, not at all. The other day a *bouaâri* was preparing some drums he had collected from producer of matches. It must have been that those drums contained sulphur, because he caused an explosion in the process of cleaning them, and this guy, he lost his hand. It's sad, but it's very common, and this isn't the worst example, some are a lot more serious. We need to be more careful, for example, when the drums come from chemical plants, and contain pesticides, or other hazardous materials, the practice must be, to flatten them, or cut them up, so that they cannot be used to carry water or for any in the food chain. Recently, near Douar Lahjer, residents of this coastal district have boiled mussels in drums from a big factory of fertilizers and pesticides. This has caused a serious health crisis.

I am now 60, and after all my years in the field, I can tell you that the things are different. Many efforts have been made, and now the waste is cleaner, the city is cleaner, even we are cleaner. Before, you could get rid of the waste anywhere, illegal dumping was happening everywhere, it wasn't even unusual. Now we pay attention to the cleanliness of the city and neighbourhoods. Of course, the problem of the waste pickers disturbs us, but it is up to the authorities to settle this. There has this attempt at the Bernoussi sorting centre, where they tried to organize them. Still, the authorities should be aware that all materials that have value are picked from the street and so they never reach the centre, the *bouaâra** sell everything which has value on their routes, and before returning to Bernoussi. So in fact it is only the real waste, that which has no value that reaches the centre. Actually, for this type of effort to succeed, you need someone with experience in the field, someone like me who knows what's going on, to organize the waste pickers. Only I do not want to have anything to do with that, it does not concern me. They start

now to talk to me about pension and social benefits ... my children are grown and independent, my life is behind me."

Saïd, who has recently become a *bouaâri*, abandoned his prior job as house painter. "I developed an allergy that crippled me; I was no longer able to work in a solvent-laden environment. What I do ... I make my living ... I *bakchech**; I am bouaâri in the trash. I am constantly looking for the piece that has value, but I take all that is sellable. I found a livelihood, I earn my living honestly, I provide for the needs of my family, I do not ask anyone for anything." Saïd spreads reusables before him on the sidewalk, a mixture of shoes, a kettle, a stove, DVDs.

Saïd is *bouaâri* by night and *ferrache* during the day. From 9 pm to midnight, he searches the trash, mainly in Lissassfa area, a suburb of Casablanca.

Figure 22. Waste picker at night, and flea market trader by day.

Source: Wincy.

By day, between 1 and 3 pm and sometimes until 6 pm, he spreads his goods on the pavement. He is aware that he occupies public space, and police officers remind him with their constant warnings, "but so far, they leave me alone, they see that I do not bother anyone or ask anything from anyone." His aspirations: to have a means of transport, a cart that will allow him to go to the residential neighbourhoods where the garbage is richer ... "*lebyassatesfihoumflouss**, goods worth alot of money. As soon as I have enough money I return to my countryside, I buy a piece of land and I'm done with *Zbel of the medina**." Saïd smiled, a resigned smile as old as the world.

Figure 23. Examples of second-hand, recovered products displayed for sale directly on the sidewalks.
Source: Wincy.

Cart - Karossa pulled by a donkey carrying electronic waste (computer monitors)
Source: Wincy.

On the edge of his cart, *Karossa**, driven by a frail donkey, Driss, a young man whose face is already weathered by the sun, showed the city with a sweeping gesture of the hand; "We clean the city, people look down on us, call us *Bouaâra* or *Mikhala**, in their mouth it is an insult. They don't see us as human, and are not aware of our contribution, they think that we only disturb their garbage, but in fact we give life to their waste. The *Charika dial Zbel**, the public works and urban cleansing company, does not like us; they say that we destroy the garbage containers. But they forget that everything is mixed together and without us there is no sorting. According to them everything must go in the truck ... but for us it is our daily bread that we are fishing for in these bins. We just want a little consideration and recognition of our role and our contribution in cleaning up the city."

6.2. Birth of a social issue

Three stories, three life paths, three destinies ... nobody can emerge unscathed from an exchange with a *bouaâri*. Even approach him, is a story itself. Sometimes he is fearful and runs away, often he is curious but keeps his distance. Rarely, he reveals himself easily. The oldest in

the profession may see in a conversation, a business opportunity – or a threat to their business. The most vulnerable are like the living dead. On the one hand, invisible and abandoned by the society, or hunted. Or, on the other hand, they feel that they are singled out for blame and abuse, they are in the wrong place at the wrong time. Some see them as disturbers of the peace, others as a necessary evil, and still others as children of misfortune.

It might be convenient to say that there are many *Bouaari* and only one problem. But this is false. There are several problems and a variety of *Bouaari*. It's too facile to use the laws and rules as an excuse, and to condemn group of people for the fact that they are operating outside of the system, and to require that they conform and become part of the established formal order, before they are entitled to participate in a dialogue, or others are permitted to plan and implement improvements.

The realities are elusive, even for those of us of good will and clever mind. Or perhaps it's too hard to engage, and – in contrast, too easy and too comfortable to wash our hands after each contact, and eliminate the "dirt" from our consciousness. And so, we have created a structural failure to observe, recognise, understand, and engage with informal recycling. And to our "surprise," in the shadow of our denial, an entire sector has been born, come of age, organised itself, proved profitable, and installed itself at the margins of Morocco's vital and growing industrial economy. Like barnacles on the hull of a ship, informal recyclers nourish their businesses at the edges, they multiply out of sight, spread themselves, create colonies, and are then impossible to remove. When we wake up to this reality, it stumps us: what instruments do we use, what stance do we take, what to do?

Looking away is no longer an option, the informal waste sector workers themselves have become visible, unavoidable, ubiquitous, and there is nowhere for Morocco to hide.

Figure 24. Cart – Karossa, manual push cart
Source: Wincy.

Figure 25. Illegal dumping

Source: Wincy.

Figure 26. Garbage thrown directly in public space
Source: Wincy

6.3. Morocco today and the problem of solid waste

"Solid waste management" or rather "the problem of solid waste" – because until recently in Morocco "solid waste management" was not on the agenda – is a hot potato: high in the public consciousness, but seen more as a threat than a promise. Or a runaway train, in which the policymakers are like the engineer, trying to save lives and get the train back on track and under control. This is how we understand the development of various inclusive policies, as a way to restore governance and to salve the conscience of this at the highest levels of the national government. Morocco, with the approval of its new constitution in 2011, has resolved to embrace sustainable economic development, based on the institutional, economic, and social reforms adopted in the period since 2000. There is a broad commitment to engage with the issue of solid waste management, based on an understanding that the country can no longer afford to practice a non-policy of denial and avoidance.

This collective commitment stems in part from the July 2009 address given by the Morocco King Mohammed IV, in which, he urged the different parties to commit to a path of sustainable economic development where economic progress is based on respect of human dignity and protection of the environment. The National Charter for the Environment (Charte Nationale de l'Environnement) is the palpable result.

Morocco, like all developing countries, faces major and pressing challenges in development, and is fully aware of the need to preserve the environment and to provide a satisfactory response to all environmental imperatives. Faced with these exigencies, and in accordance with these commitments, we reaffirm the need to pursue careful but far-reaching policies of change, both at the level of the economy and through public communication and sensitisation, and in concert with regional and international partners. To accomplish this, we appeal to the government to elaborate, in the framework of sustainable development, a Comprehensive National Environmental Charter, with a focus on Conservation of open space, parks and reserves, and natural resources. The Charter should also include the preservation of natural, historical, and cultural sites, natural formations, and monuments that make up our common historical and cultural heritage, whose protection is a collective responsibility for current and future generations. From now on, it is the responsibility of the public authorities to attend to the environmental protection dossier in all of their current and future development projects.	Le Maroc qui, à l'instar de tous les pays en développement, affronte des défis majeurs et pressants en matière de développement, a pleinement conscience de la nécessité de préserver l'environnement et de répondre aux impératifs écologiques. Face à ces exigences et conformément à ces engagements, Nous réaffirmons qu'il est nécessaire de poursuivre la politique de mise à niveau graduelle et globale, tant au niveau économique qu'au plan de la sensibilisation, et ce, avec le concours des partenaires régionaux et internationaux. A ce propos, Nous appelons le gouvernement à élaborer un projet de Charte nationale globale de l'environnement, permettant la sauvegarde des espaces, des réserves et des ressources naturelles, dans le cadre du processus de développement durable. La Charte devrait également prévoir la préservation des sites naturels, vestiges et autres monuments historiques qui font la richesse d'un environnement considéré comme un patrimoine commun de la nation, dont la protection est une responsabilité collective qui incombe aux générations présentes et à venir. En tout état de cause, il appartient aux pouvoirs publics de prévoir le volet protection de l'environnement, dans les cahiers de charges concernant les projets de développement.
Box 2. Excerpt from Speech of King Mohammed IV, 31 July 2009. Source: translated by the editors from text at right	**Extrait du discours de Mohammed VI - Roi du Maroc, le 31 juillet 2009** Source: Portail du Royaume du Maroc: http://www.maroc.ma/fr/discours-royaux/discours-de-sm-le-roi-%C3%A0-loccasion-de-la-f%C3%AAte-du-tr%C3%B4ne

The charter, which saw the light of day only after a lengthy consultation process involving government institutions, citizens, and other stakeholders, was adopted in its final version on 22 April 2010, on the occasion of Earth Day. The text aims to encourage a collective environmental consciousness and to stimulate behaviour change among citizens. The charter creates enabling legislation for the establishment the producer responsibility and the polluter pays principle as modes of engagement with the private sector. The government is charged with the integration of environmental considerations into all public policies, and actions, and the reconciliation of existing legal and policy instruments with provisions and requirements introduced in the Charter. Indeed, although some implementation decrees are still pending, the legislative landscape is relatively complete, with specific reference to law No. 11-03 on the protection of the environment and law No. 28-00 relating to the waste management system, from collection through transfer

safely and adequately. As these laws enter into force, waste governance is challenged by the social and economic realities of the existence and activities of the informal recycling and waste sector.

Fortunately, the urgency and the need for progress in waste management is broadly anchored in the «PNDM» (NPMSW), the National Program for Municipal Solid Waste (MSW). Morocco has a population exceeding 33 million and produces more than 6 million tonnes of MSW annually. Planned rapid economic development, increases in population, pressure on urban areas that peri-urban settlements, suburbs and new satellite cities and industrial areas, challenge both the capacity and technical adequacy of traditional waste and recyclables collection systems. The result is a traditional system which cannot keep up, and fails to adequately collect, treat, and dispose of the quantity and variety of urban wastes.

The PNDM, a program of the Ministry of the Interior, the Department for the Environment, and supported by the World Bank has a budget of nearly 40 billion dirhams. Local Authorities provide funds to cover about 70% of the total costs, 15% are on the State budget and international cooperation, 12% provided by waste fees and other taxes, clean development mechanisms contribute up to 3%.

Within 6 years, the PNDM has managed to increase the professional collection coverage from 44% to 80% with a target of 100% by 2020, a goal that requires that all of the city managers are able to mobilise the funds to provide infrastructure for recycling and for disposal. Among its ambitions are the closure and land reclamation of all of the open dumps and illegal dumpsites, and significant development of the recycling value chain. The methods projected are well-defined, and include taking into account the integration of informal recyclers and their collectivities, such as associations and cooperatives. This inclusion strategy has a clear goal of socio-economic integration, but also a green jobs component, with explicit reference to respect and human dignity. This is all the more urgent since the number of direct jobs and indirect jobs livelihoods related to this sector is estimated to be more than 50,000. Also according to sources at PNDM, informal recycling manages 5% of all waste and generates nearly 900 million Dhs. per year of income. So the officially recognised financial impact of informal recycling – likely to have been underestimated – is already very significant.

Figure 27. Examples of solid waste recovered inside and at the factory entrance or the loading dock.
Source: Wincy.

Alongside the issues of MSW, industrial wastes form a related set of problems. These materials often follow residual waste to the disposal sites, and are not captured for valorisation, primarily due to a lack of infrastructure, practices, and systems for source separation, sorting, and processing. Most recent estimates is that the volume of industrial waste generated comes to around 1.57 million tons of waste annually, of which about one sixth, or 256.000 tonnes, are hazardous materials having a value of 300 to 400 million dirhams per year. Industrial professionals are nonetheless aware of the shortfall in capacity, and it should be clear from this that in Morocco, the development of recycling opportunities is both highly significant and deeply under-developed.

The private commercial activities of the recycling sector in relation to the recovery of recyclable materials is characterized by a dual organization: on one side the so-called industrial sector, which involves organized and licensed industrial operators (wholesale suppliers, importers, recovery operators, etc.) and on the other side, the vertical structure, mainly informal, starting with extraction, and resulting in the industrialization of the product. Each of the two channels has its own methods of management and organization, its own operators, sales channels, etc. However, both channels have the same recovery downstream and export markets, and there is a high degree of interdependence

The so-called informal (or artisanal) sector starts its work with the capture of waste from the generator or the household. Materials move through primarily informal channels up the value chain and informality stops when the materials are traded to the industrial that recycles the products in the process or exports them. The industrial is either formally known, or himself belonging to the informal sector.

The industrial sector is currently extremely active, with sales volume that – according to national statistics—is increasing every year. It is based on a supply chain that always starts with the informal sector, and that passes through organized waste recovery plants and also depends on the import of secondary resources, and second-hand or recycled products. Among the market are plastic, paper and cardboard. Other products are imported as mixed scrap but generally in smaller volumes.

For industrial solid waste the concept of the value chain is the cornerstone of the entire recovery system. Intermediate processors all along the chain pass materials to exporters, and the story quickly becomes one of export, globalised markets, and published commodities prices. The formal sector consumers have no recourse other than to rely on informal supply routes alongside imports, particularly when it relates to fibre (cardboard and paper) and metals. These last represent the high-value aristocracy of the recycling world, and occur seldom and in small quantities in MSW. Traders operate at the intermediate level and mainly export to Southeast Asia rather than trading locally. It is not clear whether this choice relates to price, demand, or strategic considerations.

With this situation in mind, we can conclude that the solid waste service chain touches the value chain where there is an interest in separation at source, sorting, and processing, and that these connections are closer in relation to MSW than to industrial waste. Materials recovered from MSW are traded through a number of specific value chains with high value added, which are based almost entirely in an informal recovery system, whose very informality is impeding the growth of these value chains and discouraging investment.

There is an urgent need for public authorities to take control of this sector and its problems, especially considering that both formal and informal actors are well aware of the business opportunities. There is also a fairness issue, as the benefits of this vibrant trading system accrue to only a small number of actors, leaving the problems to the broad segment of the waste pickers who represent a marginalised population. Informal recycling generates economic and environmental value, and contributing to Morocco's flourishing industrial growth in the global value chains, without enjoying the benefits they deserve. For this reason, we think that developing policies of inclusion in the waste management system is a responsibility of local and national authorities.

6.4. State of the art of Informal sector integration in Morocco

What can we say about informal business, or, preferably, the informal economy? Before informality, there is economy, or more accurately, there is business. Very good business, in fact, which certainly has its own rules, and peculiarities, but it is nevertheless a real system with own code of conduct, values, and practices. We hear all too frequently, that it is also a system avoiding taxation, evading labour laws, and lacking social protections for its workers. Are we "afraid of the big bad wolf" in the dark and dangerous woods of informality?

The distrust of everything informal is both old and modern, as informality comes into being only as formal systems grow and mature. The smuggling of illicit goods is what became of private trading, once the system of border controls was implemented. Informal settlements are a product of urbanisation. Informal is neighbourhood, community, tribe, the village, the odd jobs, making and sharing food, «*terfkhobz**».

In Morocco, different degrees of informality coexist, and formal systems have their own ways of moving in and out of the world of the informal! Informal systems have their dark sides as well, from discrimination and sexual abuse to child labour, to the lesser sins of failing to calibrate scales or leaving garbage all over the street. And waste is a dirty business, in many senses of the word, so that the informal waste sector ends up doubly stigmatized, for their identification with Zbel*, (the word Zbel having a very negative social connotation). So even formal waste companies are in a dirty business, and informality adds to the stigma.

Notwithstanding, the value chain brings together a wide variety of trades ranging from street scavenging, the extraction of materials in garbage bins and containers, to informal selective collection, to small, medium and large traders and specialised materials processors. Among the most common occupations, we can find:

- Micro-collectors: who are responsible for the removal and transport of waste from households to communal containers or informal dumps. This service chain activity is limited to underserved peri-urban areas or neighbourhoods, traditional and temporary open markets, or other places where waste is generated and where waste management companies do not collect;
- Street, dump, and truck pickers, who extract valuable materials from mixed waste. They work on landfills or in the streets, rummaging and searching in bags or cans of garbage. Street pickers work on foot or with a wheelbarrow.

- *Itinerant waste buyers* (IWBs) go house to house, and are usually pushing a cart, leading a pack animal (mule or donkey, or, if they are better off, riding a tricycle, or driving a van
- Small junk shops and processers, who have more infrastructure, and often permanent premises, and who process, stock, pack, and the products of their recovery.

The numbers of collectors in urban and urban surroundings grow with urbanisation, the exodus of rural families to the city, and the increasing economic insecurity with loss of secure and stable income. Economic growth requires, Morocco, like other countries of the South, a response to an economic boom and the movement of many people to cities. Workers see their numbers increasing even when their profession remains the same. The challenge is that sanctions or too heavy of a hand in formalisation can mean the kiss of death for the sector, the end of its growth and opportunities. And the global demand for materials is not likely to stop in our lifetimes, nor any time soon; there is too much opportunity in the price fluctuations for virgin materials, and the business opportunities are too attractive. So these occupations are not likely to be either transient, or to disappear.

With this in mind, it is not surprising that the view of informal recycling is changing, nor that national and international stakeholders are shifting their impression of informal recycling from a threat to an opportunity. The more conscious under interveners and change agents call for building on what already exists. They position themselves to accompany a transition to a global vision of an inclusive (and circular) economy, which many of the highest authorities of the State are supporting. Global experiences of integration and support for formalisation and professionalization — in short, policies or actions supporting and accompanying informal recyclers in their journey– are multiplying, and this vision is increasingly by civil society, government bodies, the formal private sector, and local authorities. One outstanding example already exists in Morocco, at the controlled landfill of Oum Azza.

Oum Azza is currently the only landfill in Morocco with a sorting line between the entrance and the tipping area. The landfill itself is spread over an area of 110 hectares, the remaining operating life is 20 years, at an annual processing capacity of 225,000 tons. Beyond the environmental impact, the project stakeholders operating the PPP (public-private partnership) emphasize the social integration gains. In the project, about 150 dump pickers working at the old landfill, Akreuch, were supported by an NGO to organize themselves in a cooperative called Attawafouk. The model is strong but not perfect, and there are, in particular, challenges to the marketing of materials via the cooperative. Notwithstanding, the experience has had some gains and represents a strong signal about the political will to integrate the informal sector. Perhaps

more importantly, it is a signal as to the willingness of the parties to engage with each other in dialogue, and an affirmation that they at least have passed beyond the tyranny of ignorance, fear and stigmatizing of "the other.".

Figure 28. Examples of the sorting centre that offers pre-treatment and recovery at the entrance to the Oum Azza landfill.

Source: Photo from a presentation of Oum Azza CET, by Groupe Pizzorno Environnement TECMED in December 2013, repeated at the SWEEP-Net Forum in April of 2015.

Another example of integration is also worthy of mention: the sorting centre of Sidi Bernoussi in Casablanca. The Casablanca metropolis alone contributes 20.7% of national GDP (HCP, 2012), and represents a concentration of nearly half of the industrial base of the Kingdom. The Greater Casablanca conurbation's population of approximately 4.3 million (census of 2014) represents 12.6% of the total population. When Casablanca has a problem with waste, the whole country suffers.

Casablanca is better known as the hub of all Moroccan value chain activity, and therefore the most significant concentration of informal recyclers. Different studies talk about varying figures; the estimated number of informal recyclers at the national level was 10,000, but perhaps it would be more accurate to use 5000. In Casablanca, recent study (less rigorous than a census) done by the local authority, documents about 1,200. All agree that waste pickers are highly visible in all parts of the city, and this awareness has made it into the media and into the political discourse. Social aspects, health conditions and the hard work of a Casablanca waste picker are widely reported by the media and civil society. The city authorities are actively seeking advice on creating an integration plan.

This sense of urgency has been the driver for the development of the sorting Centre of Sidi Bernoussi: it is more an intervention to change operations, than a pilot project. Indeed, this

project that falls within the framework of the INDH (National Initiative for Human Development) led by the Prefecture of Sidi Bernoussi with technical and financial support from the private sector. This operation targets seven neighbourhoods of the districts of Sidi Bernoussi and Sidi Moumen and falls within the framework of the implementation of the objectives of the National Waste Management Programme (PNDM). The overall budget allocated to the sorting centre, which has an indoor area of 2,600 m^2, is around 9.4 million dirhams. This facility is composed of a platform for sorting, recycling and recovery of MSW, and cold storage rooms for organic waste. Formalised waste pickers responsible for the door-to-door or community collection have tricycles for collecting and transporting the recyclables between their collection point routes and the landfill entry area. The collection points are delimited and clearly identified, and equipped with coloured 2 m^3 containers colours promoting separation at source and deposition in the containers.

As in Oum Azza, the collectors are former waste pickers, who have been integrated into the workforce of the project. The goal is to integrate 60 persons, or about 5% of the city's estimate of the total number of waste pickers. According to these former street pickers, the working environment is healthier, more regulated, they have working hours from 8 am to 5 pm, so that they are free of dependency on junk shops, and they no longer have to work at night. The working conditions are better for their health; they no longer work in the dumpsite, and they have adequate clothing, masks and gloves. They say, if you ask, that this project allows them to live and not just to survive. The centre is now operating in a shakedown period. It is not about technology, but about a change of attitudes and habits – not only of the households, but also of the waste pickers themselves. In spite of their appreciation of the improvements of integration, what Mr. Mbarek told us is true: the tricycle collectors are tempted to sell the most valuable products of their collection directly to the junk shops, rather than bringing them to the centre.

Figure 29. Sorting Centre at Sidi Bernoussi

Source: Photo press (Lematin.ma 07/01/2015)

Civil society participates in its own way, and according to its abilities and resources, to focus on this issue from an environmental and social point of view. Two experiments are interesting to highlight. The first is that of the Bahri association and the second is ZeroZbelXperience of a blogger.

Figure 30. Bahri Publicity Flyer

Source: Bahri Association

The Bahri association has taken the protection of the coast and the ocean as its mission. The development of environmental awareness and dissemination of the principles and practices of sustainable development are also central to its values. It creates targeted actions involving the general public, the private sector and also local authorities, including the city of Casablanca, using a variety of tools and approaches.

Its flagship operation "Bahri Dima Clean" celebrated its 9th production in June 2014. Volunteers cleaned the beach of AïnDiab in Casablanca and succeeded to remove 6.3 tonnes of waste during one morning. This association has enjoyed major support from Hakima El Haite, the deputy Minister of Environment.

Recently, the association started the process of informal integration, and, with the support of its partners, provided collection equipment – an electric bike with a container for transport and sorting, as well as distinctive uniforms. to 300 informal recyclers in the city. This initiative has created a buzz on social networks: Hamri the waste picker (his real name is Mustapha El Hamri) is the first waste picker who benefited from this operation. Quickly he became a character in the first Moroccan Integration Reality Soap: he is featured in television interviews, comics, extracts of his stories, launching of a Hamri TV show. Best of all, this is a real person, who can be reached by phone and offers collection services. The experience is interesting and works: an experimental action has become reality. It also confirms – and presents to a larger public – the depth of expertise that this type of professionals have about waste and recycling, and shows everyone their entrepreneurial talent and spirit.


Figure 31. Example of mixed waste in the containers of the tricycles

Source: Wincy.

ZeroZbelXperience is an initiative of a young Casablanca blogger who launched the following challenge: «*I will seek (and find) simple solutions in my lifestyle and my consumption that minimize the amount of waste I generate ... and I go for the great ideal of ZeroWaste/ZeroZbel!*».

This blogger pursued the zero waste experience into the area of launching large-scale events at which the focus was on producing minimal waste. He followed waste from his home to the famous Médiouna dumpsite on the outskirts of Casablanca, which receives more than 3,000 tons of waste per day where there are between 300 and 500 informal waste pickers who serve as the classic example and object lesson of all environmental, social and economic ills related to urban waste management. ZeroZbel* used citizen activist approaches to put the spotlight on the issues faced by dump pickers, and indeed all waste pickers.

This young man took his passion beyond sorting and recycling his own household waste, nor did it stop with a tour of the largest landfill of Greater Casablanca. His point was quite radical: even for persons of extreme goodwill and commitment, finding a formal path to reduce and recycle domestic wastes is close to impossible.

The obdurate and impermeable complexity of the informal sector in general and informal recyclers in particular, has been confirmed through a number of other experiments, experiences, and studies. In the context of the implementation of the National Strategy for the MSE (micro and small enterprises) Sector, for example, the Ministry in charge of economic affairs ad business, in 2013, launched a project to promote various sectors of value chains. The recycling value chains received a special focus among the value chains selected for study for the Greater Casablanca Area. Here too, the informal sector emerged as central to all of the economic activities,

especially in the two value chains that received a specific focus: used oils and plastics (MAGG, GIZ, 2013). The analysis of these value chains in particular highlighted several important sub-sectors. Specifically, the analysis of waste oils, while investigating a multiplicity of actors and outlets, returned time and again to the waste picker at the base of the pyramid.

6.5. Mbarek, Saïd, Driss, and the others

"Dumpster diving," that is, picking waste set-outs or scavenging containers, is how many rural migrants find a way to generate income on their first arrival in the city. It is an activity for newcomers, homeless, unemployed and for those who are disadvantaged on a variety of dimensions. Unlike Roma in Europe or Bangladeshis in India, street picking in Morocco is not the exclusive preserve of any specific ethnic group or minority. The population of waste pickers is very uneducated, even illiterate. It is male-dominated, except on landfills where women and children are more often working. The age varies, from around 6 or 7 years to around sixty years. Their lifestyle is pretty rudimentary.

Waste pickers often – but definitely not always – live in in peri-urban settlements, which, in the best case, are adjacent to but not on the landfill, and close to unclaimed land or common territory. From the fieldwork, it appears that swine feeders and those collect organic waste for livestock feed in the suburban areas. They live in dreadful conditions, sometimes sharing rudimentary shelters with the animals. Waste pickers who have access to higher-quality recyclable materials waste are better off, both in terms of revenues and living conditions, but they are still marginalised.

The value chains are pyramidal, with the street and dump pickers forming the base. The base being the waste pickers; these waste pickers sell materials directly to a junk shop or an intermediate processor who will in turn sell to a trader or broker or exporter. The materials, purer and better packaged, find their way finally to end-user industries in Morocco or abroad.

In this system, children and old women represent the most fragile population. Children are mainly found on landfills, adolescents are among itinerant buyers and street pickers. Many are orphans or abandoned children who do not attend school, or in case of newcomers to the city, it is possible that they have never been to school.

Generally speaking, for the waste picker at the base of the pyramid, the working conditions are deplorable. The lack of a policy commitment to separation at source reinforces the difficulty of

their task. It is said that the more the waste picker moves and «grows», the more he is able to improve his revenues. Keep in mind, they have free access to a recoverable mine, the question is: what is the degree of resilience? Mbarek started at the very bottom of the chain, after 16 years he is about to install an informal unit to produce detergents. He has cleanliness in the blood! Saïd has only one passion, to save some money and return to his native country. Driss the youngest does not know what he will do tomorrow, but for the time being, he wants to be visible, respected, to have an occupation that has a name and a status.

6.6. Vision and perception of the informal sector by other stakeholders

For a large industrial generator operating on the outskirts of the city, the *Bouaari* is the answer for the waste dilemma. His role is critical, since he extracts value from the worthless. However, the industrialist wants nothing to do with him, and organises his invisibility. Waste is set out on the outside of the factory gate, what happens outside the factory does not concern him. See no evil. Waste is his problem, this is a solution is as good as any other. The Manager, let us grant him a little more social and environmental consciousness, bemoans the failure of the city authorities to have produced a sanitary landfill, and criticises them for not organising formal recycling. Just now it can't be helped, he sees that working with the *Bouaari* is a «necessary evil», but – he says a shade too righteously – of course this cannot continue. He has certifications and supply chain requirements that he worry about the end of life of his waste. The itinerant scrap collector cannot usually give him a certificate of safe destruction. Sure, he is in favour of producer responsibility, polluter pays, these should be implemented as soon as possible. And yes, it would be perfect if the laws in Morocco are strengthened. But enforcement must be accompanied by measures to support enterprises, otherwise it will have no – or even an adverse -effect.

He revs himself further up, explaining that it is past time to require that formal recyclers operate based on specifications books that make their roles and responsibilities clear. For the private sector, the primary producer of industrial waste, the cost of treatment and disposal is crucial. They are less concerned with integrating the *Bouaâra*. We can find such an example in the industrial area of Tangier, where the association of industries (AZIT) created an opportunity for its members to organise pooled services, including the collection and recovery of waste. Informal actors were excluded from the area. Even though the *Bouaâra* are private entrepreneurs, their conditions of work do not remain their private concern, they become the subject of public outcry.

The public authorities, in particular the communes and municipalities, find themselves between a rock and a hard place. They have the difficult task of ensuring urban cleanliness, public welfare and prosperity. They are under pressure to move beyond delays in implementation that have retarded the modernisation of the waste sector in their cities for decades. They no longer have the right to make mistakes. A contingency plan is in place. But the challenge is considerable. The famous PNDM allowed to develop a vision and made resources available. The Bouaâra constitute a barrier to deployment of such projects. Municipalities multiply awareness actions and launch studies to better understand the social and societal dimension of this problem. They are well aware that this is a case of «big money», certainly a part of the recycling chain is highly marginalized, but lobbies, intermediaries, wholesalers and recyclers, who are stronger, benefit regardless of health working conditions and of any consideration for human dignity. The call of the informal is permanent, it is the call of the immediate money, not easy but immediate.

The manager of a multi-national service company in charge of urban cleansing, often a daughter organisation of an international holding company, is obsessed with his contract to make waste disappear, and demands of the authorities that they fix the issue with informal recyclers. The informal recyclers disturb his operation because they have the practice to de-containerise "his" waste. Worse, the Bouaâra vandalises his containers, takes "his" recyclables, and leaves a mess behind, without taking the time to replace the unwanted waste in the containers. The containers are messed up, waste is all around on the sidewalks and streets, and immediately begins to attract other waste. This doesn't help the agents of the cleansing company do the job for which they are contracted and paid. In Casablanca, the new recycling containers follow international standards for igloos for separation of organic waste, and are supposed to stimulate voluntary participation in source separation and recycling.

And maybe it is true, European standard containers are more beautiful and ergonomic, but this doesn't suite some citizens, who don't bother to open lids, and instead throw their waste on the ground around the container. The use of garbage bags is not yet common practice, and it is true that it is difficult to open the metal hatch end to hold it open while emptying the waste. And sometimes the hatch dirty and yucky, and the clients don't want to touch it to open and so they nicely dump their materials on the outside.

Nor do the beautiful European containers suit the waste pickers, who see the hatch as a barrier between them and the valuable recyclables in the containers. They opt for a more radical solution, then simply remove the hatch and reach into the container. And that hatch, well it will sell for quite some dirhams per kilo, it's metal...

Figure 32. European standard container, with jammed hatch and waste on the ground.
Source: Wincy.

Figure 33. Hatch has bee removed, but the waste is still on the ground.
Source: Wincy.

The manager in charge claims to believe that encouragement of source separation could greatly facilitate his work. He is launching some pilot projects, alongside an awareness campaign to socialise and spread the changes. He invites participation of civil society, each organisation according to its interests and means. He seeks to encourage the collectivities created by public-private partnerships.

Donors contribute generously, recognising the urgency for improved waste management in Morocco, to keep up with the sustained and highly valued economic growth. There are various programs of the GIZ funded by the German government, and financial support from the World Bank, and some others. Donors confirm their understanding that integration of the informal sector – even at the level of simple recognition and acknowledgement – is a necessary element in a modernised solid waste and sustainable development policy landscape.

The Ministry of Environment works together with the Ministry of the Interior under the umbrella of micro private sector support in the PNDM framework. They put forward informal integration, via a sorting centre in association with the organization or cooperative of informal recyclers, to replicate the successful implementation of the sorting centre of Oum Azza or Sidi Bernoussi.

It is both interesting and positive, that all of the positions we have encountered share the merit of taking into account the socio-economic and environmental dilemmas posed for the society by the Bouaâra. Less productive is that each, according to his or her positioning in the service and value chains, has more or less hardened opinions. A shift to positioning that is more nuanced, "neither black nor white," "neither right nor wrong," is to be applauded, especially when it comes from public authorities that face the institutional challenge that the Bouaâra operate outside of

the law. It would still be easier to ignore this challenge by turning away, so it is positive that this phase has passed.

But despite the increasingly open and nuanced discourse around informal recycling, it is not yet possible to speak of structural integration of the informal sector. Does informal integration belong in the policy of private sector participation (PSP) or social inclusion or labour rights? Rigorous evaluation and analysis, and consultation with the informal participants, could form the first steps towards a proposed business and governance model for widespread structural integration.

The only two precedents, the NGO project at the Oum Azza Landfill and the public-sector project at Sidi Bernoussi Sorting Centre, each have a restricted scope, and respond to very direct technical questions related to landfill-based operations. The Sidi Bernoussi results are preliminary, very new, and open a Pandora's box of new questions and challenges. The Sidi Bernoussi project of the INDH also has a cross-sectorial aspect to reduce social exclusion and vulnerability, as well as to solve a technical problem of sorting and recovery. The replicability of this project, and others like it, remains to be seen. There is the much bigger question of which integration model is to be adopted, how is it to be financed, and how will it be framed?

The case of Oum Azza, presented as a success story, remains a model specific to landfills, and one that depends on NGO facilitation. Moreover, landfill picking is perhaps the easiest form of waste picking to authorise, control, and/or integrate, and the World Bank has already established many principles to do this. Integration of landfill pickers is one of major axes of the PNDM process, but is limited in scope and vision, not least because in the case of landfills, there is talk of a sedentary population of waste pickers living on the landfill, whose options, in part because of fear of expulsion, are quite limited. In other SWEEP-Net countries, and in the Guideline of the Inter-American Development Bank, it is clear that this form of integration is an interim step, as the presence of waste pickers at a landfill is in most cases a transitory phenomenon and will end when the landfill is closed or upgraded.

The Sidi Bernoussi model is in principal more robust, specifically in its features of (a) moving the sorting and extraction process off of the landfill, (b) creating a facility outside the tipping area, which has (c) modest infrastructure, health and safety protections, and certain standards operation, in combination with (4) the benefit of social housing outside of the landfill. This Casablanca integration intervention, while it remains partial, has another strength, in that it makes a backwards integration into the collection process and in this way involves street pickers

as well. There are no known integration efforts in Morocco that focus primarily on street pickers, and this makes the Sidi Bernoussi experiment doubly interesting. It is precisely this point which has created a stalemate in Oum Azza, as the landfill pickers in the Association have more or less forbidden the NGO to "deal with" the street pickers there. Integration of street pickers has been the focus of the Tunisian project Structural Integration, profiled in Chapter 7, making exchange of information between Morocco and Tunisia, both forward-thinking, democratic, and coastal, an important next step.

The political will shown by officials in the Environment Ministry to study and better understand the informal recycling sector and the lower levels of the value chain, follows both of these pilots in terms of proposing to waste pickers that they organise themselves in an association. As the Tunisian pilot projects have shown, this strategy is more risky and probably less feasible than it at first glance appears. Unlike the population of relatively sedentary dump pickers, the population of street pickers, IWBs, mobile traders and hybrid service providers is mobile, indeterminate, and flexible. Points of organisation are difficult to identify, other than the small neighbourhood junk shops, and the very mobility of the pickers means that their loyalties also shift quite easily. The opinions and ambitions of the waste pickers themselves are critical to identifying appropriate integration strategies, which makes the role of consultation, dialogue, and picker-led development much more important than it is in landfill-based integration strategies. Perhaps for this reason, public officials and doors tend to show a marked preference for landfill integration projects.

In Morocco, dialogue and other participatory techniques do characterise a number of social integration initiatives. A Ministerial-level department, within the Ministry of Industry, is dedicated to the "problem" of informality for informal workers in many sectors, including recycling, but its activities in the recycling area have so far fallen short of ambitions or interventions to leverage any form of structural integration. There are high expectations for achievement in this area following the passage of the law governing self-employment (law 114-13). The new statute is aligned with the strategic commitment of the Moroccan Government to promote inclusive growth. The main lines include promoting youth employment, using a social safety net to reduce vulnerability, and the expansion of social protections; with the ultimate goal of reducing informality. Finding interim or long-term solutions for the problems and challenges of the informal recycling sector is especially urgent because of the sector's size and specific characteristic, and because in this sector, integration is about position, recognition, and, ultimately, human dignity. The relevant Ministries have the challenge to design and propose instruments for integration that attract the active participation and agreement of the informal recyclers themselves.

6.7. Small steps on the path, the route, and the highway

In Morocco, we are fortunately beyond the idea that the informal sector needs to be eradicated, especially in the short- and medium-term. A fragile consensus is emerging, that it is no longer possible to turn away, and recognition and the beginnings of dialogue represent the first steps, which have, at the time of this writing, the first levels of official status. The feet are on the path, where do we go from here?

The path leads toward a variety of forms of *recognition* and *acknowledgement*, not only of informal recyclers as individuals, but of their role as operators occupying economic and environmental niches in the waste management system. The first levels of the path, therefore, begin within the formal waste management sector, **orienting and training all staff and officers in the municipal cleansing institutions** to become aware of the nature of informal work, its benefits and risks, and the fact that it brings the value chain and the service chain into a closer relationship to each other. This can be followed by a commitment to collect and share data, register information, give the informal sector a presence in reports and analysis, and understand the dynamics of their relations to the waste management system as a whole, including points of synergy and friction. This leads, further along the integration path, to recognition of the status of informal recyclers as part of the system, and inviting their **participation and engagement in processes of project elaboration, planning, policy development, and implementation**.

Social integration is also on the roadmap, with a focus on understanding the social problems of the most marginalised individuals and families in the informal waste sector, and maintaining regular contact with these persons, many of whom will be elderly women, children, recent migrants, and the homeless. A first step is strengthening competence within the Social and Health ministries, to recognise, analyse, and intervene appropriately and respectfully in cases of extreme precariousness. Mapping and a census are indispensable in this **process**; less obvious but equally important is the role of **occupational recognition** which creates a professional identity and a connection to legal identity, social security, access to financial services, and the like. Creating access for informal waste and recycling workers to medical care and social services are also first steps along the path to social integration, and can be combined with other interventions including offering them work off of the landfill; supporting them along the route to secure housing and putting their children in school; and creating a functioning social safety net that reaches out– institutionally and geographically – to support them in their communities.

All roads have signs and signals, and in this integration journey, they take the form of **public education**, **information**, **and engagement.** ZeroZbel started this, and building on the success of Hamri in the Integration Story is a good direction. Better public image, understanding, and support help both in practical terms – as the waste set-outs will improve in cleanliness and quality – and in strategic terms in terms of public support for integration at the level of both electoral and neighbourhood decision-making. A stop along the way in this may be visible ID cards, badges, connecting waste pickers to specific routes, and supporting personal contacts between informal recyclers and their clients. Opening and strengthening channels of communication are critical, as is the idea that communication is multi-directional. All to often, "socialising" information means telling or propagandizing or convincing, like the traffic light or sign; a better interpretation would be participation, consultation, dialogue. At the political level, creation of an ad hoc committee representing the various stakeholders could be established, and charged with creating and maintaining open pathways of communication with the informal sector and the value chains.

Institutional anchoring of integration is an important aspect of the path, and will represent one of the destinations of the AutoRoute. Given the level of commitment to the topic of the value chains and institutional support to formalisation within the Ministry of Industry, the integration route through the mechanism of PSP, private sector participation, and public-private partnerships (PPP), seems to be the most likely and feasible direction for institutional anchoring. Along the way, there will probably be a need for development of a new type of public-private-private partnership (PPP), that resembles the current Business to Business (B2B) relationships between informal recyclers at the base of the value chain, and other value chain actors "higher up". Informal recyclers are already actors in the value chain, and supply formal channels, it remains to be seen if the institutional form of these supply relationships can be transferred to the service chain. A next stage along the way is working on legality and contribution to the tax system. The new self-employment statute paves the way for some – if not most informal recyclers, but probably not for Mr. Mbarek or Hamri: their self-identification as entrepreneurs has already moved them into the category of businesses.

The teenage waste picker and the old woman

One fine day, in an upscale Casablanca neighbourhood, an elderly woman encountered a young man – a teenager really – who was rummaging in a waste container. Maybe this lady was a tourist or a foreigner. In any case, according to the young man, she pulled him from the trash can and offered him a flower. It was his last day of scavenging. Years later, this young person has become a university graduate, a responsible adult, a father, a manager, located in the upper echelons of the society. He is happy with his life, and above all, he is grateful to that one old lady, who literally picked him out of the trash.

Developing an instrument / financial package which will ensure the concept of immediate gain and consider future integration of the informal sector projects.

6.8. Glossary of Moroccan words used in italics in the chapter

Local word	Alternative spelling	Arabic spelling (Moroccan)	French	English
Baiaa mourtachayates	//	مرتشيات بائع	Vendeur de détritus	Trash seller
Bakchech	//	بقشاش	Fouineur	Snoop
Charika dial Zbel	//	الزبل شريكة	Société de nettoyage public	Public cleansing company
Ferrache	//	فرّاش	Vendeur à l'étalage/ Colporteur	Street hawker/ peddlar
Gandoura	//	كندورة	Tunique longue	Robe, Tunic
Karossa	Karoussa	كروسة	Charette	Cart / wagon
Lebyassatesfihoumflouss	Lebyassates fihoum flouss	لبياسات فلوس فيهوم	Pièces à valeur	Replacement parts with value
Mikhali	Mikhala	مخالي	Chiffonier	Rag picker, waste picker
Moullaferaille	Moul la feraille	لفراي مول	Ferrailleur	Scrap dealer
MoulZbel	Moul Zbel	زبل	Eboueur	Garbage collector
Terfkhobz	//	خبز طرف	Morceau de pain	Piece of bread
Zbel	//	نفاية /زبل	Ordures	Garbage

Chapter 7. In Transition: Integrating Egypt's Informal Waste Sector

Egypt's informal waste sector is in the spotlight as the country undergoes sector-wide solid waste reform. This strong and resilient group find themselves at a defining crossroad. The stars of our show are caught between pure excitement, blissful hope, extreme caution, wariness, and disappointment verging on cynicism. As the various interventions begin in earnest, some people's positions working in the informal sector are changing, while others remain stagnant. The bulk of the interventions aim to create small-medium enterprises (SMEs), and facilitate the Zabaleen's[17] access to garbage (waste) collection contracts.

Emotions run the gamut, depending on where the person is in the integration dance. Those in queue to become formalised companies radiate excitement, as they discuss expansion plans

"Hello, welcome! I am the manager of this recycling factory!" 3 El Touny's general manager proudly declares. Her colourful outfit matches her glowing enthusiasm as she slowly waltzes through her family's small trading company. Their business is situated in Port-Said's garage district next to the mouth of the Nile river. The owner, general manager, and human resource manager warmly greets us at their metal gate made of aluminium sheeting. Their business houses the bare essentials, an open gazebo space, which doubles as an office, and a loading/un-loading area in the centre. "Here we store low-density plastics and here high density plastics, currently we have 20 workers that collect waste door-to-door, but we also buy some of our recyclables from street waste pickers", she happily states. Her husband eagerly jumps in and shows me the colourful public awareness flyers showing citizens how to separate wet from dry waste. Her father then proclaims, "I have been waste picking for 32 years, but I am most proud that my company was registered in January 2015. The owner announces with joy that when 3 El Touny signs their contract with the city of Port Said, he will expand his workforce to 40 employees. As we are wrapping up, the owner explains that while their business strives, transporting recyclables to the sale point, 100 km away, is a serious economic challenge. The tour ends with a quick look at their truck, with a bed painted half-blue for dry waste and half-green for organic waste.

Box 1. Integration Experience: In Queue for Formalisation

Source: Elaborated by the authors based on an interview and site visit in April 2015.

17 Zabbaleen are a Christian minority group that dominate the informal waste sector in Cairo.

and new operational opportunities. Companies already formalised are grateful, but they err on the side of caution about how it will ultimately affect them. And those waiting to get into one or another integration system, are still hopeful, but remain sceptical about what the future holds, and afraid that the opportunity will pass them by. Interviews with enterprises in each of these states are presented in boxes, below.

The varying emotions demonstrate a slow shift in the waste picker's perceptions depending on their position in relation to sector reform. For example, newly formalised waste pickers start to see themselves as businesspersons rather than employees. With their newfound attention, the informal waste sector is gaining access to new opportunities and obtaining a new voice. Generally, the Zabaleen try to stay positive and wait to see what happens, despite an underlying mistrust that lingers between the informal and formal sector.

Yes, for years internationally acclaimed newspapers such as the New York Times and the Guardian have documented this hard-working group. But today's limelight is different. After about 50 years of dealing with neglect, strict resettlement policies, and being dismissed as thieves, today the Zabaleen find themselves in the eye of the integration hurricane.

The Egyptian local/national government, local/international NGOs and private companies are all working to achieve integrated and sustainable waste system reform. This time everyone is keen on "getting it right", after the "horrific" mistake allowing foreign multinationals to manage Egyptian waste in key cities like Cairo, Giza, and Alexandria. The push for inclusive growth also stems from the global trend, which recognises the informal sector as an important player in solid waste management systems.

These developments are unfolding in a waste management climate characterised by determination, passion, high levels of interests and a feeling that testing of new approaches is important. For example, one approach being tested is contracting local NGO service providers. These projects are not clearly evaluated, and seem to have promise, but not in all situations.

Political and governance factors are favourable and highly dynamic. On the one hand, the actors hold the shared goal of reforming the waste management system in order to improve public health, provide better sanitation services, reduce unemployment, and integrate the informal sector. On the other hand these same actors are often acting in parallel, without taking the time for creating structural communication channels, which might ultimately yield better results. There is no consensus about the process in sight, yet this is what is needed for finding synergies

"I am grateful for the opportunity to become a formalised company, and hopeful that the waste system in Giza will operate well in the end", Mr Mbarek, owner of a recently formalised SME reservedly states. Even though, as former local NGO director, Mr. Mbarek has only been in the waste business for about one year, but his insights are very valuable.

I observe the Giza pilot projects through his eyes[18]. He explains that the project has three phases, two of which are completed. Mr. Mabrouk carefully mentions the changes that came with each phase. "In phase one, my 13 workers collected waste door to door for 5,005 households, and I received 12 Egyptian Pounds (L.E.) per household. In phase 2, my company was assigned a street to collect waste from both businesses and households, and I received one monthly lump sum for my services. In phase 3 my company will return to collecting waste from 5,900 households." After collecting single bags from his clients, his employees sort the waste and sell the recovered recyclables. He continues to state that it is a pleasure to contribute to cleaning his native city, but he sincerely hopes for more communication and collaboration among the actors. The lack of clarity, such as not receiving a copy of his contract, perpetuates confusion.

Box 2. Informal Sector Experience: Already Formalised

Source: Elaborated by the authors based on an interview and site visit in April 2015.

and creating coherent development. Instead, all stakeholders are working on their own, not even aware of how complementary their respective integration work could be. The projects are often implemented rapidly and under pressure, without cross-institution consultation. Many things are happening fast, but it is not always clear whether they are moving the situation in a consistent direction.

While it is important not to delay integration during this great opening for sector reform, the lack of planning and coordination among relevant stakeholders may hinder the development of a clear vision supported by all. In both policy and technical circles in Egypt, it has become possible to discuss and to work on informal integration, but the commitment remains uneven.

18 The government project spearheaded by the Ministry of Urban Renewal and Informal Settlements (MURIS) established door-to-door waste collection service provided by formalised SMEs in Giza, a large city located in Greater Cairo. The initiative will be discussed in greater detail in the section entitled: Status Quo of Informal Integration.

After I pass through a thick layer of flies, three women sitting on the floor sorting waste greet me kindly. Their sorting station is located on the first floor of their multi-family home in the Mokattam Zabaleen settlement. The youngest woman, maybe in her early 20s, introduces the others, "this is my mother and aunt". My tour guide, Ezzat Gundy, a well-known Zabaleen leader, points out the sorted materials: glass and plastics. While her bare hands attentively pick up each item and quickly throw it in its respective pile, the mother explains, "We sort about one ton of waste from 8 am to 4 pm every day except for Sundays. We used to feed the remaining organic waste to our 10 pigs before they were killed in 2009". She explains that the Egyptian government reacted to the global epidemic of "swine flu" in 2009 by "culling" (slaughtering) all of the pigs that were held by the Zabaleen. There was no evaluation of either the economic impact of this to the Zabaleen, who were both producers of pigs and consumers of pork, and neither was there any consideration of the environmental impacts of the disappearance of a system of valorisation for organic wastes.
Then, she abruptly stops, turns, looks at me and says, "Our husbands and sons are out all night from midnight to 6 am, collecting waste. They are tired, and they deserve to be home at night like every other family. My daughter spends all day here instead of going to the university. I am proud of our tradition, but there has to be a better way. Can't the waste come here, can't we have a proper workplace, or can't we own the recyclables? Sometimes, I think I would do something else, if someone gave me the chance. We have no education, so we must stay here and continue sorting waste". Their neighbour enjoying his midday smoking session at a nearby shop echoes their message. This middle-aged waste picker explains, "My son and I collect waste all night where my father and grand-father did before us. We get home at 6 am and then my son must leave for school at 7 am. My father and grand-father were businessmen and pioneers, I am simply a worker toiling for his daily bread."

Box 3. Informal Sector Experience: Not Formalised

Source: Elaborated by the authors based on an interview and site visit in April 2015.

Figure 34. 3 El Touny's publicity flyer
Source: 3 El Touny staff

Figure 35. 3 El Touny's truck prepared to separate dry and wet waste
Source: Rachel Savain

Figure 36. Street public awareness for Mr. Mbarek's company
Source: Rachel Savain

Figure 37. 3 El Touny's workers' uniforms
Source: Rachel Savain

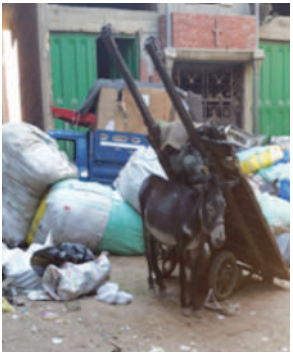

Figure 38. Mokattam's waste collectors means of transportation
Source: Rachel Savain

Figure 39. Sorting area in a Mokattam home
Source: Rachel Savain

7.1. The Context: Egypt's Solid Waste Management Reforms

With improvement in public health and environmental protection as the main drivers for implementing an integrated sustainable waste management system, the Egyptian government is taking noticeable strides at the policy, institutional, and technical level to facilitate the reform and modernisation process. This section frames Egypt's solid waste management reform within the country's larger socioeconomic and political context. The main actors, their goals and specialties are presented.

7.2. Framing Egypt's Story

Egypt has been facing a steadily increasing waste stream, closely related to joint increase in population and the pace of urbanisation. As of 2010, the country was producing about 20.5 million tons of waste annually, a 36% increase from 2000. Major cities' populations also increased at a pace that has outstripped urban planning. For instance, greater Cairo must manage the waste of about 20 million people on a daily basis, double the population of New York City, but with far fewer resources and infrastructure.

Under this burden, it seems as if governmental institutions in Egypt are constantly warding off or responding to environmental crises, in part driven by waste management problems. While

the Zabaleen began their waste collection services in the 1950s, solid waste management did not become a widely addressed public policy issue until the 1980s. By the late 1990s, globally endorsed solid waste management privatisation experiences appeared to promise a panacea of solutions to repair inadequacies and inefficiencies in the then-operating system. In the pro-privatisation policy environment, several European multinationals won full operational contracts in Cairo and Alexandria between 2002-2017. The official explanation for looking for European participation, was that the Zabaleen were only collecting about 50% of the waste produced, and the city needed support to increase collection coverage and improve overall public sanitation. These multi-service contractors first sought to shift to community containers, and when that did not work, they re-re-introduced Zabaleen into the collection services, either as employees or indirectly via sub-contracting. The Zabaleen remained part of the system, but the modernisation process pushed them further and further down the pyramid, reducing their autonomy and worsening their economic situation.

Today, the formal and informal solid waste system stakeholders perceive the solid waste management problem slightly differently, depending on their position. All seem to agree that the privatisation process via large multinational companies failed to provide sufficient and affordable services. In Cairo and other cities the expectations and financial conditions for the privatisation were neither clear nor transparent. Local government did not really understand the political, institutional, or financial implications of contracting, and the internationals were not prepared for the complexity of the city, nor the realities of the financial offer. As a result, the companies implemented a container-based secondary collection system, which never really worked because Egyptian households were used to door-to-door collection services. At the time of this writing, there is a fragile and somewhat unstable consensus that this task should return to the Zabaleen, who want to do it and have the experience, but under better working conditions and with improved results.

In terms of formalising and integrating the informal sector, the government remains primarily focused on collection, and concerned with reducing public health problems and minimizing the inconvenience and secondary economic and political impacts associated with them. Changed approaches must reduce Egyptians' daily exposure to waste hazards, and the direct contact with large quantities of waste. The traditional Zabaleen custom of processing waste in their living areas represents a public health risk. Container picking moves the activity away from the Zabaleen residential area, but it also has a negative image and creates a perception that the waste pickers only remove what's valuable, and leave the rest scattered in the streets. This creates an environmental issue, around what happens to the non-recyclable waste, especially

when it is left in the streets. The Zabaleen don't create this problem which can be analysed as the lack of adequate, affordable, waste disposal infrastructure, but their level of activity highlights this environmentally unfavourable situation, and all too often, the blame "sticks" to them.

The public sector's other pre-occupation is that the informal sector "takes what is not theirs." This is a common attitude in middle-income countries seeking to modernise their solid waste systems. Faced with rising costs, local authorities generally ignore recycling as long as they do not have to pay for disposal themselves, and only start to care about what happens to waste, when private sector actors appear to be earning money or getting benefits from working with waste and recycling. Whether or not the government has the experience and will to equal or surpass the informal sector's performance is not usually seen as relevant. So at this point of time in Egypt, it has become a priority to clearly define who owns the waste and who is responsible for it at each level of the service chain; this will be a first step to defining each actor's role within the system.

The informal sector's main problem is the lack of access to a variety of rights within Egyptian society. Many Zabaleen mentioned the need for occupational recognition nationwide and its associated benefits, such as social security, increased access to steady income, and financing support for their sector. From the Zabaleen's perspective gaining recognition may relieve the constant exploitation they experience as their lot in life.

The public and the households simply ask for better and more reliable service. In this sense also the international privatisation represented a step backwards for many households, who were told to use a container after years of door-to-door collection service.

As an after-effect of the political shifts in 2011, the larger context has changed. All waste management activities occur within a rapid, dynamic social, political, and institutional transition. Government officials shift positions, institutions and ministries are moved around, and responsibilities change more frequently than is comfortable.[19] Some spill-over on waste management – even in the best of circumstances a multi-disciplinary activity often located between institutions – seems inevitable. Current economic conditions are not especially favourable: both the global economic crisis and the Egyptian political transition have affected demand for recyclable materials, limited employment opportunities, and created economic stagnation.

19 In 2011, Egypt's longstanding Mubarak government was overthrown.

7.3. The Current Situation

Despite the multitude of problems, there is a great swell of energy and ambition to improve solid waste management and have clean and healthy cities. All stakeholders are actively working to transition to an integrated and sustainable solid waste management model: with user and provider inclusivity, good governance and political commitment, and financial sustainability. The main governmental actors, the Ministry of Environment (MoE), the Ministry of Urban Renewal and Informal Settlements (MURIS), and the Ministry of Local Development (MoLD) are actively engaging in a series of parallel approaches and competing interventions to address the solid waste management question. The main challenge is to bring all these streams together into a single, systematic mighty river of change. This calls for joint planning, frequent communication and co-ordination, consultation, comprehensible policies, strengthened financial instruments, and coherent governance and participation approaches. And it requires leadership to bring all parties together in a single agenda.

There is much complementarity, even if not all stakeholders always realise this. MURIS in collaboration with some governorates, is implementing socio-financial integration so fast that it can best be described as "at the speed of light." The intervention principally focuses on offering the informal sector a supported path to register themselves as formal SMEs (small- and medium-sized enterprises). A second line of work is to rehabilitate downstream operations such as compost plants, so that registered SME collectors have somewhere legal and environmentally appropriate to bring the residual waste. The body of practical, on-the-ground experience being created through MURIS's work provides the basis for significant knowledge for the other main actors – and it is to be hoped that they will take the opportunity to draw and learn from these activities.

MoE is working more at the policy and institutional level, producing policy and programme documents, elaborating reform options and weighing the benefits of a variety of informal integration strategies. Both ministries bring a crucial piece of the puzzle to the table, MoE's policy and legal analysis coupled with MURIS's real on-the-ground solid waste experiments. Other ministries, with single interventions, such as the Ministry of Housing's contract arrangement with formal Egyptian enterprises in one city, enrich the landscape of informal integration, either by designing and implementing direct actions, or by changing policies and improving the enabling environment for micro and small (informal) enterprises. The level of attention is high, but it is unclear whether informal integration will make it onto the main agenda for change.
In 2012, the Egyptian government officially launched the National Solid Waste Management Program (NSWMP) co-financed by the German Federal Ministry for Economic Cooperation

and Development (BMZ) via GIZ and KfW. The action reaffirmed the government's political commitment to solid waste management. KfW and GIZ work within the framework of the NSWMP for securing investment capital and providing technical assistance to achieve sector reform at a national level.

The NSWMP has the following main objectives:

1. establish a national enabling framework,
2. finalise a national strategic plan,
3. provide master plan models in several governorates,
4. provide service operation models for primary collection
5. facilitate innovative financial instruments
6. contribute to capacity building within the sector, and
7. improve knowledge sharing and stakeholder management practices.

The National Enabling framework aims to define who is responsible for different aspects of the waste management system, and creates a national strategy for 10-15 years. As per the agreement, the Egyptian government's main task is institutional strengthening and coherence, in the form of responsibility to create a National Solid Waste Management Agency.

The Solid Waste Directives published in November 2014 make a strong commitment to integrating the informal sector in law, policy, and practice, through "recognition and integration of such informal capacities and preservation of their livelihoods." (National Strategic Directives for Waste Management in Egypt, p. 7)

This brand-new national policy document provides a road-map for informal integration, and:

- has structural integration of the informal sector as a key short-, middle-, and long-term objective
- treats integration of the informal sector as an element of private sector participation
- looks to create a level playing field for informal actors, so that they can contract or work on the same basis as other private sector actors;
- includes a framework approach to integration, rather than focusing on piecemeal interventions or pilot projects.
- includes measures for financing and technical integration, as well as social integration
- sets the intention to organise these inclusive measures via a consultative, participatory process
- includes a capacity development approach

In its current phase the NSWMP is projecting regional consultation workshops with all stakeholders in late 2015, leading to a National Strategic Plan in early 2016. The goal is to reform the sector, define disposal options, recommend facilities for different areas, estimate operational costs, and define first priorities in investments. Governorate-level master plans to develop regionally tailored solutions are included in the programme.

Outside of this national and regional planning, the government recognised the need to fix several inconsistencies within the sector. In January 2014, the Prime Minister signed Decree 22 C.a.o.a to create an integrated sector for solid waste management (ISWMS, "sector") within the Ministry of Environment to regulate solid waste management in Egypt.

The ISWMS was established to address a number of inadequacies in the solid waste policy and governance landscape, and clarify legal and institutional frameworks.

The creation of the ISWMS works towards creating a singular entity, a so-called "segregated unit" charged with managing the solid waste system, to replace the fragmented institutional context from previous years. Perhaps the strongest advantage of the segregated unit is that it will have an independent budget, and can be held accountable for results. The future goal is to implement an Egyptian Solid Waste Management Regulatory Agency—(ESWMRA) that coordinates all interventions and stakeholders as well as defines the national strategy. The Agency will be the sole actor; other ministries are represented on its board. The Governorates will be responsible for implementation.

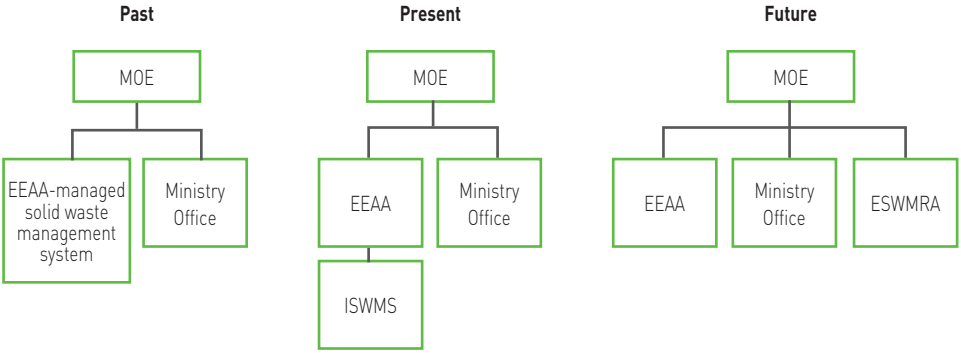

Figure 40. Evolution of organisational structure of Ministry of Environment.

Source: MoE Staff, Ahmed Said, April 20, 2015—some other stakeholders represent this differently

The developing Egyptian solid waste policy landscape demonstrates a growing political commitment to sustainable waste management. Several government entities have met to discuss how integrating the informal sector fits into the current policy paths, and have identified some available integration options. One of these is the SME path, where integration is via registering enterprises, which some stakeholders reported as the result of a 2012 inter-ministerial meeting. This approach is the subject of a cycle of research, testing, and more testing, but the feedback and evaluation element seems to be missing.

7.3.1. Anchoring the policy level discussions

Several policy directions and scenarios appear to be competing for dominance of the informal integration discourse. We can divide them into three main "clusters" of approach, goals, and view of the informal sector and integration – each one approaching the informal sector issue in its own specific way.

4. circular economy,
5. high modernisation,
6. hybrid model

Table 3. Three policy frames for informal integration in solid waste system development

Approach	Goal	View of the Informal Sector	Integration approach- technical and institutional	Service or Value Chain
In this scenario, informal enterprises, duly registered, would become the sole owners and managers of the dry and wet recyclables derived from the waste stream.	complete and optimised informal integration via the route of private sector participation in the solid waste system	small and medium-sized enterprises, who work in the service and value chains, and whose earnings come both from service fees and from valorising recyclables and organic waste.	creating and contracting SMEs throughout Egypt, and strengthening their autonomy and access to economic niches. An example of how this would be operationalized is a proposal for the informal sector to conduct door-to-door collection, transfer recyclables to designated plants, organics to composting, and the (minimal) residual waste to the government-operated final disposal site.	Service chain integration, through door-to-door (paid) collection Value chain integration, where informal enterprises collect and sort the waste streams and have the right to valorise them. It is not clear whether transfer and processing would depend on large public-sector facilities or that this could occur in the value chains.

The *high modernisation route* has at its core the ambition for implementing large infrastructure, such as waste to energy treatment plants, regional landfills, and modern, mechanised transfer stations. In this scenario, the informal sector would be mainly responsible for collection services. The integration options concentrate on absorbing and employing the informal sector into the large and well-capitalised service chain.	Modernise solid waste management through investment in large infrastructure, such as waste to energy treatment plants, regional landfills, and modern, mechanised transfer stations	workers in the service chain, involved in primary collection of waste and/or recyclables, whose income comes exclusively from salaries in the service chain, because valorisation has become the right of large enterprises contracted to governorates and city authorities	Absorption in salaried work in collection crews and workers at stationary facilities like transfer stations and disposal sites	Lower levels of the service chain, as hauling and the operation of transfer stations, treatment facilities, and final disposal sites would be reserved for contracts with large Egyptian formal-sector companies
The *hybrid model* proposes a middle ground in between the first two paths. The main feature of this scenario is to create institutional space for a variety of operators, at differing scales, drawn from the public, private (formal and informal), and civil society sector.	Optimise efficiency, investment, and fairness, with a mixture of moderate-scale inclusive operations, high-technology investments particularly in relation to transfer and disposal, and a mix of instruments for connecting the public and private sectors.	Some are seen as enterprises, some as (current or potential) salaried workers, some as daily workers or piece-workers.	Integration options mix informal organising with opportunities for the enterprise route and workers' route depending on regional and local choices. This collection of enterprises would be able to have contracts or concessions to collect and transfer waste in various settlement types and under varying conditions.	Formalised SMEs, NGO initiatives, and others working primarily on waste and recyclables collection, and larger formal sector companies, both national and international, involved in hauling and large facility management.

7.4. Zabaleen: Global Icons of Informal Entrepreneurs

The Zabaleen are a resilient group – an Orthodox Christian minority – with long-standing waste collection service traditions dating back to the 1910s. In the world, the group is unique, as the

community combines geographical, religious, cultural, historical, and entrepreneurial solidarity. A robust formal journalistic and academic literature document many aspects of the Orthodox Christian community's perspectives and lifestyle, and follows them through almost at every major change occurring in Egypt. In short, the world appears to be inspired and amazed by the Zabaleen, and there is a considerable amount of global empathy and attention for them.

7.4.1. Zabaleen Traditions

In many ways, the Zabaleen, despite or perhaps because of their minority status have effectively navigated the formal waste system, and built their economic activities where they could. The first arrivals to Cairo were farmers from Upper Egypt who started to collect organic waste to feed to their pigs. Today's census estimates the population of informal recyclers at around 120,000 in Cairo alone. Before the swine flu epidemic in 2009 convinced the government that it was necessary to cull (kill) all the pigs in 2009, swine feeding served as the backbone of their traditional practices and the core of their earning models.

Despite being subjected to three forced resettlements, and without owning any land, the Zabaleen managed to build a separate city at the edge of Cairo, Mokattam, now within the city limits. The first of its kind, it now has about 30,000 people living there and is comprised of hundreds of multi-family apartment buildings. Multiple generations reside within one building; a father builds a floor for his son upon marriage and so on. Most families have at least 3 generations operating under one roof. The family enterprises use the first floor of their homes to house recyclables or sort garbage – sometimes creating a health hazard.

Figure 41. Multi-generational homes in Mokattam
Source: Rachel Savain

Figure 42. Recently paved main street in Mokattam city
Source: Rachel Savain

Figure 43. Example of waste collectors' transportation
Source: Rachel Savain

Along with their religious and cultural customs, the Zabaleen have their own inherited traditions of shared work, financial solidarity, and advocacy. On average waste collectors spend five hours covering 30-40 buildings anywhere from four to 12 levels. Their work area is "inherited" as a rights-based concession that is passed down from their fathers and grandfathers. They each collect about 1 tonne per day using (borrowed or their own) trucks or tricycles. Typical companies have two employees (father and son) or four workers (not including the son, if the family has more resources). Some Zabaleen stated that they do not receive fees for door-to-door collection, yet all of the residents interviewed stated that they pay a surcharge to the Zabaleen collectors of between 10 L.E and 50 L.E for their services. This is in addition to the 12 L.E. fee deducted from the electricity bill. Zabaleen women work downstairs in their apartment buildings, to sort the waste that is brought during the day.

The 1970s were a time when some families accumulated sufficient resources, and were able to start to buy recyclables from others, and become traders. These families were able to adapt their business models to handle "new" recyclables, such as plastics, as they appeared in the waste stream, and were able to meet global and regional market demand for them. Beginning in the 1980s, donors such as the World Bank, Ford Foundation, CRS, CEDA, DANIDA, USAID, Save the Children, and others invested in social development and education, and these funds flowed into the Zabaleen communities. Investment programmes permitted some families to take loans, or qualify for lines of credit from informal and social venture funds or to participate in savings societies. In a savings society, each participating family saves about 500 L.E per month, and the collective funds (i.e., 5,000 L.E. if ten families participated) is distributed to one family. The practice shows how the Zabaleen community works to mutually benefit each other.

The Zabaleen have a relatively long history of advocacy, which is anchored in labour unions and associations. In the 1970s, they established their first association for garbage collectors. The goal was to better organise the sector and secure social protections and health insurance. With the same ambitions, the Zabaleen created an independent labour union in January 2012 after a presidential decree in January 2011 allowed any group (outside of the formal professional syndicates, such as lawyers, doctors) to unionise. The union has three branches based on the major Zabaleen settlements[20]. The labour union is poorly funded due to low membership. There are as many as three competing "syndicates" which have a semi-official status, and which are recognised as privately organised groups but not as official labour unions. The Zabaleen report that they don't join the syndicate because they are afraid of getting arrested, which weakens their advocacy position. However, they do have a voice in the private media.

20 Mokattam, Muslim, and a third which has not been communicated.

7.4.2. Emerging Occupations: Expansion into the Value Chains

While most of the Zabaleen are garbage collectors, occupations as small, medium and large traders in the value chain have been emerging, and traders now represent about 10% of the community. These companies have obtained a licence to "trade and export materials", most commonly plastics. Larger traders have more and more types of machines for processing recyclables and have the ability to process larger volumes of materials, and sell at better prices. Larger recyclers have upwards of 100 workers, for whom they often provide housing. Their factories have the capacity to compact, clean, and pelletize plastics. Smaller traders typically own a manual baler, process four tonnes per day, and have up to 10 workers. If necessary, they pay a processing fee to larger recycling companies to pelletize materials.

Figure 44. Small cardboard trader's factory (compacter + truck)
Source: Rachel Savain

Figure 45. Large trader's plastic pebbles ready for sale to exporters
Source: Rachel Savain

Figure 46. Large trader's equipment to melt plastic.
Source: Rachel Savain

According to the business owners, the benefits of their profession are that they have more work flexibility, in comparison to the waste collectors. They work three to four days per week and have more independence. All of the traders reported cash flow difficulties, as their companies have to buy recyclables in cash from waste pickers and then sell to Egyptian exporters with payment in 30, 60, or 90 days, and some reported as much as 180 days, or a half year, to the time that they are paid[21]. Large traders must also accumulate a large inventory since large exporters won't buy batches that are worth less than 1 million L.E., an amount that takes up to six months to accumulate. Smaller recyclers also have trouble paying the steadily increasing export fees per shipment, which rose from 500 to 1600 L.E from 2010 to 2014. The smaller traders also compete against the two Egyptian companies with formal agreements to export directly to China.

21 The global standard for payment of recyclables is net 90 days, and every single small recyclables trader in the whole world, to survive, has to mobilise six months working capital, which is why replacing the small traders seldom works. This situation is in no way limited to Egypt, but, as is the case in most countries, the Egyptians think it is unique, and that they can fix it, whereas it is simply a characteristic of the recycling industry.

According to one large trader, since the revolution the US dollar value has increased in comparison to the L.E., the economy has deteriorated, and exports have decreased. When the price of petroleum decreases the prices paid globally for plastics also decrease. Normally this might mean an increase in demand, but in the current situation the decrease in price falls together with increased competition from producers of virgin plastics (probably because of reduced demand for oil, so more oil is being directed to plastics production). Usual buyers include Saudi Arabia, Thailand, China, and Libya. There is also an increase in competition from growing post-consumer supplies of recyclable plastics in West Africa. Some of the producers there were previously buying Egyptian plastics, but now their own recycling systems are functioning better, with some support from Turkish companies, and so they are no longer importing recyclables from Egypt. This is an example of how the supply of recycled plastics is increasing at the same time that demand is weakening. Historically the supply increase/demand decrease would occur once every 2-3 years on a seasonal basis, but the cycles appear to be changing.[22]

Box 4. The Influence of Global Commodities Trading on Egypt's Recycling Sector.

7.5. Integration: A Crowded Institutional Landscape

Given the test-and-study culture embedded in the solid waste management sector in Egypt, it is not surprising that several pilot projects are occurring at once. This provides a rich learning landscape, but also one that is somewhat cacophonous, with many voices working on their own integration approaches. For the results to have sustainable impact, much more discussion and coordination between interveners appears to be crucial.

The bulk of the projects work to register and contract SMEs, offering a formalisation option to as many as possible of the informal sector enterprises and workers..

This section provides a (provisional) inventory and analysis of the on-going interventions and highlights lessons learned.

7.5.1. On-going Informal Integration Interventions

There is so much going on in the area of informal integration that making a complete inventory of interventions is nearly impossible. Table 4 lists the main interventions that could be documented.

22 This is a huge topic: the survival of collectors (and hence service provision) relies on revenues from selling/exporting recyclables. How sensitive is this business? Are there thresholds? How have fees to residents to change if plastics become even cheaper... This is also important, when discussing formalisation and integration. Value chain (informal) recycling only exists when it produces profits (or reasonable margins) to the entrepreneurs. But demand is driven globally, and dominated by East Asian conglomerates, for which North Africa is a small-to-moderate size supplier.

Table 4. Inventory of Informal Integration Interventions in Egypt at the Time of Writing

Pilot name/brief description	Main "owner"	What and where	Comments from stakeholders
SMEs registration and contracting	MURIS	Port Said	about to launch
		Giza	on-going— already considered to be a failure - Ministry is drawing from lessons learnt in phase 3, to launch soon
SMEs: formalisation, registration and contracting	MURIS	Suez, Alexandria, Ismalio, Menia, Menouf	replicating the SME registration pilots
SMEs: formalisation, registration and contracting	NSWMP	Kolta district in Assiut governorate	Testing formalised SMEs as service providers in an urban setting- not launched yet
SMEs: formalisation, registration and contracting	NSWMP	Abu Badawy district in governorate in RES governorate	Testing formalised SMEs as service providers in a rural setting- not launched yet
EPR-Tetra Pak - equipment funds scheme with SOY	SOY and TetraPak	Greater Cairo area	finances equipment to formalised small traders to process drink packages--not launched yet
SOY+ Bill and Melinda Gates + formalisation of SMEs project	SOY and SMEs and Ministry of Investment	Ministry of Investment project to finance SMEs	Registered 120 waste collectors and extended temporary licenses to 100 informal recyclers
Mokattam Recycling School	SOY+ Procter Gamble	Mokattam	School for boys 8-20 years old- educational and business aspects
Artisanal work	APE	Mokattam	Support creation of artisanal patchwork for women

In general, the projects show a growing awareness for integration. The push is developing in a pro-informal integration global environment. Most of the projects are pilots, which focus on building enterprises using technical integration with some elements of professionalization and formalisation. Technical integration stems from the emphasis on registering and contracting SMEs, but there is also an interest in training the sector in business development and management skills.

The on-going pilot integration experiments often have multiple dimensions: they combine the ambition to loosely organise participating informal waste workers into legal entities, with the

commitment to assure their further professional development by offering them stable contracts in the service chain and value chains. The projects lean towards hybrid interventions, with goals that combine elements of economic improvement for waste pickers with health, safety, and environmental improvements of the private recycling activities. Some interventions also aim at improving waste and recycling environmental footprint, reducing toxics, creating jobs, and contributing to clean communities. The initiatives also concentrate on citizen and client engagement in order to encourage source separation as a cultural practice.

Figure 47. Government built recycling workshops in Port Said.
Source: Rachel Savain

Figure 48. Large street container in Imbaba Giza intended for source separation
Source: Rachel Savain

For example, the Port-Said project, organised by MURIS and the Governorate, aims to provide reliable, quality door-to-door collection services to the population, develop newly formed SMEs, and rehabilitate a compost plant. The project has multiple goals, including: producing clean communities; creating viable jobs; improving the economic situation of informal recyclers; closing the waste loop through municipal composting; and supporting the recycling value chains.

First, the pilot registered two door-to-door collectors in the service chain and several small traders in the value chain. Participants received support to complete the paperwork needed to register companies. Per Egyptian law: each company is required to have one owner, one manager, one planner, one accountant, and some workers. The process takes about two weeks in a provincial area but only three to seven days in Cairo due to the Ministry of Investments' "one-stop-shopping" registration programme.

Next, the participating companies are offered an opportunity to provide a formal, door-to-door collection service in a specific zone. The model is that each collection company uses the following benchmarks:

- 300 households allocated per worker
- The companies sign renewable contracts with the local government
- The companies contract the workers based on monthly contracts
- The companies pay 30% taxes of their service operations, but there are no fees paid on the recyclables
- The companies own the recyclables
- Sorting activities must take place in their assigned government-built workshop space[23]
- The governorate owns the compost and the companies must deliver it to the plant (once it is rehabilitated)[24]
- Dry and wet waste is ideally separated at the source.
- There is a commitment from MURIS to pay for the collection for one year after one year each household pays EGP 3 per month, which is 50% of the cost. After this period, the governorate will fund the other half of the collection

The contracted companies must participate in professionalization training with the goal of improving their capacities to provide professional services. MURIS has partnered with the International Labour Organization (ILO) to train companies on the service and value chain elements including: waste transfer and sorting practices, source segregation, and client-based communication.

A third feature of the intervention is to organise citizen participation in source segregation of wet and dry recyclables. This makes community engagement and communication crucial aspects to the project's success. MURIS and the governorate have contracted NGOs to handle this aspect of the project. Globally, NGOs are considered as bridge builders between informal and formal waste institutions. They also provide a direct line of communication to the clients, or citizens. The ILO and MURIS, along with the governorate, have trained NGOs on how to operate door-to-door public education campaigns. Each team divides their districts into sections and recruits five volunteers from different NGOs in the area. The NGOs to explain the door-to-door collection and source segregation plans and to invite and register their feedback. The surveys showed that the project would have to incentivise citizens to get them to sort the waste at home. MURIS collaborated with the Ministry of Supply to provide households with credits at local grocery stores to buy food staples, such as oil and rice. The households only receive this credit if they have been consistently separating their dry and wet waste.

23 Shown in figure 47, MURIS and the Port Said government partnered to finance the construction of 14 buildings, each with 2 workshop spaces for 2 companies

24 Currently MURIS is working with 20 investors bidding on 2 upgrading compost plants. The idea is to use alternative fuel (dry organic waste + residual waste + the rest of the waste is landfilled).

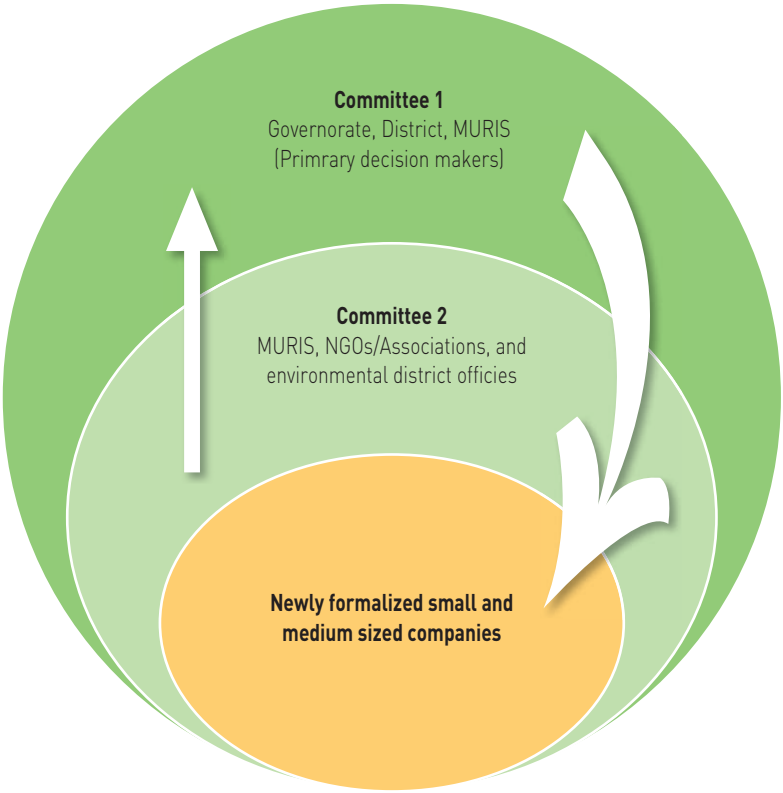

Figure 49. Example of local decision making in an informal intervention

Source: Elaborated by author, based on focus group interview

The monitoring and evaluation process is complex. Figure 49 shows an example of the local decision-making process in an informal sector intervention. Two committees manage this process. Both committees are formed via a nomination system on a majority-voting basis. The second committee, comprised of a Youth Association, the environmental district offices, and MURIS, will monitor and evaluate the project daily. The Youth Association evaluates the companies' and the citizens' daily performance and reports to MURIS every day via Facebook and WhatsApp. The performance analysis criteria are shown in Table 5.

Table 5. Performance Criteria for Evaluation

Companies' performance analysis	Citizens' performance analysis
• collection coverage • frequency • timeliness • cleanliness of streets • fuel use • number of hours on the route • capacity of vehicles • degree of filling of vehicles when they move to discharge materials	• volume of the waste in relation to weight or volume of the dry waste • "mistakes" in sorting or ability to source segregate • frequency of participation • completeness of separation • satisfaction or complaints

Every month the second committee writes a performance report and sends it to the first committee. The NGOs and youth associations also document any feedback from the citizens in the report. The first committee comprised of the governorate, the district, and MURIS review the monthly reports and decide if the companies have adequately performed. As the primary decision makers, the first committee then decides whether or not to pay the respective companies for that month's services. The project is comprehensive, but it is not yet completely clear how so many objectives can be achieved in one pilot. The conditions of this initiative are similar to other MURIS led projects nationwide and highlight the general goal of fostering a circular economy.

While this intervention is still in the planning phases, MURIS and the Port-Said governorate are also piloting their own approach to formalising, training, and contracting. As Figure 50 shows, MURIS is planning six other similar interventions across the country. To date, the ministry has launched one project in the Giza governorate in three districts. As a result, 120 collection companies were formed: 58 companies in the low-income Giza district, Imbaba, 28 companies in the middle-income Agouza district, and 14 companies in Giza's more affluent Dokki district.

The developments appear to parallel other pilot projects in solid waste, recycling, and informal integration in Egypt. From 2011-2015, Spirit of Youth Association (SOY), an Egyptian NGO, worked with several ministries to formalise an additional 100 waste companies in the greater Cairo area. The Bill Gates and Melinda Foundation funded the intervention. In the SOY project, many of the newly formed companies gained occupational recognition, and this is a key dimension of the Port Said project. The integration modality is voluntary and individualised, with the effort and benefits focusing on each willing informal recycler in turn. These small steps are preparing the way for a structural application of occupational recognition and related group rights and obligations.

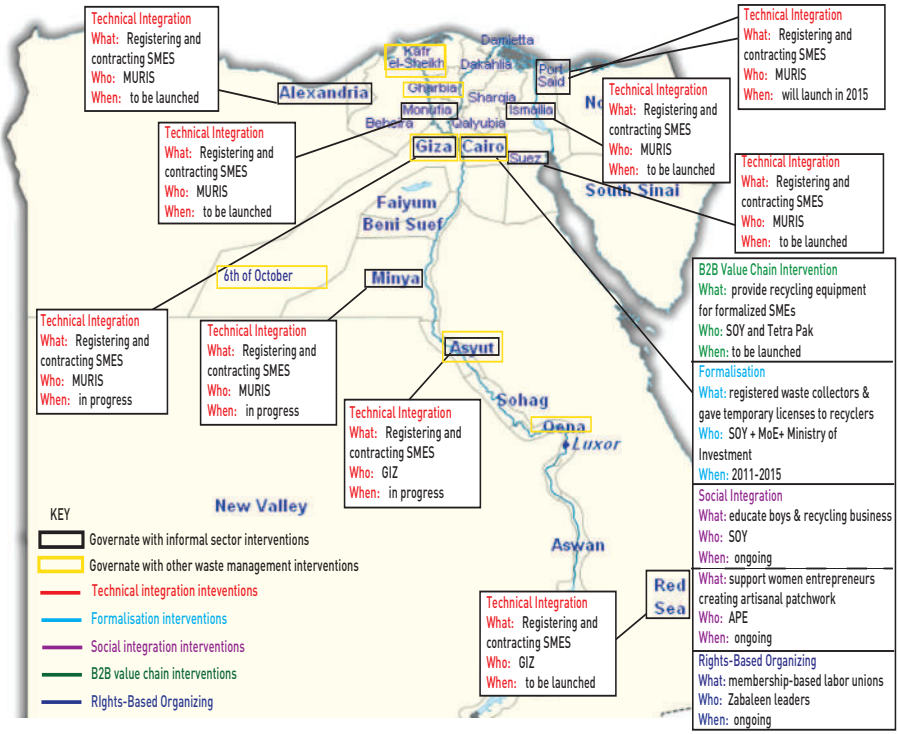

Figure 50. A Rich and Complex Landscape of Integration Interventions in Egypt

Source: Elaborated by the authors on a base of a map from the Ministry of Health's website, http://marianna-ivanova.com/ref-country-egy.php. The figure is based on information from stakeholders. This is a composite from multiple sources, both types of intervention and their locations may be subject to change.

Other projects are connected to producer responsibility (EPR) or Corporate Social Responsibility (CSR), and support value chain operations, such as Tetra Pak's equipment fund scheme. The joint venture with SOY will provide formalised small traders with recycling processing equipment, such as manual balers. The project focuses on working with those same 100 small traders that received temporary operational licenses. The sorting stations will need to do additional work to comply with environmental, health, and safety laws, in order to make their licenses permanent. In this case, the companies must handle a reasonable recycling quota of Tetra Pak's products, but they may use the machines to process other recyclables. SOY will monitor and evaluate the companies' progress.

A mixture of hybrid interventions with a splash of EPR dominates the intervention landscape. It is bustling with pilot projects testing what is feasible in Egypt, an approach that is important to establishing a sustainable system.

7.5.2. Learning from Informal Sector Interventions

In Egypt's current waste management environment, there is an interest in analysing lessons learnt from the on-going pilots. The main reflections highlighted by pertinent actors were that:

1. some interventions would benefit from more thorough planning,
2. there are often many actors monitoring the similar or the same elements of a project, and
3. projects would benefit from co-ordination and transparency.

The Giza project, led by MURIS, the Giza governorate, and with occasional participation of the Giza Central Beautification Authority (GCBA), provides a source of some of the lessons learned. The project sought to balance comprehensive planning and operational flexibility, and to respond to unexpected circumstances. This allowed the project's collection model to change between phase 1 and phase 2. In phase 1 the SMEs were assigned households, but in phase 2 they were assigned streets that include businesses and households. It appears that the project was implemented first, evaluated during implementation, changed in the middle, but that reflections and questions followed somewhat later. It was positive that interventions started immediately; but a challenge for consultation, because this mode of ad hoc functioning can result in lower levels of stakeholder contributions to the process. As a result, there was no significant change during the project in terms of source separation, cleanliness, or other parameters. A key improvement would be if benchmarks and indicators of monitoring and evaluation were agreed-upon in advance between different stakeholders and the informal sector themselves.

For good monitoring, there should be a hypothesis shared among actors, of what the desired change is and what the benchmarks are for measuring whether change has occurred or not. There appears not to be a practice of making a baseline, or the baseline is contested along the same lines as other competition between actors. There is a practice of creating an action plan, but it is not clear to what extent this plan is shared among the participating stakeholders. In this case, MURIS applied the well-known trust-building strategy of contracting NGOs to monitor the service providers and connect with the population.[25] The tactic is clever given the complexity of the stakeholder landscape, but it only works if the NGOs are both neutral and have the capacity to deliver.

25 NGOs working on the Giza project in the Imbaba district are Hawa, an umbrella for other associations are working together in the same district

The financial part of interventions appears to be weak or inconsistently formulated. Some actors indicated a need to ensure a better cash flow -- payments are often arriving too late or are inconsistent, although this is normal for the value chain but not normal for the service chain.

While it seems too early to gauge which informal waste sector integration strategies will ultimately dominate in Egypt, the core seems to be enterprise-based professionalization. The projects are working to improve the economic situation of the informal sector and/or to focus on the sector's social development. Egypt's current intervention landscape misses the twin pillars of integration: organizing and legal, structural, occupational recognition.

7.6. Perspectives for the Future

Informal integration in the context of Egypt's solid waste system is a rapidly moving train, exciting, unstoppable, crowded, dynamic, noisy, and very, very, interesting. But it is not clear to the passengers, or even the crew, precisely where this train will finish its journey. The decision-makers' growing awareness of structural integration is developing in a supportive and global environment. There are more interventions working on enterprise-based professionalization than ever before. However, there is still a need to build a better consensus about how and at what pace integration should occur. And key actors need not only to talk to each other, but also to listen to each other and to their constituents – the informal entrepreneurs themselves. This will help the stakeholders clarify how the informal sector can fit into an integrated waste management system.

Regular sharing and exchange of experience, together with the formation a multi-stakeholder platform, could be important in anchoring positive change in vibrant and diverse integration landscape that is Egypt today. The NSWMP and GIZ's annual forums and upcoming on-line knowledge exchange are both important tracks to get stakeholders talking and exchanging lessons and accomplishments. Sharing across institutions could facilitate comparison and learning, improve monitoring and evaluation and streamline the decision- making processes, and validate successes. Consistently analysing the contribution of different service providers and operator models can aid decision-makers in identifying their respective strengths and weaknesses within an integrated waste management system, and in making choices.

Clarification and transparency in relation to the decision-making processes and roles would improve short- medium- and long-term outcomes. It should be clearer who makes which decisions at the national, regional, and local level, within the informal sector, and in relation to

private-sector participation. Better co-ordination and clearer decision-making will minimise the risks of multiple institutions monitoring the same aspects of a project at the same time, which can lead to participant exhaustion, frustration, and miscommunication. Building trust is necessary, and increased stability in interventions will help. At the time of this writing, steps are already being taken to address inconsistencies at the policy/institutional level, the technical/operational level, to improve processes of stakeholder engagement.

On a technical/operational level, the need for an integrated policy that considers the informal waste sector is evident. Box 5 explains a proposed government project led by MURIS to separate Zabaleen living and working spaces by relocating recycling operations to an industrial park. The idea would address the public health concerns while providing enterprise-based professionalization opportunities for waste pickers on a voluntary basis. The project signals that Egypt is still very much in the reform process and assessing its options. Major interventions have not yet matured to enable broad-scale countrywide action, such as obtaining national legal status for the informal waste sector, nor for establishing national waste pickers associations, as has happened in Brazil, India, and Colombia.

One key component for sustainable informal integration is creating an industrial park up to ensures that recyclers operate up to environmental standards for recycling workshops. The proposed intervention is to move recycling workshops to an industrial land 40 km distance from the Mokattam settlement. The main driver is public sanitation by separating living and working space. United Arab Emirates and the Egyptian Government fund the credit extension scheme. The Recycling workshops will repay loan in small payments. According to a Zabaleen leader, benefits of recycling workshops include: (1) increased air flow; (2) allocation of more land/workshop; (3) Capacity building; (4) formal licenses facilitate access to capital; (5) will encourage other informal sectors to formalise, as 60% of Egypt's economy are informal SME.

Box 5. Proposed Recycling Industrial Park

The 2014 NSWMP's guidelines started laying out the broad lines for what informal integration should look like in Egypt. The policy document does not yet claim a government-wide consensus, but goes far in confirming the commitment of multiple actors to pay attention to the informal waste sector. This attention appears to have moved into a much more positive space of engaging the informal sector, rather than casting them aside. The most important recommendation is to keep all relevant actors engaged, and empower those who need help obtaining a stronger voice among the many stakeholders.

7.7. About this Chapter

Unlike the foregoing chapters, for reasons explained earlier, this chapter was written, not by one Egyptian expert or practitioner, but by dozens of experts and practitioners, who generously gave their time and shared their enthusiasm, knowledge, expertise, faith, fears, ideas, doubts, analyses, and hopes and ambitions for informal integration and a future of positive inclusive recycling and waste management. Rachel Savain, from the core editorial team, visited those people, and photographed them in their places of work and business, listened to their stories and ideas, and compiled the chapter, which has gone through several revisions as well. The process can best be compared to making soup: the cook finds and selects the ingredients, puts them through a preparation process, and combines them. The morsels retain their individual character, and can be recognised, but they are also infused with the flavour and colour of the soup as a whole. This chapter, like the soup, represents the facts, opinions, and that we encountered, and we hope that it retains their flavour and colour, and that all contributors will recognise their own contributions, and the value that they have contributed. But we invite them also to accept that the presentation is from the editors, and that we, as professionals, have taken the liberty to make interpretations, connections, and comparisons, which they might not agree with. Like the soup, we have put all these individual contributions into the "cooker" of an editorial process, added our own flavours, colours, and spices, and we hope that what comes out is more than just the sum of all the parts, and maybe even contributes some value to all of them. We are very profoundly thankful to all the contributors, named and without names, but the responsibility for the overall chapter, and the interpretations, opinions, and analysis, is ours, and not theirs.

Table 6. List of Contributors to the Egypt Chapter

	Contributors to the Egypt Chapter, transliterated into English	Date of Contact, in Egypt
1	Chief Zabaleen	Sat April 18
2	Ezzat Gendy, SOY	Sat April 18
3	Mokattam, private recycling workshops, solid waste collectors and waste pickers	Sat April 18
4	May Moussalem, MURIS (Representing Dr. Laila Iskandar, Minister of State, MURIS)	Sun April 19
5	Youseff Said, MOURIS/ former SOY	Sun April 19
6	Berti Shaker, GIZ	Mon April 20, Fri April 24
7	Joachim Stretz, GIZ	Mon April 20, Thurs. April 30
8	Ministry of Environment Ahmed Saâd, Mohamed Hussin Ahmed, and staff	Mon April 20
9	Ahmed Said, MoE GIZ focal point; NSWMP Manager, Ministry of Environment	Tues April 21
10	Dr. Rami el Sherbiny, University of Cairo	Tues April 21
11	Amr Elsherbini, Ministry of Investment	Tues April 21
12	Taamer Saameh, Ama Arab- Italian multinational,	Tues April 21
13	Port Said Intervention stakeholders and composting facility	Wed April 22
14	Dr. Mohammed Salah, Ministry of Environment (MoE)	Thurs. April 23
15	Mohamed Ismail, Tetra Pak	Thurs. April 23
16	Giza Informal Sector Integration project, MOURIS/Giza Governorate / NGOs/ Giza Central Beautification Agency	Thurs April 23
19	Residents/households (Greater Cairo and Port Said)	ALL the time

Chapter 8. Decision-Makers' Guide: Integrating the Informal Sector in SWEEP-Net Partner Countries and Other Middle-Income Countries

8.1. Dear Decision-maker

Why should you be concerned with doing anything related to the informal sector in recycling and waste management? Why should you be bothered with those dirty people? Aren't they all criminals? Don't we all agree that they impede progress and retard development? Shouldn't we just eliminate them, help them to do something decent and productive? If you have asked yourself these questions, these next pages are for you.

This short guide is designed to help you formulate your own answers to these and other questions. If you are a city council member charged with waste management, the sales or operations manager of a multi-national waste company, consultant to the regional governor of the largest province in your country, the mayor of a regional capital, the UNDP Country Representative, the public affairs director of a global consumer goods company, the director of an NGO, the Director of Operations of one of the six development banks, the parliamentary speaker for your political party, an Imam or Priest or Rabbi or Lama, or in some other position of power and influence, these few pages are for you.

Faced with a dilemma, and without time to do academic research in order to develop adequate answers, you have two main questions:

1. Why on earth should I pay any attention to the informal sector in my city or country, when I have a city cleansing company (ministry, factory, transport company) to run? Lets call this the "**WHY question**".

2. These people are everywhere and nowhere, they have no papers, how do you expect me to go about integrating them into my operations, when I don't even know how to talk to them? Lets call this the "**HOW question**."

8.2. The WHY question: Why integrate informal recyclers and garbage collectors (the informal sector) in your city or country?

Informal recyclers and garbage collectors are part of the waste management landscape in your city. The main reason you might want to engage with informal recyclers and garbage collectors is that they are part of your waste system, whether you know and accept it or not. If they or their activities trouble you, it is probably because you are trying to ignore their existence. But that isn't possible, they are real, they are active, and they affect your every-day operations. By engaging with them, you at least open a space for more productive co-operation. **Engaging the informal sector is a more productive strategy than denying its existence**.

The informal sector is a ready-made resource for your solid waste system. The micro private enterprises in your city that are recycling and collecting waste have created viable business models for these activities. Because they are self-financed, they have to be creative, efficient, effective, reliable, and above all, cost-effective. And they do this even when the boundary conditions are unfavourable, when they may he harassed, arrested, or robbed during their daily rounds, so they are tenacious and persistent. All of these are qualities which your own waste management system values. **Informal integration can help your public services work better, leaner, and more efficiently, so that your budgets stretch further and produce better results.**

The informal sector knows something that you don't know: how to sell recyclables profitably to the value chain. As commercial (micro-) enterprises, informal recyclers know how to prepare and sell materials into the competitive, highly organised formal value chains. They know what has value and what does not. They know which ways of sorting and preparing leverage the most income and the highest profits. **Including and co-operating with the informal recycling sector is your best and fastest chance to reduce the quantity of materials that your services need to collect and dispose.**

The activities of informal recyclers are already subsidising your waste management operations, and making your professional life easier and your work more effective. The informal recyclers in your city are removing hundreds – if not thousands – of tonnes of materials from the waste stream, and valorising them. All this produces environmental, social, economic and operational benefits for you, *for which you do not pay*. 90% of all recycling happening in your city is due to their efforts. You have the power to improve their operations and increase the benefits to your city even more, or you can seek to compete with them – and probably lose the competition, at considerable cost to your own operation. **Co-operation and integration costs less, and delivers more benefit, than competing or inhibiting their activities.**

Most informal recyclers and garbage collectors would like to formalise their businesses and pay taxes, but without an integration strategy, this is too risky for them. It is true that many informal enterprises do not pay taxes or fees, but often this is not their choice. Their professions are not recognised, they can't register a business because that class of enterprise doesn't exist in the national register of authorised occupations, and the tax authorities have a very hazy idea of what and how to tax these enterprises fairly, because even very small recycling businesses have to have a very high turnover in cash, but extremely slim profit margins. Until there is a clear commitment to co-operate, and, usually, some provision for fair taxation, these enterprises don't dare register for fear of being punished and losing everything. **A well-designed integration initiative can increase tax revenues, reduce informality, and have many spin-off benefits in terms of social integration.**

8.3. The HOW Question: How do you go about designing a process to integrate the informal sector?

The big answer to this is a small word: **ask**. There is no "blueprint" for integration, but there are principles, and the most important one is to create a climate of trust and enquiry, so that both formal and informal sector stakeholders have the opportunity to ask questions and give answers. In this way you build up a process.

The following table is a list of steps in the integration process, drawn from global experiences both with integration, and with participatory planning and decision-making. After each step, there is a so-called "consultation round," where you as a decision-maker go back to the participants in the process and invite their feedback, so that your process becomes a self-correcting, trust-building virtuous circle of change, improvement, acknowledgement, and planning additional changes.

Table 7. Steps in an integration process.

Process and questions for decision-makers in their own institutions. These things you – as a decision-maker - can do in your offices or with your facility staff, in your own professional and physical comfort zone.	**Steps towards decision-making: participation, consultation, transparency, sharing with other stakeholders and the informal sector.** These things will take you out of your comfort zone, into the field, into communities you prefer not to visit, seeing things you might prefer to ignore
Locate your institution in the framework, Identify your goals, your relation to the informal sector, the drivers that are affecting you and your institution. What is (or is not) "driving" your interest in integration? Do you want the informal sector to simply disappear?	**Step 1. Make an inventory of the informal sector "issues" in your institution and related institutions.** Organise conversations with other stakeholders and make an inventory of goals, relationships, direct contacts, networks, and projects. Do any of these institutions (including yours) have direct contacts with informal recyclers or garbage collectors? Write down the results of the inventory.
Consultation interlude	Share the results of your inventory in a blog or via email or a short document with informal and formal and NGO actors. If you have points of contact with informal sector people, make contact and share the inventory with them, and ask then for feedback. You can also ask them whether you can go with them to the field.
"See" and make acquaintance. Have you ever shaken hands with an informal recycler? How often do you visit the dumpsite? Do informal recyclers or garbage collectors work on your street, or in your neighbourhood? Who are these people?	**Step 2. Take two of your colleagues, and go and see for yourself.** If you have a point of contact with the informal sector, ask them to take you on a route or to the dumpsite, "see" their world through your own eyes. Do this a few times, especially if the first time is confusing or difficult. Keep going until you can get beyond your emotions and engage with photographing, analysing, and documenting what is happening to the materials being collected or recycled.
Consultation interlude	Share the photos or analysis with other stakeholders and invite them to refine your analysis and interpretation. Stay with what you see, focus on facts, limit or eliminate assumptions and prejudices. Invite different explanations and interpretations. In this way you are socialising your observations and building a shared *problematization* of the situation.

Understand: service and value chains, framework, occupations, census, socio-economic factors. What kind of recycling is operating, is it value chain or municipal recycling? Is disposal controlled, does your city have a sanitary landfill? Which intermediaries are organizing contracts, payments, movements of material? Where are you in terms of planning cycles?	**Step 3. With this new or strengthened acquaintance with the informal sector, make a first analysis of the solid waste situation and identify the recycling framework and the place of informal recyclers or garbage collectors within it. Then decide whether this is a problem and/or a significant issue that needs action**. Is there separate collection of recyclables and who does it, an NGO, the public service company, an itinerant waste buyer, street pickers? At this point, you can prepare a kind of action plan or ToR for preparing a baseline analysis of the situation with informal recycling and garbage collection.
Consult	Organise a short meeting with a few informal recyclers, some formal recycling industries, public service organisations, etc. Share your analysis and check whether your analysis is shared, or whether you might need to modify or nuance it.
Measure and make a baseline document about the service and value chains, and how they are connected, and the place of informal activity and enterprises within it.	**Step 4. Make a baseline analysis report that focuses on measuring and the real activities of the informal sector**. This baseline has two parallel lines: the first one is about the facts: who is doing what, where do the materials go, how many people, how many tonnes , which materials. Create a process flow and if possible a materials balance. The second line is: where is the information and who has it. Depending where you are in terms of planning cycles, the baseline can either contribute to planning or substitute for it or use information produced by the planners for creating the baseline. Pay attention in the baseline to understanding who is paying whom, for what, and on what basis.
Consult and socialise the results of the baseline, inside your institution and with other stakeholders	Check with the technical people, policy office, and other colleagues in your local authority as to whether they agree with the facts in the baseline and invite them to correct, nuance, or otherwise contribute
Formulate goals and priorities for informal integration separately and together. Make sure to include technical, social, economic and financial, governance, institutional and environmental goals and then see which ones resonate.	**Step 5. Formulate goals and priorities for informal integration**. Organise several workshops with key stakeholders to socialise the baseline and set priorities for planning and pilot projects. First identify possible actions and then let the participants prioritise them or put them in rank order. In this part of elaborating an integration approach, it is really important to pay attention to long-term earning models. Short-term project money can disrupt viable economic relations, and this helps no one and gives integration a bad name. It is very useful to do an analysis of interests and influences – and to have the workshops with groups or individuals who have the same interests-influences profiles. Consider meeting women and men in separate meetings, or having one or more meetings only for the informal recyclers and "a few friends," so that they are clearly in the majority. *You can use this step to also create working groups or one or more technical committees.*

Consult especially with those who did not attend	Check in with groups and individuals who did not participate, to see if they agree and especially if there is something they want to add, or if they are interesting in joining a working group/technical committee.
Elaborate and prepare interventions. Organise/empower/ identify/formulate demand-driven initiatives	**Step 6. Elaborate one or more interventions or multi-intervention scenarios that address the goals and priorities**. This is a creative process and it can be done in meetings, via a kind of "open call" for ideas, through a tender, through a contest, by hiring consultants, or any number of different ways. The results should include multi-track recommendations for concrete projects or actions that aim for practical, measurable interventions to move towards integration.
Consult with stakeholders. Through the consultation process, you can select the persons or organisations that will work directly on integration.	If there is a document, share it with informal sector members or others who might be affected, through email, written communication, or meetings. Be sure to invite comment and be fully open for changing the plans if they don't resonate with enough of the key stakeholders.
Plan for informal integration at policy, legal, project, and operations level.	**Step 7. Make an informal sector integration action plan (ISIAP), with timeline, budget, and specific ideas about persons or groups to participate**. Your ISIAP should be concrete, specific, and identify key institutions and stakeholders who participate in implementation, and/ or who are supplying technology or equipment, making choices, and the like. If you are working in the value chains, you will need at this point to make a market study for improving revenues. If you are working in the service chain, it will be important to do intensive public education and assess the households' willingness to pay and/or willingness to participate. If your focus is social integration, be sure the relevant ministries and local institutions are in agreement and are prepared to do their part.
Consult and socialise the action plan with the service providers and the service users or clients, plus also with the value chain who may be expected to buy more or different kinds of materials	Take the ISIAP to the streets, consult with everyone from the baker to the university professor to the people selling Boga at the beach. And when you hear good ideas, CHANGE YOUR PLANS. In this phase, it is also really important to ask the informal sector participants what they need in order to begin.

Experiment, pilot, demonstrate,	**Step 8. Start implementing – the sooner the better**. Most informal entrepreneurs have good earning power but relatively little resilience. Their financial balance is fragile – and even though they might be 100% in agreement with the integration plans, they won't wait very long. So don't ask them to wait months or half a year to begin – start within 4-6 weeks of a general approval of the plans. Remember that informal recyclers or garbage collectors know how to do their "jobs" very well, but that they are not necessarily used to dynamic and changing aspects of their work, nor do they usually have time to formulate a structural or strategic response to a new situation. Accompaniment can help, and so can participatory monitoring.
Consult, document, accompany, monitor	Go back to the streets and dumps, but this time to accompany the social, institutional or technical /economic integration operations in the service chain and the value chains. Share the burden of change with the informal sector – and pay attention to their feedback on what is being implemented. Photo-documentation is also extremely helpful – both in documenting what has happened and in diagnosing what is going wrong. Be prepared to change what needs changing.
Evaluate experiments	**Step 9. Evaluate what is happening, from the point of view both of formal and informal stakeholders.** Pay special attention to what is happening to the intangible parts of the system. These range from respect and attitude of both the informal sector workers and their clients/suppliers, to income loss or gain, to complaints from the value chain, to jealousy from persons in related sectors whose work is not getting so much attention.
Consult and listen to the feedback	When things are happening it can be a challenge to maintain open channels of communication, but exactly that is what is usually needed.
Reflect, re-formulate and improve	**Step 10. Migrate the test phase into permanent or structural change, taking into account what is working and what needs to be improved**. Pilot or demonstration projects should always be designed for "graduation" to permanent or structural operation. Particularly with vulnerable stakeholders like the informal sector, it is cruel to end a project just when they feel like something good is happening. So design your intervention with the intention of continuing it – if it works for all parties. You can always decide later to stop it or re-design it. But if you design it to be time-bound, you can create a strong failure of confidence because the informal sector is still there after the project ends. So let the project be there with them.

8.4. From the Literature: Correcting some misconceptions about the informal sector

8.4.1. What is the relationship between the informal sector and formal institutions?

In general, the relationship between the informal waste sector and formal institutions is mainly defined by mistrust and competition. Fortunately, there is a growing trend aimed at finding peaceful resolutions among the system's main stakeholders. Gerdes & Gunsilius (2010) and Gerold & Frankfurt (2009) argue that informal sector's ability to collectively organize significantly contributes to building trust with formal actors. For instance, in Egypt a small group of powerful recyclers operates the informal sector. In addition, the Zabaleen case shows how lack of integration is caused by the informal sector's unreliability due to the informal recyclers' irregular operating hours and concentrated decision-making power. This hinders possibilities for establishing collective representation. Authors suggest that NGOs can aid in achieving internal trust. In turn, the sector may experience legal or semi-legal contracts, committees, forums, etc. to create a solid representative voice.

8.4.2. What problems can integration solve?

Integration can alleviate tensions within the system and provide productive service provision. Within the informal sector, integration can reduce occupational health and safety risks. In an organized setting, waste pickers can gain health care and life/accident insurance access. In addition, source separation initiatives reduce or eliminate their contact with openly dumped waste. Legitimizing waste picker activities can lead to less harassment. These measures positively affect the waste management system primarily by increasing the informal sector's work productivity. The sector supports women's financial empowerment, especially in a co-operative setting. Medina (2000) case studies on Columbia's Co-öpertive Recuperar reports that the women have access to source separation training, loans, and scholarships for their studies. The results reiterate the development potential in organizing waste pickers through integration. Overall, the improvements may increase work efficiency and boost the waste pickers' self-esteem (Medina, 2008).

8.4.3. What are the risks and benefits of not integrating the informal sector?

Figure 51 outlines what effects the integrating the informal sector can or cannot have on the costs and revenues of waste management systems in six case study cities. Subtraction: when the informal recycling sector seizes to operate (response to a regulation that hinder the sector's valorisation activities), and (2) addition: when the informal recycling sector is professionalized and integrated into the system. Both of these models are based on a thorough baseline of the current situation. The results indicate that integration can increase or stabilise recyclable recovery

rates. Also, the disposal rates can decrease. For instance, Cluj's disposal rate decreased by 23% after the informal waste sector was recognised and integrated.

City	Baseline			Subtraction			Addition		
	Total cost incl material revenue	Cost per capita	Tonnes recovered per year	Total cost incl material revenue	Cost per capita	Tonnes recovered per year	Total cost incl material revenue	Cost per capita	Tonnes recovered per year
Cairo	(€103.963.000)	(€13)	1.413.000	(€110.001.000)	(€14)	1.128.362	(€209.990.000)	(€27)	1.902.000
Cluj	€494.000	€1	23.000	(€849.000)	(€2)	49.000	(€13.714.000)	(€36)	56.000
Lima	€68.786.000	€9	539.000	€75.270.000	€10	376.000	€67.815.000	€9	549.000
Lusaka	€1.168.000	€1	17.000	€12.761.000	0€10	12.000	€12.904.000	€10	60.000
Pune	€2.081.000	€1	118.000	€4.611.000	€2	428.000	€3.023.000	€1	386.000
Quezon	€7.292.000	€3	157.000	€5.161.000	€2	126.000	€3.113.000	€1	157.000

Figure 51. Scenario Modelling: Total Costs, Total Costs per Capita, and Tonnes Recovered for the Three Scenarios

Source: Scheinberg et al, 2010

The most cited benefits of integration are livelihood creation and improved service efficiency. The idea is that informal recycling may serve as a poverty alleviation strategy for a large vulnerable population. Studies indicate that both before and after modernisation informal waste recyclers often earn more than their country's minimum wage. For instance, Nzeadibe's (2009) study on informal recycling in Nigeria shows that waste pickers in the country's urban centres earned approximately twice as much as the national minimum wage. Figure 52 shows that the informal sector creates a viable livelihood option for at least twice as many people as the formal sector.

	Total no.of livelihoods in informal waste sector (persons)	Total employment in the formal waste sector (person)	Ratio of persons working in the informal waste sector to those employed in the formal waste sector	Informal sector households depending fully on income from informal waste and recycling activities
Cairo	33.000	8.834	3,7	91%
Cluj	3.226	330	9,8	31%
Lima (1)	17.643	13.777	1,3	88%
Lusaka	480	800	0,6	69%
Pune	8.850	4.545	1,9	63%
Quezon	10.105	5.591	1,8	82%
Total/avg	73.304	31.793	2,3*	71%**

(1) Including persons working at informal pig farms. The ratio of persons working in the informal waste sector to those employed in the formal waste sector, when excluding these persons, would be 0,8. * Weighted average of six cities. ** Simple average of five cities.

Figure 52. Examples of Livelihood Creation in the Informal and Formal Sector

Source: Scheinberg et al, 2010

In terms of improving service efficiency, the argument is that the informal sector has strong community knowledge, and is often in a better position to tailor their services. Fobil et al. (2008) empirical analysis of inclusive recycling arrangements in Accra, Ghana is one of many studies that make a convincing case for this claim. Their findings demonstrate a 40% efficiency increase because of SMEs contracting from 1985-2000. In addition, the informal recyclers provide services in slums or peri-urban areas that are often inaccessible to the formal sector.

While organizing the informal waste sector into SMEs is popular option, municipalities often have a hard time managing a multitude of MSEs simultaneously. The public sector may be ill equipped to achieve their assigned duties since they operate in weak regulator structures, and lack access to the financial and human resources needed to monitor and enforce contract terms. For example, in Dar es Salaam City, Tanzania, the municipality was not able to regulate 49 SMEs and one larger regional recycler contracted for service delivery. Local officials were not aware of the company's operational logistics and had little information on their environmental performance. Other risks are that if the private sector is not professionally developed, then the municipality initially bears high political risks in the partnership. This occurs because waste pickers often lack capital, technology, and professional training to work in institutional structures. Without regulation, the sector may prove to be unreliable and not capable of fulfilling partnership duties. On the other hand, the informal sector is at risk of being blamed for poor service of performance during politically unstable periods or election cycles.

8.4.4. Where do I go for further guidance?

There is a growing body of work on informal integration, but, as yet, little measurement and evaluation. Many sources are listed in the reference list.

The WIEGO website, www.wiego.org, is a treasure trove. The website of SWEEP-net, www.sweep-net.org, has many good resources for the MENA region. For an overview of informal integration up until 2012, the InteRa study, Velis, et al 2012 is an important resource, as is the IADB publication, *Preparing Inclusion Plans for Informal Recyclers at Final Disposal Sites: An Operational Guide*. The publications from the GTZ/GIZ informal sector study (Scheinberg, Simpson and Gupt 2010 and Gunsilius, Chaturvedi and Scheinberg 2011) lay the research basis for many of these statements, and other GIZ publications, available at www.giz.de, are also very useful. The UN-Habitat 2010 book, *Solid Waste Management in the World's Cities*, applies that knowledge to 20 cities worldwide. For participatory methods relevant to crafting an informal integration strategy, the RWA-Group documents on Structural Integration of the Informal Sector, available at www.sweep-net.org, are a recent and extremely useful resource. Check the

website www.marcolombia.co for news of the first global data entry and benchmarking system for measuring the impacts and performance of inclusive recycling, being developed by WASTE, NMPO, CEMPRE Colombia, and one of this book's authors. Robert Chambers' classic guide to participatory rural assessment, *Whose Reality Counts*, *Putting the First Last*, remains (for this author) unsurpassed as a guide to professional humility in working with informal and poor persons worldwide. The French-language literature seldom overlaps with the English, so here are two outstanding examples. Belghazi (2008) is one of the best analyses – in any language – of the relationship between solid waste system reform and social and economic impacts on the value chain. The brand-new publication by Jéremie Cavé, *Ruée vers L'Ordure*, is a welcome addition to this literature.

9. Afterword. Integration of Informal Recyclers: Challenging Solid Waste System Reform in the SWEEP-Net Partner Countries.

Plenary Talk by Anne Scheinberg at the 5th SWEEP-Net Forum, Tunis, 14 April, 2015.

"God bless the grass, that grows through the crack
They roll the concrete over it and try to keep it back
The concrete gets tired of what it has to do
It breaks and it buckles and the grass grows through
And God bless the grass

"God Bless the grass that grows through cement
It's green and it's tender and it's easily bent
But after a while it lifts up its head
For the grass is living and the stone is dead
And God bless the grass

"God bless the grass that's gentle and low
Its roots they are deep and its will is to grow
And God bless the truth, the friend of the poor
And the wild grass growing at the poor man's door
And God bless the grass."

-Malvina Reynolds (1900-1978, USA, environmental and political activist and singer-songwriter)

Good morning, I have the honour to talk to you today about informal sector integration. This is a subject that I am passionate about, and an issue in which SWEEP-Net has taken a leading role. So to start, I would like to take the opportunity to thank the GIZ/ SWEEP-Net team, in particular Anis Ismail, Markus Luecke and Julia Koerner, for giving me this opportunity to speak with you about it.

What to do about the informal sector is a global question that is affecting solid waste management systems all over the world. It's a middle-income country issue, because it becomes both visible and urgent at a moment when solid waste systems are being reformed and upgraded. And that usually occurs in moments of rapid growth, urbanisation, and rising standards of living and GDP. So informal sector visibility is in some sense an indicator of a good news story: poor countries are moving into the middle-income category, that cities are lively and growing, and that environmental protection is receiving policy-level attention and commitment.

"Integration" is what they call in the Netherlands (my adopted country) a "collective term" or a cluster of meanings, because it covers a range of situations and strategies. *Formalisation*, where the occupations, enterprises and the labour conditions are forcibly regularised, is one end of the "integration" spectrum, and *organising, securing social protections, inclusive privatisation* (contracting with municipal waste authorities), recognising occupations, and capacity development for *professionalization* are at the other end.

There are a number of assumptions hiding in the term "informal sector integration" which are so deeply a part of your daily work as solid waste experts – and of my work as well -- that I can't resist the opportunity to make them explicit.

First, we all believe that a modern, technologically sophisticated and well-functioning solid waste system represents the future, and that any part of the system that does not fit into this vision either needs to adapt or disappear. This was how cities in the USA dealt with informal "scavengers" in their period of rapid modernisation in the 1980s, they criminalised informal recycling through "anti-scavenging ordinances." This was necessary because cities were investing heavily in recycling as a means of avoiding disposal costs. They were paying consultants for recycling plans, buying trucks and set out containers, contracting for development of MRFs (materials recovery facilities) and organising yard waste collection and composting. The goal of all this was to divert as many tons as possible from the new, expensive, and difficult to site regional landfills: these decision-makers felt that they needed to be able to rely on collecting, capturing, and selling the predicted volumes of recyclables to recover costs. In North America and North-western Europe at that time, "integration" meant elimination or absorption. Wherever possible, informal recyclers were offered jobs as sorters in an MRF or workers in a second-hand shop. Absorption and elimination remain on the list of integration strategies, and are the focus of some very interesting projects in Palestine. But they seldom work well in middle-income countries, where many politicians are unwilling to admit that operating a modern landfill costs money, so there is perhaps too little understanding that avoiding disposal is an important element of good solid waste management.

But the main reason absorption has a limited perspective in your countries is that there are relatively more informal recyclers, and they are the only ones who know how to recycle, and absorption moves them out of the value chain and into waste management services. And then no one knows how to recycle. The investment that cities in Canada and Denmark and Germany made in developing know-how and relationships with the recycling industry is seldom seen in your countries. City officials don't have this knowledge of the value chain, and few city managers are willing to invest in it, and even less to invest in building MRFs or composting facilities.

The second assumption is that if informal recyclers are eliminated, cities can make money on recycling and use it to finance their solid waste programme. I saw the effects of this first in Malaysia in 2004: a UNDP (expensive) recycling initiative failed miserably because it relied on NGOs and local authorities to collect recyclables, without consulting or involving the IWBs (private informal door to door buyers of recyclables). So the IWBs simply took all the materials that were placed at the curb for the NGO or municipal vehicles to collect. If diversion from disposal had been the main goal, this would have been fine with everyone, but the city and the NGO wanted the revenues, so there was a conflict. Jordanian cities and regions might recognise this experience.

The third assumption is that integration represents a one-way effort for the informal recyclers. But integration – whether of immigrants in their adopted countries or of the informal sector in modernising waste systems – requires host institutions to open a space for integration, as well as requiring of informal recyclers that they modify their ways of working and earning in order to enter that space. This way of looking at integration is also very physical: informal recyclers need storage and processing spaces in the city, but if they get them, they also have to adapt and make modifications in their ways of working, to manage the rejects better, to avoid bothering their neighbours, and to protect the workers, the environment, and public health in and around their facilities. Integration needs to be multi-directional, if it will work at all.

The fourth assumption is that informal recycling is a transitional situation, and that it will "go away" as the solid waste systems of your countries become more and more complete, technologically sophisticated, and in general begin to approach European systems in countries like Germany or Sweden. This is plausible – in part because there are not so many successful examples to the contrary. Yet the emerging models of inclusive extended producer responsibility in countries like Brazil, Colombia, Argentina, and Chile are creating a critical mass of evidence that this can work, and be sustainable. And global companies like Dell and Coca Cola and Unilever are investing heavily in this model. So it is certainly too soon to tell.

The fifth assumption is that "integration" is most important for the informal recyclers themselves, and that therefore "social integration," or organising a social and educational safety net, should be the main focus of integration. The city of Pune, India is a global leader in this, and in 2001 the city agreed to include its 10,000 women informal recyclers in government-financed health insurance schemes – although not yet in specific social protections like pregnancy leave or pensions. Social integration is certainly important and has been a key feature of the *Structural Integration* programme here in Tunis, which you can visit on Thursday if you choose the option of FV-3. But I consider it more a necessary than a sufficient condition for integration. Informal recyclers need access to health care, pensions, education – just like you and I want and need those things for our families – but getting them is more a right than an achievement. Here in Tunisia that right is dependent on legalising and recognising the occupation of Barbécha, but that is only the first step of an integration story which is unfolding here in Tunisia.

Which brings us to the sixth assumption, for me one of the most critical, and the one which I will focus on through the end of this talk. We have a tendency to assume that informal integration is a kind of unavoidable but irritating annoyance to solid waste managers in your countries, and that the solid waste system would be better off if it had never come up. It is sometimes even described as "dirty and illegal work," with the call "to get those thieves out of our landfills." The "disease" is presented as being informal recycling, with integration the medicine. And the attitude for taking the medicine is "we have to do it, but let's get it over as quickly as possible so we can go on to the real work".

I question this sixth assumption, which puts me on dangerous ground, and brings me back both to the title of this presentation and the poem with which I began it. I see informal recycling as a symptom of a quite different disease, but the symptom which, like a high fever, gets all the attention. I begin to see the short-term focus on efficient but ever more costly sinks, for constantly increasing amounts and proliferating varieties of waste as the real disease. Our waste management paradigm depends on improving technologies and investments and cost recovery mechanisms for burying or burning wastes by building sanitary landfills and preparing for waste incinerators, at costs that range from Euro 25 per tonne for the most basic type of controlled disposal, to Euro 2.000 per tonne for incinerating hazardous waste. When you don't have the fiscal resources to pay the doctors in your hospitals, is paying Euro 2.000 per tonne a sustainable waste management strategy for your countries and cities?

Informal recycling is only informal, one can say, because the formal systems of waste management ignore it, exclude it, criminalise it, ridicule or shame the individuals, deny its

professionalism, and actually prefer that it didn't exist, particularly in your cities that should be clean and investment friendly. So we have the tendency to simply eliminate it, like paving over the grass:

"God bless the grass, that grows through the crack
They roll the concrete over it and try to keep it back..."

But the solid waste systems have enough to do to keep up with their obligations, to remove heaps of waste, to continually inform citizens, recover costs, and the like, and it makes them tired, like the concrete in the poem.

"The concrete gets tired of what it has to do
It breaks and it buckles and the grass grows through"

So let's turn the analysis on its head. What if informal recycling were an important indicator of what is wrong with the traditional solid waste approaches to ever more expensive sinking? At a recent solid waste event, I asked some solid waste managers: 'have you ever seen an informal recycler whose work is to bring unsorted waste to your landfills? Informal recyclers are taking waste away from the landfill, not bringing it. If the decision-makers were doing a good job, there would be nothing coming to the landfill that would interest an informal recycler.'

In other words, if the solid waste systems were really investing in inclusive source separation and co-operation with the value chains, the "informal" recyclers would be central to the system, not doing their best to reclaim materials at the margins.

"God Bless the grass that grows through cement
It's green and it's tender and it's easily bent
But after a while it lifts up its head
For the grass is living and the stone is dead."

Informal recyclers show us how a solid waste system can move from the dead approach of more and more expensive sinking, to the living approach of the circular economy. As solid waste managers, *informal integration* is a strategy for *upgrading* our solid waste paradigms, which, if not dead, are not exactly alive either. But informal recyclers can't do this from outside the system. And the system can't do it without them.

So the real message here, is that the solid waste systems in your countries, to succeed in their project of developing and modernising and reforming urban cleansing systems, desperately need informal recyclers with their knowledge of materials, their contacts with the value chain, their experience of producing industrial feedstocks, and their efficiency born of having only their own muscles and resources to invest. The entrepreneurial drive to support their families, that characterises informal recycling in all countries, represents a positive force. In the same way, the informal recyclers need the legal protection of authorisation, the respect of occupational recognition, the discipline of being part of the tax system, the dignity of social protection systems, the safety of legalisation and identity cards or badges for safe passage, and the resources of access to financing and investment; all of these are necessary if they are to improve their recovery performance, fix health and safety problems, and protect the environment.

So in closing, let us briefly consider the difference between the accomplishments of a fourth generation solid waste system and a fourth generation informal recycling family. The fourth generation solid waste system is functionally and conceptually the same as the first generation: waste is removed from the immediate point of generation, transported outside the city or village limits, dumped in water, buried in the ground or burned. Only the facilities get bigger and further and further away from the city centre and the houses of the middle class. It costs about Euro 500 per household per year, stores waste underground, transports it in big trucks, and exports it to other countries 300-400 km away to landfill, or incinerates it at a cost of Euro 300 per tonne. This by the way, is the current situation in my home city of the Hague, the Netherlands.

And the fourth generation of informal recyclers? In my work I visit all kinds of landfills, dumps, transfer stations, streets. I talk to a lot of informal recyclers – in cities ranging from Port au Prince, Haiti, one of the poorest countries in the world, to New York City in the USA, for a few years more, maybe, one of the richest. I meet a lot of second and third generation waste pickers – they are on the landfill or on the street with their mothers or grandfathers. But curiously, I never meet fourth generation waste pickers, because the fourth generation are the doctors, engineers, teachers, and lawyers, the first in their families to go to university. The exit of the fourth generation private recyclers is a family success, but a waste system failure. The loss of independent recycling entrepreneurs leaves the waste system more and more rigid, and moves it further and further from the model of a circular economy.

Mainstreaming sustainable approaches to integrating the informal sector might mean that the next generation of solid waste systems in your countries will be about something other than sinking or burning waste – that you are on the way to being circular economy countries where the

materials cycle works with greater resource efficiency. This is the direction taken by Egypt's new Waste Management Directives. It's an approach that Moroccan government institutions have been working with since about 2005, and one which both GIZ and the World Bank are strongly supporting. And it's as much of a challenge – or more – than for a waste picker grandmother to send her grandson to university.

With the SWEEP-Net Forum, the coming three days offer many opportunities to explore the technologies, approaches, and accomplishments of informal sector integration and progress towards the circular economy. I hope that we will have a chance to discuss these issues more in detail in some of those sessions.

Thank-you very much for sharing this time with me!

10. About the authors and publishers

10.1. Dr. Peter Cohen (Preface)

Dr. Peter F. Cohen holds a Ph.D. in Applied Anthropology from Columbia University and has more than 12 years' experience in Involuntary Resettlement with institutions such as the World Bank, Inter-American Development Bank (IDB), and European Bank for Reconstruction and Development (EBRD) in countries including Argentina, Belize, Brazil, Colombia, Ghana, Guatemala, Guyana, Haiti, Kyrgyzstan, Mozambique, Palestine, Peru, and Tunisia. He has organized and presented at various workshops, training events and knowledge exchanges in Involuntary Resettlement, the social dimensions of Solid Waste Management and the integration of informal recyclers into formal waste systems. He is lead author of "Preparing Informal Recycler Inclusion Plans: An operational Guide" (IIR, 2013) and "Resettlement and the Human Dimension: Lessons from an informal recycler inclusion project" (IAIA, 2014). He currently lives in Brazil.

10.2. Dr. Anne Scheinberg (Principal author, editor)

Dr. Anne Scheinberg has been active in waste management and recycling for more than 35 years. She has a PhD (2011) in Environmental and Social Sciences from Wageningen University, in the Netherlands, and two MScs, one in Public Administration from the John F. Kennedy School of Government, Harvard University, Cambridge, Massachusetts, USA, and one in Socio-Linguistics from Georgetown University, in Washington DC, USA. She spent the first half of her career as a "garbologist" in the USA, where, from positions in the glass recycling industry, and as a municipal recycling co-ordinator and consultant, she was a member of the cohort of young professionals who co-invented *municipal recycling* in North America in the 1980s. In 1992 she emigrated to the Netherlands for the first time, left in 1996, and returned again in 1999 after a year in Honduras and four years in the Balkans. She recently completed 15 years working for WASTE, Advisers on Urban Environment and Development, in Gouda, the Netherlands, where she led the GTZ (now GIZ) study, *Economic Aspects of the Informal Sector in Solid Waste* in 2006-2007, and the project to produce the award-winning publication *Solid Waste Management in the World's Cities* (2010). Scheinberg was also Lead Consultant for and principal author of the

2012 Botswana Recycling Guidelines. Scheinberg left WASTE in 2014. Recent projects include producing a chapter on EPR and the informal sector, for the OECD guidance document on EPR, and a number of other publications on the global informal recycling sector. She is one of a handful of researchers and activists working on the recognition and integration of the European informal recycling sector.

Dr. Scheinberg's work focuses on the practical, institutional, economic, policy, and strategic aspects of recycling, waste management, and sustainability. She works closely with the CWG, the Collaborative Working Group on Solid Waste Management in Low- and Middle-income Countries, a global community of practice. Currently, she serves as a resource to members of the global informal recyclers movement; she contributes to formulation of plans and approaches to integrate informal recyclers into their host municipal waste management systems, and supports professionalization and higher rates of recycling. She has a fascination with middle-income countries, and is working with the Dutch company NWMC, WASTE, and CEMPRE Colombia to create the "Gold Standard" Benchmarking and data management system for inclusive recycling in Latin America. Dr. Scheinberg lives in the Hague, the Netherlands with her husband, J.C.J. (Hans) Paalvast, an energy auditor and wind energy enthusiast, with whom she shares responsibility for the family business, Springloop Cooperatie U.A. In a recent audit of their household waste for the month of May, 2015, their household produced 8 kg of container glass, 7 kg of mixed office paper, newsprint and cardboard, 9 kg of mixed kitchen waste, 1.5 kg of mixed rigid and flexible plastics, and 1.2 kg of residual waste, of which more than 90% was TetraPaks, aluminium foils, and metal tins, which are not yet recyclable in the Netherlands, where PMD fractions are just being introduced.

10.3. Rachel Savain (co-author, Egypt Chapter Author)

Rachel Savain is an international environmental researcher and consultant, specializing in inclusive recycling and waste management. Between 2012 and 2015, she coordinated a program to reinforce four Haitian municipalities' capacity to implement integrated waste and water management systems. She helped conceptualize and put in place a municipal door-to-door collection project that successfully collects fees to finance service provision. Rachel holds a Master's of Science in Environmental Policy from Bard College and a Bachelor of Arts in French Studies with a minor in Environmental Studies from Williams College. At Bard, she self-published her award-winning Master's thesis entitled: "Building Public- Private Partnerships: Integrating Informal Recyclers in Solid Waste Management in Haiti". At Williams, she contributed to updating the college's e-waste recycling program. Rachel is now a member of the ISWA (International Solid Waste Association) Young Professional's Group.

10.4. Eng. Yasser Dweik (Palestine Chapter Author)

Yasser Dweik is the Executive Director of the Joint Service Council for Solid Waste Management of Hebron & Bethlehem Governorates - Palestine (JSC-H&B). JSC-H&B is managing the solid waste service in the Southern West Bank, which has a population of 800,000. Solid waste service includes collection, transportation, recycling and disposal in a sanitary landfill. JSC-H&B is managing now a central landfill and two transfer stations including the hauling from the stations to the landfill in addition to other waste facilities like medical waste treatment plant and sorting facility. The JSC-H&B is following the National and International Standards for Social and Environmental issues in Solid Waste Management. The author and his colleagues designed and implemented an inclusion scheme for informal waste pickers with a certain methodology that can be considered as the first experience in informal integration in Palestine.

10.5. Dr. Meryem Aziz Alaoui, (Morocco chapter Author)

Dr. Alaoui holds a Doctorate (PhD) in Environment and Sustainable Development of the University Hassan II in Casablanca (Morocco), a Masters in Environmental Sciences of the University of Le Havre (France). She also holds a Master of IAE Rouen (France) in Management and Business Administration. Returning to Morocco, Ms. Aziz Alaoui worked as an engineer at the Ministry of Industry. She was also expert for UNIDO (United Nations Industrial Development Organization) and worked nearly nine years with GIZ (German Cooperation). She has her first skills in the environment sector and all aspects of sustainable development namely social and economic aspects. Due to her background and professional experiences, her profile moved towards sustainable economic development with recognized expertise in the promotion of industrial value chains in particular the value chain of recycling. Mgrs. Alaoui has acted as speaker in various national and international events related to sustainable development; for example during the 14th meeting of the United Nations Commission on Environment and Sustainable Development (United Nations Headquarters, New York 2006) and in 2009 she presented some of her work to the European Union in Brussels. Meryem is the founder of Wincy Company, specialized in strategic consulting and sustainable economic development. She is also Associate Professor at the University Mundiapolis of Casablanca.

10.6. Ilyès Abdeljaouid, Tunisia chapter co-author

Ilyès Abdeljaouad, co-founder and Senior Partner of SMART Consult, a private-owned consulting firm, has extensive experience in economic, financial and general studies in the fields of

environment and infrastructure (sewage, sanitation, waste management) and for industrial companies. Formerly head of the economic studies department of STUDI, he is currently working on public private partnership issues (sewerage and solid waste management). His areas of expertise include in particular the definition and implementation of regulatory, institutional and financial solutions designed to foster private sector participation in the field of environmental services, and more generally of public services.

He has conducted several studies in Tunisia, Algeria, Morocco, Mauritania, Burkina Faso, Syria and Egypt on the management of solid or liquid waste on behalf of government agencies (Tunisian National Agency of Environmental Protection, Tunisian National Agency for Waste Management, Tunisian National Sanitation Agency, Tunisian Ministry of Environment, Syrian Ministry of Environment, Algerian Ministry of Environment, Mauritanian Ministry of Environment, Burkinabe Ministry of Housing, Moroccan State Secretary of Environment, USAID, METAP, AfD, GiZ, KfW, World Bank Group).

10.7. Abdelhamid Ghribi, Tunisia chapter co-author

Mr. Abdelhamid Ghribi graduated from TU Berlin as an Urban planning engineer. He has been active in Tunisia, as public official for 25 years, specialising in the development of regional territory and municipal technical affairs.

Ghribi has worked as an independent expert since 2006 specialising in in local and environmental governance. He has deep specific knowledge in the fields of urban and regional planning and waste management, with a focus on coordination of studies and communication. Ing. Ghribi participated, with the support of international cooperation, in numerous urban and regional planning studies, sustainable development and ecosystem protection, and has served as a project coordinator of integrated waste management and public awareness for GIZ for the past three years. He is also a Coach and Trainer for technical staff and elected officials on behalf of VNG International and CFAD.

11. Annexes

11.1. Annex 1. References and Resources

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11.2. Annex 2. Methodological Notes.

Researching the informal sectors in solid waste and recycling is a rather different type of activity than traditional research, even at the level of a desktop study. By definition, the informal sector is informal, outside of the system, and often is seen as being a threat to the formal system, which undermines it or retards its progress. This creates specific methodological challenges which make a study like this immensely more complicated than it seems at first sight. This chapter explains the methodological approaches used to complete this book

Snowball research

"Snowball research" begins with the information that is already within reach. It involves making an inventory of who and what each of us knows already, reading documents, making contacts, asking those contacts to make other contacts, and continuously broadening the pool of contacts and knowledge. It is a fairly organic process, which we all understand intuitively, but it doesn't always work. For example, when the questions are especially controversial, or when there are some "x factors" that are creating taboos or resistance, the response is low, and the "snowball" remains small.

For this project, the starting information has included the SWEEP-Net website, the SWEEP-Net coordinators in the nine partner countries, GIZ and its network, and the background information gathered in the fact-finding phase of *Structural Integration*. The first phase of the research usually results in a working hypothesis in answer to the research questions, which allows for refining of the ideas about what kind of information is needed, and where to go for further deepening of the information base. Telephone interviews represent the second step in this approach, and are strongly dependent on the quality of the first level information.

Appreciative Inquiry

Appreciative inquiry is a form of field research that can best be described as an attitude. In the Regional Study, we pay special attention to the state of knowledge in relation to the informal and recycling sector, as well as to the relations between formal and informal stakeholders, the way informal actors are considered, and how different sectors relate to each other. Appreciative inquiry starts with the attitude that whatever is happening in a city, country, or region:

1. is worth respecting and understanding
2. has some kind of logic or reason for existing, but may have changed over time so that some aspects are out of phase with others
3. represents a system with internal rules, logic, stakeholders, and operating instructions

4. is well-known to the stakeholders directly involved in it, whether or not they are able to articulate its structure or logic to an outsider
5. represents the best that the stakeholders can do under the circumstances that they perceive and experience
6. has strengths, weaknesses, threats, and opportunities

Literature Search

Using the approach of snowball research, Phase 1 began with a literature search, starting with documents produced by the SWEEP-Net secretariat itself – and the reference list they contained. In addition to conventional searches of journals, the researchers also used material from the websites of the World Bank, WIEGO and GIZ, and received some additional documents through network queries.

To obtain supplemental information and to encourage free conversation the research team conducted open-ended interviews. About 30 email queries were sent to GIZ and other consultants on two separate occasions. Only a third or less than 10 country-based solid waste management professionals and consultants, working in the government, international and national NGOs, and as private consultants, responded to the queries and accepted to participate in interviews (see Annex 1).

In order to gather consistent information throughout the region, the interview questions focused on four main areas:

- The state of knowledge and recognition in each country, and numbers where they are available
- Informal sector activities and interventions in informal integration in the service chain
- Informal sector activities and interventions in informal integration in the value chain
- Informal sector and private sector participation policies

For this topic, the responses of the first contacts were quite weak: of the approximately 30 emails requesting a telephone interview or additional documentation, sent in English or French, only very few persons responded. The conclusion, confirmed in face-to-face conversations during the SWEEP-Net Forum, was that the topic is taboo, embarrassing, and that there are few professionals in the region who want to go on record as having experience or opinions about it. The few people who did have something to say and made contact, formed the "short list" for selecting the authors for this booklet.

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