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Consultancy for Up Stream Poverty and Social Impact Analysis (PSIA) for Egypt's Solid Waste Management Reform

Final Report

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Table of Contents

List of Tables **6**
List of Acronyms and Abbreviations **11**
PSIA Glossary **13**
Executive Summary **15**

Chapter One: The Poverty and Social Impact Analysis 41
1.1 General Background on the Poverty and Social Impact Analysis 41
1. 2 The Up Stream Poverty and Social Impact Analysis (PSIA) for Egypt's Solid Waste Management Reform 41

Chapter Two: Municipal Solid Waste Management in Egypt: An Environmental Challenge 44
2.1 Introduction 44
2.1.1 Composition 45
2.1.2 Properties 45
2.1.4 Institutional Framework 46
2.1.5 Legal Framework 46
2.1.6 Finance and Cost Recovery 47
2.1.7 Government Directives for MSWM 48

Chapter Three: The Poverty and Social Impact Analysis (PSIA) Methodology 51
3.1 The Selected Analytical Framework for the PSIA 51
3.2 PSIA Methodology and Tools 51
3.2.1 Literature Review 52
3.2.2 Primary Data Collection 52
3.2.2.1 Quantitative Data 53
3.2.2.2 Qualitative Data 62
3.3 Strengths and Limitations in the PSIA Methodology 65

Chapter Four: Current Situation 69
4.1 Background Information about the Targeted Governorates: 69

4.1.1 Poverty Analysis 69
4.2 Giza Governorate 70
4.2.1 Socioeconomic Characteristics of Giza Governorate 70
4.2.1.1 Description of Giza Governorate 70
4.2.1.2 Municipal Solid Waste Management System 70
4.2.2 Mapping of Different Actors in the MSWM System in Gharbia 74
4.2.2.1 Historical Snapshot and Communities Views 74
4.2.2.2 Current Situation 75
4.2.2.3 Giza Cleansing and Beautification Authority (GCBA): 77
4.2.2.4 International Environmental Services (IES) 81
4.2.2.5 Other National Private Sector Companies 84
4.2.2.6 The Informal Sector 86
4.2.3 Assessment of the Current MSWM System in Giza 88
4.2.4 Profile of the Informal Sector in Giza Governorate 95
4.2.4.1 Groups Engaged for Many Years/Traditional Groups 96
4.2.4.2 Recently Emerging Groups 101
4.3 Gharbia Governorate 113
4.3.1 Socioeconomic Characteristics of Gharbia Governorate 113
4.3.1.1 Description of Gharbia Governorate 113
4.3.1.2 Economic Activities 113
4.3.1.3 Population 114
4.3.1.4 Education 115
4.3.1.5 Employment Status 115
4.3.2 Sample Description 116
4.3.3 Municipal Solid Waste Management System 117
4.3.3.1. Municipal Solid Waste Generation in Gharbia Governorate 117
4.3.3.2 Mapping of Different Actors in the MSWM System in Gharbia 118
4.3.4 Profile of the Informal Sector in Gharbia Governorate 136
4.3.4.3 Demographic Characteristics of the Informal Sector in Gharbia Governorate 143
4.4 Luxor Governorate 147
4.4.1 Socioeconomic Characteristics of Luxor Governorate 147
4.4.1.1 Description of Luxor Governorate 147

4.4.1.2 Economic Activities 147
4.4.1.3 Population 148
4.4.1.4. Education 149
4.4.1.5 Employment 149
4.4.2 Municipal Solid Waste Management System 149
4.4.2.1 Description of the Current MSWM System in Luxor Governorate 149
4.4.2.2 Mapping of Different Actors in the MSWM System in Luxor 149
4.4.2.3 Assessment of the Current MSWM System in Luxor 160
4.4.4 Profile of the Informal Sector in Luxor Governorate 161
4.4.4.1 Warehouse Owners 162
4.4.4.2 Youth Individual Scavengers 162
4.4.4.3 Individual Scavengers 163
4.4.4.4 Families Working in Scavenging and Sorting 164
4.4.4.5 Scavengers Employed by Private Companies 165
4.4.4.6 Intermediaries ("Qamatt") 165
4.4.4.7 Municipal City Council Crew 166
4.4.4.8 Sailors on Floating Hotels 166
4.4.5 Demographic Characteristics of the Informal Sector in Luxor Governorate 169
4.4.5.1 Age 169
4.4.5.2. Gender Roles 169
4.4.5.3 Educational Status 169
4.4.6 Child Labor 169
4.4.7 Social Organization Supporting the Informal Sector 169
4.4.8 Description of the Working Environment (Health and Security Risks) 169
4.5 Ismailia Governorate 170
4.5.1 Socioeconomic Characteristics of Ismailia Governorate 170
4.5.1.1 Description of Ismailia Governorate 170
4.5.1.2 Ismailia Population 171
4.5.1.3 Educational Facilities 171
4.5.1.4 Economic Activities 172
4.5.2 Municipal Solid Waste Management System 173
4.5.2.1 Description of the Current MSWM System in Ismailia Governorate 173
4.5.2.2 Mapping of Different Actors in the MSWM System in Ismailia 173

4.5.2.3 Evaluation of the Current System in Ismailia Governorate 182
4.5.3 Profile of the Informal Sector in Ismailia Governorate 184
4.5.3.1 Scavengers/Street Pickers 185
4.5.3.2 Small Dealers 187
4.5.3.3 Small Enterprises 188
4.5.3.4 Municipal Waste Crew/Private Companies workers 188
4.5.4 Demographic Characteristics of the Informal Sector in Ismailia Governorate 189
4.5.4.1 Age 189
4.5.4.2 Gender Role 189
4.5.4.3 Educational Status 189
4.5.4.4 Child Labor 189
4.5.4.5 Social Organizations Supporting the Informal Sector 189
4.5.4.6 Description of the Working Environment (Health and Security Risks) 190
4.5.4.7 Security Hazards 191
4.6 Estimation of Numbers of Informal Sector Workers in the Municipal Waste Sector 193
4.6.1 Introduction 193
4.6.2 Methodology 193
4.6.3 Given Input 194
4.6.4 Assumptions 194
4.7 Market Value for the Informal Sector Activities 197

Chapter Five: The Sustainable Livelihoods Analysis 202
5.1 General Introduction 202
5.2 The SLA Analysis for the Informal Sector Groups 203
5.2.1 SAL for Zabbaleen Community 203
5.2.2 SLA Analysis for the Informal Sector Outside the Traditional Zabaleen Community 207
5.2.3 Polices, Institutions and Processes (PIPs) 212

Chapter Six: Alternatives and Suggestions for the SWM Reform 213
6.1 Introduction 213

6.2 Alternatives Analysis....216
6.2.1 Alternatives for Community Groups....216
6.2.1.1 Community Perspective for an Improved System....216
6.2.1.2 Local Communities Willingness to Pay for an Improved SWM System..220
6.2.1.3 Enterprises Willingness to Pay for an Improved Level of Service....223
6.2.2 Alternative for the Informal Sector....224
6.2.2.1 Alternatives for Zabbaleen Community in Ard El Lewa....225
6.2.2.2 Alternatives for the Newly Emerging Informal Groups....234
6.2.3 Institutional Framework for the Implementation of the PSIA Alternatives..224
6.2.3.1 The Social Development Department....225
6.2.3.2 Other Complementary Mechanism....225

Chapter Seven: Dissemination and Capacity Building Plan 235
7.1 Key Findings from the PSIA....240
7.2 PSIA Dissemination Methodology....240
7.2.1 Regional Workshops....240
7.2.2 Central Launch Workshop....242
7.3 Capacity Building Plan....243

PSIA Conclusion.... 244
References.... 247
Annexes.... 250

List of Tables

Table 0.1 Framework for the Scenario A on the Integration of the traditional informal sector groups
Table 0.2 Framework for the Scenario B on the Integration of the traditional informal sector groups
Table 0.3 Framework for the Scenario A on the Integration of the newly emerging groups
Table 0.4 Framework for the Scenario B on the Integration of the newly emerging groups

Table 2.1 The Daily and Annual Amount of Municipal Waste Generated by Governorates in Egypt
Table 2.2 Composition of Municipal Waste in Egypt
Table 2.3 Properties of Municipal Waste

Table 3.1 The Justifications of Sample Selection within the Targeted Governorates
Table 3.2 Sample Distribution by Governorate
Table 3.3 Distribution of the Survey Sample by Urban Characteristics

Table 3.4 Main Features of the Surveyed Areas
Table 3.5 Main Economic Activities for the Surveyed Enterprises
Table 3.6 Gender Representation in the Survey Sample
Table 3.7 Age Characteristics of the Survey Sample
Table 3.8 Income and Expenditure of the Household
Table 3.9 Summary of the FGDs and In-depth Interviews in the Targeted Governorates

Table 4.1 Poverty and Deprivation Indicators on the National Level and in the Targeted Governorates
Table 4.2 Giza New Administrative Division, July 2010
Table 4.3 Giza Governorate Administrative Division and Population
Table 4.4 Waste Composition in Giza Governorate (2009)
Table 4.5 Communities' Preference for the Current Versus the Past Garbage Collection Systems
Table 4.6 Reasons for Preferring the Zabaleen Old System
Table 4.7 SWM Service Providers for the Survey Sample
Table 4.8 List of National Companies/Associations that Operate in SWM in Giza Governorate
Table 4.9 Visibility of the Informal Sector to Governorate and Community
Table 4.10 Satisfaction Level with the Current SWM Services among the Surveyed Sample of Giza Governorate
Table 4.11 Reasons for Satisfaction
Table 4.12 Reasons for Dissatisfaction
Table 4.13 Impacts of the Current System on Local Communities
Table 4.14 SWM Service Fees as Shown in the Survey Results
Table 4.15 Administrative Distribution of Gharbia Governorate (according to 2006 census)
Table 4.16 Distribution of Population by Area and Gender
Table 4.17 Employment Status in Gharbia Governorate
Table 4.18 Perception of Street Conditions in the Neighborhood
Table 4.19 Reported Distribution of the Sample by Service Provider
Table 4.20 Distribution of the Sample Satisfaction with the Waste Collection Service
Table 4.21 Distribution of Population by Markaz
Table 4.22 Pre-University Education in Luxor
Table 4.23 Perception of Street Conditions in the Neighborhood
Table 4.24 Satisfaction Level with the Current SWM Services among the Surveyed Sample of Luxor Governorate
Table 4.25 Ismailia Administrative Division
Table 4.26 Ismailia Population, 2010
Table 4.27 Amount of Generated Waste by Markaz
Table 4.28 SWM Service Providers for the Survey Sample
Table 4.29 Perception of Street Conditions in the Neighborhood
Table 4.30 Level of Satisfaction with the Current Situation among Beneficiaries and Enterprises
Table 4.31 Method of Disposing Garbage
Table 4.32 Estimate Numbers of Street Pickers on the National Level
Table 4.33 Processes which Add Value to Waste and Groups Involved in the Process
Table 4.34 Value Chain of Prices

Table 6.1 Local Communities Reply When They Were Asked if They Want the Current System to be Improved
Table 6.2 Service Provider Preferences in the New Improved System
Table 6.3 Preference for the Garbage Collection System

Table 6.4 Preference for the Collection Service Frequency
Table 6.5 Framework for Scenario A for the Integration of the Traditional Informal Sector Groups
Table 6.6 Framework for Scenario B for the Integration of the Traditional Informal Sector Groups
Table 6.7 Framework for Scenario A for the Integration of the Newly Emerging Groups
Table 6.8 Framework for Scenario B for the Integration of the Newly Emerging Groups

Table 7.1 Preliminary Proposed Capacity Building Topics and the Targeted Group

List of Figures

Figure 3.1 Summary of the PSIA methodology
Figure 3.2 The Wealth Index Indictors of the Survey Sample
Figure 3.3 Monthly Income and Expenditure of the Survey Sample
Figure 3.4 Women FGD in Boulak
Figure 3.5 Men FGD in El Warrak
Figure 3.6 In-depth interview with one of the subcontractors in Gharbia
Figure 3.7 In-depth interview with one of the dumpsite scavengers, El Dawakhlia, Gharbia

Figure 4.1 Giza Map According to the New District Administrative Divisions
Figure 4.2 Key SWM Actors in Giza Governorate
Figure 4.3 Service Providers of Giza Governorate
Figure 4.4 The entrance of Shabramant Dumpsite
Figure 4.5One of the national companies' trucks unloading at Shabramant Dumpsite
Figure 4.6 Waste containers in on El Warrak Main Street
Figure 4.7 A canal in Boulak El Dakrrour
Figure 4.8 An Article by one of the nation company's Chairman about the role of the companies in improving SWM sector in various governorates, published in El Nadi El Syasi, June 2010
Figure 4.9 Electricity bill for one of the shops in Boulak El Dakrour District noting a charge of LE46.70, out of which LE 20 are for cleansing fees
Figure 4.10 Electricity bill from a beneficiary in Boulak indicating "none/without" in the cleansing fee cell
Figure 4.11 The Informal Sector Groups in Giza Governorate, Features and Categories
Figure 4.12 Street pickers' donkey carts in Mohandeseen, Giza
Figure 4.13 Street picking on a small scale on one of Dokki's side streets
Figure 4.14 Interview with one of the street pickers in Boulak
Figure 4.15 Waste from Generation to Recycling and the Role of Informal Sector Groups, Giza Governorate
Figure 4.16 One of street pickers' houses in Boulak
Figure 4.17 A small shaded area for the dumpsite scavengers to socialize and rest
Figure 4.18 Segregated recyclables at Shabramant Dumpsite
Figure 4.19 Itinerant recyclable buyers in El Warrak, Giza
Figure 4.20 Itinerant recyclable buyers in Boulak, Giza
Figure 4.21 Percentage Distribution of the Population by Markaz
Figure 4.22 Maps of the Selected Surveyed Markazes
Figure 4.23 Waste Generation Rate by Markaz
Figure 4.24 Waste Collection Services in Gharbia Governorate
Figure 4.25 MSWM Actors in Gharbia Governorate
Figure 4.26 Care Service Company cars disposing waste in Dawakhlia dumpsite, Gharbia Governorate

Figure 4.27 Care Service workers in Tanta, Gharbia Governorate
Figure 4.28 Contract between LGU and one of the contractors
Figure 4.29 Summary reports for the CDAs working in waste management and funded by the SFD 5-7-2010
Figure 4.30 Street pickers in Tanta, Gharbia Governorate
Figure 4.31 Storage area/warehouse of one of the dealers in Gharbia
Figure 4.32 Distribution of the Sample Reporting Having Ever Seen Scavengers
Figure 4.33 Need to Enhance the Waste Collection Service
Figure 4.34 Service Provider Preferences in the New Improved System
Figure 4.35 Waste from Generation to Recycling and the Role of Informal Sector Groups, Gharbia Governorate
Figure 4.36 Luxor Map indicating the Waste Collection Services in Luxor Governorate
Figure 4.37 Key actors of SWM in Luxor Governorate
Figure 4.38 Organizational Chart of the Cleansing Department of Luxor City
Figure 4.39 Waste disposals in Al-Haubil Dumpsite
Figure 4.40 Scavenging works in Al-Haubil Dumpsite
Figure 4.41 West Side Dumpsite
Figure 4.42 A child scavenging at the West Side Dumpsite
Figure 4.43 Burning waste at Al-Tawd Dumpsite
Figure 4.44 Dynamics of the Informal Sector in Luxor
Figure 4.45 Estimated Numbers of Workers in the Informal Sector
Figure 4.46 Divisions of SWM Responsibilities in Ismailia
Figure 4.47 Ismailia Map Indicating the Waste Collection Services in Luxor Governorate
Figure 4.48 One of the transfer stations in Ismailia City
Figure 4.49 Abu El Balah Dumpsite, Ismailia
Figure 4.50 The composting plant in Abu El Balah Dumpsite
Figure 4.51 Model of waste collection equipment in El Qassaseen El Gededa
Figure 4.52 Health care waste is mixed with domestic waste in Abu El Balah Dumpsite and scavenging activities are ongoing
Figure 4.53 Care Service Company containers at Suez Canal Hospital
Figure 4.54 Burning waste by the canal bank
Figure 4.55 Waste accumulations next to one of Ismailia Markaz basic education schools
Figure 4.56 Recyclable picking from street containers
Figure 4.57 Sorted PET bottles in a warehouse
Figure 4.58 Cardboard loaded to be transferred to dealers
Figure 4.59 The Typical Waste Hierarchy in the Four Governorates Under Study
Figure 4.60 Example of Value Added in Plastic Processing in Mensheyat Nasser – Greater Cairo
Figure 5.1 Sustainable Livelihoods Framework
Figure 5.2 Main Sources of Livelihoods for the Informal Sector Groups' in Giza Governorate

Figure 6.1 Summary of the Main Potential Vulnerable Groups within the Reform Context and the Potential Impacts
Figure 6.2 Service Provider Preferences in the New Improved System
Figure 6.3 Preference for the Garbage Collection System
Figure 6.4 Giza Beneficiaries Willingness to Pay and Link to the Level of Income
Figure 6.5 Ismailia Beneficiaries Willingness to Pay and Link to the Level of Income
Figure 6.6 Gharbia Beneficiaries Willingness to Pay and Link to the Level of Income
Figure 6.7 Luxor Beneficiaries Willingness to Pay and Link to the Level of Income
Figure 6.8 Enterprise Willingness to Pay for an Improved SWM System

Figure 6.9 The Proposed Structure for the Social Development Department under the SWM National Entity

Figure 7.1 Representatives from the UNDP, MoLD and the PSIA team responding to the participants comments during the PSIA launch workshop
Figure 7.2 Some of the participants and representatives at the PSIA launch workshop

List of Boxes

Box 3.1 Key Aspects for the selection of the survey sample in the targeted Governorates

Box 4.1 "Segregation at Source", Giza Governorate
Box 4.2 Shabramant Dumpsite
Box 4.3 Hurgada and the street picking
Box 4.4 Dawakhlia Sorting Point
Box 4.5 Defra Composting Plant
Box 4.6 Information about Care Service El Mehalla El Kobra and Tanta
Box 4.7 Contract Model, Gharbia Governorate
Box 4.8 CDA in Shobratna - Basyoun
Box 4.9 CDA in Emiout - Contour
Box 4.10 CDA in Neshel - Qotor
Box 4.11 Administrative Structure of Luxor Governorate
Box 4.12 Crew and Equipment of the SW Collection Services in Luxor City
Box 4.13 Private Companies and Scope of Service in Luxor City
Box 4.14 Profile of an Individual Scavenger
Box 4.15 Example of Financial Accounting Method for Local Dealers
Box 4.16 Al Kholafaa Al Rashedin CDA
Box 4.17 Estimating the Significance of the Municipal Solid Waste Management Activities in Incomes of the Informal Sector
Box 4.18 Model 1- Transactions between a Dealer Buying from Street Pickers and Selling to a Large Dealer
Box 4.19 Model 2 – Transactions of a Dealer who Hires Street Pickers to Collect for Him

Box 6.1 Proposed Mandates for the SDD
Box 6.2 Proposed Structure for the "Consultation Forum"

List of Annexes

Annex A: Copy of the Beneficiaries Survey Questionnaire
Annex B: List of Interviewed Stakeholders
Annex C: Findings from the Survey Results
Annex D: Documentation for the Launching workshops

List of Acronyms and Abbreviations

APE	Association for the Protection of the Environment
BOT	Build Operate and Transfer
CAPMAS	Central Agency for Public Mobilization and Statistics
CCBA	Cairo Cleansing and Beautification Authority
CDA	Community Development Association
CMU	Contract Monitoring Unit
EEAA	Egyptian Environmental Affairs Agency
EGP/LE	Egyptian Pounds
EMU	Environmental Management Unit
ESDF	Egyptian Swiss Development Fund
FGD	Focus Group Discussion
GCBA	Giza Cleansing and Beautification Authority
GOPP	General Organization for Physical Planning
IES	International Environmental Services
KFW	Kreditanstalt für Wiederaufbau (*Reconstruction Credit Institute)*
LGU	Local Governorate Unit
MoLD	Ministry of Local Development
MSEA	Ministry of State for Environmental Affairs
MSWM	Municipal Solid Waste Management
NGOs	Non Governmental Organizations
NSWMP	National Solid Waste Management Programme
PIPs	Policies, Institutions and Processes
PM&E	Participatory Monitoring and Evaluation
PSIA	Poverty and Social Impact Analysis
SAP	Structural Adjustment Programmers'
SCA	Suez canal Authority
SCI	Suez Canal for Investment
SDD	Social Development Department
SFD	Social Fund for Development
SG	Secretary General
SIA	Social Impact Assessment

SLA	The Sustainable Livelihoods Approach
SPSS	Statistical Package for Social Sciences
SWM	Solid Waste Management
UNDP	United Nations Development Program
WB	The World Bank

PSIA Glossary

The glossary of this PSIA has been developed with the purpose of presenting the key jargons and terms as used in this PSIA. Some discrepancies might appear between these terms and those developed by other studies. However, for the purpose and scope of this PSIA, the following glossary should be used.

Itinerant waste buyers (Sarreh) (pl. Sarreha)	Waste collectors who often go from door to door, collecting sorted dry recyclable materials from householders or domestic servants, which they buy or barter for and then sell.
Gonya	A large thick plastic pack that Zabbaleen use for carrying the primarily collected recyclables of different items (collectively without sorting) which are taken home for further segregation. Before the culling of the pigs in 2009, it was used for packing all waste, including organic refuse.
Large scale dealer	The trader who work in wholesale of recyclables. The large scale dealer usually deals with large amounts of recyclables and has direct contracts with recycling industries and/or importers.
Small scale dealer	The traders of recyclables who work in small quantities of recyclables and in most cases are in direct contact with Sarreha and waste pickers. They usually have access to warehouses (on different scales) to store recyclables.
Street pickers	Those who search for street waste (in waste containers) that serve as secondary raw materials and could be reused or sold to recyclable traders on different scales.
Wahy (pl. Wahya/Wahys)	Migrants from Egypt's Oases or Waha. They historically have been collecting waste from residents to use for cooking and heating purposes. The types of waste that were not appropriate for these purposes were sold by Wahya/Wahys to Zabbaleen as fodder for pigs.
Waste pickers/scavengers	Scavenging is done in dumpsites, a transfer station or another intermediate point or within settlements where sorting and segregation of recyclables is practiced, like Zabbaleen settlements. These individuals sort through waste prior to being covered.
Zarab/ Zabbal (pl. Zabbaleen)	Zabbaleen migrated in the seventies from Upper Egypt and started raising pigs on the garbage collected from households. Raising pigs was the primary source of income for Zabbaleen. They also work in sorting and selling recyclables separated from waste.
Qamatt/ Mo'allem	This figure is a manger/leader of a number of street pickers, hired to collect recyclables for him. This position was found in all the governorates but with different names. Qamatt is most often used in Luxor.

Zarayeb	Originally, the word in Arabic referred to animal sheds. In the context of the Zabbaleen settlement, it refers to places where Zabbaleen/ Zarabeen raise pigs. These places exist in Zabbaleen settlements and in most cases Zabbaleen settlements are referred to as Zarayeb.

N.B.: The Consultant adopted the glossary above from "Role of informal sector recycling in waste management in developing countries", David C. Wilson, Costas Velis, Chris Cheeseman, Habitat International 30 (2006) 797–808. The definitions of the various terminology were tailored to the context of Egypt and the PSIA.

Executive Summary

The Up Stream Poverty and Social Impact Analysis (PSIA) for Egypt's Solid Waste Management Reform

The Poverty and Social Impact Analysis (PSIA) Approach was developed by the World Bank with support from several bilateral development agencies in 2001. The need for a PSIA is driven from the assumption that different individuals are likely to be affected differently by various programs and policy reforms. The PSIA is a set of tools to analyze the impact of policies on the well-being of different social groups, with particular focus on the poor and those vulnerable to impoverishment. It seeks to support poverty reduction through better policy, particularly, in low-income countries..

The assignment of the upstream Poverty and Social Impact Analysis for Egypt's Solid Waste Management Reform comes with the main objective of influencing the objectives and features of the SWM sector reforms at its inception, rather than waiting for the details of the reforms to be solidified and to then assess their likely impacts. In this sense, the PSIA will evaluate the different impacts of each policy alternative in order to assess its likely outcomes on equity, effectiveness, and feasibility. The Current policy directions for the reform of the SWM sector involve formalization of the SWM sector, expanded involvement of private sector operators and roll out of partial cost recovery system for households and enterprises.

Waste management privatization often goes beyond this by extending the reach of the formal waste management system into activities that were previously the domain of the informal sector. Vulnerable categories are likely to be affected by the ongoing sector reforms in a number of ways. The current drive towards formalization, privatization and cost recovery, thus, needs to be handled carefully if they are to avoid hitting vulnerable constituencies, increasing inequalities and along the way, hamper the very success of the reforms. On the other hand, the reform of the sector has the potential to improve living standards for the poorest sections of the population.

EcoConServ Environmental Solutions has been awarded the consultancy service for the "Up Stream Poverty and Social Impact Analysis (PSIA) for Egypt's Solid Waste Management Reform." The main objectives and tasks of the PSIA is to avoid and/or mitigate any negative impacts of the reforms on vulnerable groups and achieve equitable outcomes and sustainable systems. It is also meant to identify the roles of central and local government and propose a capacity enhancement plan to address social inclusion issues. Moreover, the PSIA aims to evaluate different scenarios for each policy alternative in order to assess its likely outcome on equity, effectiveness and feasibility. The PSIA targeted four Governorates from various regions in Egypt, representing the different types of Governorates. The Governorates are Giza, Gharbia, Luxor and Ismailia.

Municipal Solid Waste Management in Egypt: An Environmental Challenge

Municipal solid waste has been inadequately managed for many years in Egypt. Egypt generated an estimated 20 million tons of municipal solid waste (MSW) in 2009, and the amount of solid waste produced annually is growing at an estimated 3.4% per year. Waste collection systems have left large areas of towns and cities (in some cases more than 50%) without service or under-serviced, and the majority of collected waste is dumped in facilities that lack any effective management. Composting, although widespread, has generally not been effectively implemented. Recycling activities have only been undertaken in some cities under unsafe and unhygienic conditions subjecting workers who participate in these processes to many risks. The majority of dumping sites are unsafe, and there are

no preventive measures at these sites to prevent the self-ignition of waste. 50 - 60% of the waste composition is organic matter.

Responsibility for MSWM in the central government of Egypt is dispersed among a number of ministries. The Ministry of Local Development through Governorates and respective municipalities is responsible for the implementation of MSW activities either through direct implementation or through tendering to other entities. Except for Cairo and Giza Governorate, in general, Governorates lack a specialized unit that is entirely responsible for waste management. The Ministry of State for Environmental Affairs (MSEA) and its technical arm the Egyptian Environmental Affairs Agency (EEAA) host a General Directorate for solid waste management. The mandate of this directorate is the formulation of policy directives and the provision of guidelines for proper management of municipal waste. The Ministry of Finance is responsible for approving budget allocations for operational costs.

The legal framework regulating MSWM in Egypt is multisided and falls under the jurisdiction of different ministries. There is no legislation dedicated to SWM. Legislation is instead in the form of provisions within other laws. The most significant are Law 38 of 1967 and its subsequent amendments in Law 10 of 2005, and Law 4 of 1994 and its Executive Regulations. Other laws pertaining to SWM includes Law 48 of 1982 regarding Nile River Protection.

In 2000, Egypt adopted a National Strategy for Integrated Municipal Solid Waste Management (MSWM), which included the development and implementation of an integrated waste management system. Within this National Strategy, a new cost-recovery initiative was introduced to provide sustained revenue for the financing of the privatization process. Privatization of solid waste management (SWM) had occurred in a number of governorates in Egypt. However, the process faced many administrative problems in these governorates. To date, nine private sector companies are operationally involved in waste collection. Three are international and operate on the basis of Design, Build, Operate systems, and local private companies operate in other Governorates such as Suez, Port Said, Gharbia, Luxor and Aswan Governorates. Some NGOs are operational at the level of villages in Egypt. The informal sector has been playing a significant role in Egypt in terms of waste collection and recovery of recyclables. The most visible role was in Greater Cairo through the "Zabbaleen" groups as well as other groups in the other governorates. Conflicts have been detected with the informal sector during the implementation of the privatization.

Under current Presidential directive, EEAA is currently taking the lead and is starting reform and improvements in the Greater Cairo Region. A strategy and action plan is currently being prepared involving all stakeholders both formal and informal. The main point under this strategy is the establishment of one central entity responsible for handling SWM at the national level and establish cooperation mechanisms with the informal sector in addition to several technical solutions related to the dumpsite and the utilization of waste.

The Poverty and Social Impact Analysis (PSIA) Methodology

The upstream PSIA for MSWM reform in Egypt is an assignment that involves multiple levels and disciplines. The PSIA has been carried out in a broad sense that encompasses institutional, political and social analyses to investigate the various policy and policy reform impacts on the local community and more specifically, on the poor and most vulnerable groups as well as the informal sector groups engaged in SWM. The PSIA analysis also targets the assets and vulnerability contexts

and the research tools were formulated in a fashion that allowed for the utilization of the findings in proposing pro-poor measures within the proposed policy alternatives.

The PSIA involved literature review, primary data collection of both quantitative data and qualitative data. The quantitative data collection involved the application of a total of 811 structured questionnaires (492 for beneficiaries and 319 for enterprises). The survey sample in the four Governorate was carefully section to represent the main urban/rural characteristics, different service providers areas and variety in the level of income. Moreover, and in order to yield the depth of information required for the PSIA, a groups of qualitative tools, mainly focus group discussions and in-depth interviews were carried out in the targeted Governorates.

The PSIA adopted a socially and poverty-sensitive approach that paid great attention to the marginalized groups, particularly the informal actors in the solid waste field. It benefited from success stories and useful case studies. The PSIA highly contributed to opening the eyes of various stakeholders on the complexity of the social issues related to SWM. In the meantime, the PSIA has faced a number of limitations. This involved challenges in gathering information from the informal sector groups, limitations in resources, and lack of secondary information on the level of certain parts of the PSIA geographic scope.

Current Situation

Giza Governorate

Giza Governorate is a pure urban Governorate that exists within the larger urban community of the Greater Cairo Region. Giza is one the main urban historical and service centers in Egypt that hosts large number of important institutions of touristic and academic importance. Giza's population is estimated to be around 3 million inhabitants. Since July 2010, Giza has been divided administratively into fourteen districts. According to the previous administrative division of the Giza governorate, Omranya is the largest district at the Governorate level in terms of both area and population. Giza North is the district with the highest population density, while El Haram has the lowest population density (97 persons/feddan). The generation rate of waste in Giza was estimated at 4000 tons/ day and the collection efficiency does not exceed 60% of the generation rate (EEAA, State of the Environment, 2009). The organic component constitutes the largest portion of the generated waste.

Municipal Solid Waste Management System in Giza Governorate

Historically, the SWM system which prevailed in the urban parts of Giza Governorate that now constitute the entire Governorate was dominated by the traditional Zabbaleen system. Over the last ten years and with the introduction of the international private sector companies in Egypt, new actors have been introduced to the SWM field in Giza with the main objective being to improve the system in order to cope with the increasing demands and requirements associated with the increased population.

Giza Cleansing and Beautification Authority (GCBA) is the key Governmental organization in charge of SWM on the level of Giza Governorate. GCBA mandates include beautification including the preparation of public parks and cultivating green areas, provide regular maintenance for green spaces and managing the nurseries on the level of the Governorates and cleansing (SWM) including

the various activities related to SWM. Apart from undertaking waste management by itself, GCBA is the official Governmental agency in charge of representing the Governorate in contractual agreements with various local and international companies. GCBA is responsible for inviting bidders to provide the SWM services within Giza's jurisdiction. It is also the main competent authority for monitoring the performance of the international and local companies contracted for the various SWM activities. In addition to its role as a contract manager and a monitoring body to other companies, GCBA is still responsible for providing SWM services in Al Warak Districts. There are 3,800 cleansing workers under GCBA and most of them are hired with permanent contracts.

The International Environmental Services (IES) is an Italian company, one of the subsidiaries of Ama Arab and is currently holding the concession for various cleansing and beatification activities in Al Dokki, Al Agouza and Giza North (Imbaba) Districts (30% of the total population of Giza). The signed contract between GCBA and IES started in 2002 and will end in 2017. The contract value is 36 million LE. The interview with IES showed that they face operational problems constantly that return to contractual problems as he contract has been developed under certain conditions and these conditions have never been practically available for the company. Consequently, IES is not able to meet the contractual terms and is penalized by GCBA. Moreover, there is a lack of accuracy in the base line information of beneficiaries in terms of the number of the units to be served. On the other hand, citizens' behaviors and lack of commitment to the system is another big challenge.

The national companies are widely dominated by wahys who managed to organize and legalize their situation to get official deals with GCBA. In the meantime, one of two available NGOs in Giza has been formed by wahys (The Cooperative Association for Social Services) and the other is composed of Zabbaleen (The Association for garbage collector in Giza Governorate). The operation of the national companies is facing some operational challenges of great similarity to those faced by the International company. These include low and static contract value, overlapping in responsibilities between the national companies and GCBA result in continuous conflict between the two parties. Moreover, the national companies stated that currently there is no official system for benefiting from recyclables and the informal sector is dominating the scene. This is perceived as a weakness in the current system.

Assessment of the Current MSWM System in Giza

In Giza Governorate, the study revealed a number of positive aspects related to the MSWM situation. This, in particular, includes the high level of attention from the government and strong political will for a better situation and constructive reforms for the sector. Moreover, in Giza Governorate, SWM sector involves a range of actors with good experience in SWM. The informal sector group, particularly the Zabbaleen and wahys, enjoy the know-how of the sector and have very rich experience in door to door collection service, which have proven, for long years, to be the most efficient and culturally appropriate SWM system in Giza Governorate. Moreover, there is generally an increased level of understanding of the value of recyclables and their high economic potential. While this is not yet done in a structured and legalized framework, it still constitutes a core source of income for a large base of the urban poor.

On the other hand, the PSIA showed that the current system in Giza Governorate involves a number of weaknesses that can be summarized in:

1- High level of dissatisfaction and negative socioeconomic impacts that the social survey strongly revealed.

2- Lack of clarity of the division of responsibilities
3- Conflict of interests among various actors
4- Duality of payment and economic burden on poor families

The Informal Sector

Giza Governorate is home to a large and diverse community of informal sector groups that work in different modes. Some of the informal sector groups in Giza Governorate have been traditionally engaged in waste collection. These groups include garbage collectors (Zabbaleen) and wahys, and they are engaged on full time basis and on exhaustive mode in waste business. The engagement of new actors in the SWM, namely GCBA and the international companies has affected the livelihoods and changed the work dynamics of these groups. However, they are still important players in the process. The key zabbaleen gathering in Giza is in Ard El Lewa. On the other hand, other groups have newly emerged and are informally making a living out of recovering recyclables. They have direct interest in handling recyclables. The observation of the PSIA team and the interviewed stakeholders including community members suggested that the numbers of these group members has drastically increased lately and is becoming a clear observed phenomenon in Giza streets like in the majority of urban centers in Egyptian cities. The increase in the informal recyclables picking phenomenon could be attributed to:

- The increasing poverty and inequalities
- Unemployment and lack of secured sources of income
- The deficiency in the current SWM system
- The emerging market of recyclables

Within the recently emerged groups, certain subgroups have been classified by the PSIA. These mainly include street pickers whose basis of work is along street containers, collection points and illegally dumped waste, where they sort recyclables items and sell them to dealers. Te second subgroup is Shoubramant scavengers who work in recovering recyclables from Shoubramant dumpsite. Their number is around 50 scavengers. Moreover, Giza has a large community of itinerant recyclables buyers and dealers on various scale.

Gharbia Governorate

Gharbia Governorate is located in the Delta region and covers an area of 1942.3 km². The total population of Gharbia is estimated at 4 million and 11 thousands inhabitants, of which 70% reside in rural areas. The administration division of the Governorate includes 8 Markaz, 8 cities, 4 districts, 53 rural local units annexed by 318 villages and 1,249 hamlets. In addition, there are 47 informal settlements, among which 19 have been developed by the Governorate and 28 are in the process of being developed.

The main economic activity is agriculture and the associated activities, which mean that waste generated is mostly agricultural waste. The Governorate is famous for crops such as cotton, rice, wheat, fruits and medicinal herbs. Gharbia is also known for huge industrial textile complexes encompassing spinning and weaving. Other industries in the Governorate include fertilizer, pesticides, chemicals and paper, as well as perfumes.

Municipal Solid Waste Management System in Gharbia Governorate

The generation rate of waste in Gharbia was estimated at 3000 tons/day in 2008. Tanta Markaz has the highest waste generation rate in Gharbia, estimated at 525 tons/day. This is followed by El Mahala El Kobra Markaz at a generation rate of 510 tons/day. El Santa and Kotor Markazes were recorded as having the lowest rate of waste generation in Gharbia.

Organic waste constitutes 50-60% of the waste in Gharbia. Despite this, segregation and collection of recyclables is still undertaken in Gharbia, especially in urban settlements.

The Local Government is the main entity responsible for municipal waste management in Gharbia. In this respect, the responsibility of the Local Government comprises:

1. Collecting, transporting and disposing of waste from streets and public areas.
2. Preparing tenders for contractors and private companies.
3. Contracting the private companies.
4. Monitoring the private company and the contractors.
5. Law enforcement for violations related to waste dumping.
6. Managing dumpsites and composting plants.

The Local Government in involved in the waste system in Gharbia at five different levels:

1. The Department of Cleansing at the Governorate level collects waste in Tanta.
2. The Department of Cleaning and Beautification collects waste in each city of the Markazes.
3. The Local Government Unit (LGU) collects waste from villages.
4. The operators of composting plants and or dumpsites.

Waste collected by the Local Government is disposed of in two sites: El Dawakhlia in El Mehala El Kobra and Defra. The Dawakhlia site used to be a sorting site, however it is no longer operational and is now being used as a dumpsite. The second site used for disposal of waste collected by the Local Government is a composting plant in Defra.

In addition to the Local Government, a number of private operators are functioning in Gharbia. Care Service is operating in the two major urban cities of El Mehala El Kobra and Tanta. The company is responsible for waste collection, transfer and disposal. The company was contracted for ten years to undertake door to door collection, however, this never took place. Currently, two years are left in the contract, and Care Service provides collection from large containers placed on the streets. They collect waste from residential areas, organizations and enterprises, and on a voluntary basis, they also sometimes collect waste that has accumulated in the streets. Waste is finally transferred and disposed of in Dawakhleia and Defra sorting/dumpsite in El-Mehala El-Kobar and Tanta respectively. The second private company operating in this field is Hany El-Naggar Company, which is contracted to undertake final disposal of waste from Dawakhlia and Defra sites to the dumpsite in El Sadat city. The company performs this task against a monthly fee of 160,000 LE.

The third private company operating in the waste management field is Mabouk International Company for Engineering Industries. The company works in the manufacturing field and produces waste collection equipment, among other types of equipment, which is competitive in the international market. (30% less than international prices according to the owner. The owner is currently preparing to participate in the new tender for waste collection.

Contractors (Motaahedeen) are individuals, who under a license agreement pay an annual license fee to the LGU in return for providing a waste collection, transfer and disposal service. By virtue of their license, contractors are permitted to collect a pre-agreed upon monthly fee from residents in return for their service. There are 15 contractors currently operating in El Mehala El Koubra Markaz.

There are CDAs working in Gharbia Governorate, among which only 16 CDAs work in municipal solid waste management.[1] However, some CDAs ceased working in this field as a result of lack of local transfer stations, which made their work economically unfeasible. CDAs are predominantly dependent on donor funded grants to operate their services. The Social Fund for Development (SFD) has invested a total of 700,000 LE to support CDAs operating in this field. Another prominent donor in the field is the Egyptian Swiss Development Fund (ESDF).

Assessment of the Current MSWM System in Gharbia

From the survey sample, 51% of beneficiaries and 43% of the enterprises believe that the streets are not clean. The data collected revealed that the government provides the service for around 30% of the sample for the beneficiaries against 36% provided by the private company, 9% was covered by the CDAs and 21% received no service at all. 60.9% of the beneficiaries and 55.7% of the enterprises were not satisfied with the service. The main reasons for dissatisfaction were as follows:

1. Poor service is provided.
2. Garbage collector does not come regularly.
3. Streets are not cleaned.
4. Garbage is not collected from apartments or shops.
5. Garbage collectors do not collect the whole garbage.
6. The government receives money yet provides no service

Informal Sector in Gharbia Governorate

The informal sector is mainly involved in sorting and collecting recyclables by means of street picking, scavenging in dumpsites or collection points, and/or buying directly from households and commercial establishments through itinerant waste buyers (Sareha). Recyclables (plastics, soda cans and cardboard) are mainly traded through small dealers – usually informal dealers, who sell to larger dealers in Gharbia. Large dealers supply intermediate or end user factories outside Gharbia by recyclables. Operation of the informal sector in Gharbia is highly interconnected. Informal linkages between different actors – both direct and indirect – exist, allowing for distribution of roles and responsibilities and for structured operations to take place. Nevertheless, conflicts over waste still take place from time to time. Wholesalers or large dealers of waste are at the head of the hierarchy of the informal sector, and directly influence the work of other key actors in the system. The activities of the informal sector in term of segregation are very visible and detectable in urban settlements such as El Mehal El Kubra and Tanta, where the waste composition allows for such segregation activities to take place. The involvement of the informal sector in street picking and scavenging in rural areas is smaller in magnitude than in urban settlements given the nature of waste composition.

[1] Information Centre in the Governorate 2010

The informal sector groups in Gharbia Governorate involve street pickers who sort waste either from communal waste bins or from waste improperly dumped in the streets, working with their own carts or with the dealer's carts that he has allowed them to use. Street pickers sort the waste and sell it to small or large dealers in the area. There are also scavengers who sort waste in dumpsites, transfer stations or any other intermediate point. In Gharbia, scavengers can be categorized as either a family type or individuals. The number of full time scavengers is estimated at 150 in Gharbia. In addition to that, there are itinerant waste buyers (Sareha) and their estimate number in El Mehala El Koubra is estimated at 200 to 300 individuals. In addition to this, there are around 200 Sareha working in Tanta. The Sareha's operation is very closely linked to the large waste dealers. On the level of dealer, Gharbia has around 300 to 400 small dealers in El-Mehala. They own storehouses and buy their recyclables from Sareha, street pickers and scavengers. Seven large dealers trade in large quantities and obtain their recyclables based on deals with small dealers, itinerant buyers and other. They sell their recyclables outside of Gharbia to recycling factories or end user factories.

Luxor Governorate

The Governorate of Luxor is located in Upper Egypt, overlooking the Nile River and is considered one of the most prominent touristic Governorates in Egypt. Following Presidential Decree 387 for the year 2009, Luxor was upgraded from a city to a Governorate with a new administrative division. The administration division of the Governorate includes six cities, and 7 Markazes. Luxor City is divided into two main sections the East Bank and the West Bank and is inhibited by a population of around 1,031,014. The total area of Luxor is 2,424 .82 km^2 including the desert hinterland, out of which 241.42 km^2 are inhabited.

Luxor governorate is predominantly touristic. Tourism is the main economic activity upon which the governorate depends. The touristic nature of the governorate has directly impacted the type of waste generated and has led to a waste composition rich in recyclables, especially plastics, including PET and empty soda cans. Agricultural activities take place in the governorate and are mainly concentrated in the cultivation of sugarcane, local beans, wheat, and maize. Some industrial activities also exist in the governorate and are mainly in the field petrochemicals and textiles.

Municipal Solid Waste Management System in Luxor

The generation rate of waste in Luxor was estimated at 250 tons/ day in 2009. The key actors involved in SWM on the level of Luxor Governorate are the local Government, the private sector and the informal sector. However, a distinctive feature in Luxor is the fact that the private sector is greatly engaged in the waste collection from hotels given the touristic nature of Luxor. CDAs are operating in other Markazes such as Tawd and Isna.

The Local Government represented by the local government Unit (LGU) in Luxor City is responsible for street sweeping, collecting residential and commercial waste from municipal containers/ bins and for disposal of collected waste. In addition to this, the LGU is responsible for collecting waste from public utilities including governmental hospitals. Work is performed through three daily working shifts carried out within the City's administrative sectors. Currently, the LGU worker is paid a monthly salary of LE 500, and a plan has been set up to increase the number of

labors to 1,800 workers Including 35 women. The local government dumps in Al Haubil dumpsite, which is the main dumpsite in Luxor Markaz and City. The dumpsite is located at the desert belt of the city. Two areas at the dumpsite are dedicated to dumping the waste collected by the two private companies (Aal Al-Bayt and Al-Hoda). The west Side dumpsite is located in the desert 17 km away from Al Qurnah City. An area is dedicated to dumping the waste from Redaco, a private company.

On the level of Al-Tawd City, there are five LGUs. They serve all residential areas. Waste is transported to a dumpsite east of Deir El-Qeddiseen to be burned without sorting. The cities of Armant and Isnah are newly affiliated with Luxor Governorate. Service is provided through LGUs.

There are five private sector companies operating in Luxor. The companies are contracted directly by the hotels they serve in return of a predetermined contract value to be paid monthly per hotel or floating hotel. Private companies in Luxor do not cover residential areas in the Governorate. Contracts with hotels and floating hotels stipulate that the Company remove waste from spots designated for this purpose. A speed boat is used to collect waste from floating hotels. Contracted hotels and restaurants buy bags designated for waste collection. Hotel workers collect these bags, screen them for security reasons and place them in the areas/spots as agreed. Aal Al-Bayt Company workers load these bags on board of the Company vehicles. Waste is transferred and disposed of in the official dumpsite of Al-Hubail area. There is, generally, positive feedback regarding the service provided by the private company. The only negative aspect is the lack of any company social or insurance obligations toward the labor force.

Solid wastes collected from hotels and restaurants on land are transported by trucks supplied with workers who load and unload the waste at the dumpsite located at Al-Hubail area. With respect to floating hotels, waste is transported by barge workers who collect, load, and unload this waste on the West bank. They, then, load them again onto to vehicles to take to the same dumpsite.

Assessment of the Current MSWM System in Luxor Governorate

54.3% of the beneficiaries sample found that the streets should be classified in terms of cleanliness as "clean." While 19% described the streets as "unclean" and 14.3% found that the streets are "absolutely unclean". For enterprises, 58% of the survey sample stated that streets should be classified in terms of cleanliness as "clean." The percentage of those who were not satisfied with the provided service is less than 58.1% of the surveyed households and for the surveyed enterprises percentage of those who were not satisfied with the service was 46%, and about 2% did not determine their attitude. The main reasons for dissatisfaction are the absence of anyone to collect garbage(30.4%), the irregularity of the collection service and the unclean image of the streets. These reasons for dissatisfaction came very similar for enterprises that referred to the inefficiency and irregularity of service and attributed their dissatisfaction to the final result, which is the low level of cleanliness on the streets.

The Informal Sector in Luxor Governora

The informal sector in Luxor is not homogenous in nature and it includes several categories, operation modes and groups which mainly include warehouse owners, scavengers, intermediaries "qamat", and sailors on floating hotels. There are linkages between the different categories of the informal sector in Luxor through which recyclables are collected and traded. In general, there is no conflict of interest, but a kind of covert cooperation.

There are two types of warehouse owners in Luxor:

1- Type one includes three large warehouses owned by company owners (Aal Al-Bayt, Redaco, Al-Hoda companies). They have an estimated number of five workers each.
2- Type two includes 15 small warehouses owned by either scavenging families or by owners who are mostly not from Luxor. They are originally residents of adjacent Governorates like Sohag, Assiut and Qus.

Another model of the informal sector is the individual scavengers who sort in dumpsites, whether in areas dedicated to private companies or outside of them. They sell their daily collectables of recyclables to warehouse owners. There are also five families that work in scavenging and sorting. These families depend child labor. The number of scavenger children is estimated to be between 25 and 30. A different model is that of the scavengers employed by private companies. This type of scavenger is employed by Al-Hoda Company with a monthly salary ranging from LE 300-350 in return for sorting the wastes in the area dedicated to the company at the dumpsite.

Intermediaries "Qamat" is one model of the informal sector in Luxor Governorate. A dealer in Cairo pays a sum of money of up to LE 100,000 to be considered as *"Ardia."* This sum is paid for one or two kinds of recyclables. It is paid to the local dealer who employs a number of Qamatin, who in turn, manage a number of scavengers to collect the needed recyclables.

Ismailia Governorate

Ismailia Governorate is one of the Canal Governorates. The area of Ismailia is about 5066.96 km^2, and the urban structure of Ismailia is composed of five Markazes and seven cities. The Governorate also encompasses 25 mother villages and 6 satellite villages and 592 hamlets. Ismailia Governorate population reached 942,800,0 thousand inhabitants of which 53.6% are rural population. Agriculture and fishing sectors employ the largest portion of the Govenorate labour force followed by services and governmental jobs, construction and commercial activities. The governorate of Ismailia is home to many industrial activities that depend primarily on utilizing agricultural production.

Municipal Solid Waste Management System in Ismailia Governorate

Ismailia Governorate generates an amount of around 752 ton/day. The Governorate has 2 two composting plants. The responsibility for MSWM in Ismailia Governorate is divided among some key responsible parties. This includes the Governmental local units (LGUs)/municipalities/districts, private companies and CDAs.

The local government is key player in SWM in Ismailia Governorate. The survey carried out confirmed that the majority of respondents are served by the LGU or the three districts services. Ismailia Markaz waste is transferred to Abu Balah dumpsite which is the main dumpsite for Ismailia markaz, in addition to other smaller dumpsites in Al Mostakbal and Kantara. There are 2 composting plants adjacent to Abu Balah which are not fully operational.

The private sector is contributing the MSWM in Ismailia with two companies who are working in the City of Ismailia. Suez Canal for Investment (SCI) is a company contracted by the Suez Canal Authority (SCA) to undertake collection, transfer and disposal of waste from various residential areas and establishments affiliated to the Suez Canal Authority (SCA). this constitute around 40% of Ismailia City population. Beneficiaries do not pay any service fees in return for the SWM collection

service. SCA pay the SCI contract and provide the service to beneficiaries without service fees as part of its corporate social responsibility activities.

Care Service is the second private company working in Ismailia City, the company is in charge of the domestic and healthcare waste of the various Departments within the SCA Hospital waste is then transported by Care Service vehicles to the public dumpsite. The company also provides a number of street containers in the neighborhood of SCI Hospital.

CDAs are a different model for service providers in Ismailia Governorate rural areas, several programs have worked in funding solid waste and sewage collection project. For this type of projects, donors usually provide funds for equipment which usually include collection equipment. The CDA, then, holds the responsibility of operating and maintaining the project.

Municipal Solid Waste Management System in Ismailia

The survey showed that around 60% of the beneficiaries sample and 54% of the enterprises perceive their neighborhood as not clean. **It also revealed** high level of dissatisfaction with the current SWM situation among the surveyed beneficiaries and enterprises, 63.4% of the beneficiaries and 76% of the enterprise are totally dissatisfied. The reasons for dissatisfaction included the unclean streets appearance and the unavailability of convenient tool for waste disposal. Random dumping of waste is still practiced by around 59.3 % of the surveyed sample of beneficiaries (Dump on the street, throw into a pile of garbage, dump on waterways, canals, drainage and burning) and 25.3% of enterprises (Dump on the street, put in a waste collecting vehicle, throw into a pile of waste, burning).

Informal Sector in Ismailia Governorate

The informal sector groups are widespread in Ismailia governorate and they cover groups of scavengers/street pickers and dealers. Many of the workers of the formal sector are also engaged in waste recovery. There is an interrelated and large network of MSWM informal operators who are working and making a living solely out of waste recovery and sorting in Ismailia. In addition to this, municipal solid waste management workers are also involved in collecting and sorting recyclables from these wastes in order to resell them as an additional source of their income. Informal activities in general are highly related to the current inefficiencies associated with the service provided by the official operators.

Scavengers and street pickers could not be distinguished as different categories of the informal sector in Ismailia. The informal sector involved in waste recovery usually work interchangeably inside dumpsites and in streets. There are of two types, family type and individuals. Dealers work by and for themselves but also hire others to work for them. They buy items from individual scavengers. Those dealers sell their recyclables either to large dealers who have quotas in factories or sell directly to industrial facilities.

Estimation of Numbers of Informal Sector Workers in the Municipal Waste Sector

The estimation of the workers from the newly emerging groups was very challenging given the characteristics of this sector and the type of employment in it. Limitations related to this included the high dynamic nature of the sector, the variety and heterogeneity of the various groups within the

sector, the mobility and overlap among different groups of the sector. Moreover, the informal groups, particularly the street pickers and scavengers, are socially stigmatized groups. This fact, makes them try as much as possible to work invisibly on the streets. They are generally suspicious of others and are reluctant to reveal information out of fear of being legally accused.

To estimate the number of street pickers/Sareha, the PSIA team adopted a methodology. The methodology for estimating the number of street pickers/ Sareha was based on the quantity of waste generated per governorate and the corresponding estimated number of informal sector workers per each ton of generated waste. The assumptions included:

1- Based on collection efficiency, collected waste in a given Governorate is transferred to the composting plant/dumpsite without being sorted.
2- The remaining uncollected waste is left in the streets and is sorted out by Sareha/Street pickers.
3- Sorting rate/picker was estimated in reference to the efficiency of the zarabeen and given the nature of the Governorate under study. In Giza, high efficiency was assumed (70 kg/picker per day. Gharbia, Ismailia and Luxor were all assigned the same rate of 40kg/ picker/day).

In order to get an estimation on the national level, Governorates were grouped geographically as Greater Cairo Region, North Coast (Alexandria and Matrouh), Canal ,Sinai, Red Sea, Delta and Upper Egypt. Apart from Greater Cairo region and Alexandria, which were assigned higher rates of sorting/picker/day, given all other Governorates were assigned a rate of 40 kg/per picker per day.

Based on these estimations, the number of sareha/ street pickers at a national level is **54941 (7714** for Giza, **788** for Ismailia, **2250** for Gharbia and **469** for Luxor).

Market Value for the Informal Sector Activities

Experiences in different developing countries have proven that the informal sector activities in the waste sector can contribute significantly to the economy. There is a value added to collecting recyclables from waste and transforming them into tradable goods. In addition to this, such activities have numerous economic benefits including the establishment of new enterprises – mainly SMEs, the development of trading networks, capital accumulation and investments. Moreover, the reuse of recyclables translates into savings in terms of raw material, transportation cost and energy usage.

Value is added to waste through a series of processes. The informal sector activities in the waste sector are usually organized in a hierarchy form. Value added along the hierarchy is skewed towards the top, the higher the hierarchy, the higher the value. At the bottom of the hierarchy are the street pickers and scavengers who are engaged in extraction of recyclables, and at the top are the end user factories where recyclables feed into their manufacturing processes, and where the highest value of the product lies.

The organization and work dynamics of different groups of the informal sector involved in the waste system in a given market directly influences the value chain of traded recyclables in this market. Unorganized markets, decreases the ability of those at the bottom of the waste hierarchy to

add value to the recyclables they collect. In addition they become more prone to exploitation from groups of higher hierarchy especially intermediate dealers.[2]

The vast majority of those working in the informal sector in the four Governorates investigated (scavengers, street pickers and Sareha) occupy the bottom of the hierarchy. They tend to work as individuals or families. It is essential to have an organized supportive network and an access to financial and technical means to allow these groups to have further involvement in the processing of the material to increase its value added. These pre-requisites are mostly not available for the groups in the four governorates under study. Scavenger, street pickers and Sareha are not able to negotiate the price of the recyclables they collect and moreover, many of them sell their recyclables to a pre determined dealer for whom they work for or even they have to pay a fee to be able to access the waste.

Most sareha, scavengers and street pickers engage in either collection only, or collection and sorting. Their profit margins are minimal. As for dealers, most large dealers own warehouses across the four governorates and resort to aggregation of large quantities of waste to make use of the economies of scale. This model exists in across the four Governorates. A small number of dealers are engaged in simple pre- processing such as washing or bailing. Across the four governorates, and except for Ismailia, there are no micro enterprises engaged in recycling. Recyclables are traded directly to larger dealers outside of the Governorates or in some cases to end user factories. The recycling market in the four governorates, hence, is neither making the optimal benefits from manufacturing nor the benefits related to job creation and higher profits are not captured.

The Sustainable Livelihoods Analysis

The PSIA team, adapting the sustainable livelihoods approach (SLA), has analyzed the livelihoods of the informal sector group working in SWM in the targeted Governorates. The main and key finding related to this exercise is that the various informal sector groups are using their assets base, including the human, financial, social, natural and physical assets, in order for them to cope and draw survival strategies and confront the various shocks they face. Working through the weaknesses in the assets' base of the informal sector groups helped the PSIA team in drawing alternatives that aims to strength these weaknesses in order to help these groups move out of the vulnerability context and attain more sustainable outcomes for their lives.

Alternatives and Suggestions for the SWM Reform

The Government of Egypt represented by MoLD and EEAA, is expressing serious commitment and dedication to improve the MSWM systems all across Egypt and in particular in the large urban centers where the problem is more evident. The international organizations are widely assisting in this regards with several strategies and studies which are currently underway. The outcome of these studies will contribute to drawing the features of the reform program of MSWM. One positive aspect about these efforts is that they are fully coordinated.

[2] David C. Wilson, Costa Veils, Chris Cheeseman. Role of informal sector recycling in waste management in developing countries, Habitat, 2005.

There is, generally, a trend towards encouraging the private sector involvement in the sector. However, this trend will not be developed as a 'one model fits all' but rather should be tailored to the special characteristics of each Governorate and the various characteristics within each of the Governorates.

The PSIA analysis made it evident that in order for the future reform of the MSWM sector to be successful and sustainable, irrespective of the reform directives adopted, ample attention to the various social aspects should be paid and the concerns of various sub-groups should be to the extent possible safeguarded. Attaining sustainable social outcomes requires full orientation with the complexity of the dynamics, interests and capabilities of various groups, including local community groups and the informal sector. The alternatives analysis will, thus, present suggestions for local community groups and the informal sector groups. It will also draw an institutional framework that can play the role of the home/owner of these alternatives. The alternatives were developed in full collaboration with stakeholders.

Alternatives for Community Groups:

The various community groups (beneficiaries of households and enterprises) have their own views for the planned reform which the PSIA helped significantly in exploring. The carried out social survey came out with the main features of local communities expectations from an improved system and their willingness to pay for that. This PSIA should be used as a starting point or a mechanism for further surveys and community consultation activities that should precede projects' designs.

- Need for improved system

The survey results showed that a high majority of the surveyed communities think that the current system should be improved. Giza Governorate showed the highest percentage of respondents (93%).

- Preference for the Service Provider

The highest frequencies were for the governmental operators and the private companies and the figures for these two service providers appeared to be very close in all the targeted governorates except Luxor where beneficiaries showed higher preference for the private companies as a service provider. It worth noting here, that the field observations to local communities reactions to this question during the survey and the FGDs showed what really mattered for local communities are the pattern and frequency of the collection system and how much they pay.

- Preference for the Type of Collection Service:

There are significant differences among the Governorates, and that could be attributed to the nature of the Governorates and local communities' familiarity with specific systems. Door to Door collection appeared to be the best preferred collection system in Luxor and Giza while it appeared to be less preferred in the other two Governorates. In Giza, the preference for the door to door collection is expected and could be justified by the failure and negative impacts of the other systems currently in place. In Luxor, this could be justified by the fact that around 55% of the questionnaire

was applied in urban and semi-urban areas. In Gharbia, local communities seemed to be in favor for the street collection system and in Ismailia the building to building collection system was the preferred collection model.

- **Key Consideration for the success of the new system**

A question about the key aspects that should be taken into account in order to guarantee for the new system success has been asked as part of the survey, the suggestions that came out from the respondents across the Governorates were found to be very similar. The PSIA team strongly believes that this happen because of the big similarly in the deficiencies of the system, at least from community prospective as they are more concerned about the issues of collection and practices. The suggestions with highest frequencies included:

- Regular waste collection
- Monitoring system should be applied
- Wastes to be collected directly from shops and houses
- Increase the number of street containers
- People should be committed to the system (and this involved both awareness raising and law enforcement)

- Local Communities Willingness to pay for an improved SWM system

Within the focus of the PSIA, measuring communities' willingness to pay and afford for an improved SWM service were important issues to explore. The results showed strong positive relation between the level of income and the fees amount the local communities are willing to pay.

- Enterprises willingness to pay for an improved level of service

The enterprises survey results showed that enterprises are willing to pay for an improved SWM service. The results, however, varied considerably form one Governorate to the other. In Giza Governorate, the widest portion of enterprises (65%) showed willingness to pay more than LE 10 per month for an improved service. Ismailia results came very close to Giza results. In the mean, Luxor and Gharbia results came very close to each other, with the majority of enterprises (around 42% in each of the Governorate) were willing to pay an amount between LE 4:6.

The following social aspects should be highly considered:

- The engagement of the private sector is welcomed as long as the service that will be offered will be of efficient quality and the amount of service fees are not going to form a financial load on the local communities. In most of rural areas, the Government is perceived to be the best service provider, particularly in the cases of absence of NGOs/CDAs that could assist in this regard.
- Given that the survey sample made a fair representation for the various income categories, the results showed that proposed service fees should be linked to the economic standard of the communities.
- Duplication of payment is a major concern for various types of beneficiaries (local communities and enterprises) who had strong negative reaction. Any planned reform should establish a controlled service fees collection to eliminate the duplication of payment. To enable the practical implementation for that there is a need to consider the appropriate system from communities' view and provide this system under full satisfactory coordination among various types of operators (Government, Private sector and the informal operators) to avoid any duplication of payment claims. The interests of the informal sector should be given the highest priority.

It is strongly recommended, throughout the various steps of any SWM project, to adopt a participatory approach that engage local communities and encourage them to have a say in designing the appropriate systems from their perceptions. Proposed mechanisms to ensure this include:

- Carry out consultation activities including social surveys during the phases of detailed design of various systems in different Governorate
- Preceding any SWM interventions with detailed social impacts assessment (SIA) and ensure the allocation of sufficient funds for this purpose. SIA should involved conducting tailored surveys to assess the potential impacts of the designed planned interventions on the local communities and propose mitigation measures to eliminate any potential negative impact.
- Carry out awareness raising campaigns on different areas and develop the campaigns to fit with the contextual specificities of the targeted areas.

Alternative for the Informal sector

The field work clearly revealed that the informal sector groups, particularly those who are working on an exhaustive mode, can not tolerate negative impacts on their sole source of income. Affecting the livelihoods of these groups will not merely result in increased level of poverty and vulnerability, but rather might cause unpredictable social implications including but not limited to violent reactions.

The proposed alternatives, focus on two scenarios, the first is an integration of the informal sector within any proposed solid waste management program. The second looks at an empowerment scenario which would provide the informal sector with the means to find livelihood opportunities in other sectors away from the solid waste management. The first alternative of integration would present a win-win situation where the informal sector integration can enhance the solid waste system while providing these groups with a more legitimatized means of living. Consultation with governmental entities such as EEAA and MoLD shows that the government is interested into means of including these groups within the system. Initiatives are currently under way in Cairo governorate to organize the involvement of the traditional Zabbaleen groups in Cairo in the new proposed reform system. In spite of these indications, the study presented an analysis for an alternative scenario in case of exclusion from the waste sector, especially for the newly emerging groups who are not usually recognized at all on part of the Governmental agencies.

Alternatives for the Traditional groups, including Zabbaleen at Ard El Lewa

Within the context of these alternatives, the traditional groups are not limited to the zabaleen groups but it rather include other families that have been historically engaged in the trade of recyclables, for whom this business is the backbone of the family income. Currently, Zabbaleen families are trying to cope with the various changes that they encounter but the limitation of assets means for them limitation in choices and alternatives.

Scenario A: Integration Scenario

With a long historical involvement in the waste sector, the Zabbaleen groups are more rigid and inflexible in changing their long known profession.

Prerequisites for Integration:

1. It is crucial to have recycling and waste minimization at source as one of the main pillars in waste management to visualize an active role of the traditional sector in waste management.
2. Political will is another prerequisite for the success of any integration initiatives
3. The need to find an institutional house to adopt and coordinate any integration scenario
4. Ability of the sector to organize itself internally.

Table 0.1 Framework for the Scenario A on the Integration of the traditional informal sector groups

Objectives	Activities	Output	Key Responsible Agency/ies
Immediate Term			
Addressing the basic needs	- Improve access to infrastructural services, education and health facilities	-A more acceptable living conditions and lower rates of child labor	NGOs ,Ministry of Education (Literacy programs), Giza Governorate
Improving working conditions	- Mobilize resource to address poor working conditions, households' conditions and lack of infrastructure - Plan and implement awareness programs on health hazards - Develop guidelines for recovery and recycling of material - Increase monitoring and inspection	-Better business opportunities at the short term and lower - Lower rates of diseases	GOPP/EEAA/Ministry of Health/NGOs
Organize the sector internally	- Revise existing initiatives for organization of the traditional sector - Examine new models of organization which would take the poor and vulnerable into account and prevent influential Zabbaleen to exploit others. - Examine and extract lessons from the new negotiations currently taking place in Greater Cairo with Manshyat Nasser Zabbaleen.	- Ensure representation in any national initiatives - Enhance negotiations skills - Ensure equitable opportunities	- NGOs (AGCCD and others), Leaders within the traditional group
Legal Recognition	-Revise laws and regulations related to solid waste management	-Legal clauses to integrate the informal sector and decrease harassments by the police by having a legal entity	MoLD/ EEAA/ GCBA
Longer Term			

Objectives	Activities	Output	Key Responsible Agency/ies
Economic & social Empowerment	-Arrange experience and business exchange programs between Ard El Lewa Zabbaleen and Manshyet Nasser -Facilitate access to micro-finance	-New business opportunities for growth to start new small recycling and recyclables trading business	Manshyet Nasser NGOs, EEAA and Micro credit organizations (e.g. SFD and others.
Capacity Building	-Designing and implementing skills development programs and skills program in recyclables processing including low cost waste technologies.	- A knowledgeable informal sector with the ability to expand	EEAA/ NGOs/ Mansheyat Nasser NGOs
Socially and Economically sensitive resettlement plan	-Develop comprehensive resettlement Programs and carry out participatory consultation with the community	-Successful resettlement with minimal socioeconomic impacts on the community -Land ownership or usage guaranteed to provide security for living and working	GOPP/ Giza Governorate

Scenario B: Scenario for Alternative livelihood Opportunities outside of the SWM

Although, unfavorable, a scenario to empower the traditional informal groups into livelihood opportunities away from the waste sector should still be considered as an alternative to ensure their welfare on the long run. Field work has shown that many of the youth previously involved in Ard El- Lewa area have resorted to other jobs especially after the slaughtering of pigs and the conflict with the private sector companies.

Table 0.2 Framework for the Scenario B on the Integration of the traditional informal sector groups

Objectives	Activities	Output	Key Responsible Agency/ies
Immediate Term			
Addressing the basic needs	- Improve access to infrastructural services, education and health facilities	- New business opportunities for growth to start new small recycling and recyclables trading business	NGOs ,Ministry of Education (Literacy programs), the Governorates
Capacity Building	- Improve access to vocational training and improve females access to training on other home based economic activities		Vocational training programs/SFD/NGOs/the Governorates/other relevant organizations
Economic & social Empowerment	Facilitate access to micro-finance	-New business opportunities for growth to start new small business out of the waste sector	- Micro credit facilities (e.g. SFD)/ NGOs
Socially and Economically sensitive resettlement plan	-Develop comprehensive resettlement Programs and carry out participatory consultation with the community	-Successful resettlement with minimal socioeconomic impacts on the community -Land ownership or usage guaranteed to provide security for living and working	GOPP/ the Governorates

Alternatives for the newly emerging informal groups

The newly emerging informal groups, except for some small scale families, are highly characterized by individualism. Social networks exist between different actors of the system, however, the sector is characterized by being highly volatile with the sector attracting large number of the poor who have no alternative work opportunities. Types of employment in this sector also extend to both exhaustive and temporary types. These facts make attempts for integration of these groups in the any SWM reform initiatives challenging. Moreover and from a more generic vision, understanding the problem of the growth of the newly emerging group of the informal sector as a clear manifestation for poverty, suggests that tackling the root causes of this problem needs broader understanding and handling for the poverty issues. Poverty is a national challenge and a daily political concern. The PSIA proposed the same scenarios that were proposed for the traditional informal groups although no specific favorable scenario has been indicted.

Scenario A: Integration Scenario

Prerequisites for Integration

1- Political will to legalize these groups and to find them a role in the SWM system
2- Appreciation of the economic input of these groups in the SWM system
3- Building bridges of trust between the Government and these groups
4- Coordination of work between traditional groups and newly rising group
5- The ability of these groups to mobilize themselves

Table 0.3 Framework for the Scenario A on the Integration of the newly emerging groups

Objectives	Activities	Output	Key Responsible Agency/ies
Immediate Term			
Understand the size and dynamics and input of the informal sector nationally	- Mobilize local municipalities and NGOs to create a national inventory of informal sector workers and their activities	-A clear vision of the size of the informal sector in Egypt - A clear vision of the economic contribution of the sector	Municipalities/NGOs/EEAA
Addressing poverty issues	- Mobilizing NGOs into addressing basic needs of informal workers - Improve access to education and health facilities - Improve access to housing and enforce child labor related laws and regulations	- Better living conditions - Lower rates of child labor -	NGOs and civil society organizations/ Ministry of Education (Literacy programs)/ Municipalities Ministry of Social Solidarity/ the National Council for Women
Organize the sector internally	- Providing a framework of action organizing the relationship of different parties within the informal sector - Advocating different groups to organize themselves through NGOs or cooperative unions	- Ensure representation in any national or policy level initiatives -Enhance negotiations powers of the groups - Minimize conflict and exploitation -A more equitable distribution of income	MoLD/ EEAA/ Civil Society
Improving working conditions with other stakeholders	- Put clear guidelines and regulations organizing working relationship with other stakeholders - Examine existing models of cooperation - Increase inspection at dumpsites - Develop guidelines for recovery and recycling of material	-A more equitable distribution of income between groups -Defined work relationship to avoid exploitation - Lower rates of diseases	Municipalities/EEAA/Ministry of Health/NGOs
Legal Recognition	- Revise laws and regulations related to solid waste management	- legal clauses that integrate the informal sector entities and activities - Decrease harassments by the police	MoLD/ EEAA/Municipalities

		by having a legal entity	
Longer Term			
Economic & social Empowerment	-Facilitate access to dumpsites and transfer points -Facilitate access to micro-finance - Strengthen social networks with traditional groups of the informal sector	- Better working conditions - Better opportunities for advancement (e.g. owning a vehicle or a storehouse)	- EEAA providing support through the planned state of the art and center of excellence for recycling in Manshyet Nasser. - Micro credit organizations
Capacity Building	- Basic capacity building on health hazards related to handling waste and the protective measures needed - Design skills program in recyclables processing including low cost waste technologies.	- Lower rate of accidents and diseases. -knowledgeable informal sector with the ability to expand	EEAA/ NGOs/Donors

Table 0.4 Framework for the Scenario B on the Integration of the newly emerging groups

Objectives	Activities	Output	Key Responsible Agency/ies
Immediate Term			
Profiling the sector	- Mobilize local municipalities and NGOs to create a national inventory of informal sector	-A clear vision and segmentation of the sector	Municipalities/NGOs/EEAA
Addressing Child Labor problem	- Mobilize on-going efforts to solve child labor problem		Line Ministries/Initiatives for education and integration in society (Ministry of Tourism)
Addressing the basic needs	Improve access to infrastructural services, education and health facilities	-A more acceptable living conditions	NGOs and civil society organizations/ Ministry of Education (Literacy programs)/ the Governorates
Capacity Building	Improve access to vocational training and training on management		Vocational training programs/ SFD/NGOs
Economic & social Empowerment	Facilitate access to micro-finance	New business opportunities	- Micro credit facilities (e.g. SFD)/ NGOs

Institutional Framework for the implementation of the PSIA alternatives

The integrating the informal sector within the waste management system is a multidimensional and complex task. In examining the institutional responsibilities related to the proposed alternatives, the following was found:

- The alternatives are relevant to a wide range of governmental, NGOs and private sector.
- The political will of accepting the responsibility of these alternatives could not be guaranteed.
- Lack of dialogue among various actors is a serious challenge

The Social Development Department

The proposed institutional framework by the PSIA aimed to go in line with the wider policy directions. It seeks to utilize certain planned institutional reforms both at the national and local levels, namely the establishment of a national entity for SWM and the further institutional reform interventions planned under the decentralization program underway by the MoLD. In order to ensure tailoring the proposed institutional set-up to the National context of the country, several consultative activities have been carried with the concerned authorities and the consultants working in the institutional reform of SWM.

The core of the proposed institutional setup for implementing the proposed alternatives is the establishment of a Social Development Department (SDD) within the proposed national SWM entity. The SDD is supposed to play the role of coordinator, stimulator and facilitator of implementing various socially-oriented activities. Such a department would be a longer-term objective, and might start as a function that is carried out by 1-2 officer in the entity, but which grows over time into a larger department with many activities.

The proposed structure of the SDD will involve four main units to be in charge of implementing the mentioned alternatives/proposed activities on the level of both local communities and the informal sector. Mandates/ Main Responsibilities for the SDD under the National Entity for SWM:

- Develop policy and strategy related to the informal sector and other social aspects in consultation with relevant stakeholders and in line with overall national strategies in SWM.
- Strength the dialogue and communication among various actors related to the SWM
- Safeguard the interests of the marginalized groups who have direct stake in the process
- Facilitate the design and implementation of awareness raising campaigns
- Design and carry out community related activities (e.g. social surveys) prior to the implementation of various SWM interventions.
- Assist the various informal sector groups to legalize their situation and empower them socially and economically.
- Build the capacities of relevant stakeholders either directly or through seeking consultancy services.
- Stimulate the implementation of participatory monitoring and evaluation (PM&E) techniques

Other Complementary Mechanism

In addition to the operation of the SDD as a main institutional home for the integration of the social aspects within the SWM reform, a "consultation forum" is also recommended to complement the function of the SDD. It is proposed to work as a networking tool and consultation pool that might

facilitate the department functions. The "Consultation Forum" could function as a mechanism to ensure that various interests are transparently shared and that the interests of the various social groups are safeguarded. Proposed structure for the "Consultation Forum" include the Ministry of Local Development (MoLD), The Egyptian Environmental Affairs Agency (EEAA), Representatives from relevant ministries (Ministry of Social Solidarity, Ministry of Labour, Ministry of Trade and Commerce, Ministry of Education,…etc), NGOs, academics, consultants, parliamentarians, local assembly representatives and representatives from the informal sector groups

Dissemination and Capacity Building Plan

After producing the draft of the PSIA, results have been discussed with wide range of stakeholders during one regional and one central dissemination workshops. These workshops also aimed to disseminate the PSIA mechanism and methodology as a sort of capacity building for the various groups of stakeholders. The main conclusion of the PSIA included:

- The level of awareness of the social aspects related to SWM is still limited among various stakeholders particularly the responsible Government officials. This stresses a need for raising the level of awareness of those key actors with the complexity of the social issues related to SWM.
- Behavioral challenges are a key issue that needs to be considered in designing and implementing SWM reform. This is never done on a structured basis by either governmental agencies or the private sector. There is a need to train the main SWM actors on designing awareness raising messages.
- Informal sector issues are dealt with and understood in isolation form the poverty context within the whole country. In designing programs to tackle informal sector issues, it is necessary to place the various groups within a broader, holistic and multidimensional context in order to address their problem from a developmental prospective rather than penalizing them.
- There is a need to promote the broadest possible range of measures and roles for various actors, including those who are not directly engaged in the SWM sector.

The PSIA has developed a set of recommended training modules that could be considered in the future by the SDD. The delivery of these modules to the targeted stakeholders should be done as part of a comprehensive capacity building plan. The identified modules are the result of the PSIA team's views and analysis for the various training needs assessment that was included in the tools. The training modules are meant to serve the implementation of the developed alternatives on the previous chapter.

The PSIA conclusion showed that the social aspects associated with SWM should be highly considered in the future planning in order to ensure attaining more sustainable social outcomes both for local communities and the informal sector groups involved in the sector. In order to ensure this high consideration, the establishment of an institutional house to be in charge of implementing the various recommendations of the PSIA is indispensable. The PSIA proposed institutional arrangement lines up with the ongoing policy and institional directions.

Chapter One: The Poverty and Social Impact Analysis

1.1 General Background on the Poverty and Social Impact Analysis

The Poverty and Social Impact Analysis (PSIA) Approach was developed by the World Bank with support from several bilateral development agencies in 2001. The need for a PSIA is driven from the assumption that different individuals are likely to be affected differently by various programs and policy reforms. It was driven by concern about the slow pace of poverty reduction, reactions to the social impacts of Structural Adjustment Programs (SAPs), and recognition that poverty and distributional aspects are influenced by a very wide range of policies, even where these policies are not directly focused on poverty reduction[4]. This widely depends on the various material and non-material assets of individuals that contribute to determining their coping mechanisms and the alternatives available to them.

According to the World Bank, a Poverty and Social Impact Analysis (PSIA) is a set of tools to analyze the impact of policies on the well-being of different social groups, with particular focus on the poor and those vulnerable to becoming impoverished. It seeks to support poverty reduction through better policy, particularly, in low-income countries. The PSIA promotes alternative policy choices and complementary or compensatory policies that intend to enhance benefits to stakeholders, especially poor people, minimize the losses they may experience as a result of reform, and consequently, contribute to the public acceptability and sustainability of these policies. PSIA is also a tool for analyzing the tradeoffs between social costs and benefits of reform, designing appropriate mitigating measures and risk management strategies for the reform program and assessing the country's capacities to implement these measures. It is also perceived to be a policy dialogue tool for enhancing transparency and accountability in the reform process[5].

Despite its value as an upstream planning tool, PSIA literature highlights some common practical challenges. First, there is a lack of awareness of how a PSIA could assist in policy reform. Moreover, PSIAs also challenge the dominant top-down planning model, which might be a significant political challenge. Furthermore, the practical implementation of the mitigation plans and procedures requires an institutional home to incorporate results into the policy process. This is strongly reliant on the political will to institutionalize PSIA recommendations.

1.2 The Up Stream Poverty and Social Impact Analysis (PSIA) for Egypt's Solid Waste Management Reform

[4] A User's Guide to Poverty and Social Impact Analysis, The World Bank Poverty Reduction Group (PRMPR) and Social Development Department (SDV), 2003.

[5] Ibid.

The Government of Egypt has recently expressed an interest in setting up a national program for building management capacity for Solid Waste Management (SWM) reforms. Specific support would initially include technical assistance to the Ministry of Local Development (MoLD) followed by support for policy reform at the national level to improve the economic, environmental, and social/institutional performance of the sector.

The assignment of the Up Stream Poverty and Social Impact Analysis for Egypt's Solid Waste Management Reform comes with the main objective of influencing the objectives and features of the SWM sector reforms at its inception, rather than waiting for the details of the reforms to be solidified and to then assess their likely impacts. In this sense, the PSIA will evaluate the different impacts of each policy alternative in order to assess its likely outcomes on equity, effectiveness, and feasibility.

Current policy directions for the reform of the SWM sector involve:

(a) The formalization of the SWM sector;
(b) The expanded involvement of private sector operators;
(c) Roll out of partial cost recovery system for households and enterprises.

However, in Egypt, as is the case in various developing countries, waste management privatization often goes beyond this by extending the reach of the formal waste management system into activities that were previously the domain of the informal sector. Vulnerable categories are likely to be affected by the ongoing sector reforms in a number of ways. The current drive towards formalization, privatization and cost recovery, thus, needs to be handled carefully if they are to avoid hitting vulnerable constituencies, increasing inequalities and along the way, hampering the very success of the reforms. On the other hand, the reform of the sector has the potential to improve living standards for the poorest members of the population.

Eco ConServ Environmental Solutions has been awarded the consultancy service for the "Up Stream Poverty and Social Impact Analysis (PSIA) for Egypt's Solid Waste Management Reform." A contract was signed between the United Nations Development Program (UNDP) and Eco ConServ Environmental Solutions on 20th April, 2010 to launch a six month assignment.

According to PSIA Terms of References (ToRs), the main objectives and tasks of the PSIA are:

a) GoE aims to undertake a comprehensive reform of its SWM Sector through sound analysis and identifies the PSIA as a tool to:

I. Avoid and/or mitigate any negative impacts of the reforms on vulnerable groups
II. Achieve equitable outcomes
III. Improve public acceptability and success of the reforms
IV. Achieve a future Solid Waste Management Plan that is technically, socially, economically and environmentally sustainable

V. Clearly identify the roles of central and local government and propose a plan for capacity enhancement to address social inclusion issues and the implementation of related investment programs
VI. Evaluate different scenarios for each policy alternative in order to assess its likely outcome on equity, effectiveness and feasibility.

b) The PSIA results will be used to improve management of the SMW reform process, help it achieve more equitable outcomes, mitigate its adverse effects and improve stakeholders' buy-in. The findings and the recommendations of the PSIA will help to shape the design and the implementation of the suggested government reform program and to shape the development of the solid waste sector, possibly by forming a policy review.

The PSIA will target four governorates from various regions in Egypt. The governorates are considered a representative sample of the different types of governorates including large urban governorates (Giza), touristic governorates (Luxor), small governorates with urban characteristics (Ismailia) and large rural governorates (Gharbia).

Chapter Two: Municipal Solid Waste Management in Egypt: An Environmental Challenge

2.1 Introduction

Municipal solid waste has been inadequately managed for many years in Egypt. Egypt generated an estimated 20 million tons of municipal solid waste (MSW) in 2009 and the amount of solid waste produced annually is growing at an estimated 3.4% per year.[6] Waste collection systems have left large areas of towns and cities (in some cases more than 50%) without service or under-serviced and the majority of collected waste is dumped in facilities that lack any effective management. Composting, although widespread, has generally not been effectively implemented, and recycling activities have only been undertaken in some cities (mainly in Greater Cairo). Every year, an estimated 9.7 million tons of waste is dumped alongside watercourses in or adjacent to communities. In addition, recycling, on small and micro scales, is not performed using safe and environmentally sound measures. This subjects workers who participate in these processes as well as all citizens to many risks. The majority of dumping sites are unsafe, and there are no preventive measures at these sites to prevent the self-ignition of waste. Low-levels of environmental awareness, poor management of municipal solid waste, and the lack of enforcement of legislation all aggravate the problems surrounding municipal solid waste in Egypt.

Table 2.1 The Daily and Annual Amount of Municipal Waste Generated by Governorates in Egypt

Governorate	Daily Waste Generated (in tons)	Annual Waste Generated (in million tons)	Efficiency of Collection
Cairo	11000	4	68 %
Alexandria	3700	1.35	80%
Giza	**4000**	**1.6**	**55 %**
Qalubia	3500	1.4	45 %
El Daqahlia	4500	1.64	55 %
Helwan	4000	1.6	65 %
6 October	2500	0.91	70 %
Gharbia	**3000**	**1.1**	**70 %**
El Menofia	2000	0.73	75 %
El Behira	3000	1.1	60 %
Kafr El Sheikh	2500	0.91	65 %
El Sharqia	1800	0.65	50 %
Damietta	900	0.3	70 %
Ismailia	**600**	**0.21**	**65 %**
Port Said	650	0.23	80 %
Suez	400	0.14	70 %
Fayoum	600	0.22	50 %
Beni-Suef	750	0.27	65 %

[6] State of the Environment Report, EEAA, 2009

Governorate	Daily Waste Generated (in tons)	Annual Waste Generated (in million tons)	Efficiency of Collection
Minya	1000	0.36	65 %
Assiut	700	0.25	60 %
Sohag	900	0.32	60 %
Qena	1000	0.36	65 %
Aswan	650	0.23	75 %
Luxor	**250**	**0.09**	**75 %**
Red Sea	450	0.16	70 %
Matrouh	250	0.1	70 %
North Sinai	200	0.073	70 %
South Sinai	350	0.12	80 %
El Wady El Gadeid	100	0.13	65 %
Total	**55250**	**20.166**	**65 %**

Source: State of the Environment Report, EEAA, 2009

2.1.1 Composition

The composition of municipal solid waste in Egypt is typical of a waste profile between middle-income countries and low-income countries. 50 - 60% of this waste is organic matter which maximizes the utilization of this waste in composting plants.[7]

Table 2.2 Composition of Municipal Waste in Egypt

Waste Type	Percentage (%)
Organic waste	50-60
Paper and cartons	10-25
Plastic	3-12
Glass	1-5
Metals	1.5-7
Textiles	1.2-7
Others	11-30

Source: State of the Environment Report, EEAA, 2009

2.1.2 Properties

Several factors, namely relative density, humidity, heat content (calorific value) and the quantity and composition of waste, determine whether the waste will be recycled, converted to energy or disposed of in a landfill.

Table 2.3 Properties of Municipal Waste

Relative Density	0/3 ton/ m3
Humidity	30 – 40 %
Heat Content (CV)	1500 Kcal/ kg

Source: State of the Environment Report, EEAA, 2009

[7] State of the Environment Report EEAA, 2009

2.1.4 Institutional Framework

Responsibility for MSWM in the central government of Egypt is dispersed among a number of ministries. Some are involved at a technical level and others are more concerned with organizational and financial aspects. The Ministry of Local Development through governorates and respective municipalities is responsible for the implementation of MSW activities either through direct implementation or through tendering to other entities, such as private sector or NGOs. Except for Cairo and Giza Governorates, in general, governorates lack a specialized unit that is entirely responsible for waste management. The Ministry of State for Environmental Affairs (MSEA) and its technical arm, the Egyptian Environmental Affairs Agency (EEAA), host a General Directorate for solid waste management. The mandate of this directorate is the formulation of policy directives and the provision of guidelines for proper management of municipal waste[8]. The Ministry of Finance is responsible for approving budget allocations for operational costs. A steering committee comprising the three ministries overlooks implementation issues related to MSW.

2.1.5 Legal Framework

The legal framework regulating MSWM in Egypt is multifaceted and falls under the jurisdiction of different ministries. There is no legislation dedicated to SWM. Instead, legislation takes the form of provisions within other laws. The most significant are Law 38 of 1967 and its subsequent amendments in Law 10 of 2005, and the Environmental Law 4 of 1994 and its Executive Regulations. Other laws pertaining to SWM includes Law 48 of 1982 regarding Nile River Protection.

Law No. 38 of Year 1967

Law 38 of 1967 addresses waste management specifically. Important provisions of the law included the following:

1. Local administration agencies are responsible for waste collection and disposal, and they must meet these responsibilities by granting licenses to waste collectors and contractors.
2. Waste collectors must obtain an operating license.
3. Occupants of buildings are to set out waste for collection.
4. Provision for a levy of 2% of the rental value of a dwelling, to be used for cleaning purposes.

Law No. 4 of Year 1994

Law 4 of 1994 addresses the broad framework for environmental management in Egypt. Articles pertaining to solid waste management in Law 4 of 1994 includes the following:

Article 37

It is prohibited to throw, treat or burn garbage and solid waste except in special sites designated for such purposes that are far from residential, industrial or agricultural areas as well as from waterways. The executive regulations of this Law shall determine the specifications and conditions of such sites and their minimum distance from the areas

[8] Heba Behairy, Government Environmental Policy Making: Private Sector Participation in SWM in Egypt, 2003.

referred to hereinabove. Local units shall, in agreement with the EEAA, designate the sites for burning, throwing or treating garbage and solid waste according to the provisions of this article.

Article 38

It is prohibited to dump, treat or burn garbage and solid waste, other than infectious waste left over from medical care in hospitals and health centers, except in special sites, designated for such purpose, far from inhabited, industrial or agricultural areas as well as from waterways, in accordance with the specifications, conditions and minimum permissible distances from such areas as indicated.

Article 39

All organizations and individuals shall be expected, when carrying out exploration, excavation, construction or demolition works or when transporting the resultant waste or debris, to take the necessary precautions to secure the safe storage or transportation thereof to prevent loose particles from escaping into the air, in accordance with the provisions of the executive regulations. Collectors of garbage and solid waste shall be held to maintain the cleanliness of garbage bins and vehicles, the continual cleanliness of which shall be one of the conditions set to ensure the safety of garbage transport means. Garbage collection bins shall be tightly covered to prevent them from giving off offensive odors or from becoming a source for the proliferation of flies and other insects or from attracting stray animals. The garbage they contain shall be collected and transported at suitable intervals in keeping with the conditions of each area, provided the quantity of garbage at any one time in any of these bins shall not exceed its capacity. The competent municipal department shall control the implementation of the provisions of this Article.

A number of Amendments and updates have been made regarding regulations from the year 2005-2010 as follows:[9]

- Clauses were added to the Environmental Law 4 of 1994, to impose more penalties on the mishandling of solid waste, especially open burning and dumping in undesignated sites.
- Law 10 of 2005 passed by The People's Assembly permitting the collection of fees on the electricity bill with the payment depending on income level and area of residence.
- Presidential Decree 86 of 2010 regulates the closure of existing dumping sites and landfills in Greater Cairo, rehabilitation of their sites, and allocating new sites (5 - 8) for sorting, recycling and the final disposal of municipal solid waste, outside the residential and commercial belt of Greater Cairo.

2.1.6 Finance and Cost Recovery

Central Government Allocations

- This is the first source of funding. Allocations are made from the central government to various governorates at the local level. Allocations are not made directly to MSW management. Instead, certain expenditures are covered under

[9] SWEEP NET. The Regional Solid Waste Exchange of Information and Expertise Network in Mashreq and Maghreb countries. *Country Report on SWM in Egypt, 2010.*

different budgetary sections. There are no direct allocations for MSMM programs per se.[10] Allocations are generally insufficient.

- Cost is partly recovered through fees collected on the electricity bill in the cities or through collection of fees from residents by NGOs implementing collection systems using different mechanisms that sometimes include separate service fees after getting the approval of the competent authorities (e.g. the Local People's Assembly).
- At present, it is estimated that on average, there is a 35% gap between incurred costs for waste collection and disposal and the amount required. Cost recovered per ton of MSW relies on marketing of recyclables (15% of cost recovered), cleansing fees and penalties (50% of cost recovered). Negotiations are underway to modify contracts with private sector companies in order to achieve proper cost recovery. It is expected that cost per ton for collection, transport and disposal could reach up to 215 LE per ton[11].

2.1.7 Government Directives for MSWM

In 2000, Egypt adopted a National Strategy for Integrated Municipal Solid Waste Management (MSWM), which included the development and implementation of an integrated waste management system. The main objective of this strategy was the phased privatization of waste management services. The role of the central government was to facilitate the implementation of the strategy, and the Egyptian Environmental Affairs Agency (EEAA) was responsible for designing the necessary environmental standards and procedures. Within this National Strategy, a new cost-recovery initiative was introduced to provide sustained revenue for the financing of the privatization process. Privatization of solid waste management (SWM) had occurred in a number of governorates in Egypt, including Alexandria, Cairo, Giza, Aswan, Port Said and Suez. However, the process faced many administrative problems in these governorates and as a result; it was not implemented in other governorates.

To date, nine private sector companies are operationally involved in waste collection. Three are international and operate on the basis of Design, Build, Operate systems, and local private companies operate in other governorates such as Suez, Port Said, Gharbia, Luxor and Aswan Governorates. Some NGOs are operational at the level of villages in Egypt. The informal sector has been playing a significant role in Egypt in terms of waste collection and recovery of recyclables. The most visible role was in Greater Cairo through the "Zabbaleen" groups. Other informal sector actors are operational outside of the Greater Cairo Region but have not been adequately researched. Conflicts have been detected with the informal sector during the implementation of the privatization, especially with the introduction of the international companies. Currently, a strategy on private sector participation (PSP) in SWM is being prepared. The strategy is financed by the World Bank.

[10] Heba Behairy, Government Environmental Policy Making: Private Sector Participation in SWM in Egypt, 2003.
[11] SWEEP NET. Regional The Regional Solid Waste Exchange of Information and Expertise network in Mashreq and Maghreb countries. *Country Report on SWM in Egypt, 2010.*

Given the escalation and visibility of the waste problem in Egypt, in February 2010, a Presidential directive was given to the Prime Minister and the Ministerial Committee responsible for SWM to prioritize SWM and to take serious steps to treat the problem. The Ministry of State for Environmental Affairs MSEA/EEAA are currently taking the lead in this endeavor and are starting reform and improvements in the Greater Cairo Region[12]. A strategy and action plan are currently being prepared involving all stakeholders both formal and informal. The main points to be addressed in the plan can be summarized as follows[13]:

- The establishment of one central entity responsible for handling SWM at the national level.
- Selection and approval of eight new locations outside the Greater Cairo residential and commercial belt for new sanitary landfills. Five locations have already been allocated.
- Shutting down the two major controlled dumping sites at El-Salam and El-Wafaa Wal-Amal due to the emissions and continuous self-ignitions that take place at these locations.
- Establishing two transfer stations in the first stage: One in Katameya and the other in Obor. It is estimated that the transfer stations capacity will be 2,000 tons/day and the operational capacity in the first stage will be 1,000 tons/day. Sorting will be undertaken in these transfer stations.
- Contracts with the informal sector "Zabbaleen" will be reviewed based on door-to-door collection of household waste with a service fee of 1.5 LE per apartment per month. Zabbaleen will be allowed to transfer the waste to the new transfer stations in return for a fixed value for ton/kilometer distance. Sorting of non-organic recyclable materials will be undertaken. Negotiations are currently underway with Zabbaleen representatives to settle this matter.
- Innovative ideas regarding the recycling of waste are currently being investigated. The most prominent is the establishment of an international trading and training center for recycling in Mensheyat Nasser.
- Following a decree issued the 15th of April, 2009, 230 feddan were allocated for raising pigs in El-Koraymat area, for the Zabbaleen to return to this activity. The implementation status of this plan is not currently clear.
- The remaining waste will be transferred to landfills by the private sector where composting plants will be established at the new locations for composting the organic waste. Other waste treatment technologies are planned, such as waste to energy and biogas projects.
- The contracts with private operators operating in the Greater Cairo Region have been revised, prepared and approved by the Ministry of Finance.
- It is proposed that the new contract for the private sector company working at the northern and western zones of Greater Cairo will see an increase in contract value

[12] Interview with Dr. Atwa Hussein, July 2010.

[13] The summary of these directives are compiled from an interview with Dr. Atwa Hussein, July 2010 in addition to the document entitled: SWEEP NET. Regional The Regional Solid Waste Exchange of Information and Expertise network in Mashreq and Maghreb countries. *Country Report on SWM in Egypt, 2010.*

from 75.6 and 66.7 million LE to 107.1 and 109 million LE respectively, with a total increase of 73.8 million LE.

- Labor wages will be increased with priority to be given to informal operators. It is estimated that labor wages will go up to 1100 LE/month.
- The Governor of Cairo issued Decree number 4775 of 2009. By virtue of this decree, the waste monitoring unit will be moved from the Cleansing and Beatification Authority to the newly established department for monitoring and follow-up at the Cairo Municipality.
- Inspection and monitoring systems will be enhanced through:
  - Increasing the number of inspectors from 542 to 746, and extending work over three shifts instead of one.
  - 30 new monitoring and control units are to be established.
  - Cooperation will be undertaken with the Ministry of Communication to activate automation of the monitoring and control system.
  - Capacity building programs will be designed for inspectors.

Chapter Three: The Poverty and Social Impact Analysis (PSIA) Methodology

3.1 The Selected Analytical Framework for the PSIA

The Sustainable Livelihoods Approach (SLA) is the analytical framework that the Consultant has chosen to address this assignment. The SLA is a way of thinking about the objectives, scope and priorities for development. The approach goes beyond simply assisting in the implementation of a certain program or intervention. It is a way of putting people at the center of development (which in the case of the PSIA refers to policy reform), thereby increasing the effectiveness of planning for development assistance or reform programs. In its simplest form, the framework views people as operating in a context of vulnerability. Within this context, they have access to certain assets or poverty reducing factors. These assets obtain their meaning and value through the prevailing social, institutional and organizational environment. This environment, including the policies, institutions and processes (PIPs), also influences livelihood strategies by influencing the way assets are combined and used to attain livelihood objectives[14]. With this background, the SLA encourages the analysis of the processes through which the poor engage with institutions, and the extent to which they have a voice and can participate in and influence decisions which affect their lives.

3.2 PSIA Methodology and Tools

The upstream PSIA for MSWM reform in Egypt is an assignment that involves multiple levels and disciplines. As it involves national planning and decision making and impacts the grassroots level, the PSIA has been carried out in a broad sense that encompasses institutional, political and social analysis to investigate the various policy and policy reform impacts on the local community and more specifically, on the poor and most vulnerable groups. In examining these levels, the PSIA also investigates the institutions and spheres that organize and structure the system. This multidisciplinary approach including macro, meso and micro levels encompasses the analytical scope of PSIA.

The PSIA analysis also targeted the assets and vulnerability contexts, which were explored using the tools that were developed. The tools were formulated in a fashion that allowed for the utilization of the findings in proposing pro-poor measures within the proposed policy alternatives.

[14] (UK DFID, 2001).

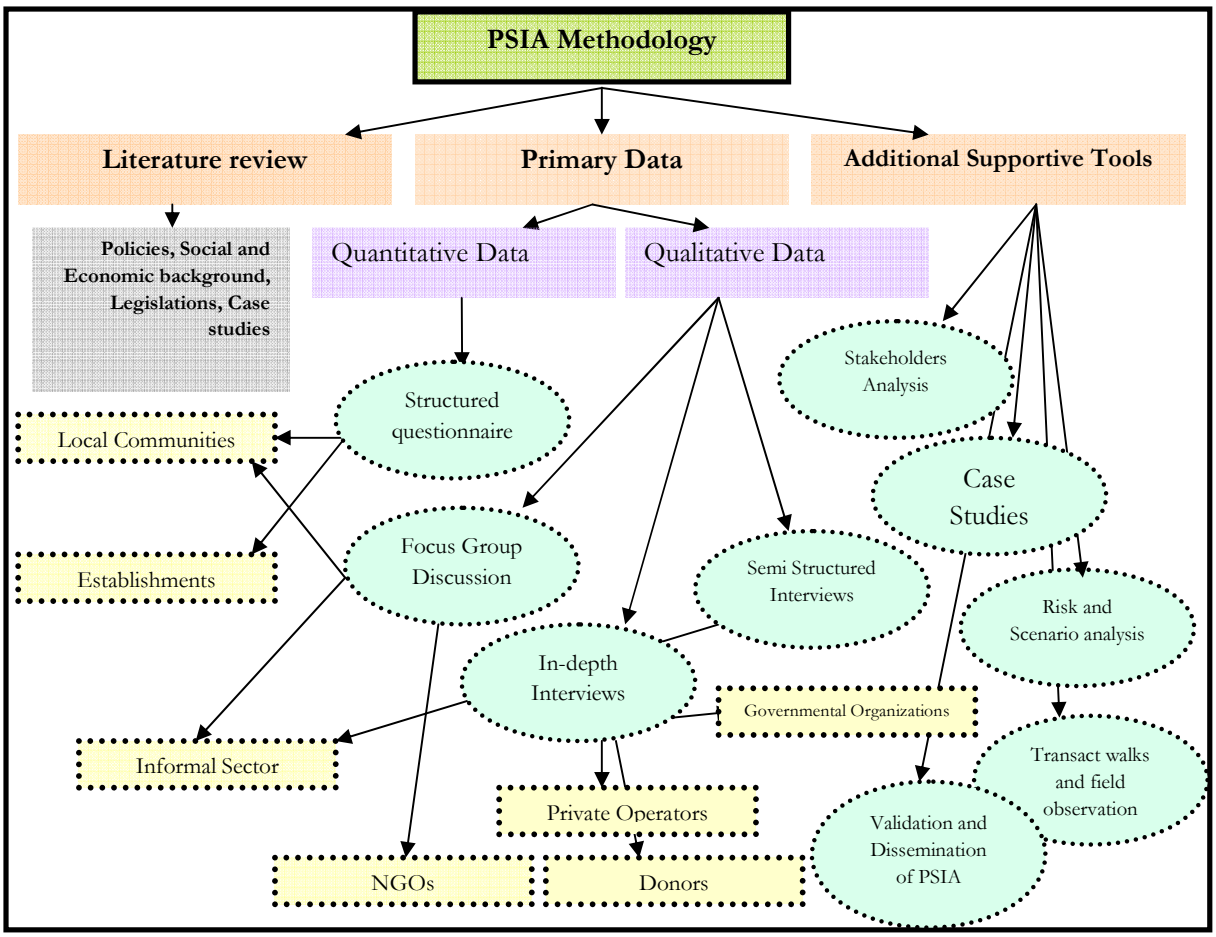


Figure 3.1 Summary of the PSIA methodology

3.2.1 Literature Review

The PSIA team has accessed a large amount of secondary information from different sources in the form of previous reports, studies, official statistics, previous PSIAs and case studies. The reviewed secondary data has been very useful for the team in capturing the legislative, regulative and political issues around MSWM. In addition, this review informed the consultants about the main characteristics of the targeted governorates and the key lessons learned from PSIAs in other countries. A list of references is attached to the PSIA report.

3.2.2 Primary Data Collection

In gathering primary information to serve in the preparation of the PSIA, the team used a package of tools to collect a combination of qualitative and quantitative data. This combination of both types of data enriched the findings and contributed to the data verification process. The team took great care in selecting the tool that would best serve the type of information to be collected and the group to be targeted.

The following section presents the tools that have been used and the criteria for sample selection. It also presents an overview of the main characteristics of the surveyed areas in the targeted governorates.

3.2.2.1 Quantitative Data

The quantitative data gathering involved carrying out a socioeconomic survey in the targeted governorates to measure the various impacts of the current situation within selected/zoned areas. Various groups of local communities are key target groups for the PSIA. As such, the PSIA focused on local communities and how they perceive the current situation, their level of satisfaction and their key expectations for reforming the system.

Structured questionnaires were designed for this purpose and targeted groups of local communities and local enterprises across the governorates. Box 3.1 below presents the main sample selection criteria.

Box 3.1 Key Aspects for the Selection of the Survey Sample in the Targeted Governorates

In selecting the survey sample in the targeted governorates, some general factors were considered in order to ensure that the survey sample fairly represented certain criteria in the four governorates. This helped in highlighting the differences among the various situations. The key selection criteria included:

- The various types of service providers (municipality, Cleansing and Beautification Authority, private companies and NGOs)
- The main features of the surveyed area (urban, rural, pre-urban, type of economic activities)
- The economic standard of the area's residents (high income areas, middle income areas and poor slums and unorganized areas)[15]

The sample selection was made on the basis of the above presented factors and the survey involved the field application of a total of 811 structured questionnaires that were developed by the team and tailored to fit the context of the PSIA. The questionnaires targeted both local communities in different places within the selected governorates (referred to as beneficiaries) as well as various types of businesses (referred to as enterprises). A total of 492 questionnaires for beneficiaries and 319 for enterprises were completed. The survey questionnaire is attached in Annex A.

Table 3.1 The Justifications of Sample Selection within the Targeted Governorates

Area	Feature	Service Provider	Number of Questionnaires		Reasons for Selection
			Beneficiaries	Enterprises	
Giza Governorate					

[15] A rough categorization for the economic standards has been made with assistance from resource persons in the Governorates.

Area	Feature	Service Provider	Number of Questionnaires		Reasons for Selection
			Beneficiaries	Enterprises	
Dokki	Urban and Pre-urban	IES	40	30	A combination of fairly medium income areas (Soliman Gohar street) and low income areas (Ezbet Awlad Allam). Served by IES.
Imbaba	Urban	IES	25	15	Random, unorganized commercial activities. Very poor level of service. Served by IES.
Boulak El Dakrrour	Urban	National Companies and NGOs	30	15	Low income district. A typical district with a famous long polluted canal that poses serious risks. Served by national companies and NGOs.
El Warrak (Warrak El Arab)	Urban	GCBA	35	20	A model of an overcrowded commercial and residential area. Only served by GCBA
Ismailia Governorate					
Ismailia City	Urban	LGU NGOs SCI Care Service	60	30	Capital city. Largest in quantity of waste generated. The main dumpsite and composting plant are located here. Large gathering

Area	Feature	Service Provider	Number of Questionnaires		Reasons for Selection
			Beneficiaries	Enterprises	
					spot for the informal sector and large warehouses for recyclables.
Abu Seer El Balad	Rural	LGU NGOs	15		Rural example with two service provision models.
Al Manayef	Rural	LGU	15		Rural area with no NGO activities.
El Tal El Keber City	Semi-urban	LGU	20	15	Agriculture activities. No official dumpsite.
El Kassaseen El Gededa	Urban	LGU	10	15	City with waste accumulations and limited land for dumpsites.
Luxor Governorate					
Luxor City	Urban		55	20	The sample involved a variety of types of enterprises (services, industrial and commercial). The beneficiaries sample included various economic standards, the 3 urban classes[16] of the city

[16] In Luxor City the following typology has been developed: **Class A**: represents high income areas (Cleopatra area in Hai Wasat and Al Fayrouz area in Hay Ganoub), **Class B:** middle income (Al Madyna Al Mounawara Street in Hai Ganoub and El Sawaki area east to the railway), **Class C:** Unplanned expansions and poor urban areas (Abu El Goud area and El Hamara area in Hai Wasat and El Awamya in Hai Ganoub), **Slums:** Al Mouazon Buildings, El Hamam area and Hagag Bely (Hai Wasat), El Mezabelen (Hai Shark), Al Matar District (near the airport) and Al Karnak, Naga Tawel and Badran (Hay Sahaml).

Area	Feature	Service Provider	Number of Questionnaires		Reasons for Selection
			Beneficiaries	Enterprises	
					urban residents.
Al Toud	Rural and Semi-urban		35	15	The sample involved a variety of types of enterprises (services, industrial and commercial). The beneficiaries sample included semi-urban areas as well as purely rural residents in Al Toud villages.
Armant	Rural and Urban		20	10	The sample of both enterprises and beneficiaries included rural areas in Al Rozaykat Kebli as well as rural areas in Armant El Het.
Gharbia Governorate					
El Mahalla El Kobra	Rural	Subcontractor	25	25	A model for the service provided by subcontractor in Manshyet El Omara.
	Peri-urban	Care service	15	10	A model for service provided by private company in the semi-urban area in Mahallet El Borg.
Tanta City	Urban	Care service	43	36	Represents low income (Shehata St.) and high

Area	Feature	Service Provider	Number of Questionnaires		Reasons for Selection
			Beneficiaries	Enterprises	
					income (governorate neighborhood) urban areas. A pure urban example. Service provided by private company.
Shoubratna Basyoun	Rural	NGO	25	14	NGO service in purely rural example.
, Qotor	Rural	None	25	25	An experience of failure with the NGOs.

The design of the survey questionnaire aimed, in the first place, to establish a baseline profile for the current situation, assess community willingness to pay and contribute to an improved MSWM system, and assess their aspirations for the required improvements. Under the baseline profile, the questionnaires measured the service providers, service fees, behavioral aspects and the key weaknesses within the current situation. The design of the questionnaire paid attention to the specificities of each governorate and intended to include questions to measure these specificities (e.g. the historical background of the service, which was an important issue, in particular, in Giza Governorate).

A team of 10 surveyors were mobilized and trained, later administering the questionnaires in the field in Giza, Gharbia and Ismailia. In the meantime, a team of five local surveyors from Luxor Governorate were also trained and participated in the collection of field data. In all the governorates, field supervisors worked closely with the team and supervised their performance. Upon completion of the field work, data was electronically entered and analysis sheets produced using SPSS. This software has also been used to establish relationships (cross tabulation) between two or more factors as will be presented in the respective sections in the PSIA.

3.2.2.1.1 Basic Profile of the Survey Sample

The following section illustrates a brief description of the collective profile of the survey sample.

- Sample Distribution by Governorate

As shown in Table 3.2 below, the questionnaires were distributed in four governorates, namely Giza, Gharbia, Ismailia and Luxor. A slight difference in the number of

questionnaires was made in favor of Gharbia Governorate for both beneficiaries and enterprises.

Table 3.2 Sample Distribution by Governorate

Governorate	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Gharbia	133	27.0	110	34.5
Giza	131	26.6	80	25.1
Ismailia	123	25.0	79	24.8
Luxor	105	21.3	50	15.7
Total	**492**	**100.0**	**319**	**100.0**

- Urban/Rural Characteristics

The PSIA team worked to ensure the fair representation of various types of districts within the surveyed governorates. The level of urbanization of the areas to be surveyed was one of the main factors considered in making decisions in selecting areas for the survey. As shown in Table 3.3 below, the various types, including pure rural, pure urban, semi-urban and slums have been represented in the survey. It should be noted that in most of the cases, the distinction between the rural and urban characteristics was clear to a great extent, and this is the reason why the pre-urban model is the least represented model in the survey. The pure urban type is most represented in the survey sample, and the main reason for this is that Giza is a predominantly urban governorate and only urban and slums areas exist in the Giza survey.

Table 3.3 Distribution of the Survey Sample by Urban Characteristics

Characteristic	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Urban	249	50.6	195	61.1
Rural	147	29.9	81	25.4
Pre-urban	43	8.7	37	11.6
Slum	53	10.8	6	1.9
Total	492	100.0	319	100.0

- Features of the Surveyed Areas

As shown in Table 3.4 below, the majority of the surveyed areas (50.6%) included residential areas with light commercial activities. In the meantime, areas where commercial activities dominated also represented a significant portion of the survey sample (38.8%).

Table 3.4 Main Features of the Surveyed Areas

Features	Number of Questionnaires	Percentage

Features	Number of Questionnaires	Percentage
Commercial areas	191	38.8
Industrial areas	18	3.7
Residential areas with few shops	249	50.6
Residential areas with no shops	18	3.7
Total	476	96.7
Missing	16	3.3
Total	492	100.0

As shown in Table 3.5 below, the surveyed enterprises included shops such as grocery stores, bakeries, stationary stores and communication shops. Moreover, small workshops for car maintenance, carpentry and steel works represented around 10 % of the surveyed enterprises.

Table 3.5 Main Economic Activities for the Surveyed Enterprises

Economic Activity	Enterprises	
	Number of Questionnaires	Percentage
Shop (including grocery, bakery, stationary, communication, etc.)	234	73.4
Workshop (carpentry, car maintenance, etc.)	29	9.1
Restaurant	13	4.1
Governmental enterprise	5	1.6
Administrative private enterprise	4	1.3
Touristic enterprise	4	1.3
Factory	4	1.3
Pharmacy	20	6.3
Café	6	1.9
Total	319	100.0

- Gender Representation

Gender balance in the survey questionnaires was an issue of concern for the PSIA team. While women are usually a primary handler of SW at the household level, men are a key player in the issues of fee payments. They are also more knowledgeable about service providers and are key decision makers in issues related to household expenditures, and are, consequently, the most authorized to answer questions related to the willingness to pay. The survey ensured gender balance among the surveyed beneficiaries. For enterprises, the situation was slightly different since the main aim was to access a respondent representing the enterprise and gender was not a main issue.

Table 3.6 Gender Representation in the Survey Sample

Gender of respondents	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Male	273	58.3	287	85.6
Female	46	41.7	205	14.4
Total	319	100.0	492	100.0

- Classification of the Age Groups of the Surveyed Sample

The largest portion of the survey sample (around 70% of beneficiaries and 70% of enterprises respondents) fell under three main age groups, ages 20 to 50 years.

Table 3.7 Age Characteristics of the Survey Sample

Age group	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
below 20 years	9	1.8	5	1.6
20 :< 30 years	88	17.9	67	21.0
30 :<40 years	107	21.7	79	24.8
40 :< 50 years	145	29.5	77	24.1
50 :< 60 years	94	19.1	68	21.3
60+ years	49	10.0	23	7.2
Total	492	100.0	319	100.0

- Poverty Profile of the Survey Sample

The fair representation of the poor groups in the local communities in the survey sample was a main concern for the PSIA Team. The survey questionnaires collected a number of indictors that the team intended to use for measuring poverty within the survey sample. This included some income related indictors, as well as non-income indictors related to access to services and basic facilities. However, the team found that relying on the indictors like access to water, sewage system and electricity might be misleading due to the fact that most of the survey sample, including those located in rural areas or poor urban areas have access to these facilities. These indictors have, thus, been excluded. Alternatively, the PSIA team developed a wealth index, which is built on factors and indicators such as job type, level of education, average income and income stability. These indictors have been collected as part of the survey. The data was compiled and classified in five quintiles. The first quintile refers to the poorest groups and the higher the level of quintile, the lower the poverty level. It can be observed from Figure 3.2 below that the largest percentage of the sample is characterized by a medium level of poverty. Interestingly, these nonmaterial indictors accord with the income and expenditure analysis of the survey, which showed that around 70% of the survey sample has a household monthly income of less than LE 1000 as indicted on Table 3.8 and Figure 3.3.

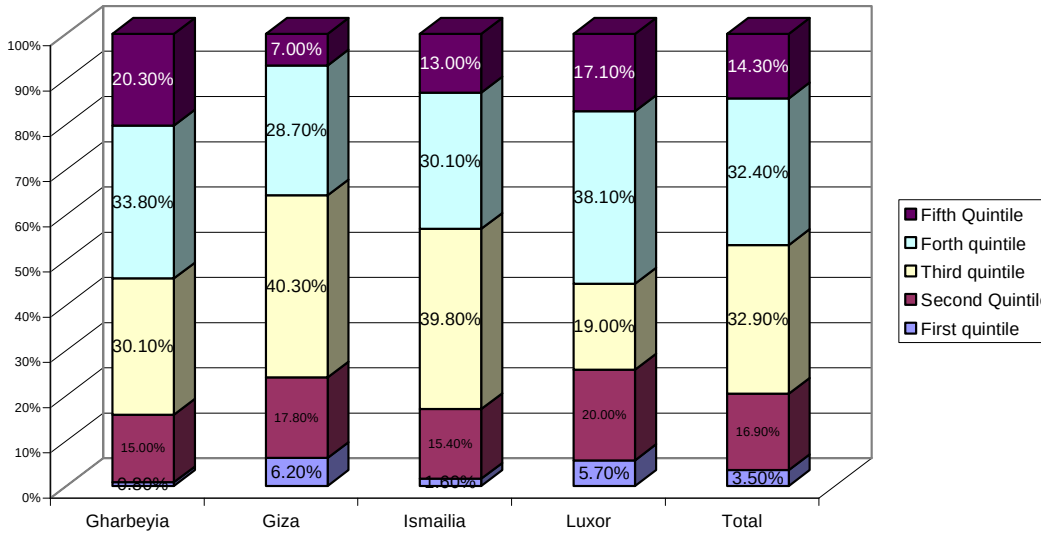


Figure 3.2 The Wealth Index Indictors of the Survey Sample

Table 3.8 Income and Expenditure of the Household

Average Monthly Income	Beneficiaries Sample			
	Household Income		Household Expenditure	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Less than LE 250	12	2.4	12	2.4
LE 250 : LE 500	50	10.2	59	12.0
LE 500 : LE 750	129	26.2	139	28.3
LE 750 : LE 1000	148	30.1	146	29.7
LE 1000 : LE 1500	92	18.7	97	19.7
LE 1500 : LE 2000	41	8.3	22	4.5
Above LE 2000	15	3.0	12	2.4
Total Collected	487	99.0	487	99.0
Missing	5	1.0	5	1.0
Total	492	100.0	492	100.0

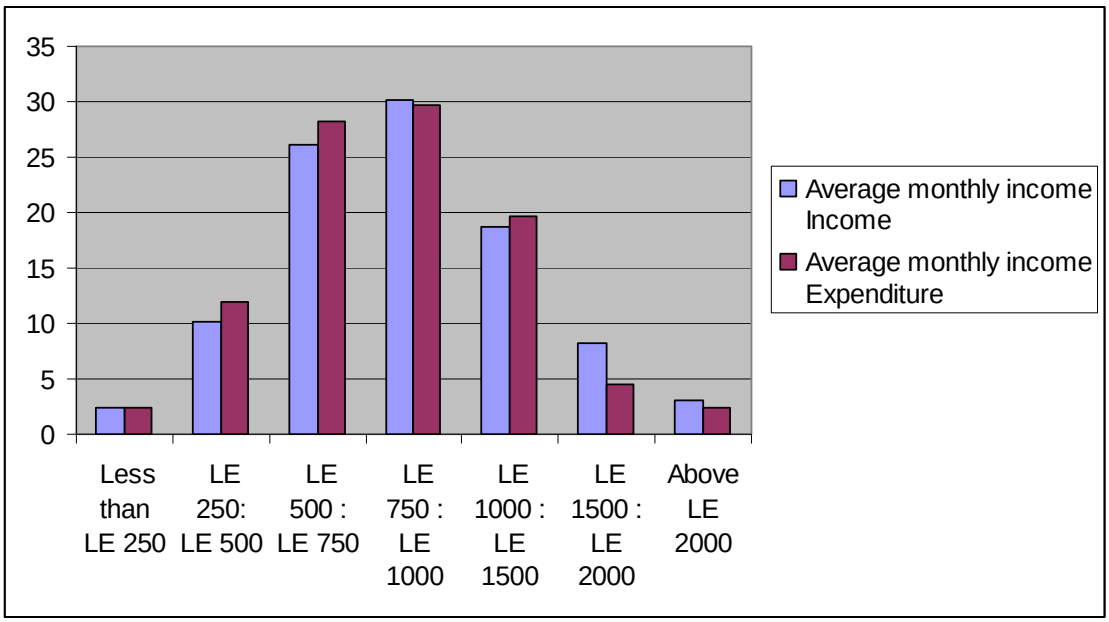


Figure 3.3 Monthly Income and Expenditure of the Survey Sample

3.2.2.2 Qualitative Data

In designing the PSIA tools, the team was very attentive to the nature of the targeted groups and the need for understanding life dynamics, strategies and work modes. The team strongly believed that applying only the quantitative structured questionnaires would not yield the depth of information required for the PSIA. The team, thus, employed a number of qualitative data collection methods, mostly focus group discussions (FGDs) and in-depth interviews. The qualitative methods efficiently provided in-depth understanding and helped in verifying the collected quantitative information, particularly through the field survey. A list of the most important stakeholders interviewed in the four governorates is attached in Annex B.

A large number of FGDs and in-depth interviews were carried out in the targeted governorates. Moreover, discussions on the central level have also been arranged with EEAA, MoLD and the consultants working in the preparation of the Strategy for the Private Sector Participation (PSP) in SWM in Egypt.

Table 3.9 Summary of the FGDs and In-depth Interviews in the Targeted Governorates

Qualitative Tool	Number of Interviews/ Discussion	Categories	Total Number of Participants
Giza Governorate			
Focus Group	2	**Informal sector groups** Scavengers in Shabramant dumpsite	11

Qualitative Tool	Number of Interviews/ Discussion	Categories	Total Number of Participants
Discussion		(men) (6) Zabbaleen in Mensheyat Nasser (mixed group) (5)	
	6	**Local Communities** Men residents in Boulak (6) Men residents in Boulak (6) Men residents in El Warrak (6) Women residents in El Warrak (7) Women residents in Dokki/Mohandessen (4)	29
In-depth Interviews	5	**Informal sector groups** Zabbaleen in Ard El Lewa (2) Women in Zarayeb Ard El Lewa (2) Zabbaleen in Mensheyat Nasser	
	3	**Local Organizations** St. George Church, Ard El Lewa Garbage Collectors NGO, Mensheyat Nasser	3
	10	**Governmental Officials** EEAA (2) Giza EMU (5) GCBA (1) Shabramant Dumpsite Management (3) Subcontractor in Shabramant Dumpsite (1) Cleansing Crew of GCBA (2)	14
	1	**National Operators in Giza Governorate** Al Faraounia, Enviro-Master and Al Obour	2
	2	**Community Members** Women residents in Hadayek El Ahram (2)	2
Luxor Governorate			
Focus Group Discussion	4	**Community Members** Women in Al Toud (8) Men in Al Toud (6) Women in El Qorna (6) **Informal Sector** Women from the informal sector (3)	23
In-depth Interviews	13	**Governmental Officials** EMU, Head and Deputy of Al Toud City Council, Cleansing Department	15

Qualitative Tool	Number of Interviews/ Discussion	Categories	Total Number of Participants
		Informal Sector Men and women	
Ismailia Governorate			
Focus Group Discussion	2	Local Communities	
In-depth Interviews	10	Governmental Officials (8) Ismailia EMU (2)	10
	2	**CDAs (2)** Al Kholafaa El Rasheden and Om Azam	2
	18	**Informal Sector** 18 interviews with various categories	18
Gharbia Governorate			
Focus Group Discussion	4	**Governmental Officials** Tanta City 3 Districts (Hai Awal, Tani and Talet)	21
		CDAs Headed by the head of the NGOs Federation (8)	8
		Local Communities Men local residents in Manshiet Omara (8) Women local residents in Shoubratna (6)	14
In-depth Interviews	3	**Private Companies** Care Service Staff and crew (10) Mabrouk Company (1)	11
	21	**Informal Sector** 3 female scavengers, 4 children scavengers, 1 waste picker, 13 male dealers scavengers and waste collector	21
	20	**Governmental Officials** EEAA, EMU, SFD, Landfill managers NGOs union	20
	8	**CDAs** CDAs who work in waste collection	8

Figure 3.4 Women FGD in Boulak, Giza

Figure 3.5 Men FGD in El Warrak, Giza

Figure 3.6 In-depth interview with one of the subcontractors in Gharbia

Figure 3.7 In-depth interview with one of the dumpsite scavengers, El Dawakhlya, Gharbia

3.3 Strengths and Limitations in the PSIA Methodology

The adopted methodology used in preparing the PSIA included several strengths that contributed to the quality of the PSIA. These, most importantly, include:

- A combination of quantitative and qualitative data gathering tools that positively contributed to deepening the level of analysis. The gathered qualitative information added value to the PSIA findings and enriched the analysis by allowing for the collection of in-depth information about the experiences and livelihood strategies of the various groups. These findings are supported by the participants' personal testimonies. Even within the structured survey, the survey team was also encouraged to ask the questions, even the ones with fixed alternatives, as open-ended questions to collect the community's views without exerting external influence on their perceptions and views.

- The selected analytical framework of the Sustainable Livelihoods Approach (SLA) helped the team in thinking holistically and drew the attention away from the conventional framework. The analysis looked into different variables that are key to improving and sustaining the livelihoods of the informal sector groups.

- The PSIA adopted a socially and poverty sensitive approach that paid great attention to the marginalized groups, particularly the informal players in the solid waste field.

- One distinct advantage of the PSIA's methodology is that it benefited from success stories and useful case studies such as the case of the Zabbaleen in Mensheyat Nasser.

- The process of the PSIA involved learning from the practical application of the tools and required flexibility to adapt them for the field findings. The designed tools have been pre-tested in the field and amended according to the findings from this testing. Based on the field testing, some of the questionnaires have been removed from the structured questionnaires and were included in other qualitative tools.

- Highly capable survey teams were employed to carry out the surveys in the targeted governorates. The capacity of the survey team was built through a number of training sessions that were organized to train them on the questionnaires and familiarize them with the various SWM and informal sector terminologies in the questionnaires.

- The team worked to attain the highest level of consistency possible among the targeted governorates by designing uniform sets of questionnaires and guidelines. In the meantime, the report was developed in a fashion that maintained the specificities of each of the governorates.

- Finally, the team believes that the PSIA contributed to opening the eyes of various stakeholders to the role of the informal sector and the importance of establishing measures to protect their interests. The PSIA stimulated collective brainstorming among the various groups to agree on alternatives that aim to protect the interests of the informal sector groups.

In the meantime, the PSIA has faced a number of limitations, most importantly:

- Limitations in resources did not allow for a more expanded sample for the quantitative structured survey in the governorates. However, the team worked to overcome this challenge by ensuring that the sample distribution on the level of each of the targeted governorates was made to fairly represent the various characteristics as illustrated above.

- The scope of the study included the task of estimating the number of the various groups who are working informally in waste-related business. This task was found to be quite challenging for the team, particularly for the informal sector groups that the PSIA called "recently emerging groups." This is due to the following facts:
    - ⇒ No secondary references are available in this regard.
    - ⇒ This type of informal business of sorting and selling recyclables attracts low skilled, unskilled or unemployed inidividuals. It, thus, absorbs a very large number of the poor every day. In that sense, this market is very

dynamic and is characterized by daily changes. Figures thus are variable every day.

⇒ The informal groups, particularly the street pickers and scavengers, are socially stigmatized groups who are negatively perceived by local communities, the police, municipalities and other groups. Most of them live in slums or illegal places, make a living illegally, are widely perceived by police and communities to be socially deviants or "criminal record holders." They are, thus, trying, to the extent possible, to be invisible on the street. They also have suspicious attitude towards strangers and are usually reluctant to reveal information out of fear of being legally questioned.

⇒ The only sources available to the consultant were the estimations provided by resource persons. It was noticed that there were wide variations in these estimates according to the personal judgments and observations of the person being interviewed.

- Generally speaking, collecting information from the various informal sector groups related to the nature of jobs, income levels and other living conditions was neither an easy nor a straightforward task. All the consulted groups showed a high level of reserve and caution in providing information about their lives and livelihoods. This is partially because of the informal mode of work in which they participate has a very limited level of security.

- The situation in Giza was the most complicated of all the governorates. The various historical clashes and conflicts of interests between the government and the Zabbaleen in Ard El Lewa, as will be elaborated in details inside the PSIA, have resulted in a deep sense of mistrust and lack of security. This was reflected in the reluctance and cautious attitude of Ard El Lewa Zabbaleen community towards the PSIA. Apart from a few of the local leaders in Ard El Lewa (e.g. the church), most of those who were interviewed tended to question the team's statements about the objectives of the PSIA. This included a strong resistance to revealing information and not allowing the team to take pictures in the district. Moreover, communities of Zabaleen in Ard El Lewa showed resistance to participating in the workshops that were organized after drafting the PSIA.

> "This is our life and business… this is the way we look … If you take pictures and present in a report saying this is the Zabbaleen homes and business, they (referring to the government) won't look at it this way. They won't appreciate. They will rather say this is rubbish down the Mehwar road. This is the shameful scene that should be removed."
>
> Bader Besada, dealer in Zarayeb Ard El Lewa

- The team has found some difficulties in applying the structured survey questionnaire in high income urban areas, particularly in Giza Governorate where people were too reluctant to participate. This was understood to be a result of the urban

characteristics of these communities and the higher sense of individualism. On the contrary, in poorer areas, local communities were very enthusiastic to contribute their views and thoughts.

- The availability of information varied from one governorate to another and this has contributed to varying levels of consistency in certain parts of the PSIA.

Chapter Four: Current Situation

4.1 Background Information about the Targeted Governorates

The four selected governorates for the PSIA represent various patterns within Egyptian Governorates, namely urban-dominated governorates such as Giza Governorate, industrial rural governorates such as Gharbia Governorate, and the governorates with historical and touristic importance, as is the case with Luxor Governorate. Ismailia Governorate is a one of the models for the small governorates in the Suez Canal Region. Despite these differences, some common characteristics were found among the targeted governorates and can be considered as key conditions that apply not only to the remaining Egyptian Governorates but also to the majority of developing countries. This includes rapid population growth, migration to urban areas, lack of sufficient funds and affordable services and generally, a low-skilled labor force. Solid waste management systems are often poorly run and operate under low standards. Cities in developing countries often collect only 50% to 80% of waste generated[17], with open dumping as the only disposal method available. This is the average collection efficiency in the targeted Egyptian Governorates.

4.1.1 Poverty Analysis

Within the framework of this PSIA, poverty is not merely looked at from a material perspective, but rather involving multidimensional aspects such as a lack of assets that help in pursuing sustainable livelihoods. The study is tailored to this perception and the various social groups are seen through this lens. In the meantime, in examining the poverty conditions within the targeted governorates, a number of indictors were developed for poverty mapping that helped in measuring the poverty and deprivation among the four governorates. The tool was also found to be helpful in indicating regional disparities in human development. The 2010 Human Development Report has helped in setting comparative measures among the four governorates and between each of the four governorates and the national level as shown in Table 4.1 below.

Table 4.1 Poverty and Deprivation Indicators on the National Level and in the Targeted Governorates

Information	Gharbia	Ismailia	Giza	Luxor	Egypt
Total population	4,125.9	988.5	6,490.8	469.5	75,097.3
Annual population growth rate	1.6	2.7	2.5	2.2	2.0
Crude birth rate	25.3	30.9	27.8	26.0	27.8
Crude death rate	5.8	6	5.3	6.8	6.1
Population demographic dependency ratio	51	52.3	52.1	57.2	54.9
GDP per capita (LE)	8,799.6	8,970.2	8,242.8	9,105.6	10,246.1

[17] Wilson, David C & Costa Velis & Chris Cheeseman. "Role of informal sector recycling in waste management in developing countries" Habitat International v30 : 797–808, 2006.

Information	Gharbia	Ismailia	Giza	Luxor	Egypt
Expenditure per capita (LE)	4,057	3,785	3,960	2,714	3,712
Lowest 40% of people	25.9	24.1	20.2	25.4	22.3
Ratio of highest 20% to lowest 20%	3.2	3.7	5.2	3.2	4.4
Gini coefficient[18]	0.24	0.27	0.34	0.24	0.31
Poor persons households (%) of total households	7.6	18.8	23	40.9	21.6
Ultra poor persons households (%) of total population	0.8	4.3	7.6	14.3	6.1
Unemployment rate (%) among total population	12	11.1	6.7	17.2	8.9
Unemployment rate (%) among females	28	22.6	13.9	35.5	18.6
Labor force (15+) (% of total population)	34.3	29.3	29.3	29.5	32.4
Public schools (%) 2007-08	0.9	1.6	10.3	0.2	3.4
Private schools (%)2007-08	14.9	11.2	8.3	18.5	11
El Azhar schools (%)2007-08	3.52	0.87	0	0.91	1.53
Gross primary school enrollment ratio in thousands	107.5	111.5	113.7	111.6	90.0

The analysis of the indictors within the table above revealed that Luxor Governorate is considered the poorest among the targeted governorates in indictors related to percentage of poor population and percentage of the unemployed population compared to the work force. This is particularly true after adding the rural areas to Luxor City according to the new administrative division. In the meantime, Giza shows significant indications of urban poverty characterized by inequalities between the poor and the well off population as indicted by the Gini coefficient and the ratio of households in the highest 20% to households in the lowest 20%.

4.2 Giza Governorate

4.2.1 Socioeconomic Characteristics of Giza Governorate

4.2.1.1 Description of Giza Governorate

Giza is one of the oldest historical sites in Egypt. Giza Governorate is the connection point between Upper Egypt Governorates and the Delta Governorates. It is also the link between Greater Cairo Governorates and Alexandria Governorate. The governorate's strategic importance returns to the fact that it hosts a large number of research and historical institutes, including, but not limited to, Cairo University, which is the oldest Egyptian and Arab University, the National Research Center, the Agriculture Research

[18] The Gini coefficient is a measure of the inequality of a distribution, a value of 0 expressing total equality and a value of 1 maximal inequality. It has found application in the study of inequalities in disciplines as diverse as economics, health science, ecology, chemistry and engineering.

Center, Veterinary Serum & Vaccine Research Institute, Theodor Bilharz Research Institute in addition to several historical sites including museums[19].

Giza Governorate is a pure urban governorate that exists within the larger urban community of the Greater Cairo Region that encompasses five governorates, following Presidential Decree 114 and 124 of the year 2008, which created new administrative divisions and reset the boundaries of the governorate allocating more agricultural land to 6th of October City, originally part of Giza prior to the decree, and promoting it to a governorate level. This resulted in a reduction in the area of Giza Governorate, changing its administrative jurisdictions and significantly altering the type and characteristics of its economic activities by removing important economic features like agricultural land and converting the governorate into a dominantly urban center.

Giza's population is estimated to be around three million inhabitants. Since July 2010, Giza has been divided administratively into 14 districts[20] based on the ministerial decree 980 and 981 of year 2010. Previously, Giza encompassed eight districts from 2008 until July 2010. This was mainly carried out with the intention of creating better work distribution and control over the increased administrative and services among the districts. It is worth noting that no statistical information on the level of the new administrative division was made available to the team. Most of the available background information on the level of Giza Governorate is sorted by the previous administrative divisions including the SWM arrangements and work division among actors. Table 4.2 below presents the new administrative division and its relation with the old administrative division, while the remaining background information will be presented based on the old administrative division.

Table 4.2 Giza New Administrative Division, July 2010

New Administrative Division	Relation to the Old AdministrativeDivision
El Warrak	Same district as the old division
Imbaba	Together used to compose Giza North
El Mounira	
Al Agouza	Same district as the old division
Dokki	Same district as the old division
Boulak El Dakrrour North	Together used to compose Boulak El Dakrrour
Boulak El Dakrrour South	
Giza South	Same district as the old division
Omranya West	Used to be part of Omranya
Omranya	Used to be part of Giza South
El Talbya	Used to be part of Omranya
El Remaya	Together used to compose Haram District
El Haram	
Hadayek El Haram	

Source: Discussion with Giza EMU Environmental Inspectors, June 2010

[19] Source: Giza Environmental Profile, EEAA, 2005

[20] Decree 1179 for year 2010 issued in July 2010, Source of information: Giza EMU.

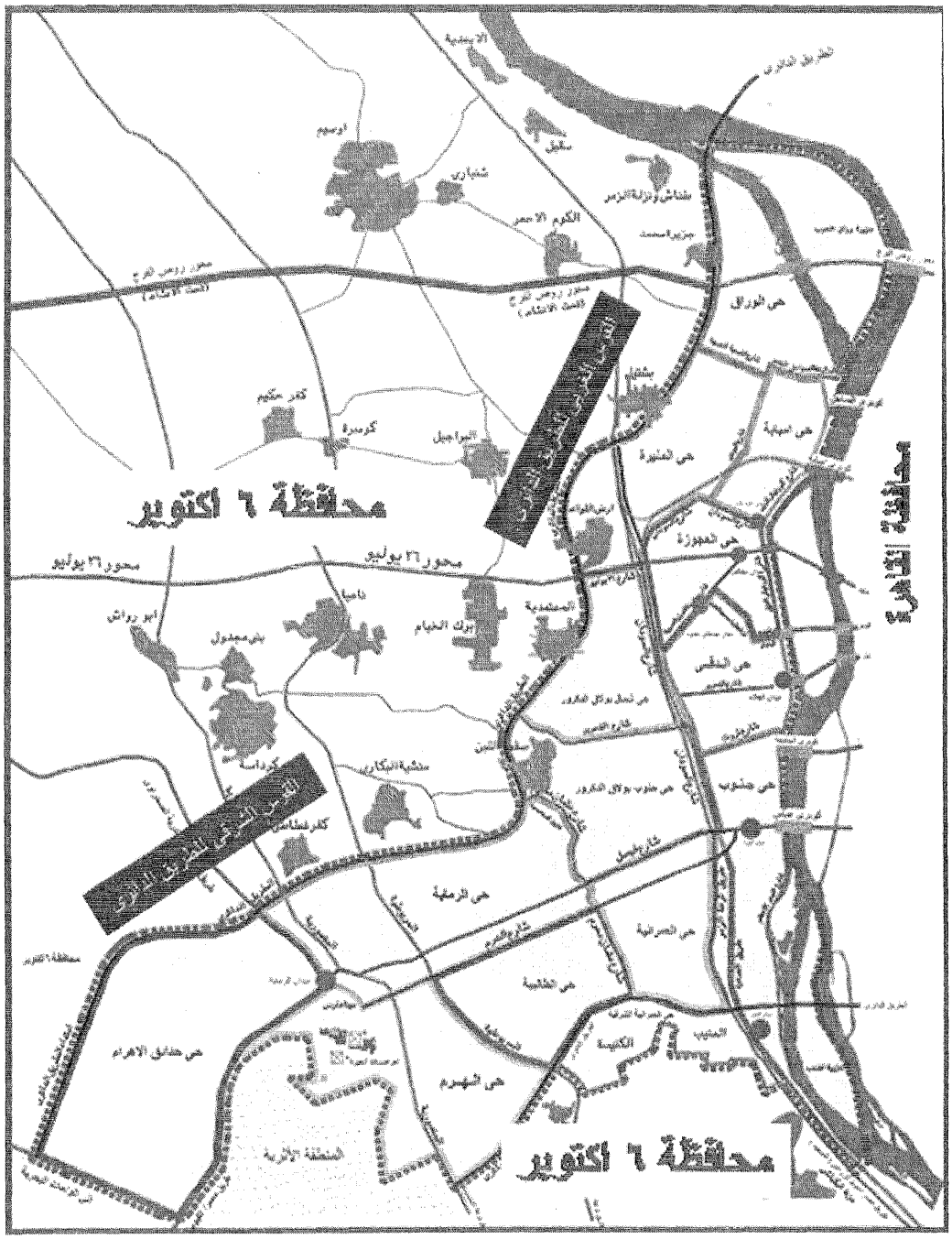


Figure 4.1 Giza Map According to the New District Administrative Divisions

According to the previous administrative division of Giza Governorate, Omranya is the largest district at the governorate level in both terms of area and population. It constitutes 19.12% of the governorate's total area and is inhabited by almost a quarter of the governorate's population. Giza North is the district with the highest population density (355 persons/feddan), while El Haram has the lowest population density (97 persons/feddan). Table 4.3 below presents Giza Governorate administrative divisions, the population of each district and the population density.

Table 4.3 Giza Governorate Administrative Division and Population

District	Total Area (feddan) and %	Total Inhabited Area	Population (1000 person) in 2006 and %	Population Density (person/feddan)
El Warrak	3009	2558	318.6	125
	%13.73		%10.62	
Giza North	2104.6	1684	597.2	355
	%9.60		%19.90	
Al Agouza	1258.9	945	162.9	172
	%5.75		%5.43	
Dokki	1217.3	852	93.3	110
	%5.56		%3.11	
Boulak El Dakrrour	3626.3	2901	564.8	195
	%16.55		%18.82	
Giza South	2690.3	2153	248.9	116
	%12.28		%8.29	
Omranya	4189.4	3351.5	719.4	215
	%19.12		%23.97	
Haram	3816.4	3053	295.7	97
	%17.42		%9.85	
	21912.2	17497.5	3000.8	Average
	%100		%100	137.1

Source: Giza Governorate Strategic Plan, GOPP, 2009 and interview with Mr. Salah Abdel Fatah, GCBA

4.2.1.2 Municipal Solid Waste Management System

The generation rate of waste in Giza was estimated at 4000 tons/day and the collection efficiency does not exceed 60% of the generation rate (EEAA, State of the Environment, 2009). The amount and types of waste generated vary greatly between different districts of the governorate and are strongly reliant on the socioeconomic conditions and consumption patterns of the districts residents. Generally speaking, relatively high income areas have higher generation rates and are higher in the value of the waste composition.

Table 4.4 Waste Composition in Giza Governorate (2009)

Waste Component	Percentage of Total Waste Generated
Organic waste	47
Cardboard	26
Plastics	6
Textiles	3
Bones	0.5
Metals	2
Glass	2.5
Others	13.5

Source: GCBA 2009

As might be observed from Table 4.4 above, the organic component constitutes the largest portion of the generated waste. Due to the urban nature of the governorate, the organic waste is mostly food waste. These amounts used to be fed to the pigs before they were culled in 2009.

4.2.2 Mapping of Different Actors in the MSWM System in Giza Governorate

4.2.2.1 Historical Snapshot and Communities Views

Historically, the SWM Systems which prevailed in the urban parts of Giza Governorate that now constitute the entire governorate were dominated by the traditional Zabbaleen system.

The survey in Giza Governorate aimed to measure the communities' perception of the previous system that largely involved Zabbaleen. The survey aimed to measure the level of community satisfaction with this, and the difference in service efficiency between the past and the current system.

Around 51% of the surveyed communities were served by door to door collection by Zabbaleen five years ago. As indicated on Table 4.5 below, around 63% of the surveyed sample preferred the old system to the current one, while 23.7% did not sense any difference. Of this percentage, almost 46% showed negative reaction towards both the old and the current garbage collections service.

Table 4.5 Communities' Preference for the Current Versus the Past Garbage Collection Systems

Preference	Beneficiaries Survey	
	Number of Questionnaires	Percentage
The system in the past	82	62.6
The current system	15	11.5
No preference (they are the same)	31	23.7
Total	128	97.7
Missing cases	3	2.3

Preference	Beneficiaries Survey	
	Number of Questionnaires	Percentage
Total	131	100.0

In asking about the reasons for preferring the previous system, as indicated on Table 4.6 below, the largest portion of replies referred to the regularity and high frequency of the service as well as to the streets being cleaner. The lower fee level was also a reason for preferring the old system for 13.2% of those who showed preference for the old system.

Table 4.6 Reasons for Preferring the Zabbaleen Old System

Reasons	Beneficiaries Survey	
	Number of Questionnaires	Percentage
The fees were less	14	13.2
The system included door to door collection	9	8.5
Garbage had been frequently and regularly collected	53	50.0
Streets used to be much cleaner	16	15.1
There were not any fees on the electricity bill	14	13.2
Total	106	100.0

This finding from the survey results analysis was also supported by the findings from the focus group discussions in the majority of the surveyed districts in Giza Governorate. The interviewed community groups revealed that they had been served by Zabbal for many years and that they were used to this system, which was regular and efficient[21]. According to several interviewed stakeholders, the traditional system had been operating efficiently and the level of community satisfaction was far higher than the current situation.

> "The government said: I will intervene to solve the problem, although there has not been a problem in the first place."
>
> Eng. Mounir Nawar, Mensheyat Nasser

4.2.2.2 Current Situation

[21] Focus groups discussion, Boulak El Dakrrour and Warak, Giza Governorate.

Over the last ten years and with the introduction of the international private sector companies in Egypt, new actors have been introduced to the SWM field in Giza with the main objective being to improve the system in order to cope with the increasing demands and requirements associated with the increased population. Figure 4.3 below visualizes the key actors:

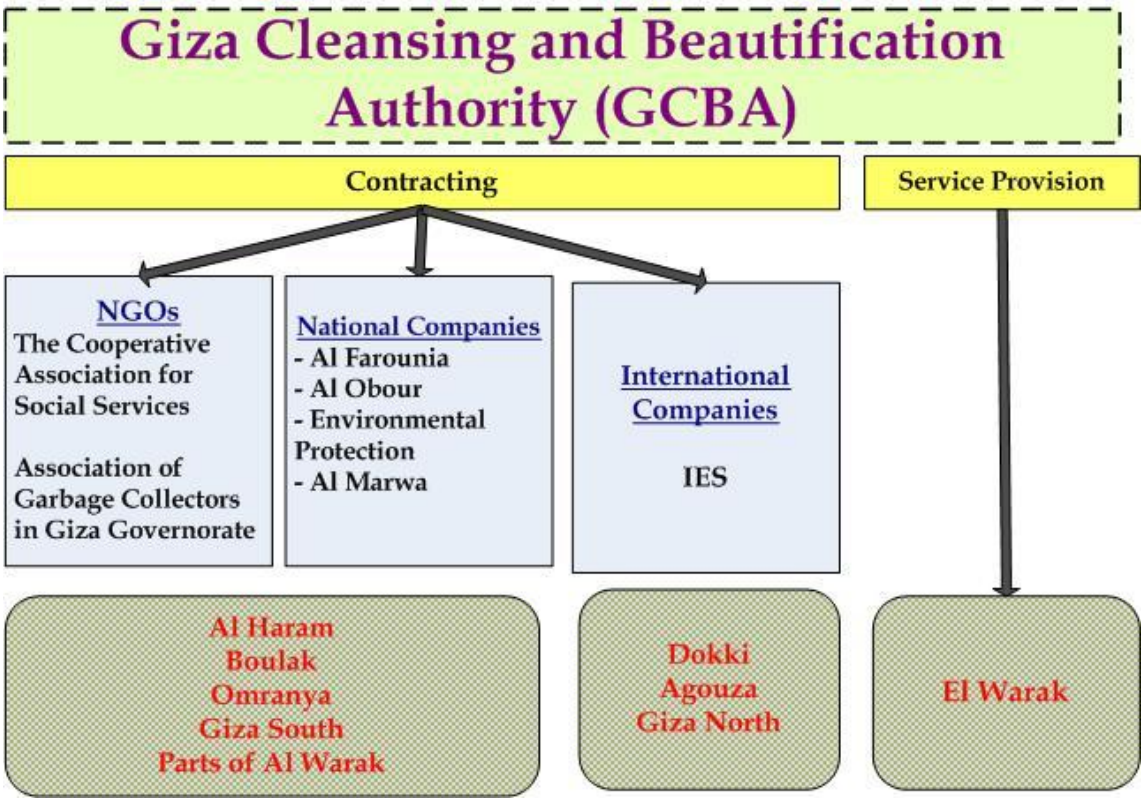


Figure 4.2 Key SWM actors in Giza Governorate

Table 4.7 SWM Service Providers for the Survey Sample

	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
The Government (Municipality, GCBA, etc.)	24	18.3	31	38.8
Private company	20	15.3	11	13.8
Zabbaleen	50	38.2	22	27.5
Nobody	35	26.7	16	20.0
Total	129	98.5		
Missing cases	2	1.5		
Total	131	100.0	80	100.0

The highest percentage of respondents (38.2%) mentioned that they are served by door to door collection service by Zabbaleen. It worth noticing that level of awareness of

local communities about who functions as their service providers seemed to be limited, particularly among the women respondents who confused cleansing workers with Zabbaleen and were not quite clear about the difference between GCBA and the private companies. Thus, this figure should be treated cautiously since the percentage of the communities who are actually served by Zabbaleen might be higher or lower than this figure.

> "We are served by Zabbaleen since long time ago. It used to be the father. Now we are served by his sons."
>
> Ladies FGD, Boulak Abou El Ela

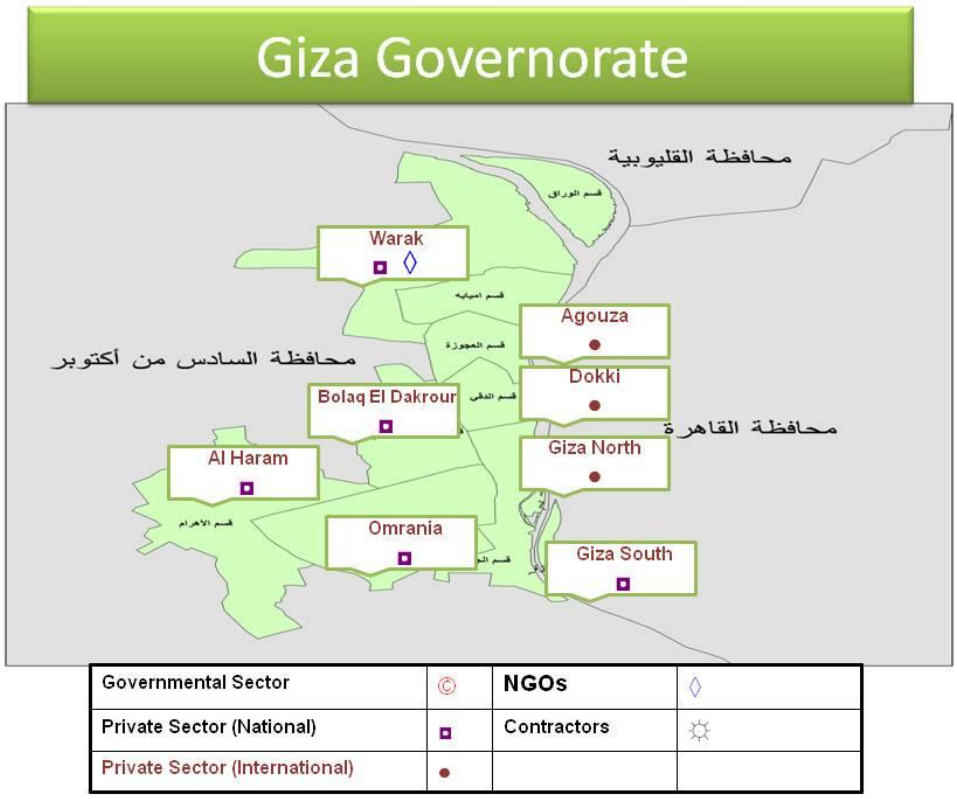


Figure 4.3 Service Providers of Giza Governorate

4.2.2.3 Giza Cleansing and Beautification Authority (GCBA):

Cairo and Giza Governorates have special cleansing and beautification authorities which were established in 1983 and 1984 respectively in accordance with two presidential decrees. The logic behind establishing the two authorities was to pave the way towards a more efficient waste management system in the capital. The two authorities play the same role as the local government in all other governorates, but enjoy specialization, separate budgets and financed administrative structure, which allow them to employ a greater number of employees and workers on a governmental cadre basis.

The original scope of GCBA includes:

- Beautification including the preparation of public parks and cultivating green areas, provide regular maintenance for green spaces and managing the nurseries on the level of the governorates.
- Cleansing (SWM) including the various activities related to SWM (waste collection from streets, waste transfer, final disposal and managing the controlled dumpsite). In addition to this, GCBA is responsible for street cleansing and regular maintenance.

In practice and like all local governments, the pressure on the SWM in house has given way to the introduction of roles for other actors in SWM systems. This mainly includes international and national private sector companies. In this respect and apart from undertaking waste management by itself, GCBA is the official governmental agency in charge of representing the governorate in contractual agreements with various local and international companies. GCBA is responsible for inviting bidders to provide the SWM services within Giza's jurisdiction and according to Egyptian legislation, namely, Law 89 of 1998 for organizing the tenders and bids. It is also the main competent authority for monitoring the performance of the international and local companies contracted for the various SWM activities, monitoring their adherence to the various contractual conditions and enforcing fines in cases of violating the contractual agreement. In case of any deficiencies in the performance of the other actors, namely the international and national companies and NGOs, GCBA is also responsible for ensuring that the provided service meets reasonable standards that satisfy the served communities.

While the official figures of EEAA pointed to collection efficiency of 55% of the generated waste in Giza Governorate, the personal estimation of the GCBA representative[22] showed that the overall collection efficiency rate for both the operating international company and the national companies in Giza together operating in Giza does not exceed 40% of the required rate (more details about those actors are presented below). According to the same source, the efficiency of the Italian company alone, which is the only international company currently working in Giza Governorate after the withdrawal of the Spanish company, does not exceed 20%. GCBA is working to fill in the performance gaps by providing and covering the costs of crew and equipment.

In addition to its role as a contract manager and a monitoring body to other companies, GCBA is still responsible for providing SWM services in Al Warrak Districts, including municipal (among other) waste collection from street containers and waste transfer to the controlled dumpsite in Shabramant. GCBA is also responsible for contracting companies to carry out all the sorting, segregation and recycling activities at the controlled dumpsite.

GCBA has a Contract Monitoring Unit (CMU) which is the main department in charge of supervising and following up on the performance of the international companies, currently the Italian company, International Environmental Services (IES). In the meantime, the Projects Department and more specifically, the affiliated "Contracts Monitoring Unit" is responsible for monitoring the performance of the local

[22] Meeting Eng. Salah Abdel Fatah, SWM Specialist GCBA.

associations and companies and is responsible for following up on their commitment to the contract conditions. Under this Unit, the field supervisors are also in charge of reporting and fining the cases where operators (international companies, national companies or Zabbaleen) bypass each other or where external individuals carry out services without licenses. The fine for these cases ranges between LE 2000 to LE 3000. They are also in charge of reporting the cases that violate the internal regulations of GCBA. Moreover, the Contracts and Monitoring Unit of GCBA includes a section for licenses with a team in charge of issuing and following up on Zabbaleen licenses which are not valid any longer.

Support is provided constantly by EEAA to GCBA. In 2008, and in order to allow GCBA to cope with the crisis of the withdrawal of the Spanish SWM company, EEAA provided GCBA with equipment that amounted to LE 11,000,000 and in 2009 to 2010; EEAA also granted equipment with a value of LE 20,000,000 to GCBA[23]. In 2008, EEAA in cooperation with GCBA has started an initiative for "segregation at source."[24]

Box 4.1 "Segregation at Source", Giza Governorate

The demonstration project of "Segregation at Source" by EEAA

EEAA is one of the main central authorities of strong relevance to SWM.

- Drawing policies and legislation related to SWM sector among other environmental issues
- Developing strategies and guidelines for SWM
- Providing technical and financial assistance to the governorates in preparing bidding and specification documents
- Disseminating awareness material and carries out awareness plans
- Carrying out pilot and demonstration projects

In 2008, EEAA in cooperation with GCBA has carried out a "Waste Segregation at Source Initiative" in Talbya District in Giza Governorate. The project was implemented with the main objective of raising community awareness about waste related issues such as the potential of utilizing recycled waste, improving the quality of the raw input to composting plants and consequently, the quality of compost, reducing the effort currently exerted in segregating waste, and minimizing street scavenging activities.

The project promoted the idea of "at source segregation" by encouraging residents to segregate organic waste from non-organic waste.

EEAA provided two collection trucks to GCBA and they provided colored street containers to distinguish the type of segregated waste.

According to the EEAA, the project is a very successful model that could be replicated

[23] Meeting Eng. Ahmed Saeed- SWM Specialist EEAA.
http://www.almasry-alyoum.com/article2.aspx?ArticleID=199956&IssueID=1323

[24] Interview with the SWM Department, EEAA, July 2010.

in other districts and other governorates. Currently, the segregation rate reaches to around 80%.

There are 3,800 cleansing workers under GCBA and most of them are hired under permanent contracts[25]. The secondary sources showed that permanent to temporary workers of GCBA are estimated at 75% to 25%[26]. According to GCBA, the permanent workers receive the various benefits of being governmental employees.

Box 4.2 Shabramant Dumpsite

Shabramant Dumpsite

The Shabramant Dumpsite is the only official controlled dumpsite for Giza Governorate. It is located on an area of 714 feddan and is used for the final disposal of various types of waste from Giza. The road to the dumpsite is not paved at certain parts and the internal routes inside the dumpsite are very rough and are believed to be a serious hazard for the transfer vehicles, particularly for the old vehicles (*Source: Eng. Salah Abdel Fatah – GCBA, SWM Specialist*).

GCBA is the main official authority in charge of the dumpsite's management. The dumpsite was established in 1989 and is composed of five landfill cells. Currently around 130 feddan composing four cells have been totally filled and closed. Conflicts with the Supreme Council of Antiquities have been present for a long time and accordingly, the dumpsite transfer is currently planned in the near future.

All types of municipal waste including markets, households and enterprises waste, are disposed at Sabramant Dumpsite under the management of GCBA. Parts of the waste are recycled in the composting plant, which was established in 1993 with an optimal daily capacity of 120 ton/day and actual capacity that does not exceed 75 tons/day.

Since 2004, GCBA sub-contracted one of the national companies which are working in the field of SWM in Giza Governorate and 6th of October Governorate, namely Al Farounia Company. Under this sub-contract, Al Farounia is allowed to recover and benefit from the non-organic recyclables from the dumped waste at the dumpsite. Under this subcontract which is renewed annually, Al Farounia is currently paying LE 163,000/month for using the dumpsite.

[25] Meeting Eng. Salah Abdel Fatah, SWM Specialist GCBA.
[26] Giza Governorate Strategic Plan, GOPP, 2009.

Figure 4.4 The entrance of Shabramant Dumpsite	Figure 4.5 One of the national companies trucks unloading at Shabramant Dumpsite

The subcontracted company has an agreement with scavengers who work at the dumpsite. The number of scavengers currently working at Shabramant Dumpsite is estimated to be 50 persons.[27] Previously, in the last few years, the number of scavengers has amounted to more than 150 persons. The users of the dumpsite (both the subcontractor represented by Mr. Nasser and Mr. Mohammad Ibrahim, Al Farounia National Company and the dumpsite scavengers) stated that the main reason for the drop in the number of dumpsite scavengers is the increased number of street pickers. As a result of this, the work in the dumpsite is less profitable because several sorting rounds are undertaken on the streets, which significantly lowers the value of the garbage that reaches the dumpsite. This negatively affects the livelihoods of dumpsite scavengers and also the business of the subcontractor who currently believes that the income from the recovered amounts is not only unprofitable, but does not even cover the cost of contract between the company and GCBA.

The agreement with some of the dumpsite scavengers involves written contracts that are renewed upon the renewal of the contract between GCBA and the subcontractor and that include conditions that allow the subcontractor to terminate the contract in case his contract with GCBA is terminated. In the meantime, other scavengers have a gentleman's agreement with Al Farounia.

According to both types of deals, the recovered recyclables are the property of Al Farounia and the scavengers have the right the price of 50% of the weight of the recovered recyclables from Al Farounia according to the market price. Scavengers within the dumpsite have specialties according to the type of recyclable that they sort.

4.2.2.4 International Environmental Services (IES)

IES is an Italian company, one of the subsidiaries of AMA Arab and is currently holding the concession for various cleansing and beatification activities in Al Dokki, Al Agouza and Giza North (Imbaba) Districts. The total population of the three districts represents 30% of the total population of the governorate. The signed contract between GCBA and IES started in 2002 and will end in 2017. The contract value is 36 million LE/year. The interview with IES[28] showed that they constantly face operational problems that return to the following main reasons:

- **Contractual problems with GCBA:**

Certain contractual terms were developed considering certain conditions and these conditions have never been practically available for the company. Consequently, IES is not able to meet the contractual terms and is penalized by GCBA. Examples mentioned included penalizing the company for not incinerating health care waste at a time when GCBA did not make incinerators available and also fining the company for not land filling waste when no sanitary landfill land was allocated in the first place.

[27] Mr. Mohamad Ibrahim, Representative of Al Faronmia Company at Shabramant Dumpsite.
[28] Eng. Ahmed Nabil, IES General Manger and Islam Hegazy, Managing Director.

- **Lack of accuracy in the baseline information of beneficiaries:**

The baseline that the contract considered in calculating the number of beneficiary units (apartments and enterprises) was not accurately developed and consequently, the actual units that are served are much higher than the estimates within the contract. In the meantime, the number of units are constantly increasing, which is not reflected in the contract. Additionally, the contract does not consider inflation or changes in prices. The contract does not consider the changes in price of fuels, oils, cost of hiring a crew and also, did not include depreciation cost of equipment.

- **Behavioral problems:**

IES representatives believe that they are facing a serious problem with citizen behaviors and lack of commitment to the system. They believe that behavioral problems, including random disposal of waste, are more serious in high income neighborhoods and that community members in poorer areas are more likely to keep their street clean because in many cases, streets are a space for several local social and business interactions. The community survey carried out as part of the PSIA recorded similar observations in Boulak where the main street was observed to be filled with accumulated garbage and overflowing garbage containers were everywhere. In the mean time, both the team's observation and the statement of local residents showed that they pay close attention to their side streets and are keen to keep them clean.

> "The problem is not here in our side street. We take care of it. Look at the situation outside by the main street… see how waste is accumulated near the school and next to the vegetables and fruits market where we buy all our food stuffs…"
>
> Women in FGD in Boulak

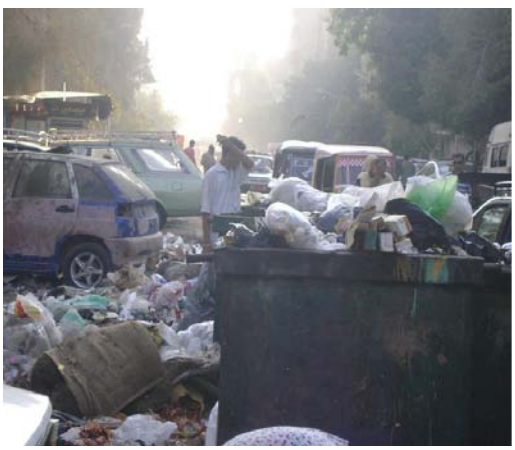


Figure 4.6 Waste containers on El Warrak main street

Figure 4.7 A canal in Boulak El Dakrrour

In 2002, IES launched an experimental program for segregation at source which included incentive schemes and it worked relatively well. However, IES stopped the

program due to the lack of feasibility of segregation at source because of the absence of a landfill.

According to GCBA, the Italian company is not meeting the performance expectations. Plenty of the current performance gaps are the result of disagreements in the interpretation of the contract clauses[29]. For instance, IES and GCBA have been in a serious contract dispute since 2003 on street cleansing levels which were perceived by GCBA to be unsatisfactory. However, according to IES, its 15-year service agreement requires it to clean the streets assigned to it once a day. GCBA expects streets to be kept clean at all times, and insists that a clause permits the authority to levy fines if the Italian company fails to meet expectations. Another disagreement over the contract clauses includes the type of collection service that should be offered. Household collection is interpreted by the GCBA as a door-to-door collection. IES understands household collection as building to building collection. GCBA levies heavy fines on IES, deducts the percent of its monthly fee and this results in the company's inability to meet the various requirements including crew and equipment in order to deliver a satisfactory and efficient level of service[30]. What is perceived by GCBA as efforts to fill in the performance gap is seen by IES as a heavy burden that negatively affects the company. An example of this is the high salaries that GCBA obliges IES to pay the workers provided by GCBA if their performance drops. It is worth here noting that the basic salary provided by GCBA for the permanent cleansing workers is LE 360/month[31].

> "Yes, they provide us with their workers to compromise the shortage in workers but they ask us to pay LE 720/worker/month, a salary that we can not afford for our workers and that they are not actually paying for their workers. We only pay our workers LE 350 and currently we reduced our work force to less than the half after we used to have 2300 workers."
>
> Eng. Ahmed Nabil , IES General Manger

In order to deal with this vicious cycle, GCBA is currently in the preparatory phase of reviewing new tender documents that will clearly address these gaps by adding new obligations to the bidder including door-to-door collection service, and obligations related to the amount of waste to be collected and delivered at the dumpsite by the bidder. The Cabinet of Ministers appointed an international consultant to prepare the contracts draft and IES stated that the drafting process has involved consultation with different stakeholders including governmental and private operators. In the meantime, the World Bank in cooperation with the Ministry of Local Development (MoLD) are currently in the process of preparing a strategy for the participation of the private sector (PSP) and the strategy is expected to produce recommendations to address the current contractual gaps.

[29] Interview with Ala'a Abdel Hafez ,Environmental Inspector at Giza EMU and Eng. Ahmed Saeed, EEAA.

[30] Inter Press Service, News Agency, Cairo Sinking in Garbage, By Cam McGrath, Monday, July 12, 2010 and the interview with Eng. Ahmed Saeed, SWM department EEAA.

[31] Interview with one of GCBA workers in Boulak Districts (did not reveal his name).

On the level of cooperation between IES and the informal sector, namely Zabbaleen, it was mentioned that the several trials to engage Zabbaleen with IES ended in failure. According to the representatives of IES, Zabbaleen are characterized by being unorganized and difficult to manage. They can not adhere to systems and prefer to work individually. This view about the 'individualism' of the Zabbaleen is fitting to a great extent with the different perceptions that other groups have about Zabbaleen. This will be elaborated on in more detail below.

4.2.2.5 Other National Private Sector Companies

The main national entities that cooperate with GCBA can be divided into two main groups, namely national private sector companies and NGOs or local associations[32]. Giza Governorate has six national private companies and local associations (NGOs) in charge of covering certain districts as shown in Table 4.8 below.

Table 4.8 List of National Companies/Associations that Operate in SWM in Giza Governorate

Name of the Company/Association	The District Served by the Company/ Association	The Monthly Contract Value (LE)	Number of Workers
Al Farounia Company for Services, Cleansing and Security	Al Haram District (1)	205,000	340
Al Obour Company for Integrated Services, Security and Cleansing	Al Haram District (2)	110,000	210
Environmental Protection Company for Cleansing and Beautification	Boulak District (3)	175,000	125
	Al Omranya District (1)	245,739	165
Al Marwa for Services and Cleansing	Al Omranya District (3)	80,000	185
The Cooperative Association for Social Services	Boulak District (1)	227,500	155
	Giza South (1)	106,500	60
The Association of Garbage Collectors in Giza Governorate	Boulak District (2)	261,375	170
	El Warrak District (1)	48,720	65
	El Warrak District (2)	55,680	70

[32] It is worth noting that the national companies were established with groups of wahys who are primarily and traditionally interested in profiting financially from waste. In the meantime, the associations (NGOs) are mainly formed by garbage collectors, "Zarabs," who have a direct interest in garbage that they used to use for raising pigs.

Name of the Company/Association	The District Served by the Company/ Association	The Monthly Contract Value (LE)	Number of Workers
	El Warrak District (3)	46,980	60
	el Warrak District (4)	57,420	65
	Total	1,619,834	1,670

Source: Giza Governorate Strategic Plan, GOPP, 2009 and interview with Mr. Salah Abdel Fatah, GCBA.

The national companies are widely dominated by wahys who managed to organize and legalize their situation to get official deals with GCBA. In the meantime, one of two available NGOs in Giza has been formed by wahys (The Cooperative Association for Social Services) and the other is composed of Zabbaleen (The Association of Garbage Collectors in Giza Governorate).

In performing their work, the national companies subcontract Zabbaleen as well as other workers coming from different governorates. The ratio of Zabbaleen to the total workers was found to be neither clear nor static. The situation is changing constantly since the deals are made on a short term and temporary basis.

From interviewing the national companies[33], it was found that they face some operational challenges of great similarity to those faced by the international company. These included:

- The contract value is static while the actual number of served units grows significantly each year.
- The overlapping in responsibilities between the national companies and GCBA result in continuous conflict between the two parties (e.g. street sweeping is not the responsibility of the national companies, but they get fined if streets are not clean).
- The share of the national companies from the revenues collected from beneficiaries on the electricity bills is extremely low.
- Currently, there is no official system for benefiting from recyclables and the informal sector is dominating the scene. According to Mr. Sherif from Al Obour Company, this is a serious weakness in the current system, which does not control street pickers and prevents obtaining maximized benefits from recyclables.

Box 4.3 Hurghada, Red Sea Governorate and the Street Picking

Hurghada Case:

"In Hurghada, we, as a national operator, kept losing large amounts of money for two years due to the lack of profit from the dumpsite returns. This mainly returned to the prevalence of street pickers and illegal warehouses across the City. We managed to take full control of the informal street pickers and maximize the benefit from recyclables. This would not be possible without the full cooperation of various governmental

[33] Al Farounia Company and Al Obour Company.

authorities. The fines were tough. The Governor closed all the illegal warehouses, police made full control on check points to prevent taking recyclables out of the governorate and we used various approached to convince street pickers to move with us to the dumpsite and work there. Sometimes we told them that this will be the only way to work under legitimate conditions because scavenging on streets will be fully banned. Other times, we even threatened them. Currently, we managed to take lots of them to the dumpsite where they work in sorting, and sell us weighted recyclables. We pay them fees according percentage of the price of the weighted recyclables based on the market value. We provide them with machinery and a legal situation and they are very satisfied. We consider Hurghada case as a successful case that could and should be replicated elsewhere. The magic word is cooperation and control from the authorities"

Mr. Sherif Abdel Moneim Refaay, Al Obour Company during an interview and during Giza Regional Dissemination workshop

القمامه..ونشر الأوبئه

Figure 4.8 An Article by One of the National Company's Chairman about the Role of the Companies in Improving SWM Sector in Various Governorates, Published in El Nadi El Syasi, June 2010

4.2.2.6 The Informal Sector

Giza Governorate is home to a large and diverse community of informal sector groups that work in different modes. Some of the informal sector groups in Giza Governorate have been traditionally engaged in waste collection. These groups include garbage collectors (Zabbaleen) and wahys, who are engaged on a full time basis in an exhaustive part of the waste removal business. The engagement of new actors in the SWM, namely GCBA and the international companies, has affected the livelihoods and changed the work dynamics of these groups. However, they are still important players in the process. On the other hand, other groups have newly emerged and are informally making a living out of recovering recyclables. A full profile of the informal sector groups will be presented in more detail in this chapter.

In the meantime, the PSIA team found that other groups, who are formally engaged in the SWM business, are indirectly engaged in making additional income from handling recyclables informally. This mainly includes GCBA and IES workers. Most of the

workers and employers, namely GCBA and IES, did not clearly reveal that this happens but the field observations as well as the statements of some of the interviewed workers showed that cleansing workers whose jobs allow them to sort recyclables (e.g. street sweepers) do not hesitate to make use of these income opportunities as long as this is not done openly in front of their supervisors. Moreover, it seemed for some workers that the income from selling recyclables is becoming the main source of income rather than a complementary one. The interviews reveled that the return from selling recyclables might reach up to LE 60/day which means an average monthly income of LE 1200 (supposing they work 5 days/week), in the time when the basic salary of the worker does not exceed LE 400/month.

> "I do not sell plastics. I throw all cartons and plastics in the waste containers but one of my colleagues does and he earns an awful lot of money. He makes LE 60/day. He is on good terms with the supervisor"
>
> One of GCBA workers in the Boulak district

Selling recyclables is not the only informal source of income related to waste that the workers participate in. They also earn informal income from residents and businesses from tips and in many cases, do not offer satisfactory collection from locations in front of a shop unless they are paid.

> "Tell the truth …you told her that your salary is LE 360, right? But this is not everything. Do you clean in front of my door and the neighbors' door unless we pay you 3 and 4 pounds?"
>
> One of the owners of a shop in Boulak speaking to GCBA worker

Although GCBA workers did not reveal clearly that they expect tips from residents and shops, they made it clear that having the chance to interact with people is an advantage. Thus, street sweeping is a preferred job for them. This is also clear to their supervisors who use their authority to prevent workers from this privilege. It is quite clear to the supervisors that tips and in-kind assistance is a main source of income for the workers. According to workers, loading work or traveling to the dumpsite is regarded as a kind of serious penalty and a cut of livelihood. Due to this, they usually aim for good relations with their supervisors to avoid getting into this trouble.

4.2.2.6.1 Visibility of the Informal Sector to Governorate and Community

The survey results showed that picking from street containers is a very visible activity on Giza Street. 52.7% of the beneficiaries sample and 63.8% of the enterprises reported that they see street pickers. The FGDs also revealed consistent findings where men and women agreed that street pickers are generally seen in the various neighborhoods.

Table 4.9 Visibility of the Informal Sector to Governorate and Community

	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Yes	96	52.7	51	63.8
No	60	45.8	26	32.5
Total	129	98.5	77	96.3
Missing	2	1.5	3	3.8
Total	131	100.0	80	100.0

"Yes …yes … yes, they are here all the time, shepherds scavenge in waste to bring out food for their sheep. Also Arab[34] comes in the early morning to take food for their livestock ….. No not only those …we do see lots of others with donkey carts and they take out plastic bottles and cartons on their gonyas."

A woman in an El Warrak FGD

4.2.3 Assessment of the Current MSWM System in Giza

The PSIA team carefully studied the current situation of the SWM system in Giza Governorate from a social and poverty perspective. Apart from the several existing technical challenges which might be out of the direct scope of this PSIA, the analysis focuses on assessing the socioeconomic impacts on the various groups with special attention given to the poor communities including the informal sector groups who are perceived as vulnerable and insecure. This assessment has been done with the main objective of learning from this situation to formulate alternatives for the reform program.

In Giza Governorate, the study revealed a number of positive aspects related to the MSWM situation. This, in particular, includes the high level of attention from the government and strong political will for a better situation and constructive reforms in the sector. Moreover, in Giza Governorate, SWM sector involves a range of actors with good experience in SWM. The informal sector group, particularly the Zabbaleen and wahys, enjoy the know-how of the sector and have very rich experience in door-to-door collection service, which has proven, for many years, to be the most efficient and culturally appropriate SWM system in Giza Governorate. Moreover, there is generally an increased level of understanding of the value of recyclables and their high economic potential. While this is not yet part of a structured and legalized framework, it still constitutes a core source of income for a large base of the urban poor.

On the other hand, the PSIA showed that the current system involves a number of drawbacks that can be summarized as follows:

[34] They refer to desert dwellers who come to the city seeking livelihoods.

1- High level of Dissatisfaction and Negative Socioeconomic Impacts

The surveyed local residents' view about SWM seemed to be limited to the collection process, which is the main component that they observe. In asking local communities if they are satisfied with the current system, a high level of dissatisfaction was clearly reflected in the survey results as shown in Table 4.10 below. Almost 70% of the survey respondents of beneficiaries and enterprises showed dissatisfaction with the current situation. This returns to several reasons that have been unpacked both by the survey and the in-depth tools.

Table 4.10 Satisfaction Level with the Current SWM Services among the Surveyed Sample of Giza Governorate

Level of Satisfaction	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Satisfied	8	6.1	7	8.8
Satisfied to a certain extent	32	24.4	5	6.3
Dissatisfied	90	68.7	68	85.0
Total	130	99.2		
Missing cases	1	.8		
Total	131	100.0	80	100.0

As shown in Tables 4.10 and 4.11 below, the main reasons for satisfaction included the regularity and efficiency of service which appeared in few places like the main streets in El Warrak where local communities mentioned as a place where someone important lives[35].

In the meantime, Table 4.12 shows the main reasons for dissatisfaction which were evident in the opinions of residents and enterprises. The highest percentage of respondents (35%) referred to the nonexistence of service and that they throw waste randomly. For enterprises, the highest percentage (32.5%) was given to the unclean street appearance, which affects their businesses negatively.

Table 4.11 Reasons for Satisfaction[36]

Reasons	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
They collect garbage regularly	20	54.1	5	41.7
Street conditions became better	2	5.4	-	-
The collection vehicle reaches our place	6	16.2	1	8.3

[35] Men FGD in El Warrak.
[36] The responses are calculated on frequency basis.

Reasons	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
The service is good			2	16.7
The government collects fees through electricity bill	1	2.7	-	-
The collection system is comfortable for people	8	21.6	-	-
We do not pay on the electricity bill but pay modest amounts to Zabbal	-	-	4	33.3
Total	37	100	12	100

Table 4.12 Reasons for Dissatisfaction

Reasons	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
No care provided for side streets	1	1.0	-	-
Bad service is provided	6	5.8	10	12
Garbage collector does not come regularly	16	15.5	8	9.6
Dirty streets	15	14.6	27	32.5
We double pay for the garbage collector and the government	4	3.9	4	4.8
No garbage collection/ we throw it away	36	35.0	12	14.5
No door-to-door collection service is provided	4	3.9	-	-
Zabbal does not take all types of wastes	1	1.0	-	-
The government receives money without providing any service	13	12.6	13	15.7
The government should provide waste collection service for	1	1.0	-	-

Reasons	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
free				
As we have problems with the government (don't pay fees through electricity bills)	6	5.8	1	1.2
The fees are so expensive	-	-	6	7.2
The garbage collectors take garbage only when we pay him	-	-	2	2.4
Total	103	100	83	100

The analysis of the responses to an open ended question asking about the main negative impacts related to the current system showed that the highest frequencies were given to the negative impacts on health, the increased number of flies and mosquitoes and malodorous odors. Street appearance was also an important issue of concern that community groups talked about, particularly on the main streets in low-income areas.

Table 4.13 Impacts of the Current System on Local Communities

Impact	Beneficiaries	
	Number of Questionnaires	Percentage
Diseases and health impacts	86	40.6
Visual pollution and bad street appearance	6	2.8
Increased numbers of mosquitoes and flies	52	24.5
Malodorous odors	51	24.1
Pollution (in general)	12	5.7
Blocking waterways	1	.5
Problems and clashes with neighbors	1	.5
Potential occurrence of fires	1	.5
Affecting traffic flow	1	.5
Affecting the land value in the area	1	.5
Total	212	100.0

The men and women FGDs in poor, busy commercial areas (e.g. Boulak and El Warrak) showed similar results, but elaborate more on the potential consequences of the health problems and the increased number of mosquitoes and flies by linking this to the financial load that the family may bear in order to get medication for various diseases.

"A mosquito bite cost me medicine with LE 100."

A woman in El Warrak FGD

2- Lack of Clarity of the Division of Responsibilities

The overlap of responsibilities among the key actors in SWM, with GCBA on one side and the international and national companies on the other side, and the lack of clarity about work distribution results in constant misunderstandings and conflict. The cost of this is usually paid by local communities in the form of waste accumulation and unclean streets in addition to several negative impacts that are explained in more detail below.

3- Conflict of Interests among Various Actors

Currently, the interests of the various actors are strongly overlapping and interrelated and in many cases conflicting. These changes are a main reason for the alteration of the role of the Zabbaleen and the creation of new vulnerable communities within their society; a situation which will be analyzed in–depth by this study.

Theoretically, the national companies and associations operated by the wahys (as will be elaborated in more detail below) protect the interests of the groups working informally in SWM in Giza. However, in practice and according to the interviews carried out with garbage collectors in Ard El Lewa, representatives from EEAA and the GCBA, the benefits gained from the contractual agreement have never been equally distributed among the various groups. Those who are directly included in the sub-contracts benefit most from the profit and financial return. Others who work for the sub-contractors usually gain very limited benefits[37]. GCBA is cognizant of these social drawbacks. It has planned to mitigate these impacts in the new tendering process by including new clauses that protect the interests of the large group of garbage collectors.

From this background, the garbage collectors who work for the sub-contractors try to maintain the source of income that they used to get from beneficiaries by asking households for a monthly fee in return for door-to-door waste collection, a service that is currently not provided by the international company as mentioned above. The team received conflicting opinions about whether or not people are still paying for garbage collectors informally. According to the interviewed official in GCBA, most people still pay these fees. However, garbage collectors had a different view.

"…Of course the apartments service fees has been deducted now. We ask people and it is left to their sense and generosity. Some people give us LE 3-5/month. Others refuse to pay and say: we pay on the

[37] According to the team interview in GCBA, each of the garbage collector who is working under a sub-contractor is currently paid LE 400 - LE 600 from the local company/association in return for providing daily door-to-door collection service to around 300 apartments.

> electricity bill... We are governmental officials with limited salaries, we can not pay more..."
>
> One of the garbage collectors in Ard El Lewa

Another problem which has significantly contributed to the impoverished context of the Zabbaleen is the slaughtering of the pigs in 2009. Raising pigs allowed the Zabbaleen to bring in waste to their households attached to the animal sheds (zeriba), because pigs would feed on the remaining organic waste. After the mass slaughter, bringing waste home is currently done on a much smaller scale. The Zabbaleen have no place to dispose of the remaining waste at home and it must be removed regularly. Since this is associated with additional transfer costs, they have shifted their sorting activities to primarily sorting that which they carry out of containers on the streets.

4- Economic Burden on Poor Families

One of the important negative socioeconomic impacts of the current situation for local communities, especially low income ones, is the duality of payment. While households pay cleansing fees on the electricity bills, the main source the government (represented by GCBA) is using in order to meet the contractual obligations, garbage collectors operational under the national companies/associations carry out the door-to-door collection and still demand fees from beneficiaries. These workers will not offer the service in the case where the beneficiary refuses to pay them directly. The PSIA found that the service fees are collected regularly on the electricity bill except in the El Warrak district where the electricity bill of residents includes "none" on the cell for cleaning fees (See Figure 4.10 below). In investigating the reason, no specific answer was agreed upon. For some of the community members, this happened because residents objected to paying and raised several complaints because the service is extremely poor. For EEAA, the reason is that this district is only served by GCBA and they do not have contractual obligations to meet, consequently they offer the service without return.

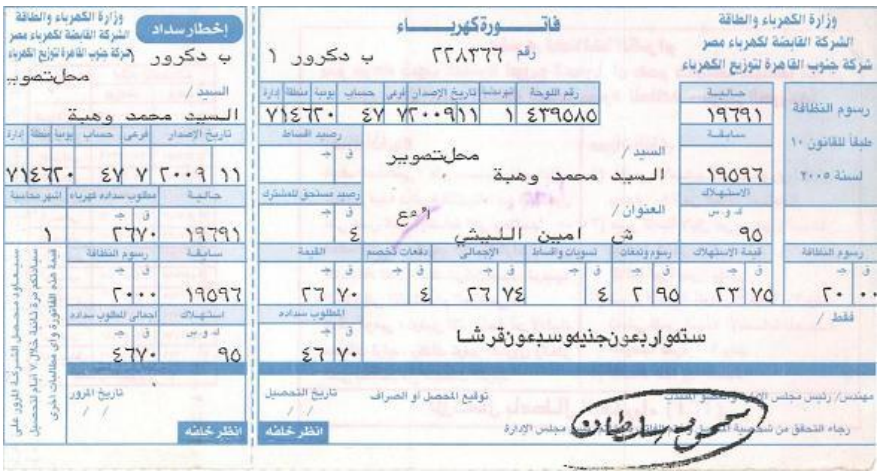


Figure 4.9 Electricity bill for one of the shops in the Boulak El Dakrrour District noting a charge of LE 46.70, out of which LE 20 are for cleansing fees.

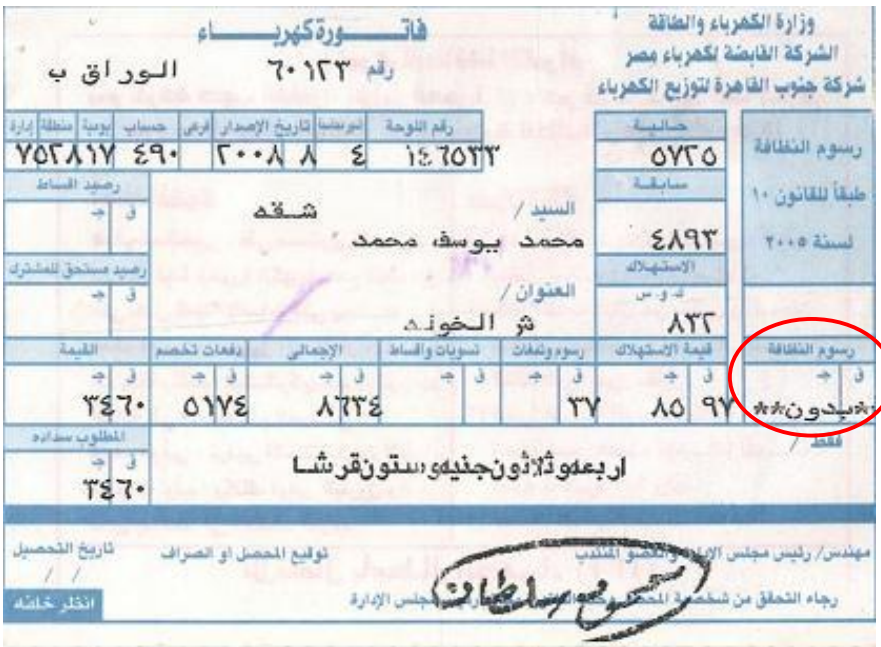


Figure 4.10 Electricity bill from a beneficiary in Boulak indicating "none/without" in the cleansing fee cell

As it could be observed from Table 4.14 below, the highest percentage of beneficiaries are paying between LE 3.00 to LE 6.00. However, enterprises are paying much higher fees that ranged from LE 15 to LE 25/month. It is worth noting here that this is not at all an indication of the size of the business. The fee calculation standards were vague with several small and modest shops paying much higher amounts as compared to the size of their business and the service that they receive. Around 70% of both the beneficiaries and enterprises sampled mentioned that they pay these amounts on the electricity bill. More details about the SWM service fees by income groups, service providers and type of surveyed areas at Giza Governorate are presented in Annex C-1.

> "Does it make sense that I pay LE 15 in electricity fees for my shop and 20 LE for the cleansing fee?"
>
> A woman owner of a clothing shop in Boulak

Table 4.14 SWM Service Fees as Shown in the Survey Results

	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Do not pay	12	9.2	4	5.0
LE 2.00	-	-	3	3.8
LE 3.00	60	45.8	2	2.5
LE 4.00	3	2.3	1	1.3
LE 5.00	7	5.3	2	2.5
LE 6.00	30	22.9	2	2.5

	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
LE 7.00	2	1.5	-	-
LE 8.00	1	.8	-	-
LE 9.00	4	3.1	-	-
LE 10.00	1	.8	5	6.3
LE 15.00	1	.8	22	27.5
LE 20.00	4	3.1	5	6.3
LE 25.00	-	-	19	23.8
LE 30.00	-	-	2	2.5
Above LE 35.00	-	-	8	8.24
Total	125	95.4	75	93.8
Missing	6	4.6	5	6.3
Total	131	100.0	80	100.0

Around 70% of the interviewed enterprises believed that the amount is too high and that they do not receive any return. However, for beneficiaries, around half of the sample believed that the amount is reasonable while the remaining half believed that it is too high compared to what they are actually receiving.

The duality of payment is another important negative economic impact that local communities are currently suffering from. The door to door collection is a requirement that residents will never receive unless they pay more for the Zabbal. Around 55% of the beneficiaries and around 35% of enterprises stated that they are paying additional amounts to get their garbage collected.

> "Zabbal serves one households of total six or so. The majority of households refuse to pay twice. We do throw waste on the street. GCBA does not place enough containers for us to use, in a time when Zabbal is offering a regular collection service. However, we still will not accept to pay again for the Zabbal."
>
> Men focus group discussions in Boulak

4.2.4. Profile of the Informal Sector in Giza Governorate

Giza Governorate hosts a large community of informal sector groups who are making livelihoods through various modes primarily from getting engaged in the various stages of SWM, in particular the stage of the recovery of recyclables from the various sources of waste. In efforts to classify these groups, the PSIA team found that they could be

divided into two main groups that have different features as visualized in Figure 4.11 below:

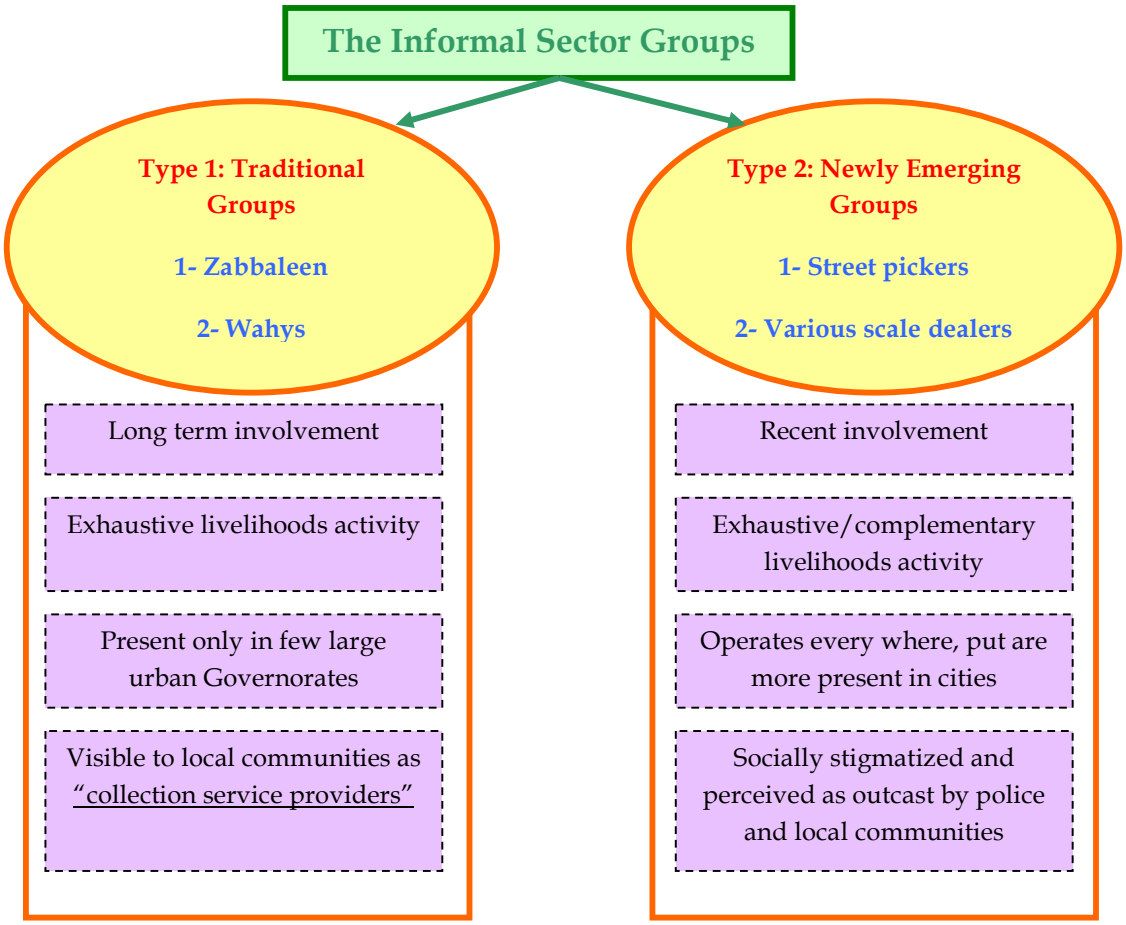


Figure 4.11 The Informal Sector Groups in Giza Governorate, Features and Categories

4.2.4.1 Groups Engaged for Many Years/Traditional Groups

In Giza Governorate, there are two main informal groups that have been historically engaged in waste collection and recyclable sorting and recovery. These two groups are Zabbaleen and Wahys. Historically, Zabbaleen migrated in the seventies from Upper Egypt, particularly from Assiut Governorate, and started raising pigs. The group was introduced to another group of migrants from Egypt's Oases, known as "Wahys," who were using refuse for cooking and heating purposes. Wahys started collecting waste from residents for these purposes and started selling off the remaining waste to the Zabbaleen to feed their pigs. Over time, an arrangement evolved between the two groups whereby the Zabbaleen would collect from residential houses for a fee paid to the Wahys. Wahys started to construct collection routes among the Zabbaleen to perform the job[38]. Since then, each group of Zabbaleen managed by a Wahy started working in garbage collection, segregating and trading recyclables on various scales. They also continued to base their livelihoods on their main source of income which was raising pigs. In the

[38] Doaa Abel Motaal, "Reconstructing Development: Women at the Moqattam Settlement of the Zabbaleen" (MA. Diss , American University in Cairo), 1995.

meantime, Wahys benefited from collecting service fees from the residents of large urban centers like Cairo and Giza.

Prior to the establishment of the GCBA, the Zabbaleen system was not organized and there was no unified fee collected from households, and no penalties levied in case of irregular collection. GCBA, after its establishment legalized the system by providing licenses to the Zabbaleen. A traditional agreement included the payment of a license fee of about LE 1000-3000 annually, in addition to 0.3- 1 LE/house/month to the GCBA. Zabbaleen used to charge households an average of 2 LE/month. Collected waste was disposed of in settlements of the Zabbaleen to be sorted and recycled. In Giza, the main areas for Zabbaleen gathering were the El-Moatamadeya, El-Baragil and Ard El-Lewa areas[39].

It was made clear by the various interviewed stakeholders and the literature review that the first disturbance of this historical cooperation between Wahys and Zabbaleen occurred at the time when international companies were invited to tender for providing the service in Giza. After the introduction of the international companies in Giza Governorate, licenses previously given to the Zabbaleen by the GCBA gradually disappeared. As a reaction to this, the Wahys were capable of forming legal entities. The establishment of these national companies (by Wahys) and association or NGOs (by Zabbaleen) is perceived as a mitigation measure that the government strongly encouraged out of consideration for the social and livelihoods aspects of the informal sector groups who, through these companies/associations, have been granted another opportunity of entering into legalized arrangements with GCBA.

During this, and because of their business oriented vision, Wahys were clever enough to get into good business deals with GCBA by establishing national companies.

As noted in Table 4.8 above, there are four national companies compared to only two NGOs. Of these two NGOs, one is not functioning and GCBA is taking over the responsibility of covering its areas (namely El Warrak). Now, all the working companies and NGOs belong to Wahys.

These companies are directly contracted by GCBA to undertake waste collection, transfer and disposal. Both the new entities as well as the national and international private companies sub-contract another layer of Zabbaleen as well as other workers from other governorates, particularly, El Wadi El Gaded, to do the collection. Only few privileged families benefit from this direct sub-contracting with IES and or GCBA. The majority of the Zabbaleen are working under those sub-contractors. Some of the garbage collectors still work independently.

4.2.4.1.1 Zabbaleen Community in Giza Governorate

After the administrative separation between Giza Governorate and 6th of October Governorate in 2008, the main concentration of garbage collectors for Giza

[39] Increasing private sector participation in Egyptian Congested Cities" (The World Bank, 2001).

Governorate became centered in Ard El Lewa. El-Moatamadeya and El-Baragil areas are currently administratively affiliated to 6th of October Governorate.

Despite this administrative division which was not in favor for the communities of El-Moatamadeya and El-Baragil, the business cooperation among Ard El Lewa, El-Moatamadeya and El-Baragil still continues in same manner as before the administrative division was made.

Estimations regarding the size of the garbage collector community in Giza were inconsistent among different sources, partly as a result of the changes in the administrative boundaries of the governorate. According to the interview with the church priest in Ard El Lewa, at least 1500 families in Zarayeb Ard El Lewa are fully reliant on garbage collection and sorting as the main and only source of income (this group is a main target of the PSIA). Moreover, at least 1500 families on the other side of El Zarayeb (west side of El Mehwar Road) used also to make a complementary living out of garbage but this number has decreased after the limited access to waste and after the slaughter of the pigs. Most of this population has become engaged in other economic activities. This gathering west of El Mehwar is also affiliated with 6th of October Governorate (Moatamadeya) so it is not in the direct scope of the PSIA.

The church priest provided an estimated figure of the funds coming from the church sources that are used in reimbursing charity assistance to the poorest families in the neighborhood. This figure was found to be very close to the figure presented by Giza Governorate Strategic Plan, GOPP, 2009 which mentioned, under an explanation for the problems that resulted from the slaughter of the pigs, that the livelihoods of around 1700[40] Zabbal working in garbage collection (either through subcontracts or independently) had been affected and that a similar number of girls and women that had been engaged in Zarrab related works and recyclable sorting had been also affected. The same reference showed that the national companies contracted 1670 workers, most of whom are known to be Zabbaleen.

In the meantime, and along the course of preparation of the PSIA and as part of the team's efforts to verify the collected information, these numbers have been double checked and it was found that other stakeholders tended to strongly question the credibility these figures. In particular, this appeared in the meetings with GCBA and IES, where the former stated assumptions that the number of families did not exceed 150 family and that, by any means, the number of Zabbaleen both in Cairo and Giza would not exceed 4000 individuals of the Zabbaleen community[41]. These same stakeholders seemed to strongly believe that there is a tendency of NGOs in Mensheyat Nasser to overestimate the numbers of Mensheyat Nasser as a means of attracting more attention to them.

Considering the conflict of interests among various actors, the team initially assumes an estimated number of at least 9000 family members in Ard El Lewa whose livelihoods are

[40] It should be noted that in the majority of cases more than one Zabbal from each family engage in garbage collection business, so this number is not a direct indication fro the number of families.
[41] Mr. Slalah Abdel Fatah- GCBA.

inextricably linked to garbage-related business but in different manners. The team considered that the church figures and Giza Governorate Strategic Plan, 2009 are the most accurate, particularly since the church statements are based on actual documented service that the church provides monthly.

Ard El Lewa area is a typical unplanned and unorganized urban expansion that is many cases is classified as slum.

> "We know that our neighborhood does not look decent and that the government wants to take us out of here and make a prestigious, visually appealing and modest scene from El Mehwar Road."
>
> Boules Gerges, Zabbal in Ard El Lewa

Recently, the housing pattern in the areas has changed from being composed of shanties made of steel sheets and other weak building materials to include other models of two to three-story concrete buildings. Few buildings in the neighborhood are multi-story buildings/apartment towers. The field observation revealed that the concrete buildings now compromise around 80% of the buildings in the area. It was said that this tendency to have more stable buildings has significantly increased after the slaughter of the pigs. This is partially due to the significant change in the domestic activities after pigs' removal[42].

The neighborhood has fairly reasonable access to infrastructure. Most of the houses are connected to clean potable water and they have an electricity supply that is only sufficient for lighting. Lack of sufficient power in the area is one of the key challenges that limit their business opportunities since they are unable to use machinery for processing recyclables. Currently, the existing machinery within the neighborhood does not exceed three crushers in a time when Mensheyat Nasser has at least 900 processing and recycling machines for various purposes[44].

The Zabbaleen neighborhood in Ard El Lewa does not have health or education facilities. Although schools and hospitals are generally available in the Ard El Lewa District (which is not limited to the Zabbaleen neighborhood), the access of Zabbaleen families to these facilities is often difficult due to financial constraints.

[42] The slaughter of the pigs in 2009 was a big financial shock, particularly for Ard El Lewa Zabbaleen, who largely depended on pigs as a main source of income. Raising pigs allowed the Zabbaleen to bring in waste to their households attached to the animal sheds (Zeriba), because pigs would feed on the remaining organic waste. After the slaughter, bringing waste home is currently done at a much smaller scale. The Zabbaleen have no place to dispose of the remaining waste at home and it needs to be removed regularly. Since this is associated with additional transfer cost, they shifted their sorting activities directly from household collected waste and from the waste containers on the streets.

[44] Reference: EEAA- The Central Department For Solid and Hazardous Waste, 2010

Generally, it was observed that the educational attainment among the Zabbaleen community in slightly different from one generation to the other. Although the majority of the community is illiterate, a relative interest in education appeared among the younger generation of youth and children. Some of the Zabbaleen interviewed mentioned that the interest in education started to increase after the last crisis of pig slaughter in 2009. For them, in the past, they never needed education because they had the waste family business with every one of the family members engaged and rewarded. This interest has arisen lately, out of Zabbaleen sense of impending destruction of their business and a real need to start in thinking about alternatives for their children, whose future is not as finically secure as it used to be. However, they also referred to the associated costs of schooling (clothes, private lessons, transportation)[45] and the fact that these costs burden them.

It worth nothing a gender gap in education was observed by the PSIA team. Most of the interviewed Zabbaleen families tended to give priority to boys education over girls education.

> "The maximum education for girls here is grade 3."
>
> Olfat Noshy, supervisor in nursery home, Ard El Lewa Church

The household living conditions in Zabbaleen houses are currently more hygienic than the situation before the slaughter of the pigs. Currently, the ground floors are used for emptying and sorting the collected recyclables which consists mostly of dry recyclables that have been primarily recovered from household waste. The ground floor, in most cases, includes a space for keeping poultry or sheep and used to accommodate the pig shed (zeriba). The upper floor(s) includes living spaces for the family members.

Gender Aspects

Despite invisibility in official figures, women and children within the Zabbaleen community used to be very important indoor actors in the process of segregation, sorting and preparing recyclables in Zabbaleen districts to be sold to dealers. They usually coordinate work on domestic level in order to ensure the highest level possible of efficiency. Currently, the amount of waste that reaches garbage collectors' households has drastically decreased and is of non-organic components (more details are presented below). This has affected the level of input required from women and girls in the sorting process.

4.2.4.1.2 Wahys

The interviews with stakeholders including GCBA and the National Companies showed that despite the historical cooperation between Zabbaleen and Wahys, the latter have been much more active in terms of getting into direct business deals with official entities including the Cleansing and Beatification Authorities in both Cairo and Giza while the

[45] Gamil, one of the Zabbaleen in Ard El Lewa.

former tended to be affiliates. Since the establishment of GCBA in 1984, work has been organized for many years on the basis that GCBA give licenses to Wahys who in turn subcontract Zabbaleen and other workers. Through this arrangement, most Wahys and few of the large scale Zabbaleen managed to get the business deals. However, the situation has changed since the government, represented by GCBA, started to invite private bidders. Wahys and Zabbaleen were encouraged to form national companies and NGOs to allow them to bid legally and this was a starting point for a serious conflict of interests between Wahys and Zabbaleen.

Almost all the national companies in Giza (Farounia, Al Obour, El Marwa) as well as some of the NGOs that are contracted by GCBA (The Association for Garbage Collectors) is basically formed from Wahys. According to the interview with the representative of Al Obour Company, Wahys are more business oriented and are more capable of coordinating and managing work and making a profit. In the past, this has been regarded as a "fair enough" arrangement for Zabbaleen as long as they were allowed to benefit from the collected garbage and use it in raising their pigs. However, after pig slaughter in 2009 and the zabbaleen reduced interest in collecting waste, the Zabbaleen feel that they have been left behind and that their interests are no longer considered.

> "We have been historically the legitimacy of Zabbaleen. We have leadership and business skills and we were able to develop ourselves and build organizational structure for us. Moreover, we have the know-how of the collection and we pay attention to the cultural context and community preference for the door-to-door collection. We get licenses from GCBA and we have our crew including Zabbaleen and this is how it worked for many years."
>
> Mr. Sherif Abdel Monem Refaay, Al Obour Company

Theoretically, the national companies and associations operated by the Wahys protect the interests of the groups working informally in SWM in Giza. However, and as explained above under the assessment of the current system, the benefits gained from the contractual agreement have never been equally distributed among the various groups.

The numbers of Wahys are not documented. It was also difficult to spot them in their places since they do not live in specific areas but rather they live in various districts like Bab El Bahr, Mounira and Boulak. However, it is safe to mention that the national companies across Giza Governorate mostly consist of Wahys.

4.2.4.2 Recently Emerging Groups

4.2.4.2.1 Introduction

During the recent years, various places in Egypt, like other areas in developing countries, witnessed the emergence of new groups within the informal sector (aside from the traditional Zabbaleen and Wahys community) that have a direct interest in handling recyclables. The observation of the PSIA team and the interviewed stakeholders including community members suggested that the numbers of these group members has drastically increased lately and is becoming a clearly observed phenomenon on the streets of Giza as in the majority of urban centers in Egyptian cities. The nature of work of the newly emerged groups involves recovering/picking recyclables from various waste assemblies and benefiting from the financial return of selling these materials. The PSIA believed that analyzing this sector requires an introductory assessment of the context and causes that resulted in the emergence of these groups. This causal analysis is believed to be very important in drawing the PSIA alternative/recommendations in Chapter Six below. It should be noted that the reasons for the emergence of these groups is common among the various governorates of the PSIA and other Egyptian Governorates. The increase in the informal recyclable picking phenomenon could be attributed to the following key reasons:

- **The Context of Increasing Poverty and Inequality**

Within the framework of the PSIA, poverty could be defined as the lack of assets to allow for the sustainability and security of livelihoods. In the framework of this definition, it could be claimed that urban poverty is one of the key challenges that faces Giza Governorate with increased numbers of people from rural populations encroaching upon the city. As a big urban center adjacent to the capital, the Ggovernorate attracts rural dwellers that come in search of better livelihoods and opportunities in the cities. The available asset base of migrants to Giza hardly allows them to find a competitive opportunity to secure a source for a living wage. The limited level of education, skills and lack of financial capabilities limit their choices to marginal unsecured and temporary jobs, including recyclable picking.

The field work under the PSIA revealed that the majority of street pickers are originally from rural peripheries. They were pushed to leave due to a range of difficulties that varied from social clashes or troubles to difficulties in securing income.

> "We used to live in Fayoum but came here a year ago. We used to sell fruits there but certain circumstances happened to us and obliged us to come. We are a family of six siblings, a father and a mother. None except the two of us work. We store recyclables at home and gain around LE 200 a week from selling cartons and plastics... It happened to us several times that the municipality (referring to GCBA) took our donkey cart and destroyed it…other time they give us a slip of paper (referring to fine report) and we pay LE 200 and get the cart back."
>
> Two brother of street pickers, ages 15 and 17

Moreover, the urban centers, like Giza, in Egypt sustain increasing gaps between the poor and the well-off. The lifestyle and food consumption pattern of the well-off now

includes different sorts of ready-made and packed foods and beverages which has led to the increase in the amounts and change in the components of recyclables in garbage.

- **Unemployment and Lack of Secure Sources of Income**

Employment is one of the most pressing challenges that face youth in Egypt. Picking and selling recyclables is a job that does not require a special level of education or skills and also does not require a large starting capital investment. Thus, this sector is, informally, accommodating low skilled persons and is attractive to large numbers of the unemployed of different ages, particularly young men. Although street pickers were not very clear about the level of income that they get from the job, the collected information from various resource persons[46] showed that a minimum of LE 50/day is gained by the smallest scale waste picker who is working for the owners of warehouses. Thus, it could be argued that they are getting a relatively decent income, particularly in certain seasons like holiday feasts and other occasions. Some of the local community members interviewed perceived this to be a more rewarding job than the work of a university graduate in the governmental sector[47].

- **The Deficiency in the Current SWM System**

Under the current collection arrangements by different actors, street containers/collection points/street intersections and corners become intermediate stations for waste before being transferred to the dumpsite. This is also particularly the case after the reduced interest of Zabbaleen in taking garbage directly to their settlements, as was the situation before. The duration of time during which garbage is left on streets depends on various technical factors like the availability and the conditions of the collection and transfer equipment. Contractual conflicts among actors (namely GCBA and IES) also sometimes result in leaving waste behind for a long time on the street.

For communities, leaving garbage uncollected on the street is a clear manifestation of the failure of the system and the lack of respect for the citizens' rights to enjoy a clean environment[48]. However, for street pickers this means an increased opportunity for them to sort and pick recyclables.

> "The Municipality (referring to GCBA) leaves garbage in street containers. A door then is open for those jobless, wanderers, beggars *(motasaweleen)* to scavenge in waste. Now…they benefit and the municipality loses. Yes…they do!! With all its equipment, loaders and technology, it loses. The Municipality is collecting un-useful rubbish, only rejects like dust and ashes. I suggest that the municipality collect modest fees from us, like LE 5 per flat and collect it from our doors and benefit from the garbage. Waste should not be left on the street. It is for our and the government's good."

[46] Eng. Ahmed Saeed, SWM Department EEAA, Mr. Nasser, Al Farounia National Company and others.
[47] A Dokki Resident.
[48] Men FGD in Boulak.

A man in El Warrak FGD

- **The Emerging Market of Recyclables**

During the last few years, there has been an increased level of awareness about the importance and value of recycling. This is partially driven by environmental awareness and the motivation of protecting the environment. Moreover, a large international market for recyclables has grown, accompanied by increased demand for various materials. A large number of local and international dealers are currently interested in obtaining large amounts of plastics and papers among other materials. Since this increased demand is not associated with structured formal supply channels, the informal supply sector is growing and the demand factor is working as a key financial incentive to attract even more individuals to this market.

"Waste (recyclables) is a real treasure. Tell me what is the difference between recyclables and oil? Oil is a primary raw materials and recyclables are secondary raw materials but both are valuable resource that should be protected."

Mr. Nasser Sayed, Al Farounia National Company

"The PET[49] used to be useless and even a big load in its disposal since it is difficult to landfill. Now, a new market is open for this type of recyclable with one big national recycling factory as well as an increasing demand from Chinese dealers on this raw material. Street pickers now are eager to collect bottles because of the high demand and the good return, with ton price sometime rising to LE 2000."

Eng. Salah Abdel Fatah, SWM Specialist GCBA

4.2.4.2.2 Main Sub-groups Within the Recently Emerged Group

Usually the process of recyclable picking involves various kinds of arrangements that helped the team in classifying sub-groups under the recently emerged groups. This mainly includes:

A) Street Pickers

Street pickers/scavengers/recyclable pickers from street containers are one of the main categories that have been recently introduced to this field of the informal SWM business in Giza, as in the other PSIA governorates. The interviewed stakeholders believed that this category has emerged and drastically grew as a response to the decreased efficiency of the system in Giza which results in waste accumulation in the streets. Their work entails searching street containers, collection points and illegally dumped waste, then

[49] Polyethylene terephthalate, mainly composing drinking water and soft drink bottles.

sorting recyclables items and selling them to dealers. Estimating the number of street pickers in Giza Governorate was found to be very challenging. The new business opportunity is attracting a huge number of boys and men of different ages who are working all over the governorate's districts. One of the large scale dealers in 6th of October Governorate estimated the number of street pickers to be several thousand and the number of dealers (owners of storage areas) to be several hundred[50].

> "Accurate in counting of scavengers and warehouses is impossible. This is a hidden business but from our experience we say, in Giza, there are thousands pickers and several hundred warehouses."
>
> Mr. Nasser Sayed Eid, Al Farounia National Company

> "Giza is home to several thousand warehouses and at least five street pickers serve each of the warehouses. Counting the warehouses is not possible. They are unregistered but definitely they are huge number."
>
> Mr. Sherif Abdel Monem Refaay, Al Obour Company

> "You want to count the scavengers! Well, count then the street containers and the collection points on streets and estimate that each of them, in average, accommodate five street pickers."
>
> Eng. Mounir Nawar, Mensheyat Nasser

Given the serious limitations in quantifying the number of street pickers working in Giza and the other governorates and due to the overlap among the various categories, the team has developed a methodology that involved a tailored formula to estimate the numbers of street pickers. This will be presented in detail later in this chapter. The findings from the team estimates were somewhat close to the stakeholders observations. The estimated number of street pickers in Giza Governorate is around 7700.

The interviews with stakeholders[51] showed that street pickers are operating in two main working modes:

A 1) Street Pickers Hired by Dealers:

In several cases, hiring street pickers is the only way for the owners of warehouses/storage areas to accumulate large amounts of recyclables. Street pickers hired by dealers are usually paid in one of two ways. The first is done on day-by-day casual basis and the daily wage is usually around LE 50. The second method of wage payment is done according to the weight of the collected recyclables and the daily wage estimate of the street picker, estimated to range from LE 75 to LE 200 depending on the area where the street picker is working, the tools and if he has assistance.

[50] Interview with Eng. Ahmed Saeed, SWM Department in EEAA.
[51] Meeting Mr. Ahmed Nabil, IES and Mr. Nasser Sayed Eid, Al Farounia National Company.

Figure 4.12 Street pickers' donkey carts in Mohandeseen, Giza

In most of the cases, it was observed that street pickers accept making deals with dealers during the early stages of their business or at a young age. They get donkey carts and other required equipment (e.g. gonya) from the dealers to facilitate their business.

A 2) Independent Street Pickers:

Another model of street picking involves the scenario in which street pickers work without any prior arrangements with dealers. They collect recyclables independently and either sell them directly to any dealer or store them until they are offered reasonable prices to sell. This arrangement is characterized by the liberty to select the working hours.

The arrangement mentioned above might overlap with the dealer model in the case that street pickers seek to grow their businesses.

During interviews with the national companies, representing Wahys, they noted that lately, after the culling of the pigs, Zabbaleen in Giza started engaging in alternative coping strategies to secure additional sources of income. This involves their engagement in the process of street picking to compensate for the drop in income by collecting larger quantities of recyclables. For Wahys, now the category of Zabbaleen overlaps with street pickers, although in the past Zabbaleen had never accepted carrying out street picking activities[52].

[52] Interview with Eng. Sherif Abdel Monaem, Al Farounia National Company.

Figure 4.13 Street picking on a small scale on one of Dokki's side streets

Figure 4.14 Interview with one of the street pickers in Boulak

This is in accordance with the statement by one of the Zabbaleen in Ard El Lewa which classifies the work into two categories. The first is the garbage collection work which they have traditionally done and which has changed to include sorting on the street after the door-to-door collection and the second is the street picking which is facilitated by donkey carts.

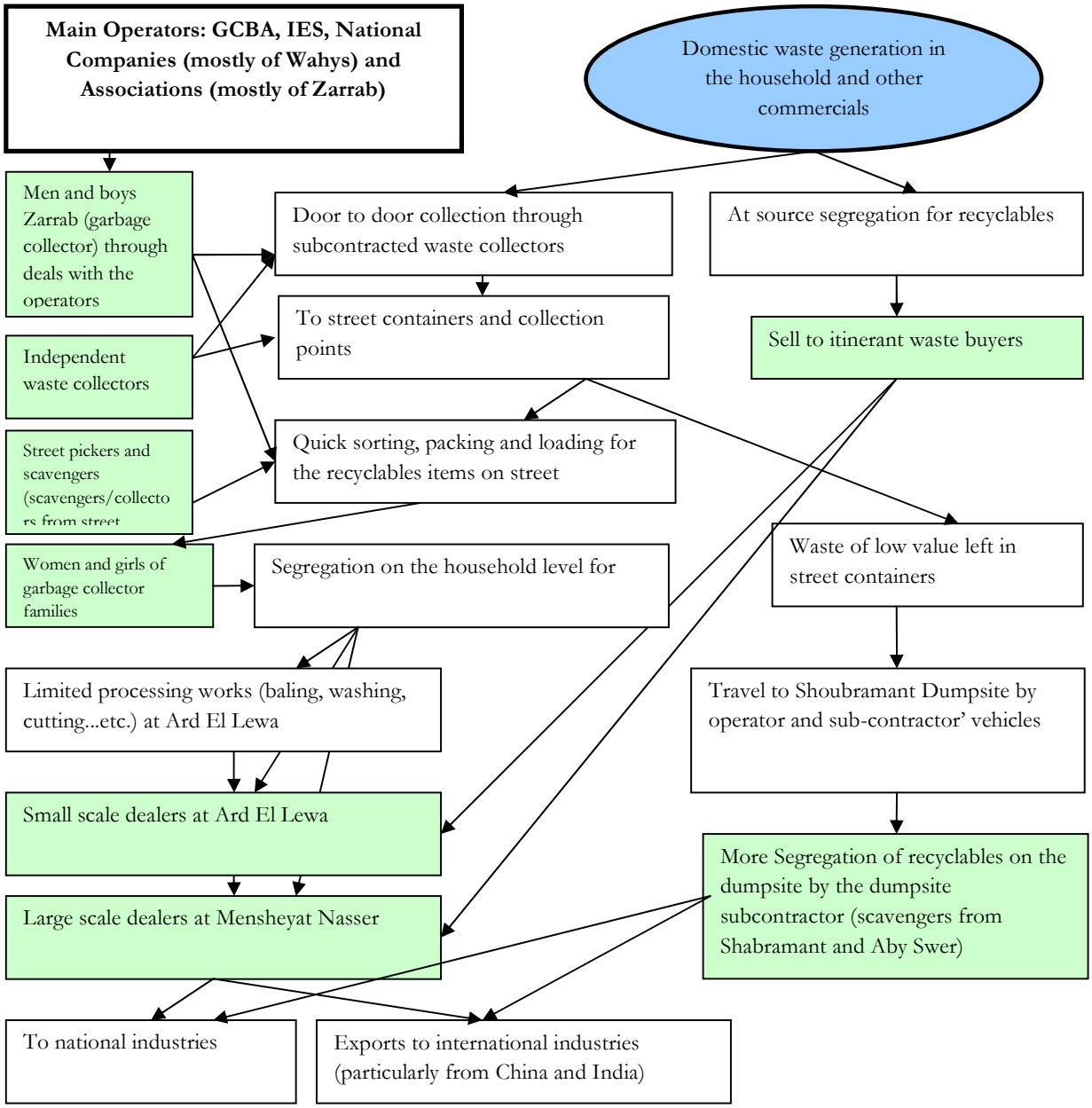


Figure 4.15 Waste from Generation to Recycling and the Role of Informal Sector Groups, Giza Governorate

There are no specific residential areas for street pickers. They are rather present in most of the low income districts of Giza Governorate. The most famous street pickers' gatherings are in Boulak, El Tare'a El Abyad (near Ard El Lewa). Street pickers also settle temporarily under several bridges.

Street picking is not necessarily an exhaustive source of income for the families of street pickers. In some cases, people carry out some street picking activities to obtain

complementary sources of income. However, this last category is impossible to be quantified.

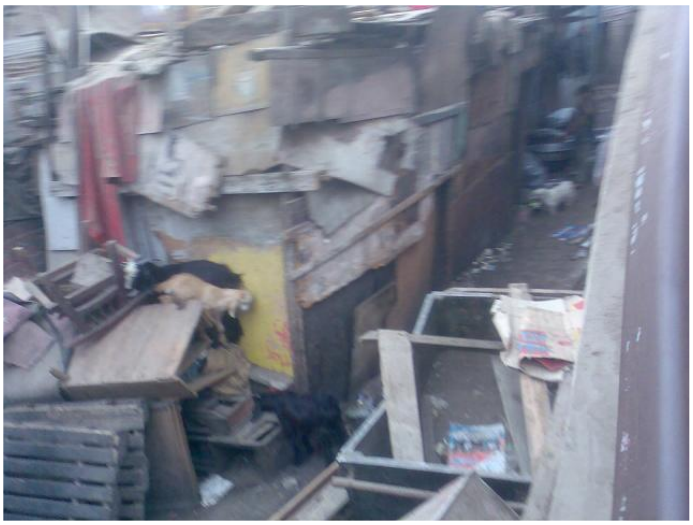


Figure 4.16 One of street pickers' houses in Boulak

Gender Issues

The visibility of women in the sector of the street pickers is very rare in the streets of Giza Governorate. Despite this, one of the interviewed street pickers in the Boulak District stated that girls often get engaged in the activity of recyclable picking to assist their brothers but when this happens, they work during the early morning to avoid being seen and to avoid being harassed or getting into troubles with GCBA.

B) Shabramant Scavengers

As shown in Box 4.2 above, the current number of scavengers at the Shabramant dumpsite does not exceed 50 scavengers. All come from Shabramant Village which is administratively affiliated with 6th of October Governorate. They have strong social relations and mostly come from one family.

Concerning their living conditions and their access to services, it was found that they reside in Shabramant and the surrounding villages and their houses are of rural design and they lack several services, most importantly sanitation and potable water which only reach the main roads but not their houses.

The interviews at the Shabramant dumpsite showed that, with the exception of very few cases, most of the scavengers are youth, ages 20 to 30 years old. Their educational background varied between illiterate to medium technical education. Only one of the scavengers holds a high university degree. The interviews revealed that girls in their families do not receive further education after the primary certificate.

In setting agreements with the subcontractor, around half the number of scavengers get word of mouth agreements while the other half secure written agreements, as shown in Box 4.2 above.

In investigating the average income of the dumpsite scavengers, the group of seven scavengers that has been interviewed stated that they are able to recover around 200 kilograms of various kinds of plastics that varies in price from 0.8 to 1.5 LE/kilogram. Given that they get 50% of the price of the recovered items from the subcontractor, it is estimated that the average daily income of each scavenger is around LE 40. It worth noting here that the physical input and time dedicated by the dumpsite scavengers is far below that of the street pickers. Particularly, under the current situation, the waste that reaches the dumpsite is of very poor value. This has been also recorded during the field observations where it was noticed that the composition of the waste reaching the dumpsite is of low value and that scavengers spend many hours without work.

"They are relatively lazy … but no more effort is required from them under this situation."

Mr. Sabry Mahmoud, Supervisor on GCBA crew at the Shabramant Dumpsite

"Here is better than the street…we are not humiliated as the case in the street. Street scavengers make more money than us but we can not do his work."

One of the scavengers at the Shabramant Dumpsite

Figure 4.17 A small shaded area for the dumpsite scavengers to socialize and rest

Figure 4.18 Segregated recyclables at the Shabramant Dumpsite

The subcontractor does not pay scavengers any advance payment but give them a daily wage according to the amount of recyclables they recover from waste. In addition to that, the subcontractor representative mentioned that the company morally maintains some social responsibility commitments to the scavengers. Based on that, the company provides different types of assistance during various occasions and in emergency cases.

Scavengers showed concern about the closing of the dumpsite and transferral of the final disposal site away from their place of residence. They stated that they will lose their main source of livelihood and it was clear that they do not have any alternative survival plan.

Gender Issues

At the Shabramant Dumpsite, it was stated that girls used to work in sorting waste in the past when the quantity of waste was larger and the quality was richer. They used to work to help their siblings and obtain additional income[53]. They used to be specialized in recovering certain food items which were either used as fodder for animals that are grown at home (sheep and poultry) or were sold. However, the situation now, as explained above, does not require contributions from girls since the workload has significantly decreased.

C) Itinerant Recyclable Buyers

Itinerant waste buyers (sarreh, pl. sarreha) are among of the important informal sector groups all across Egypt, including Giza Governorate. Their main source of incomes comes from selling recyclables to recyclable dealers after buying these segregated recyclables from households or businesses. Itinerant waste buyers usually accept buying various types of recyclables. The roaming of recyclable buyer is an incentive for housewives to segregate certain items to sell them to recyclable buyers, particularly in low income areas.

> "I give several unused items that I do not use to itinerant waste buyers. He benefits from what he collects and I benefit from money. Most of women in the neighborhood give him old plastic bottles, butter cans, old water pipes. Another sarreh is specialized in old bread. He exchanges bread with fresh mint."
>
> Women FGD in Boulak El Dakrrour

Itinerant recyclable buyers work for a middleman/dealer specializing in specific recyclables, whether a single type of recyclable, or several recyclables. Their specialization in specific recyclables developed through their ability to recognize source segregated waste, and knowledge of sources where such recyclables are obtained and sold. There are itinerant waste buyers who collect cardboard only, bread only, bones only, old clothes only (those are referred to as "saxonia"), or paper only, etc. There are other itinerant waste buyers that collect groups of recyclables; such groups may consist of scrap metal, glass, hard plastic, old appliances and house wares (those are referred to as "khorda" or "robabekkia" who initially started this trade and they define their jobs by saying "they buy everything").

[53] Abaas, one of the dumpsite scavengers.

The middleman or "mo'allem" has one or several warehouses/storage areas where recyclables are stored until dealers of large-scale warehouses buy the recyclables, measuring them by the ton. Previous studies[54] showed that the middleman has anywhere, between 5 to 40 "Sarreh". The middleman usually pays an amount to the Sarreh in advance.

Figure 4.19 Itinerant recyclable buyers in El Warrak, Giza

Figure 4.20 Itinerant recyclable buyers in Boulak, Giza

D) Dealers on Various Scales

The main work description of this category involves collecting sorted recyclables of different amounts according to the scale of the dealer who trades (buys or sells) them in fairly large quantities to a larger dealer or to industrial establishment. The dealers usually use the manpower of street pickers through two main types of arrangements. The first involves deals on daily basis and usually pays 50 LE /day. This type of arrangement tends to be used more with children and young teenagers. The second entails the street picker selling the collected recyclables according to the weight, types of items collected and market price. The estimated daily wage, in this case, for the street picker is around LE 75 to LE 100. Most of the deals among the dealers are made on a verbal basis/gentleman's agreement.

Stakeholders stated that there are few thousand warehouses of different sizes in Giza Governorate[55]. These warehouses are an indication of the average number of recyclable dealers, which is roughly estimated to be around 3000 dealers. It is assumed that at least a quarter this number works only in Ard El Lewa. In that sense, there is a clear overlap between Zabbaleen and dealers. There is no official record for the number of warehouses, particularly since the majority of them are unlicensed. According to the Head of Giza EMU, the number of fining reports issued by the EMU for these warehouses (estimated to be around 10 reports per year) could not be dealt with as an indication for the number of warehouses since the EMU does not approach these unregistered warehouses unless they receive complaints from the residents of the neighborhood. According to Law 4 of 1994, the fine in this case ranges from LE 10,000

[54] Enabling the Informal Sector in SWM, EcoConServ, 2007.
[55] Al Farounia Company representative, Eng. Mouinr Nawar Mensheyat Nasser, Eng. Youssri, Giza EMU.

to 20,000 and the case is reported to the police. The district authorities are then responsible for removing the unregistered warehouse.

4.3 Gharbia Governorate

4.3.1 Socioeconomic Characteristics of Gharbia Governorate

4.3.1.1 Description of Gharbia Governorate

Gharbia Governorate is located in the Delta region and covers an area of 1942.3 km², representing 0.2% of Egypt's total area.[56] It is bordered to the east by El Qalubia and Daqahlia Governorates, to the west by El Behira Governorate, to the north by Kafr El Sheik Governorate and to the south by El Menofia Governorate. This key location makes Gharbia Governorate a focal point of railroads and land roads. The administrative division of the governorate includes 8 markazes, 8 cities, 4 districts, 53 rural local units annexed by 318 villages and 1,249 hamlets[57]. In addition, there are 47 informal settlements, among which 19 have been developed by the governorate and 28 are in the process of being developed[58].

Table 4.15 Administrative Distribution of Gharbia Governorate (according to 2006 census)[59]

Markaz	Cities			Villages		
	District	Shiakha/Qism	City	Main Village	Satellites	Total Villages
Tanta	2	15	1	9	41	50
El Mehalla El Kobra	2	11	1	10	45	55
Kafr El Zayyat	-	-	1	6	31	37
Zefta	-	-	1	8	46	54
El Santa	-	-	1	6	38	44
Qotor	-	-	1	5	25	30
Basyoun	-	-	1	4	23	27
Samannoud	-	-	1	5	16	21
Total	4	26	8	53	265	318

4.3.1.2 Economic Activities

Economic activities mainly consist of agricultural endeavors, which indicates that the waste generated is mostly agricultural. The governorate is famous for crops such as

[56] Egypt's Description by Information, 2007 7th edition, Volume 2: Information and Decision Support Center.
[57] CAPMAS Website 2010.
[58] Egypt's Description by Information, 2007 7th edition, Volume 2: Information and Decision Support Center.
[59] Ibid.

cotton, rice, wheat, fruits and medicinal herbs. Agricultural activities also include the breeding of livestock and poultry. In addition to agriculture, Gharbia is known for huge industrial textile complexes encompassing spinning, weaving and dying. The textile industry is concentrated in Al Mehalla El Kobra, Tanta, and Zefta. Other industries in the governorate include fertilizer, pesticides, chemicals and paper in Kafr Al Zayyat, as well as perfumes in Qotor City.

Gharbia is home to a variety of important monuments and cultural events. The most popular include middle Delta monuments in Tanta, Aly Bek El Kebeer public fountain, El Sayyed El Badawy Mosque, the Coptic Grand Church in Tanta, Mari Gergis Church in El Mehalla El Kobra and San el Hagar Temple in Basyoun. On the cultural level, Gharbia hosts a number of annual events, the most popular of which is the religious celebration of the Birthday of El Sayyed El Badawy, which attracts an estimated number of 50,000 visitors to the governorate annually[60]. These special events add more strain on the existing solid waste management system.

4.3.1.3 Population

The total population of Gharbia is estimated at 4,011,000 inhabitants.[61] Among these, 50.7% are males and 49.3% are females. The average family size is four members. The total birth rate is 24.5%; natural population growth in Gharbia is thus 18.1%.

Table 4.16 Distribution of Population by Area and Gender

Area	Number of Families	Total Population		
		Male	Female	Total
Urban	314,758	601,486	596,292	1,197,778
Rural	680,988	1,432,510	1,381,032	2,813,542
Total	995,746	2,033,996	1,977,324	4,011,320

The Governorate is predominantly rural, with 70% of its inhabitants residing in rural areas. The two main urban settlements are in El Mehalla El Kobra and in Tanta. These two markazes, including their rural affiliates, have the highest population concentration in the whole governorate.

[60] Ibid.
[61] CAPMAS Website June 2010.

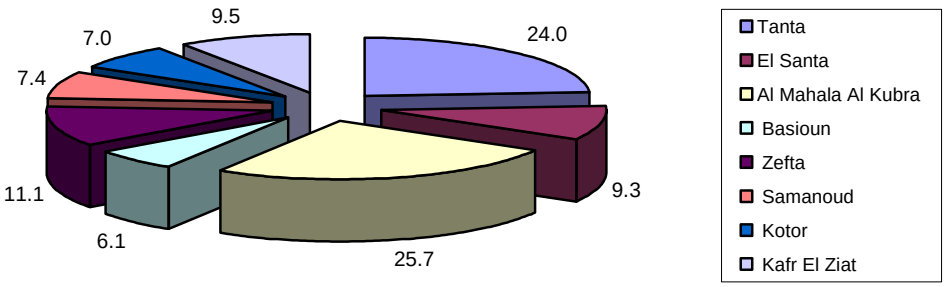


Figure 4.21 Percentage Distribution of the Population by Markaz

Given this fact, the PSIA study will concentrate on these two markazes to achieve an understanding of the dynamics of the municipal waste management systems and their social impacts on different groups in the governorate. Other markazes such Basyoun, Zefta and Samannoud are also investigated in the study to illustrate the different models of waste management, especially in smaller rural and remote areas.

4.3.1.4 Education

The illiteracy rate in the governorate is 25.7% among those 10 years and older (834 thousand people), according to the 2006 census results[62]. The figure, although seemingly high, is still lower than the national average of 29.3%.

4.3.1.5 Employment Status

The total labor force represents 34.3% of the population of Gharbia, which is slightly higher than the national average of 32.4%. In Gharbia Governorate, 24.5% of the labor force work in the agricultural field, 26.5% work in the industrial field and 49.0% of the labor force is employed in the service sector[63].

[62] Egypt's Description by Information, 2007 7th edition, Volume 2: Information and Decision Support Center.
[63] Egyptian Human Development Report 2010.

Table 4.17 Employment Status in Gharbia Governorate

Information About Employment	
Labor force (percentage (%) of total population ages 15 and older)	34.3%
Female labor force (percentage (%) of total population ages 15 and older)	25.5%
Distribution of labor force by sector	Agriculture 24.5% Industry 26.5% Service 49.0%

4.3.2 Sample Description

The study in Gharbia focused mainly on the importance of reflecting the community being surveyed in Gharbia and on the means of investigating the dynamics of the informal sector. In order to accomplish this, a preliminary pilot investigation was undertaken to profile the targeted community, including field visits and meetings with various stakeholders. The team decided to investigate a model of both urban and rural settlements in the course of the study, covering different modes of waste management systems, beneficiaries, waste providers and Local Governorate Units (LGUs) responsible for waste management at all levels (governorate, markaz, village and city). Other stakeholders such as funding agencies were also included. The profiling of the informal sector was based on both field visits and data collection from stakeholders in which both qualitative and quantitative tools were used.

In light of the above, it was agreed that the study would have the following geographical focus:

2. El Mehalla El Kobra: A big markaz served by more than one waste management system.
3. Tanta: the capital of the governorate, with a variety of commercial activities and more than one waste collection system.
4. Basyoun Markaz: small markaz served by CDAs and LGUs.
5. Qotor Markaz: the smallest of all markazes served by a CDA funded by a funding agency.

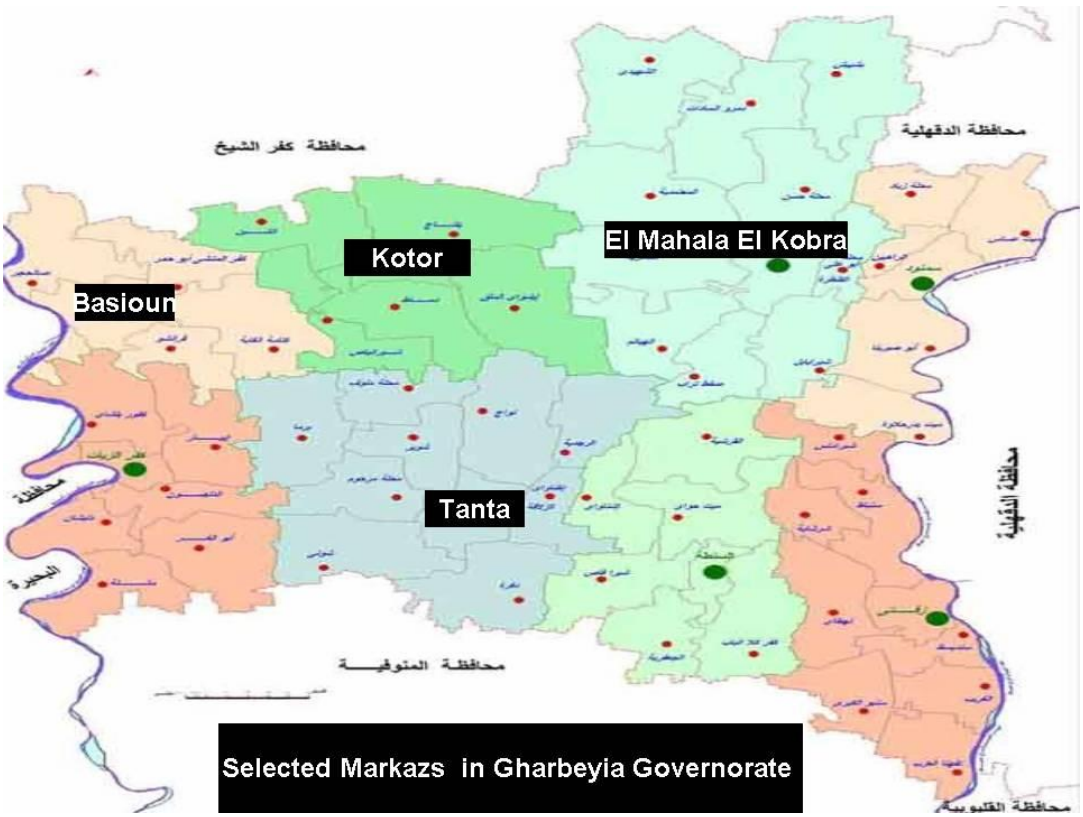


Figure 4.22 Maps of the Selected Surveyed Markazes

4.3.3 Municipal Solid Waste Management System

4.3.3.1 Municipal Solid Waste Generation in Gharbia Governorate

The rate of waste generation in Gharbia was estimated at 3000 tons/day in 2008[64]. The average of waste generated varies between urban and rural areas and is highly related to socioeconomic conditions and consumption patterns.

[64] State of the Environment Report, 2008.

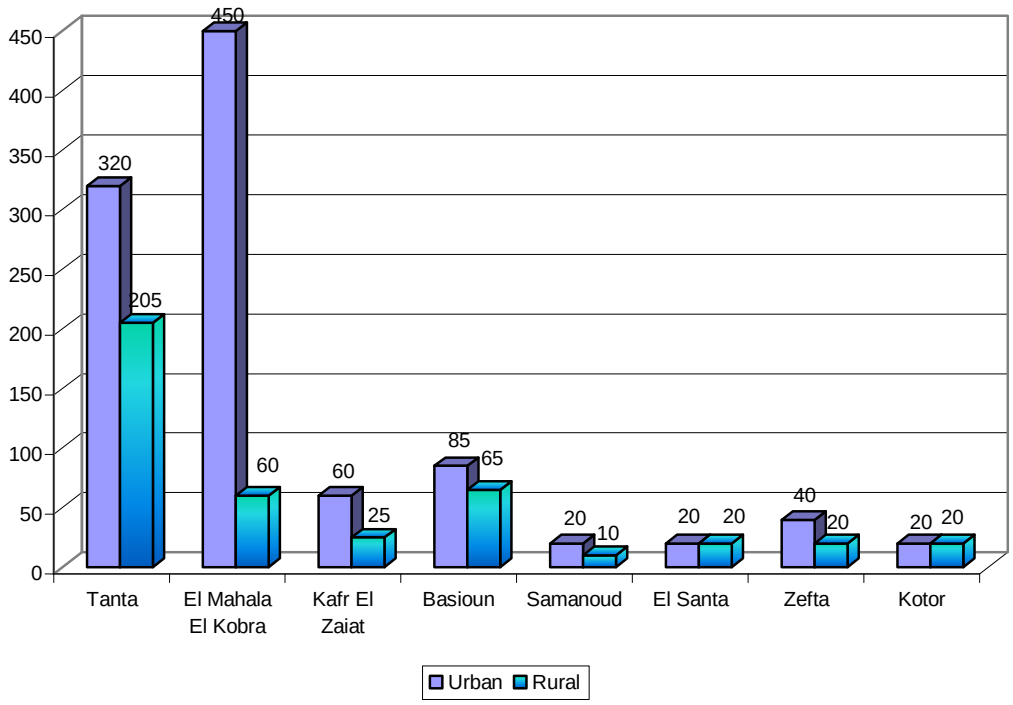


Figure 4.23 Waste Generation Rate by Markaz

According to figures from the Environmental Management Unit (EMU), Tanta Markaz has the highest waste generation rate in Gharbia,[65] estimated at 525 tons/day. This is followed by El Mehalla El Kobra Markaz at a generation rate of 510 tons/day. El Santa and Qotor Markazes were recorded as having the lowest rate of waste generation in Gharbia.

Organic waste constitutes 50-60% of the waste in Gharbia. Paper constitutes between 10-25%, plastics 3-12%, glass 1-5%, metals 1.5-7% and textile 1.2-7%. Although over half of the waste is organic in nature and not rich in terms of recyclables, the segregation and collection of recyclables is still undertaken in Gharbia, especially in urban settlements[66].

4.3.3.2 Mapping of Different Actors in the MSWM System in Gharbia

The main objective of this section is to shed light on the dynamics of the current solid waste management system in Gharbia Governorate, including different systems and actors in place, their current performance levels and the main obstacles they face.

The MSWMS is multifaceted and highly interconnected in Gharbia Governorate, with a number of key actors involved in the SWM system. The types of service provided and practices related to waste are highly dependent on a number of factors including

[65] Abd El Aziz Mahfouz, Head of Gharbeyia EMU, 13/7/2010
[66] Environmental Profile of Gharbia,

characteristics of the areas served (mainly urban versus rural), population, geographical proximity and type of waste produced. Figure 4.23 below illustrates a mapping of how different waste systems are distributed geographically at the governorate level.

Figure 4.24 Waste Collection Services in Gharbia Governorate

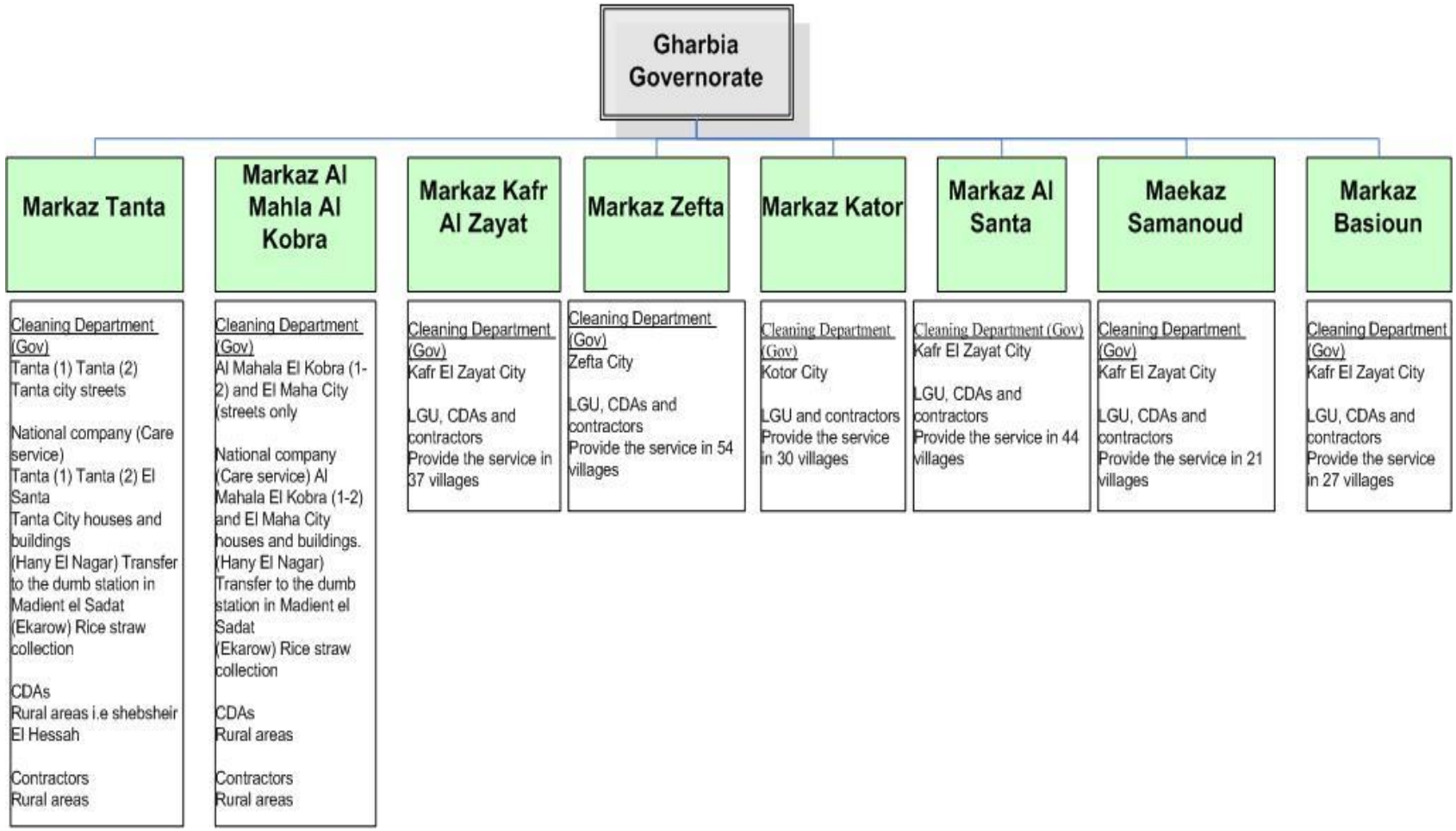


Figure 4.25 MSWM Actors in Gharbia Governorate

Figure 4.25 above illustrates the various actors in municipal solid waste management in different markazes within Gharbia Governorate.

4.3.3.2.1 Local Government

The local government is the main entity responsible for municipal waste management in Gharbia. In this respect, the responsibility of the local government comprises: [67]

1. Collecting, transporting and disposing of waste from streets and public areas.
2. Preparing tenders for contractors and private companies.
3. Contracting private companies.
4. Monitoring private company and contractors.
5. Law enforcement for violations related to waste dumping.
6. Managing dumpsites and composting plants.

The local government in involved in the waste system in Gharbia at four different levels:

1. The Department of Cleansing at the governorate level collects waste in Tanta.
2. The Department of Cleaning and Beautification collects waste in each city of the markazes.
3. The Local Governorate Unit (LGU) collects waste from villages.
4. The operators of composting plants and or dumpsites.

Waste collected by the local government is disposed of in two sites: El Dawakhlia in El Mehalla El Kobra and Defra. The Dawakhlia site used to be a sorting site, however it is no longer operational and is now being used as a dumpsite. The second site used for disposal of waste collected by the local government is a composting plant in Defra.

Box 4.4 Dawakhlia Sorting Point

Governmental Workers Operating in Dawakhlia (Scavenging and Sorting Point)

- Number of Workers: 1 supervisor, 2 technical and 3-5 workers
- Work all day long on a shift basis
- Monthly Salary: 400-650 LE/month in addition to an unofficial monthly payment by the El Sheshtawy family
- Their children are all enrolled in the education system (intermediary and high education)

Box 4.5 Defra Composting Plant

Defra composting plant is currently used only as a sorting site since it was burnt. It is located in Tanta and Care Service workers are currently operating it and sorting the transferred waste.

As a result of insufficient resources, the local government often enters into contractual agreements with other parties to provide the service on its behalf. Parties include private sector companies (usually operating at the city levels and in big cities only), contractors

[67] Abd El Aziz Mahfoz, Head of EMU in the Governorate

("Motahedeen", which usually operate at the local government unit level and the villages), as well as CDAs[68]. Obstacles faced by the locaare mainly related to lack of financial and human resources to undertake this job; officials report that the lack of financial resources is one of their main obstacles. As an illustration, in Tanta Markaz, expenditures exceed revenues by 300,000 LE per month. This amount is covered by the Service Fund in the governorate.

> "Vehicles are always in extremely bad condition. Most of the tractors need maintenance. It takes us a long time to have any vehicle repaired. According to law, the LGU should participate in addressing the fees for waste collection. It is always a low amount. (3 EGP per each unit) is too little."
>
> Abd El Aziz Mahfouz, Head of Gharbia EMU, Governorate building in Tanta, 13/7/2010

Workers are not attracted to this field of work due to the low pay and low social status associated with this type of work. Other problems are related to unfavorable behavior by some of the beneficiaries, who either never take the garbage bags to the street container, or miss the collection time, which results in an accumulation of waste.

4.3.3.2.2 Private Sector

The following is a description of the various private sector service providers.

4.3.3.2.2.1 Care Service Company

Care Service Company is operating in the two major urban cities of El Mehalla El Kobra and Tanta. The company is responsible for waste collection, transfer and disposal. The company was contracted for ten years to undertake door-to-door collection, however, this never took place. Currently, two years are left in the contract, and Care Service provides collection from large containers placed on streets. They collect waste from residential areas, organizations and enterprises, and on a voluntary basis, they also sometimes collect waste that has accumulated in the streets. In order to achieve the maximum quality of service, they have divided the cities into sectors. Each sector is served by a number of workers, with an average of 18 workers and one supervisor per sector. The vehicles have designated routes to collect waste, and waste is finally transferred and disposed of in Dawakhlia and Defra sorting/dumpsite in El Mehalla El Kobra and Tanta respectively.

Box 4.6 Information about Care Service Company for El Mehalla El Kobra and Tanta

Care Service Company in El Mehalla El Kobra and Tanta

- Number of Workers: 750

[68] Mr. Abd El Aziz Mahfouz, Head of Gharbeyia EMU, 13-7-2010 & Mr. Amr Efat, EEAA regional office, 13-7-2010 Governorate building.

- Number of Drivers: 47
- Number of Vehicles: 46 (40 in the morning shift, six in evening shift)
- Monthly Salary: 400-450 LE/month for workers, 600 LE/month for supervisors
- Health Insurance and Social Insurance is provided
- Number of Residents Served: 180,000

Figure 4.26 Care Service cars disposing waste in Dawakhlia dumpsite, Gharbia Governorate


Figure 4.27 Care Service workers in Tanta, Gharbia Governorate

In addition, Care Service Company should be operating the composting plant in Defra in Tanta, where recyclables are sorted and organic waste is composted. Currently, the composting plant is broken down and nonoperational. Manual segregation of waste in Defra is undertaken officially by Care Service Company workers, in addition to a number of scavengers who work informally on a part time basis[69]. As for El Dawakhlia sorting site, Care Service Company subcontracted it to the El-Sheshtawy family, for a monthly fee of 2,500 LE.[70]

4.3.3.2.2.2 Hany El-Naggar Company

The second private company operating in this field is Hany El-Naggar Company, which is contracted to undertake final disposal of waste from Dawakhlia and Defra sites to the dumpsite in El Sadat city. The company performs this task for a monthly fee of 160,000 LE. The company also tried to acquire the contract for waste collection, but failed due to shortage of vehicles, thus there is a bit of tension and bitterness in the company's relationship with Care Service Company, as they were competitors for the bid.

4.3.3.2.2.3 Mabrouk International Company for Engineering Industries

The third private company operating in the waste management field is Mabrouk International Company for Engineering Industries. The company works in the manufacturing field and produces waste collection equipment, among other types of

[69] General Abu El Saod Saleh, Head of Care Service in El Gharbia Governorate.
[70] All information about Care Service Co. was provided by Gen: Abou El Soud Saleh, General Manger of Care Service, Gharbeyia 13/7/2010.

equipment, which is competitive in the international market (30% less than the international prices, according to the owner). The owner is currently preparing to participate in the new tender for waste collection. The same company has previously worked in Luxor Governorate under the name of Amoun; currently they only provide equipment to different companies.

4.3.3.2.2.4 Contractors (Motahedeen)

Contractors ("Motahedeen") are individuals who, under a license agreement, pay an annual license fee to the LGU in return for providing waste collection, transfer and disposal services. By virtue of their license, contractors are permitted to collect an arranged monthly fee from residents in return for their service. The fees are usually around 2.5 LE/household. In addition, they pay an annual fee to the LGU. Contractors usually operate in villages and at lower levels. There are 15 contractors currently operating in El Mehalla El Kobra Markaz. Figure 4.28 below shows a sample contract between the local governorate unit and one of the contractors. The main points in the contract include are translated in Box 4.7 below [71].

Box 4.7 Contract Model, Gharbia Governorate

Sample Contract between Local Governorate Unit and Contractors

- Annual License Value: 4000 LE
- Duration: 3 years
- Description of Service: Collection and transfer of waste
- Laws and Regulations that Contractor must abide by: Cleansing Law 38 for Year 1967 and Decree 134 for Year 1968 regarding specifications of waste collection trucks.

[71] A subcontractor working with the contractor (refuses to disclose his name).

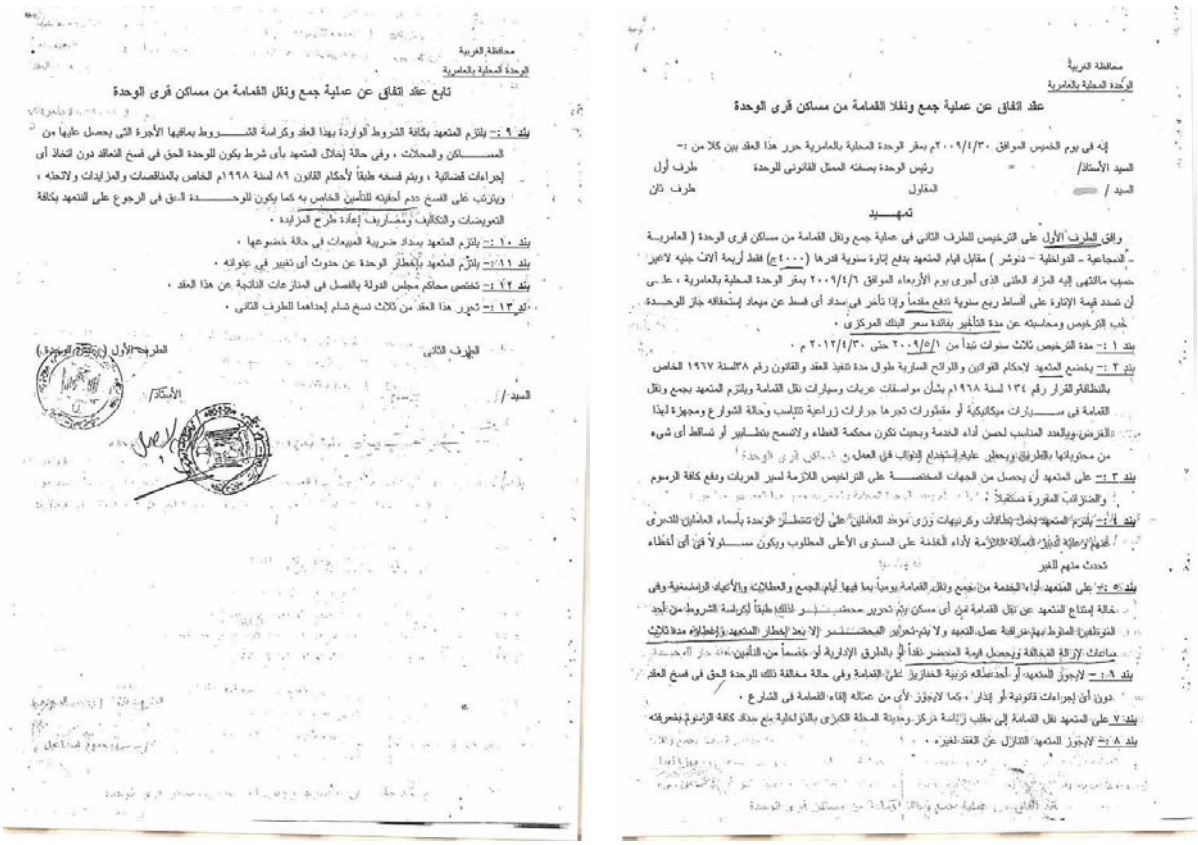


Figure 4.28 Contract between LGU and one of the contractors

4.3.3.2.3 Community Development Associations (CDAs)

There are CDAs working in Gharbia Governorate, among which only 16 CDAs work in municipal solid waste management[72]. However, some CDAs ceased working in this field as a result of lack of local transfer stations, which made their work economically unfeasible. CDAs are predominantly dependent on donor funded grants to operate their services. The Social Fund for Development (SFD) has invested a total of 700,000 LE to support CDAs operating in this field[73]. Another prominent donor in the field is the Egyptian Swiss Development Fund (ESDF).

The EDSF have supported the outreach of CDAs' services to remote areas; however they have also created friction between the operating CDAs and the LGU as a result of absence of coordination mechanisms with the local authorities represented by the LGUs during the planning and implementation stage. The direct coordinator of the ESDF projects was the governor and all the approvals and facilitations have been obtained from at the governorate level without any involvement from the LGU (e.g. Governor's decrees were issued to allocate land of state property for the project purposes and once the ESDF withdrew, conflicts started to emerge between the CDA and the LGU).

[72] Information Center in the Governorate 2010.
[73] Mr. Aly Fadel, Head of the Community Development Department SFD, Gharbia.

The Social Fund for Development (SFD) has provided grants to 15 CDAs, which employ an average of six workers each. The CDAs used to collect waste from nine plots of illegal collection points, and then transfer the waste for final disposal at Dawakhlia and Defra. Most of the waste is agricultural waste. EEAA banned the use of illegal intermediary collection points inside residential areas. This caused a major financial problem for CDAs that were obliged under this arrangement to transfer the waste to remote final dumping area. Since CDAs mostly use trailers (which are prohibited by law to be used on paved roads), the only solution was for the CDAs to purchase new equipment suitable for traveling on paved roads, and pay for the transfer cost. This was economically unfeasible for the CDAs and was the main reason that many of them failed. Most CDAs that are still operational are cross-subsidizing their waste services with other kinds of services, such as septic tank vacuuming.

الصندوق الاجتماعي للتنمية
مكتب الغربية

بيان باسماء الجمعيات الاهلية المنفذة لمشروعات جمع القمامة مع الصندوق الاجتماعى للتنمية بالغربية وموقف المشروع الحالى

م	اسم الجمعية الاهلية	ت الجمعية	رئيس مجلس الادارة	جهة التمويل	موقف المشروع
١	جمعية بناء قرسيس الخيرية امام مسجد المعلا بقرسيس مركز زفتى محافظة الغربية	٠٤٠/٥٨٦٢٣٥٠	أ/ عزت عوض ٠١٢٩٤٦٥٢٩٣	تنمية المجتمع بالصندوق	جارى ويعمل بكفاءة
٢	جمعية تنمية المجتمع بشبشير الحصة مركز طنطا محافظة الغربية	٠٤٠/٣٠٦٠٠٤٠ ٠٤٠/٣٠٦٤٥١٣	عبد/ نظار ابوزيتة ٠١٠٥٠٧٤٢٩٦	تنمية المجتمع بالصندوق	جارى ويعمل بكفاءة
٣	جمعية تنمية المجتمع بالراهبين مركز سمنود محافظة الغربية	٠٤٠/٢٩٣٦٣٦٤	د/ مصطفى ابو طاحون ٠١٢٠٥٧٤٢٤٠	تنمية المجتمع بالصندوق	جارى ويعمل بكفاءة
	مشـــــروعـــــات تحسين البيـــــئـــــة والـطـــــرق				
٤	جمعية تنمية المجتمع بشبرالنا مركز بسيون محافظة الغربية	٠٤٠/٢٩٣٤٧٨٨	محمد حشاش ٠٤٠/٢٩٣٣١٨٨ منزل	تحسين الطرق والبيئة	جارى ويعمل بكفاءة
٥	جمعية تنمية المجتمع بهبوط امام مستودع انابيب انقاذ مركز قطور محافظة الغربية	٠٤٠/٣٨٢٠٧٣٢	م/الشاذلى احمد التجار ٠١٢٢٩٩٨٥٠٠	تحسين الطرق والبيئة	لايعمل لعدم وجود مقلب قمامة
٦	جمعية المحافظة على القرآن الكريم وخدمة المجتمع ش مصطفى كامل منارع من ش المدارس بسيون محافظة الغربية	٠٤٠/٢٧٣٦٧٤٩	سعيد الشاذلى ٠١٦٥٧٠٥٩٠٧	تحسين الطرق والبيئة	لايعمل لعدم وجود مقلب قمامة
٧	جمعية تنمية المجتمع بجناج بجوار مسجد ابو رامون مركز بسيون محافظة الغربية	———	حمد البربرى ٠٤٠/٢٧١٥٠١٠ منزل ٠١٢٣٣٥٣٢٠٨	تحسين الطرق والبيئة	لايعمل لعدم وجود مقلب قمامة
٨	جمعية الخدمات الاجتماعية بسملا امام محطة المياة بسملا مركز قطور محافظة الغربية	———	أ/ عبد الحليم نين ٠١٢٣٣٧٣٣٤٦	تحسين الطرق والبيئة	لايعمل لعدم وجود مقلب قمامة

٩	جمعية تنمية المجتمع بشبرا قاص بالوحدة المحلية مركز السنطة محافظة الغربية	٠٤٠/٥٣٠٠٨٧٩	أ/ ابراهيم محمد رضوان سكرتير	تحسين الطرق والبيئة	لايعمل لعدم وجود مقلب قمامة
١٠	الجمعية الخيرية بشراق امام مسجد النور بشراق مركز السنطة محافظة الغربية	٠٤٠/٥٥٠٢٦٥٢	د/ظاهر شبادى ٠١٠٢٠٦٩٠٨٠	تحسين الطرق والبيئة	بعض نظير سنع ٥٠ جنية لكل نقلة بالمقلب العمومى يرافق مما يسبب معاناة للجمعية لعدم وجود مقلب قريب
	مشـــــروع رصـــــف الطـــــرق الاقليـمـيـــــــــة				
١١	جمعية تنمية المجتمع بدمنهور الوحش مركز زفتى محافظة الغربية	٠٤٠/٥٧٥٠١٣٥	أ/ يسرى البنا ٠١٠٤٩٠٣٣٨٧	رصف الطرق الاقليمية	جارى ويعمل بكفاءة
١٢	جمعية تنمية المجتمع بدهتورة مركز زفتى محافظة الغربية	—	أ/محمد ابورية ٠١٨٤٥٤٩١٦١	رصف الطرق الاقليمية	جارى ويعمل بكفاءة
١٣	جمعية تنمية المجتمع بالتجارية مركز كفر الزيات محافظة الغربية	٠٤٠/٢٤٧١٥٧٠	محمود ابوفرد ٠١٤٨٠١٨٥٩٠	رصف الطرق الاقليمية	جارى ويعمل بكفاءة
١٤	جمعية تنمية المجتمع بمنشاة جنزور مركز طنطا	٠٤٠/٣٠٤٠١٠٧	فؤاد فودة	رصف الطرق الاقليمية	جارى ويعمل بكفاءة

...الجمعيات الاهلية بمحافظة الغربية تحتاج الى وجود مقالب قمامة ومعدات لاقامة محطات تدوير للقمامة

Figure 4.29 Summary reports for the CDAs working in waste management and funded by the SFD 5/7/2010. (*Source: the SFD in Gharbia Governorate)*

According to the CDAs interviewed, there is no relationship between the LGU and the CDAs operating in the field. CDAs, generally, operate under the supervision of the Ministry of Social Solidarity in Egypt. As mentioned above, there is usually a lack of a coordination mechanism on the village level. The project serviced areas were selected without prior consultation with the LGU. Moreover the process of acquiring the funds and proceeding with the service (including collection of fees) have been carried out without any coordination with the LGU. Recently, some CDAs have encountered problems regarding the collection of fees, and are resorting to the support of the LGU for a solution. The LGU, however, is unsatisfied with the lack of coordination and is not willing to provide support. Legal issues are also surfacing between the two parties, namely the LGUs and the CDAs which include conflicts over land ownership. For the CDAs, the land that has been allocated by the governor for the project was perceived as being under their ownership (inherited as a result of the project). However, for the LGU, once the fund comes to an end, they claimed the land back as a state property. These issues are posing threats to the operation of the CDAs and to the continuity of services.

During a focus group discussion conducted in El Etehad El Naweey in Tanta (Union for CDAs), eight CDAs that had received grants from the Swiss Fund reported a multitude of problems. These problems had surfaced after the Swiss Fund handed over the projects, and were due to the following reasons:

1. Lack of funding and inability to achieve cost recovery.
2. The governorate has repossessed land allocated for the projects.
3. EEAA banned illegal intermediary collection and transfer points within residential areas, which impacted the economic feasibility of their work, as mentioned above.

Box 4.8 CDA in Shoubratna - Basyoun

CDA in Shoubratna - Basyoun

- The CDA was authorized in 1966.
- They work in different developmental activities: i.e. distributing bread, charity work, children's clubs, women's clubs, nursery, carpentry and waste management.
- They received funds from the Social Fund for Development for a waste collection project. In addition to this funding, they supported the project with the CDA's own financing and monthly waste collection fees from the villagers (3 LE).
- They do not perform any segregation due to the expensive cost of the equipment; they only collect waste to be transferred to the dumpsite.
- There are a total of five workers in the project: one driver, three tractor workers and one supervisor. They have social insurance.
- The workers receive no training. If the CDA builds a segregation factory, the workers would definitely be in need of training.
- The workers face many health problems.
- They are in need of funding to construct a recycling factory; however no more funds are available from the SFD.
- They have to pay money to the transfer the waste.
- Previously, the SFD used to monitor the project through monthly reports and site visits.
- No support is received from the LGU as the LGU is not getting any direct benefit from the service provided by the CDA.

Source: Meeting with Chairman of Shoubratna CDA – Basyoun District- Gharbia

Box 4.9 CDA in Emiout - Qotor

CDA in Emiout - Qotor

- The CDA started working in waste collection after receiving funding from the Social Fund for Development.
- They intended to collect a monthly fee of 2 LE from each household but people did not pay for the service, and therefore the project failed.
- Waste accumulated in the village and the LGU and the CDA do nothing to collect it.
- However, the segregators and waste pickers are active in collecting objects such as bottles, cardboard, and plastic from the waste in the village.
- The villagers have resorted to burning waste in order to avoid insects and disease.
- The CDA purchased a tractor for collecting waste. After the failure of the project they purchased a trailer for septic tank evacuation and used it with the tractor. Now the CDA is working in septic tanks evacuation, charging 8 LE per evacuation.

- Another problem facing the waste collection project was that the EEAA banned the use of illegal intermediary collection and transfer points within residential areas. As a result, the tractor would have had to transport the waste over a longer distance on paved roads, and tractors are not allowed on paved roads. As a result, the CDA had to suspend services.
- The Social Fund for Development was unable to provide support to the CDA in light of this decision, as the CDA must comply with the relevant laws and decrees.
- The project failed, currently there is no one collecting waste.

Source: Meeting with Chairman of Emiout - Qotor District - Gharbia Governorate

Box 4.10 CDA in Neshel - Qotor

- The CDA was authorized in 1975.
- They work in different developmental activities including capacity building, loans, awareness raising, water connection, wastewater and waste management.
- They received funding from Swiss Fund in order to undertake a waste management project. In addition to this funding, they supported the project with the CDA's own financing and waste collection fees from the villagers.
- The number of workers in the project includes two drivers, two tractor workers, four to seven segregators (among half of which are female) and two guards. Most of them are above 20 years old and illiterate. Before beginning work, they received on-the-job training with other employees. The CDA has two main types of recyclables segregators, permanent recyclables segregators whose monthly salary is 350 LE /worker and permanent segregators with a daily wage of 25 LE/worker.
- They collect agricultural and municipal waste from rural areas.
- A small scale recycling program is under operation by the CDA. They used to produce compost and sell it with a price of 80 LE/ton. However, the introduction of a new competing firm supported by EEAA that produce compost of better quality and lower cost (60 LE /ton), caused problems for the CDA. They started to face difficulty in marketing their compost. Consequently, they stopped producing compost and waste residue significantly increased in the waste that they transfer. Neither their financial capabilities nor their machinery can cope with this.
- The CDA collects household waste, however, they sometimes collect waste from the streets for free, especially beside schools.
- They collect a monthly fee of 3 LE from each household, which is not sufficient to provide a quality waste collection service. Therefore, they relied upon compost that used to be sold for 160 LE/ton. However, the EEAA provided support to ECARU (a company that works in straw collection and made compost from the collected straw), which allowed the company to produce cheaper compost, so the CDA now are unable to sell their product for more than 80 LE.
- The CDA is not supported by the governorate after the donor's fund ceased. Furthermore, the governor at one point allocated a plot of land for the CDA to

use as a transfer station and now the governorate authority intends to repossess the land as mentioned above.

- Accumulated waste should ideally be transferred to the El Sadat landfill, but the governorate has not assisted in this process. The CDA would need to be provided with equipment, an incinerator and vehicles to transfer the organic waste to El Sadat.
- The LGU is gives higher preference to the contractor systems as the contractors pay fees to the LGU, at a time when the CDA collects waste without paying any fees to the LGU. The CDA was supported by the ESFD whose fund has already been terminated.
- Currently no support is provided to the CDA from any source.

Source: Meeting with Chairman of Neshel CDA - Qotor District - Gharbia Governorate

4.3.3.2.4 Informal Sector

This section briefly introduces the informal sector involved in the municipal waste management system in Gharbia. Chapter three is dedicated to a full analysis of the profile and dynamics of this sector in the governorate.

The informal sector in Gharbia comprises a number of actors who are either directly or indirectly involved in the municipal waste management system. Direct Informal Sector refers to those who work informally in waste related activities and Indirect Informal Sector refers to those who are integrated within the formal waste management system, but engage in informal activities.

Figure 4.30 Street picker in Tanta, Gharbia Governorate

Figure 4.31 Storage area/warehouse of one of the dealers in Gharbia

The informal sector is mainly involved in sorting and collecting recyclables by means of street picking, scavenging in dumpsites or collection points, and/or buying directly from households and commercial establishments through itinerant waste buyers (Sarreha). Recyclables (plastics, soda cans and cardboard) are mainly traded through small dealers – usually informal dealers, who sell to larger dealers in Gharbia. Large dealers supply intermediate or end user factories outside Gharbia by recyclables. The study team could not detect any processing of the recyclables inside Gharbia, except for a limited number of large dealers who ball plastics.

Workers in the informal sector are characterized by high flexibility, both geographically (they may be mobile between markazes), or in terms of the job they do, which adapts to the needs of the waste business. The fact that most of the informal sector are involved in low-skilled types of work involving only sorting and/or collection makes it easy for them to shift between different categories as the need arises (for example from scavenging to street picking). In addition, the lack of special skills necessary to perform this job attracts a large pool of unskilled workers who are either unemployed or are in between seasons, as is the case with agricultural workers. This makes the estimation of the number of people working in the informal sector a very challenging task.

4.3.3.2.4.1 Visibility of the Informal Sector to Governorate and Community

In general, workers in the informal sector in Gharbia work without problems from authorities. Occasionally, street pickers have conflicts with authorities because of their donkey carts. Interestingly, interviews with governmental officials reveal they usually insist that these groups do not exist or that their operations are minor.

As for the community, street pickers and scavengers create chaos in most of the areas as they open the bags of garbage, search for objects and throw the rest into streets. According to the community, street pickers and scavengers are chaotic people. Only 15% of the beneficiaries and 14% of the enterprises reported that they have never seen scavengers. Furthermore, one government official noted that "those people are not so common in the areas." However, the interviewer distributing questionnaires noted scavengers in most areas, and it is clear that people do not pay attention to this group, failing to notice them even when they are active.

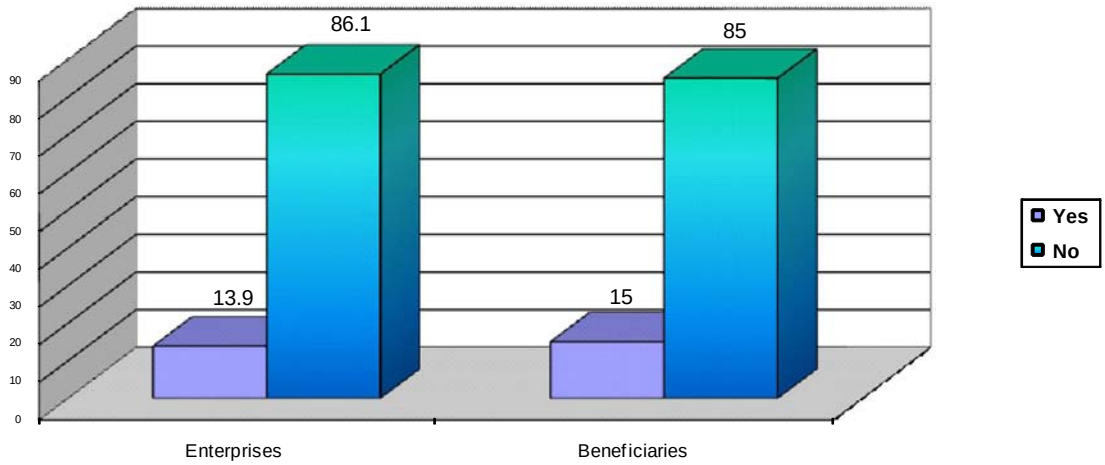


Figure 4.32 Distribution of the Sample Reporting Having Ever Seen Scavengers

4.3.3.2.6 Assessment of the Current MSWM System in Gharbia

A cornerstone of the assessment of the service provided is the perception and level of satisfaction among the community members (beneficiaries and enterprises) as they are

the groups that benefit directly from the service. The most important points raised in this regard during the survey were:

1. Level of satisfaction with street conditions
2. Type of service provider
3. Level of satisfaction with the service provider
4. Reasons for satisfaction/dissatisfaction
5. Presence of scavengers in the area
6. Monitoring and evaluation
7. Services that need to be enhanced
8. Strategies to enhance the services

Table 4.18 Perception of Street Conditions in the Neighborhood

Response	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Very clean	6	4.5	10	9.1
Fairly clean	48	36.1	31	28.2
Not clean	68	51.1	47	42.7
Absolutely unclean	11	8.3	22	20.0
Total	**133**	**100.0**	**110**	**100.0**

Table 4.18 above shows that 51% of beneficiaries and 43% of the enterprises believe that the streets are not clean, compared to 4.5% and 9%, respectively, who believe they are clean. This is very important, because people rate the service largely based on the accumulation of waste they see on the street.

The survey first concentrated on identification of the type of service provider in order to link this to the level of satisfaction, as shown in Table 4.19. The data collected revealed that the government provides the service for around 30% of the sample for the beneficiaries versus service provision for 36% of the sample by the private company. 9% of the sample was covered by the CDAs and 21% received no service at all.

For the private companies, about half of the enterprises reported that Care Service Company does the collection. The enterprises had a clearer idea about the service provider in general as they are mainly in the streets for a longer time therefore they can observe more than the beneficiaries.

Table 4.19 Reported Distribution of the Sample by Service Provider

Response	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
The Government	16	14.5	45	33.8
Private company	57	51.8	48	36.1
CDA	3	2.7	12	9.0

Nobody	34	30.9	28	21.1
Total	110	100.0	133	100.0

As reflected in Table 4.20, regarding the waste collection service, 60.9% of the beneficiaries and 55.7% of the enterprises were not satisfied with the service. This is in comparison to 13.5% satisfaction by the beneficiaries and 20% by the enterprises. Only a quarter of the sample was satisfied to some extent.

Table 4.20 Distribution of the Sample Satisfaction with the Waste Collection Service

Response	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Satisfied	18	13.5	18	20.5
Satisfied to some extent	34	25.6	21	23.9
Not satisfied	81	60.9	49	55.7
Total	133	100.0	88	100.0

In order to get a clear picture of the satisfaction level, it must be linked with the service provider. 56.3% of the sample was not satisfied with the private company. However, only 37.8% were not satisfied with the government service. This is a logical finding as people judge the overall service by the street condition, not the collection service. Since the private companies are only responsible for door-to-door collection, the streets will not be cleaned at a satisfactory level. Regarding the CDAs, the village that was investigated received charity and training services from the CDA. Therefore, they were satisfied with the CDA not only for waste collection but also for the other services provided.

The main reasons for satisfaction for the service were:

1. Garbage was collected regularly.
2. Street conditions are improved.
3. Good service is provided.
4. The government collects fees through the electricity bill, so people feel as if they aren't paying for the service.
5. Door-to-door collection is comforting for people.

The main reasons for dissatisfaction were as follows:

7. Poor service is provided.
8. Garbage collector does not come regularly.
9. Streets are not cleaned.
10. Garbage is not collected from apartments or shops.
11. No garbage collection.
12. Garbage collectors do not collect all of the garbage.
13. The government receives money yet provides no service

More details about the SWM service fees by income groups, service providers and type of surveyed areas in Gharbia Governorate are presented on Annex C-2.

The perception of the community towards the service provision should also be seen through the eyes of the service provider. For the private sector, according to Care Service, the company is currently facing financial problems. Eight years ago, the value of the contract was lucrative, currently it is not. Reductions in the company fees by the LGU worsens the situation. The transfer point in Dawakhlia and composting plants in Defra, which should have been operated by Care Service Company, are both broken down and only used currently as a manual sorting facility and dumpsite. In addition to this, scavengers sort the waste before it reaches the sorting sites.

Conflicts of interest also exist between different parties. Care Service Company reported that competition from other private companies can cause frictions. For example, sometimes their drivers are intentionally delayed on the road when they are trying to finish their routes. According to Care Service Company, they have a sufficient self monitoring system to guarantee performance: there are 22 sectors, each with one supervisor. Moreover, two assistants for the head of company observe the performance. The vehicles are monitored through estimation of their routes and by the provision of lists for the vehicles' cargo. The Cleaning Department of LGU also monitors Care Service Company in order to check if they should be penalized. There are observers and supervisors from both Care Service Company and the LGU in Dawakhlia and Defra.

As for the service provided by the LGU, problems related to the service result from limited financial and human resources which led the LGU to tender management of the waste system to the private sector. Other obstacles include the limited flexibility and restrictions related to governmental regulations. The LGU complains that the private company requires much of their budget, so they do not view the private sector favorably. In El Mehalla City, the head of Beautification Department was willing to tackle the responsibility of waste collection. He developed a full plan including a cost estimate for the project. He also developed a clear system for waste collection himself, but these conflicted with the work implemented by Care Service Company. Another conflict occurred with the CDAs that collected waste without permission and without paying money to the LGU??. The LGU has subcontracted the collection of waste from small villages and hamlets for around 13,000 LE per year on average, and when the CDAs perform the collection they do not pay the LGU.

The CDAs providing the service have reported several problems related to their work. The beneficiaries are unwilling to pay for the service, and thus the CDAs are unable to generate income. There is a lack of a funding agency in Gharbia, and a shortage of laborers, as most workers are unwilling to enter this field due to stigma from the community. The main problem for the CDAs is the LGU, as they don't benefit from the CDAs. Additionally, the CDAs had received a large plot of land from the governorate intended for waste collection; however the governorate later repossessed this land for use in other projects. Generally, the monitoring and evaluation for the CDAs is slightly limited. The only indicator for performance is the willingness of people to pay when they receive good service. The second level of monitoring is implemented by the funding agency through monthly reports and site visits. However, that ends with the conclusion of the grant, and no monitoring is undertaken by the LGUs.

In light of the above, the beneficiaries were questioned about the need to enhance the service. Around 95.0% of the sample surveyed reported that the service should be enhanced. That was an alarming indicator of the perception of the current service. The majority of the sample is not satisfied and wants the service to be enhanced. For the planners, that will add a burden to developing an appropriate waste management system that will satisfy the majority of people.

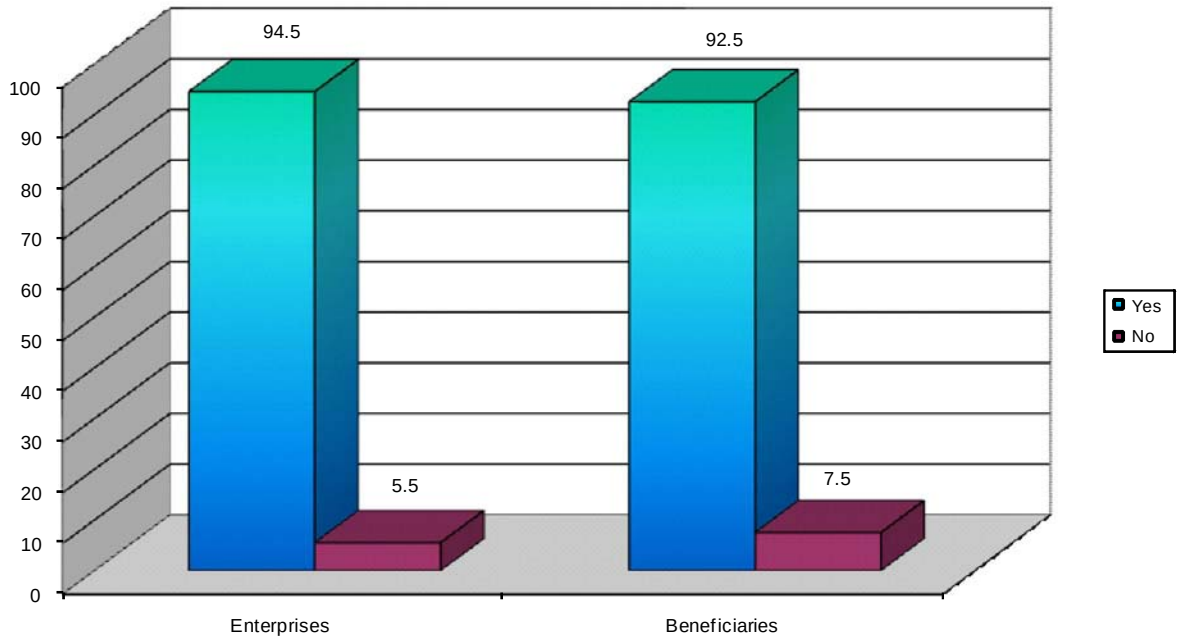


Figure 4.33 Need to Enhance the Waste Collection Service

The study team also asked the sample who should provide waste collection services in order for the services to be satisfactory. 73.6% of the enterprises were in favor of the private companies and the contractors. However, only 45.9% of the beneficiaries preferred for services to be through the private companies. The government was also an option for the beneficiaries, as 46.6% of the beneficiaries reported that waste collection services should be the responsibility of the government, while only 22.0% of the enterprises would prefer services to be provided by the government. Among both groups, the CDAs were not welcomed as an option.

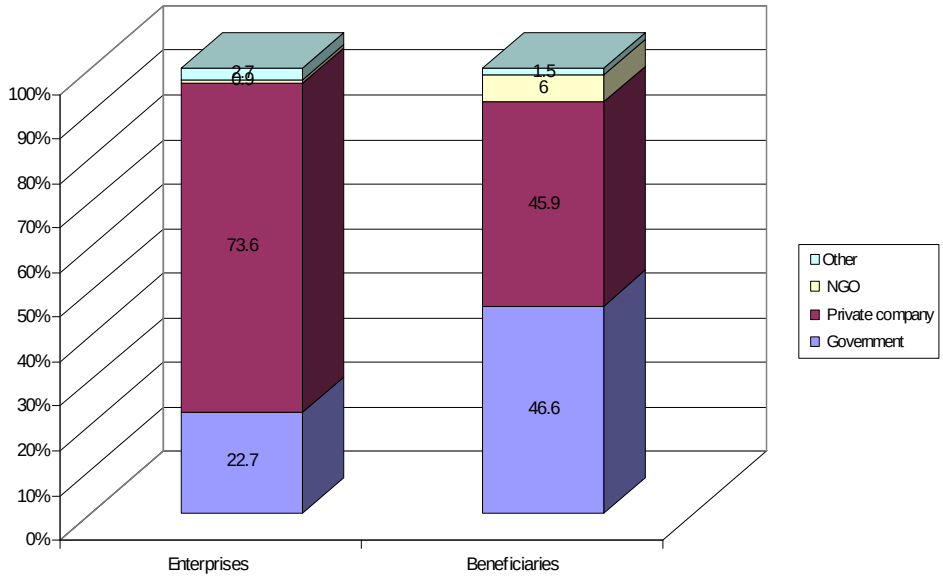


Figure 4.34 Service Provider Preferences in the New Improved System

4.3.4 Profile of the Informal Sector in Gharbia Governorate

Operation of the informal sector in Gharbia is highly interconnected, as illustrated in Figure 4.35. Informal linkages between different actors – both direct and indirect – exist, allowing for distribution of roles and responsibilities and for structured operations to take place. Nevertheless, conflicts over waste still take place from time to time. Wholesalers or large dealers of waste are at the head of the hierarchy of the informal sector, and directly influence the work of other key actors in the system. The activities of the informal sector in terms of segregation are very visible and detectable in urban settlements such as El Mehalla El Kobra and Tanta, where the waste composition allows for such segregation activities to take place. In rural areas in Gharbia Governorate, waste is predominantly agricultural in nature, and recyclables are not abundant. The involvement of the informal sector in street picking and scavenging in rural areas is smaller in magnitude than in urban settlements given the nature of waste composition. However, involvement of the informal sector in the rural areas was detected in some individual cases where subcontractors were involved in waste collection and transfer operations, as further detailed below.

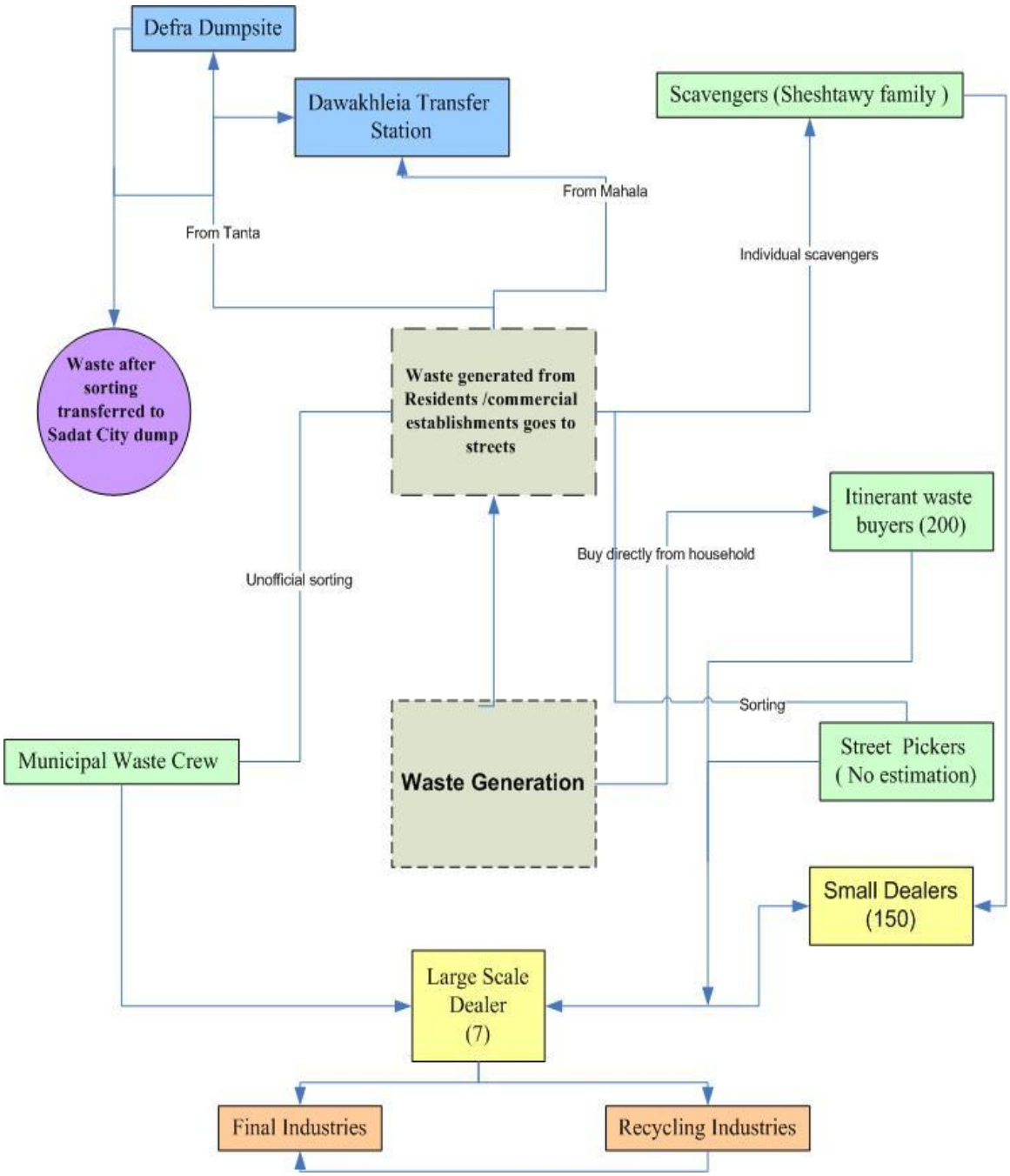


Figure 4.35 Waste from Generation to Recycling and the Role of Informal Sector Groups, Gharbia Governorate

4.3.4.1.1 Street Pickers

Street pickers sort waste either from communal waste bins or from waste improperly dumped in the streets, working with their own carts or with the dealer's carts that they have been allowed to use. Street pickers sort the waste and sell it to small or large dealers in the area. The number of street pickers is very difficult to estimate, as they are

numerous and they work on temporary basis. Sarreha sometimes also overlap with street pickers, because most Sarreha sort the waste they come across, in addition to their primary mode of work. They are usually harassed by the police.

4.3.4.1.2 Scavengers

Scavengers are waste segregators who sort waste in dumpsites, transfer stations or any other intermediate point. In Gharbia, scavengers can be categorized as either a **family type** or **individuals**.

4.3.4.1.2.1 Family Type

Scavenging families rely exclusively on segregation for their income. They also act as dealers in addition to scavenging. Two families of scavengers reside in Gharbia in El Mehalla El Kobra, namely the El Sheshtawy family and the El Sokkary family.

El Sheshtawy Family

The El Sheshtawy family is based at the site of a non-operational sorting site in El Dawakhlia, which is currently used as a waste transfer point. The family pays an annual fee of 2,500 LE to Care Service Company to permit them to sort the waste at this transfer point. In addition, they unofficially pay 1,000 LE per month to the government employees who are operating the transfer point to facilitate their work and prevent other scavengers form entering the site. The head of the family died recently and there were major conflicts which turned violent between two of his sons over the work. Care Service Company intervened and divided the weeks between the two sons; each would work for alternating one week periods at the transfer point. This gives an indication of the financial importance of this business to the family. El Sheshtawy family is now a middle class family; all their grandchildren are getting an education and look down on the business.

> "Except for me and my brother the rest of the family work as teachers, lawyers…etc. they are completely unwilling to work with us. I think we will not be able to continue working by ourselves as we have to be around most of time."
>
> Member of El Sheshtawy Family

The women of the family are not permitted to take part in the process at all. Scavenging at the site is undertaken by very few family members and by individual scavengers who are hired on demand and on a daily basis by the El Sheshtawy family. Every day the number of scavengers at the site ranges between 15 and 20. The El Sheshtawy family sells their recyclables directly to dealers. They own a warehouse to store the recyclables until they are sold. The recyclables at the Dawakhlia transfer point are viewed as an opportunity to raise the income of all groups involved. According to a member of the El Sheshtawy family, mistrust is a dominant characteristic in their interaction with other actors. They often get robbed or even experience acts of aggression by those who want

to steal their recyclables, such as setting fires at site[74]. The family refused to discuss issues related to their income and insist that they don't know how much they make.

> "We work with thieves, Care Service Company workers steal our recyclables, so I have to chase them with my motorcycle, and the scavengers also try to steal the recyclables to sell them at a higher price. The manager of the site does not protect us and his staff steals from us too. We have to protect our work through watching, monitoring around the clock. A month ago, we lost everything in a fire. The people in the site might have set the fire on purpose. We pay them 1,000 LE every month to protect us and our recyclables only."
>
> Member of the El Sheshtawy family, El Mehalla El Kobra, Gharbia

El-Sokkary Family

The family resides in Mensheyat El Salam – Meet El Leet in El Mehalla El Kobra. It is an area less than half a feddan in size. The family consists of four brothers who have been working in this field for the last ten years. They own ten carts and a number of warehouses. Each one of the four brothers is specialized in one waste item (cans, cardboard, PET, and/or other types of plastics). The four brothers work in waste collection through a network of Sarreha and/or street pickers. They collect waste from streets, illegal dumpsites or from communal bins. They live in red brick houses, in an area with no access to potable water, sewage system and use an illegal electricity connection from the main street. They don't feel safe in their area as drug use is widespread. They have a network between themselves and other dealers in a nearby area. The family is concerned about the safety of the place in terms of an emergency such as a fire, which would cause them to lose everything, and the only available fire station is 20 km away[75]. Similarly, the El Sokkary family was unwilling to discuss income related issues. According to a member of the El Sokkary family, all the family members are interested in working in the waste business, however, they still send their kids to get an education.

> "We support each other financially and socially. The whole family works in this field. However, we insist on educating our children."
>
> Member of El Sokkary Family

4.3.4.1.2.2 Individual Scavengers

Individual scavengers either work on a full time basis or on demand shifting between jobs, especially construction and agriculture. Groups of individual scavengers are usually neighbors from the same area. The number of full time scavengers is estimated at 150 in

[74] Interview with M. El-Sheshtawy, Wl-Mehala El-Kobra, Gharbeia Governorate.
[75] Meeting with Mohamed El Sokkry, El Mahala El Kobra - Gharbeyia Governorate.

Gharbia[76]. However, it is very difficult to estimate the number of temporary scavengers due to the nature of their work. Scavengers who work on a temporary basis undertake this kind of job to raise extra income and are sometimes among those who suffer disabilities or are too old to work. Their work is also directly related to the seasonality of the employment of the agriculture sector, which results in temporary seasonal unemployment for agricultural workers. Such workers are attracted to scavenging as an alternative temporary job. In addition to these reasons, street children are also engaged in segregation under this category.

They work not only for the income but they also find food, clothes and other valuables that they can sell to support themselves. Similarly, female scavengers – although few in number, compared to males – work for income in addition to the other items such as food for their families or for poultry, clothes or other items. In villages, scavengers usually work close to where they live and under the supervision of contractors and/or subcontractors. The contractor allows them to scavenge and retain the recyclables for free. This kind of arrangement allows the contractors and/or subcontractors to reduce the amount of waste collected and transferred, and hence the cost and it provides an opportunity for scavengers to increase their income by selling the retained recyclables.

Individual scavengers are paid based on their daily work. For example, at El Dawakhlia transfer point, scavengers sell the recyclables they sort to the El Sheshtawy family based on prices per weight and as determined by the El Sheshtawy family. However, they are not permitted to take them out of the transfer point. They usually work from 7 am to 2 pm. On average, scavengers make 40-50 LE per day of work. The relationship of the individual scavengers to the El Sheshtawy family ends at the end of the day and the family has no social obligation towards them. Scavengers are exposed to health and occupational hazards on site[77].

According to the site manager, health department inspectors sometimes pass by the site and request that scavengers and sorters use gloves and/or helmets. However, the scavengers and sorters think this is unnecessary. According to permanent scavengers, they resort to this kind of job because they have no other alternative work; it is their only opportunity for income.

> "I am 29 years old- uneducated. I have been working here for 16 years. I work daily in Dawakhlia, married with 3 kids. They all still are pre-schooling age. I earn 35-40 LE; I spend 15-20 LE per day. I give my mother my money to spend on the house. I have lots of debts. I came to work here instead of robbing people or begging. No one trained me."
>
> Scavenger in El-Dawakhlia

[76] Interview with M. El-Sheshtawy, Wl-Mehala El-Kobra, Gharbeia Governorate.
[76] Meeting with Mohamed El Sokkary, El Mehalla El Kobra - Gharbia Governorate [76] Based on Consultant field observations.
[77] A- Abd El Wahab, scavenger in El- Dawakhlia transfer point.

4.3.4.1.3 Itinerant Waste Buyers (Sarreha)

Sarreha buy recyclables directly from households and commercial establishments. They use donkey carts as their method of collection. The number of Sarreha working in El Mehalla El Kobra is estimated at 200 to 300 individuals. In addition to this, there are around 200 Sarreha working in Tanta. The Sarreha's operation is very closely linked to the large waste dealers. A standard agreement between both parties comprise a daily advance payment of about 200 LE which is paid by the large dealer (usually, wholesale dealers) to each itinerant waste buyer to enable him to buy recyclables from households and commercial establishments. At the end of the day, Sarreha sell their daily purchases to the large dealer. Advance payments are settled first, irrespective of the recyclables, and then recyclables are sold at market price to the large dealer. Sarreha are more abundant in the urban areas, where there are more recyclables in the municipal waste. Although they also exist in rural areas, their operations are not as extensive and their number is difficult to estimate. It is assumed that Sarreha are very mobile, moving between neighboring markazes[78]. It is worth mentioning that in Gharbia, there is no clear distinction between Sarreha and small dealers. There is an overlap between Sarreha and small dealers, who can also be working as Sarreha, buying from households. The only difference would be that these individuals would be collecting for themselves and they would not have a standard agreement with the large dealers, as explained above.

4.3.4.1.4 Small Dealers

There are around 300 to 400 small dealers in El Mehalla[79]. They own storehouses and buy their recyclables from Sarreha, street pickers and scavengers. The number of small dealers is an estimation; the study team believes that this figure may already include the estimated number of itinerant waste buyers (Sarreha), given the overlap in the activities of the groups.

Unlike Sarreha, small dealers usually have a direct deal of exclusivity with one of the large dealers. A standard agreement would involve a large dealer paying the small dealer 5,000 LE in return for the small dealer's agreement that he will sell his recyclables only to him (*Ardeiah).* The small dealer can keep the *Ardeiah* as long as the arrangement is on. The income of small dealers fluctuates depending on the quantity of recyclables they can collect, the demand in the market and the market price of recyclables. They deal in cardboard, plastics and soda cans. Iron scrap is also sometimes collected, but some dealers are reluctant to deal in it out of fear that it might be stolen. Income fluctuates with the market demand and prices of recyclables.

> "I am 50 years old. I completed my primary education. I am married with 7 children. Most of them are educated (preparatory or secondary) I spend 1000 LE per month. I have no stability in income...Sometimes

[78] A- El Showry, small dealer, Mahallet El Borg, El Mehalla El Kobra - Gharbia Governorate.
[79] Ibid.

> I earn 50 LE other times less or more."
>
> Small Dealer in El Mehalla El Kobra

The scrap market ("Khorda Market") in El Mehalla El Kobra is where recyclables, in including metal, are traded. The study team identified five more areas of "Khorda Market": in El Waraka, Abu Shahein, El Mansheiah El Gedidah, El Gomhoria and Soq El Haddadein. Small dealers as well as large dealers are present in these markets trading their goods. Some small dealers own small shops there. Used electrical appliances have a standalone market – the Friday Market. There was a resettlement plan for the "Khorda Market" in both El Mehalla and Tanta, but great resistance on part of the dealers delayed these plans and they were never implemented[80].

4.3.4.1.5 Large Dealers

Large dealers trade in large quantities and obtain their recyclables based on deals with small dealers, itinerant buyers and others. Large dealers have warehouses to store their recyclables; some are in "Khorda Market." They sell their recyclables outside of Gharbia to recycling factories or end user factories, especially in 6th of October, Suez, Port Said, and especially to steel and plastic factories. Some of them have a preliminary compressor that can be rented to others[81]. There are seven large dealers in Mehalet El Borg. Large dealers were unwilling to speak with the study team; however four of them were identified as follows:

1. Atef Tahoun - Plastic
2. Mahmoud El Wensh - Iron
3. Shalalby - Iron and Plastic
4. Yousef El Gariah - Iron and Metal

4.3.4.2.1 Care Service Crew

In total, the Care Service Company crew comprises 750 workers in Gharbia. Observation and research results show that that the majority are engaged in picking waste from municipal bins or from transfer trucks. They resort to this as an additional source of income. Sorting is done with the knowledge and consent of Care Service Company. Recyclables are sold to dealers and income is distributed among supervisors, crew and drivers. Each can make up to 20 LE per day. Additional income for workers is also obtained through unofficial agreements with residents or shop owners to bring their garbage bins to the street, clean and sweep the stairs or clean in front of shops in return for a monthly fee of 2 LE. Furthermore, the crew rents their uniforms for begging purposes and/or undertakes begging themselves, particularly near El Sayyed El Badawy Mosque in Tanta. Some workers engage in other jobs after working hours, such as haulers.

[81] Mohamed Saeed Abdel Khalek El Naquib, Worker in Care Service Company.

> "I am 35 years old. I can hardly read and write. My salary is 400 LE after deduction is only 385. It is enough for only bread. Thank God my wife works as a servant. We can hardly survive. I do some segregation in order to be able to get by. It is not lucrative but at least it is an extra amount of money. I also rent my uniform for people for 5 pounds a day to use it for begging."
>
> Worker in Care Service Company

4.3.4.2.2 Municipal Crew

The municipal crew is estimated to comprise around 30-40 employees in El Mehalla and Tanta, and 10-15 in workers in other markazes. The Municipal crew is engaged in sorting waste from collection bins and from the streets. In addition, they engage in begging and renting out their uniforms to raise extra income.

4.3.4.2.3 Subcontractors

Individual cases have been observed where contractors subcontract others to undertake waste collection and transfer in villages. This kind of agreement takes place for two reasons. One is the case where contractors are government officials and are hence not allowed to enter into a contractual agreement with the government. In this case, they resort to subcontracting in order to submit their bids in another person's name, an arrangement which is marred by manipulation of the laws and regulations. A second case occurs when a contractor has a number of areas to cover and resorts to subcontracting in order to fulfill his commitments.Workers who work under subcontractors work without any contracts. They are paid less than those employed in the private sector companies.

> "I am 64 years old – uneducated – married with 4 children they don't have an education as well. My total salary is 240 LE per month. We don't spend less than 400 LE per month. I rely upon charity from people and financial support from my sons who work in a factory. I am too old to look for any other job to support myself."
>
> Waste collector working for a subcontractor

4.3.4.3 Demographic Characteristics of the Informal Sector in Gharbia Governorate

4.3.4.3.1 Age

The age group varies across different categories of the informal sector. However, amongst the majority of scavengers, it was notable that they are either less than 16 or more than 40 years old. In addition, some above 60 have already retired and are earning an extra income. The older group consists of people who have no permanent jobs or pensioners. The dealers were between 40 and 60 years old, and the street children were between 9 and 15 years old. It is notable that a range of different age categories are represented in the informal sector.

4.3.4.3.2 Gender

The ratio of males to females working in the informal sector is largely skewed towards males. Based on their observations, the study team estimates that females represent 1/5 of the labor force in scavenging sites. Street pickers and Sarreha are also predominantly male. The general impression is that it is socially unacceptable for a female to pass by houses or to roam the streets. If they must work, they can scavenge on site. Female scavengers are present in El Dawakhlia transfer points in El Mehalla and in the Defra composting plant in Tanta, which is managed by Care Service Company. As for informal dealers, again the presence of female dealers was not observed. In addition, interviews with dealer families revealed that they usually don't allow females in the households to engage in their activities. Females who engage in this kind of work usually have no other work alternatives and are obliged to work for economic reasons, ignoring mainstream social norms.

> "I am 35 years old, divorced with 2 children. I am uneducated. My neighbors told me about this site; it is close to where I live. I came here to work with my neighbors. I go to the field but now we are out of season so we come to work here. It is very tiring so I work for one day and rest for another day. My child also likes to come with me. He thinks it is fun. If we find fruit or sweets in the garbage he feels very happy.
> I collect the stuff they tell me to collect and give it to the head of scavengers he weighs it and at the end of the day gives me whatever he wants. I don't know about the prices. He never informs me the prices of any item. I can hardly support my kids. Their father left me penniless. I know nothing about him."
>
> Female Scavenger

4.3.4.3.3 Educational Status

The vast majority of those involved in street picking and scavenging are illiterate or dropped out of schools after a very basic education. Only supervisors can read and write; some have secondary education. Families of scavengers and dealers are now concerned with educating their children.

4.3.4.3.4 Child Labor

There are two patterns of child labor in this sector in Gharbia. First, there is a presence of street children who work as scavengers, especially in El Dawakhlia. They undertake scavenging to raise an income and at the same time they support themselves with the food, clothing and other useful items they find in the waste. It is very difficult to estimate their number.

> "We are a group of children, we sleep by the mosque. We have been working here – in Dawakhlia - for three years. We are all illiterate. We find clothes, food and useful objects in the garbage. Our income is about 15 LE per day. This is good. People near the mosque send us food and clothes. We don't dream of anything. We live day by a day. When we do drugs, we use glue, most of us favor it and we do it after we finish work."
>
> Fathy, Street Child

Another pattern of children are those who actually go to school, but work temporarily in the summer to assist their parents in waste collection and street picking to raise extra income.

> "I work during summer as a waste collector to support myself and to be able to pay study fees. My foot was injured with a broken glass. My colleagues took me to the hospital. Thank God they rescued me."
>
> 15 year old waste collector working with a subcontractor in El Mehalla El Kobra

4.3.4.4 Social Organizations Supporting the Informal Sector

Research conducted with all stakeholders confirms that there are no social organizations that provide support to the informal sector in Gharbia.

4.3.4.5 Description of the Working Environment (Health and Security Risks)

The working environment is very unhealthy. Scavengers and street pickers are prone to injury. Health care waste is not segregated from the main municipal waste stream, posing a great threat of serious infection. Sharp objects, wood, metals and blades can easily cause injuries. Moreover, a foul smell is noticed as a result of accumulations of waste and sometimes agricultural fertilizers are present in the waste stream. Workers in the informal sector do not wear any protective clothes, gloves or use any tools on sites or during street picking. They lack awareness of the consequences of the risks they are facing, and refuse to use protective clothing because they are not used to them and hence they believe that protective clothing could delay their work and worsen their performance.

> "Representatives of EEAA passed by the site, they instructed that workers should put on gloves and caps. No one of course will respond to these instructions."
>
> Manger of Dawakhlia landfill, El Mehalla El Kobra

They are also prone to sun strokes as they have to work under the heat of the sun for more than eight hours a day. Regarding hygienic issues, there are usually no bathroom facilities in the areas where scavengers work and no source of running water.

4.4 Luxor Governorate

4.4.1 Socioeconomic Characteristics of Luxor Governorate

4.4.1.1 Description of Luxor Governorate

The Governorate of Luxor is located in Upper Egypt, overlooking the Nile River, and is considered one of the most prominent touristic governorates in Egypt. Following Presidential Decree 387 for the year 2009, Luxor was upgraded from a city to a governorate with a new administrative division. The administrative division of the governorate includes seven cities and six markazes. Demographic patterns are diverse and population is distributed between urban, semi-urban and rural areas.

Luxor is characterized by its geographical location on the River Nile and by the presence of a desert hinterland that extends behind the whole governorate. Located in the south, between the latitudes 25-26 northward and the longitudes 32-22 eastward, it is 670 km south of Cairo, 220 km north of the City of Aswan, and 280 km southwest of Hurgada. Luxor City is divided into two main sections, the East Bank and the West Bank. The total area of Luxor is 2,424.82 km^2 including the desert hinterland, out of which 241.42 km^2 are inhabited. Areas of cultivated land are estimated at 47,212 feddans, while the area of arable reclaimable lands is estimated at 37,000 feddans[82].

Box 4.11 Administrative Structure of Luxor Governorate

The governorate comprises seven cities and six markazes (marakez):

1- Luxor City (Governorate capital city and markaz with four affiliate shiaykhat)
2- Al-Bayyadeyah Markaz and City
3- Al Qurnah Markaz and City
4- Al Zayneyah Markaz and City
5- Al Tawd Markaz and City
6- Armant Markaz and City
7- Isna Markaz and City

4.4.1.2 Economic Activities

Luxor governorate is predominantly touristic. Tourism is the main economic activity upon which the governorate depends. The governorate is distinguished by encompassing a large number of tourist destinations and attractions of international standing. The touristic nature of the governorate has directly impacted the type of waste generated and has led to a waste composition rich in recyclables, especially plastics, including PET and empty soda cans.

In the East Bank, there are a number of important monuments:

- Luxor Temple
- Karnack Temples

[82] Egypt Description, 2009.

- Luxor Museum of Ancient Egyptian Art
- Light and Sound Show at Karnack Temples
- Sidi Abou El-Haggag Mosque

In addition to this, the West Bank similarly hosts a number of equally important monuments:

- Valley of the Kings
- El Deir Al Bahari (Mortuary Temple of Queen Hatshepsut)
- The two statues of King Amenhotop III
- The Twin Memnon Statues
- Valley of the Queens
- Queen Nefertari tomb
- The Ramsseum Temple
- Medinat Habu Temple
- Al-Ashraf tombs
- Deir El-Medina tombs

In addition to tourism, agricultural activities take place in the governorate and are mainly concentrated in the cultivation of sugarcane (22.7 thousand feddans), local beans (0.2 thousand feddans), wheat (15.82 thousand feddans), and maize (11.42 thousand feddans). Some industrial activities in the governorate are represented by 15 registered industrial facilities employing a total number of 244 workers. In addition, 2,872 handi-craft activities employ 3,873 people. Industrial activities are mainly in the field petrochemicals and textiles.

4.4.1.3 Population

The total number of the population in Luxor Governorate has been estimated at 1,031,014 in 2010[83]. The rate of natural increase has been estimated at 1.74%.

Table 4.21 Distribution of Population by Markaz

Location	Population Census		
	Males	Females	Total
Luxor City	97,148	90,002	187,151
Al-Bayyadeyah Center	30,705	29,689	60,391
Al-Qurnah Center	59,755	57,417	117,171
Al Zayneyah Center	30,895	28,652	59,514
Al-Tawd Center	47,162	46,423	93,586
Isna Center	185,425	177,583	363,007
Armant	75,683	74,512	150,194
Total	**526,737**	**504,278**	**1,031,014**

[83] CAPMAS, 2010.

4.4.1.4 Education

The illiteracy rate in Luxor is estimated at 27.2% for those over 10 years of age.

Table 4.22 Pre-University Education in Luxor[84]

Number of Schools	Number of Schools in Urban Areas	Number of Schools in Rural Areas	Number of Students	Percentage of Female
360	144	216	101.41	50.12%

4.4.1.5 Employment

Employment is mainly concentrated in the field of tourism. The unemployment rate is 17.5%[85].

4.4.2 Municipal Solid Waste Management System

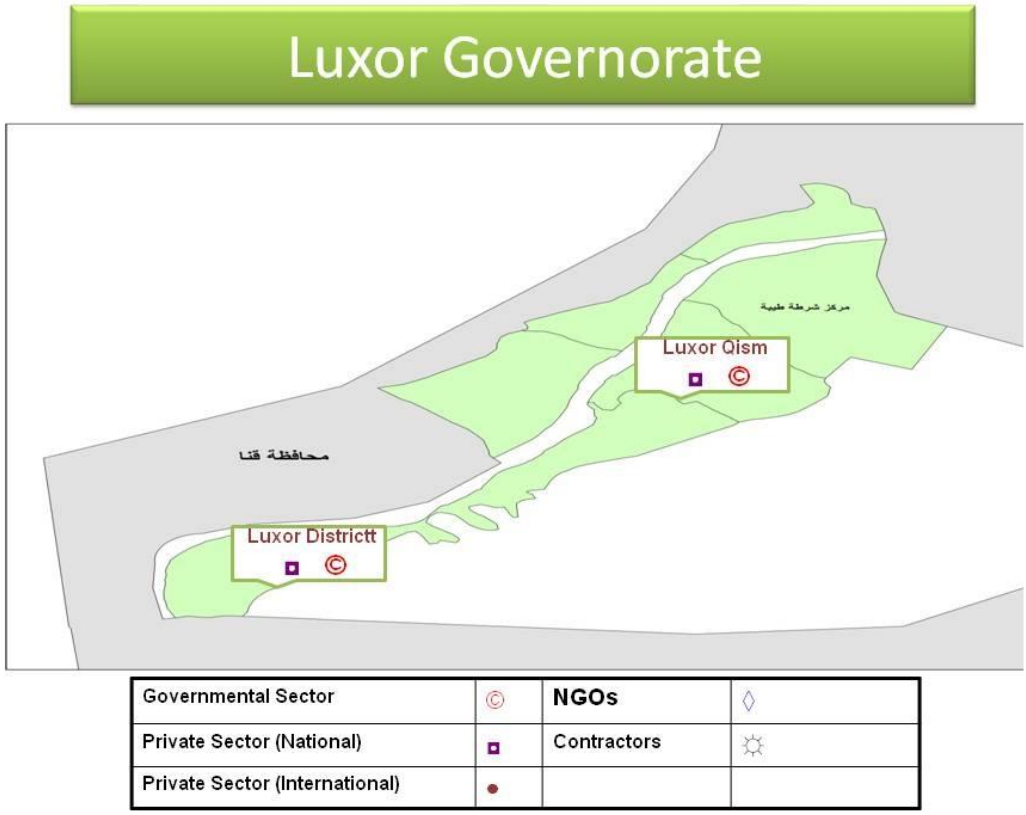
4.4.2.1 Description of the Current MSWM System in Luxor Governorate

The rate of waste generation in Luxor was estimated at 250 tons/day in 2009[86]. The main objectives of this section is to shed light on the dynamics of the current solid waste management system in Luxor Governorate including different systems and actors in place, their current performance level and the main obstacles they face.

4.4.2.2 Mapping of Different Actors in the MSWM System in Luxor

The common set up of solid waste management in Egypt holds true for Luxor Governorate as well. This involves the local government, the private sector and the informal sector. However, a distinctive feature in Luxor is the fact that the private sector is greatly engaged in the waste collection from hotels given the touristic nature of Luxor, as reflected in Figures 4.36 and 4.37 below. CDAs are also not present in the waste management system in Luxor City. CDAs are operating in other markazes such as Al-Tawd and Isna.

[84] Description of Egypt, 2009.
[85] CAPMAS, 2006.
[86] State of the Environment Report, 2009, EEAA



Governmental Sector	©	NGOs	◊
Private Sector (National)	▫	Contractors	☼
Private Sector (International)	●		

Figure 4.36 Luxor Map Indicating the Waste Collection Services in Luxor Governorate

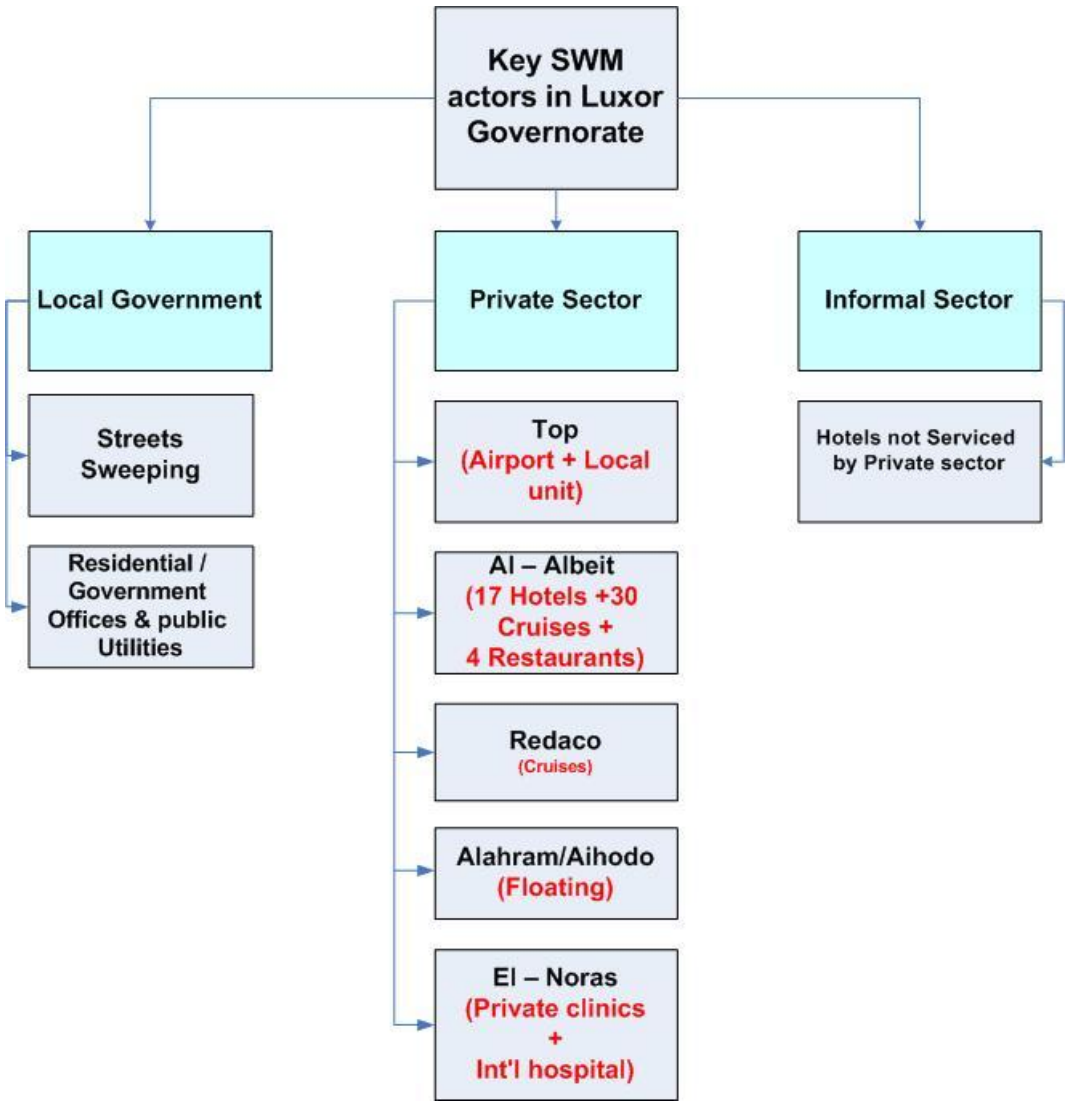


Figure 4.37 Key Actors in SWM in Luxor Governorate

4.4.2.2.1 Local Government

A) Luxor City

The local government represented by the Local Government Unit (LGU) in Luxor City is responsible for street sweeping, collecting residential and commercial waste from municipal containers/bins and for disposal of collected waste. In addition to this, the LGU is responsible for collecting waste from public utilities including governmental hospitals. The LGU also collects waste from private clinics. Work is performed through three daily working shifts carried out within the governorate's administrative sectors (South, Central, North, East, and Airport)[87].

[87] Mr. Essam Mabrouk, Personnel Division, Cleaning Department, Luxor City Council (Ex Owner of Amoun Co. for Waste Collection).

Box 4.12 Crew and Equipment of the SW Collection Services in Luxor City

Local City Council

- **Work is distributed into three shifts/day**
- **Employment structure includes:**
  - General Manager
  - Deputy General Manager
  - 5 managers
  - 5 head of sectors
  - 935 workers: 900 male/35 female
  - 120 supervisors
  - 75 drivers
- **Equipment**
  - 25 trucks: 5 per sector
  - 25 toktok (big tricycle carts)
  - 50 tricycle: 10 per sector

Originally, the service was provided by Amoun, a private company, from 2002 to 2009. Workers were paid 150 LE per month. The unavailability of labor during the sugarcane harvest season caused many problems related to service quality at the time. This led to the cancellation of the contract with the private company and the assignment of the service to the Cleansing Department of the local city council[88].

Currently, a worker is paid a monthly salary of 500 LE, and a plan has been set up to increase the number of labors to 1,800 workers.

A group of 35 girls are part of the workforce that sweeps the streets. The city has taken into account the importance of locating them far from their homes/neighborhoods to prevent them from being embarrassed or exposed. Currently committees have been formed to select workers after the announcement of the governorate's requirement to fill these vacant jobs. The governorate's future plan is to extend the services of the city council to cover the hotels on land, a service currently covered by the private sector.

[88] Major Gen. Ahmed Abdel-Aziz, Head of Luxor City.

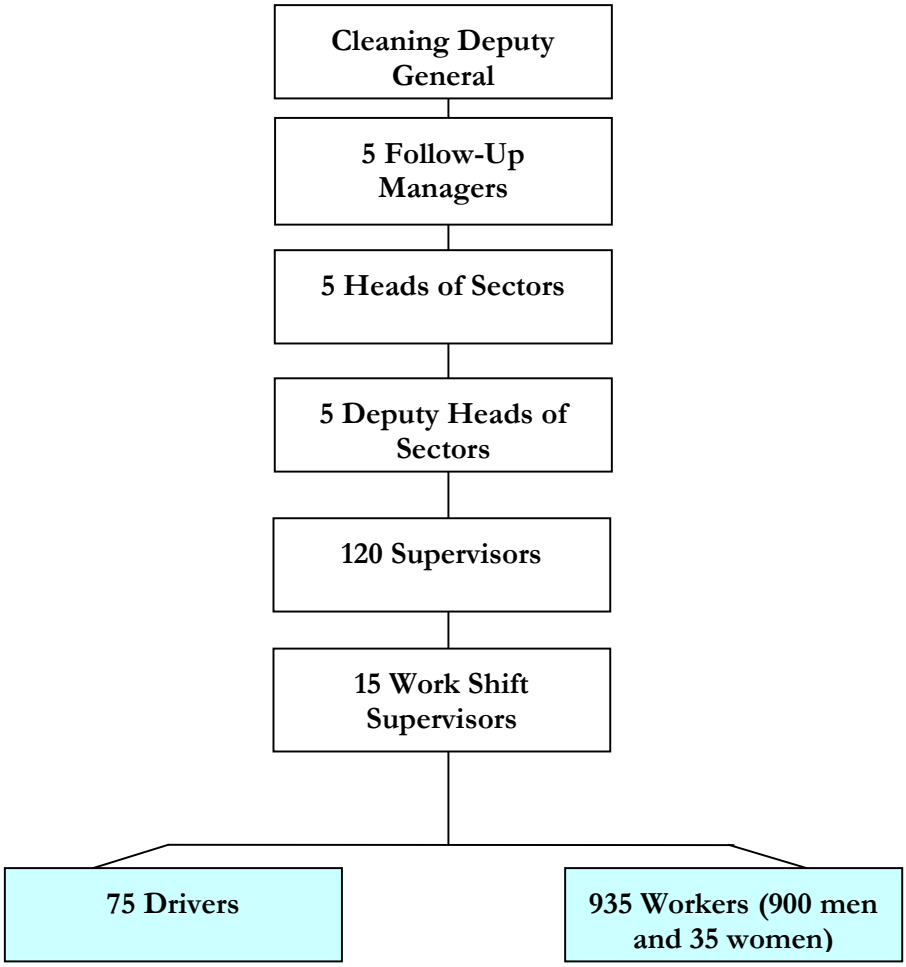


Figure 4.38 Organizational Chart of the Cleansing Department of Luxor City[89]

Al Haubil Dumpsite

The local government dumps at the Al Haubil dumpsite, which is the main dumpsite in Luxor Markaz and City. The dumpsite is located in the desert belt of the city. Residential and commercial waste collected by the municipal city workers is dumped there. Two areas at the dumpsite are dedicated to dumping the waste collected by the two private companies (Aal Al-Bayt and Al-Hoda).

[89] Mr. Essam Mabrouk, Personnel Division, Cleaning Department, Luxor City Council (Ex Owner of Amoun Co. for Waste Collection).

Figure 4.39 Waste disposal at Al-Haubil Dumpsite

Figure 4.40 Scavenging works at Al-Haubil Dumpsite

West Side Dumpsite

This dumpsite is located in the desert, 17 km away from Al Qurnah City. Residential and commercial waste collected by the municipal city workers is dumped there. An area is dedicated to dumping the waste from Redacom, a private company.

Figure 4.41 West Side Dumpsite

Figure 4.42 A child scavenging at the West Side Dumpsite

B) Al-Tawd

Affiliated to Al-Tawd City are five local units: Udaysat Qibli, Udaysat Bahari, Tawd Gharb (West), Manshyet Al-Nuba, Al-Marayes. Al-Marayes local unit of Armant Markaz, Qena Governorate, has been affiliated with Luxor City by virtue of Presidential Decree No. 22 of 2006. Al-Tawd Sharq (East) City consists of 13 hamlets.

The City Council serves all residential areas by collecting wastes from containers and trailers in streets in addition to cleaning the streets. The Council also serves all the public utilities including schools and the youth center[90].

[90] Mr. Serageddin Abdel-Aziz, Chief of Al-Tawd City Markaz, Mr. Ahmed Amin , Deputy Chairman of Al-Tawd City Council.

There are 20 containers installed near schools, government departments, and the youth center, while 150 trailers are distributed over populated areas. The existing equipment includes one tractor in addition to two dump trucks. Al-Tawd Sharq City consists of 13 hamlets, and waste placed in front of houses is collected on a weekly basis. Waste is collected from each hamlet on a specific day. The residents place the garbage in front of their houses on the day specified for their hamlet when the tractor passes by to lift up the garbage[91].

Al-Tawd Dumpsite

Waste is transported to a dumpsite east of Deir El-Qeddiseen to be burned without sorting.

Figure 4.43 Burning waste at Al-Tawd Dumpsite

C) Markaz and City of Armant and Isna

The cities of Armant and Isna are newly affiliated with Luxor Governorate. Service is provided in this city through the City Council. The number of hired labors is 200. Few garbage bins have been distributed among the city streets, which are entirely inadequate to serve the city. 23 vehicles were distributed among the affiliated villages, but were still not operational during the preparation of the study.

4.4.2.2.2 Private Sector

There are five private sector companies operating in Luxor. The companies are contracted directly by the hotels they serve in return for a predetermined contract value to be paid monthly per hotel or floating hotel. Each company pays 25% of its contract value to the LGU. Unlike the vast majority of private companies operating in the waste management field, private companies in Luxor do not cover residential areas in the

[91] Ibid.

governorate. It is worth noting that there is a covenant of honor among all workers in private companies involved in collecting and sorting solid waste in the Governorate of Luxor. A meeting was held at Sheikh El-Tayyeb's, who has concluded a word of honor agreement by virtue of which no cleaning/waste management company shall transgress over the quotas of ground or floating hotels allocated to other companies and all companies shall respect their turn in signing contracts with the new floating hotels. The sheikh has also taken checks worth 50,000 LE at the expense of the owners of these companies to be payable as a penalty in case of any infringement on the above terms and conditions.

Box 4.13 Private Companies and Scope of Service in Luxor City

- **Aal Al-Bayt** provides service to 17 hotels on land in addition to 30 floating hotels and four restaurants.
- **Redaco** provides service to 90 floating hotels.
- **Al-Ahram** provides service to 120 floating hotels.
- **Al-Nawras** provides service to the international hospital and the private clinics.
- **Top** provides service to the airport, the Governorate Council, and the Information Office.

4.4.2.2.2.1 Aal Al-Bayt: Case Study for the Operations of the Private Sector Companies in Luxor

Description of the Company

Company Name: Aal-Al-Bayt Office for Cleaning Services in Luxor
Chairman: Mr. Ahmed Mustafa
Company's History in Solid Waste Management: The company has been officially working with the governorate for five years now, and has worked earlier as a subcontractor with Al-Ahram Company for seven years.

- Contractual Agreements with the Governorate

- The company entered into a formal contractual agreement with the governorate in return for the payment of 25% of the value of the amount contracted by the company with floating hotels, namely LE 500 pounds for each five-star floating hotel and LE 300 for three-star hotels.
- There is an informal arrangement which permits the city council workers to take the recyclables they sort from residential waste bins on the street back to the warehouses owned by the company (warehouses will be discussed in a different section below).

- Contractual Agreements with Floating Hotels

The company enters into formal contractual agreements with floating hotels, including details of the service to be provided. The contract terms and conditions also include the collection of fees set forth in the contract on a monthly basis in return for the service. The value of those fees is 2,000 LE per month. The company is responsible for

providing the service to the floating hotel. The hotel however is responsible for purchasing the bags designated for that purpose. 25% of the fees is provided to the Governorate's Cleaning Fund as explained above.

- Contractual Agreements with Hotels and Restaurants on Land

The company enters into a formal contractual agreement with hotel management, including the details of the service to be provided. According to the contract, the hotel shall purchase bags designated for waste collection. Contract value is not fixed and ranges from LE 100 to LE 1000 per month depending on the hotel being served (unclassified hotels up to five-star hotels). Other factors include the number of times the service is provided per day, the quantity of waste collected and the type of waste. Some hotels require the sorting of specific items first to be disposed of by the hotel management itself.

Sorting of Waste

This will be discussed below under the informal sector and it is not part of any formal arrangement

Description of the System

Contracts with hotels and floating hotels stipulate that the company removes waste from spots designated for this purpose. A speed boat is used to collect waste from floating hotels. Contracted hotels and restaurants buy bags designated for waste collection. Hotel workers collect these bags, screen them for security reasons and place them in the areas/spots as agreed. Aal Al-Bayt Company workers load these bags on the company vehicles. Waste is transferred and disposed of in the official dumpsite of Al-Haubil area, in an area dedicated especially for company.

Note: Some hotels request in the contract to set aside emptied mineral water bottles.

Labor

Casual workers are hired on a daily basis from groups gathered at Abu El Goud coffee shop. The number of workers usually ranges between 10 workers in the summer to 15 workers in the winter. On board the speed boat, there are two sailors, two supervisors, two mechanics, and seven workers to sort and screen garbage. Daily pay for the workers ranges between 13-15 LE for a maximum of a 6 hour working shift. This range is dependent on the workplace. Workers who collect from floating hotels are paid LE 15 per day, while workers who collect from hotels and restaurants are paid LE 13 per day.

There is, generally, positive feedback regarding the service provided by the private company. The only negative aspect is the lack of any company social or insurance obligations toward the labor force. Also the non-uniformity of work as the worker in charge one day is not necessarily the same worker in charge the next day.

Transfer and Disposal

Solid waste collected from hotels and restaurants on land are transported by trucks supplied with workers who load and unload the waste at the dumpsite located at Al-Haubil area. With respect to floating hotels, waste is transported by barge workers who collect, load, and unload this waste on the West Bank. They then load them again onto to vehicles to take to the same dumpsite.

The company owner asserts that waste is disposed of and covered at the dumpsite on a weekly basis after it is sorted (sorting will be discussed below). Field observations over the period of the study and during the repeated visits to the dumpsite, however, indicates that waste is left for self-ignition or is deliberately burnt.

The governorate has been contemplating expanding the service to the hotels and the floating hotels and canceling the contracts with the private companies. In reaction to this, one of the private sector chairman commented

> "If these private companies are milking a cow, then they offer the sorters/pickers a glass of milk and changing this status will deprive this category of informal workers from having this glass of milk."
>
> Company owner

4.4.2.2.3 CDAs

CDAs are operational outside of Luxor City.

Case Studies for the Operation of CDAs outside Luxor

Al-Tawd[92]: Description of the CDA

The Community Development Association in Al-Tawd was legally registered under No. 105 in 1967 in Qena Governorate. The organization's activities cover Al-Tawd El-Balad, Naga Al-Gossour, Karam Al-Hega, and Naga Al-Taweel.

The main components of the CDA operations are as follows:

1- **The first component:** Organizing five public health seminars on gastrointestinal problems.
2- **The second component:** Cleaning the village using a tractor and trailer to transfer waste outside the village to be disposed of in the desert hinterland of the countryside. Driver's salary: LE 200, Worker's salary: LE 150.
3- **The third component:** The establishment of 100 sanitary latrines for 100 of the most deprived families.

[92] Chairman – Mohamed Saleh Rashwan,

4- **The fourth component:** Spraying the streets of the village using four motors to fight flies and mosquitoes.

Description of the System of Work related to MSW

A sum of 50 piasters (LE 0.50) was collected from residents as a contribution to project costs. There were 1000 contributors. The project was funded by the Social Fund for Development within the context of a grant worth 200,000 LE to buy a tractor and trailer to collect waste. A contract was signed with Al-Tawd City Council to allocate a plot of land at the desert hinterland for dumping the waste, and it was approved. The staff members working with the CDA are young people from villages and their education level ranges between primary, preparatory schooling, and intermediate level diploma. The only skills required by the CDA for a driver is to have a driving license. The CDA has mobilized the community through organizing a rally at the village to launch the project. Residents have donated a number of bags for waste collection for the project. There is a follow-up mechanism whereby the manager in charge of field inspection is responsible for writing a monthly report to be presented to the Board of Directors. The CDA stopped working when funding stopped for the CDA and the City Council took responsibility for solid waste management and began working. The organization started using the equipment for other rural purposes.

Markaz and City of Armant and Isna

There are three CDAs working in the field of waste collection in the following villages:

- El Deir
- Al-Mualla
- Al-Hallah

The organizational structure of the projects of the three CDAs generally involve a project manager, workers and a driver

Al-Mualla CDA: Has no contractual agreement with the LGU. The Chairman of Al-Mualla Association is following up on the project himself on a daily basis through field visits to the village.

Al-Hallah CDA: Approval was obtained from the City Council to allocate a space for the project's equipment within the local government unit. A space was also allocated at the dumpsite for the CDA to dump its waste. No sorting or recycling activities take place within the CDA. The CDA trains their staff members on aspects related to handling waste and means of dealing with the community.

Al-Hallah CDA septic tank vacuuming component was rated as very successful. The garbage collection component was activated in the village after the spread of the use of gas stoves and accordingly, a larger amount of municipal waste was extracted from houses. Previously, this waste was burnt in domestic rural furnaces. As a subsequent success of the project, the CDA will implement three initiatives including the greening of areas, the cleaning of public places and the transformation of them into parks. These

initiatives are funded by Barclays Bank in Luxor.

Armant

There are no CDAs working in the field of solid waste collection.

4.4.2.3 Assessment of the Current MSWM System in Luxor

4.4.2.3.1 Level of Street Cleanliness

Table 4.23 reflects the responses about the level of cleanliness in the streets according to beneficiaries and enterprises.

Table 4.23 Perception of Street Conditions in the Neighborhood

Response	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Very clean	13	12.4	**7**	**14.0**
Fairly clean	57	54.3	**29**	**58.0**
Not clean	20	19.0	**12**	**24.0**
Absolutely unclean	15	14.3	**2**	**4.0**
Total	105	100.0	**50**	**100.0**

54.3% of the beneficiaries sample found that the streets should be classified in terms of cleanliness as "clean." While 19% described the streets as "unclean," 12.4% described the streets as "very clean" and 14.3% found that the streets are "absolutely unclean." For enterprises, 58% of the survey sample stated that streets should be classified in terms of cleanliness as "clean." While 24% found that the streets should be classified as "unclean." About 14% thought that the streets are "very clean," while as few as 2% saw that the streets are "absolutely unclean."

It is noteworthy that the concept of "cleanliness" from community views is quite loose, subjective and its extent cannot be objectively evaluated. It is a concept that varies not only from one environment to another, but even from one person to another according to the individual's educational and cultural background. Furthermore, the evaluation of cleanliness may extend to the level of awareness of the evaluator. Thus, evaluation, in this case, should be considered to be a "generalized" attitude rather than considered to be an accurate measurement.

4.4.2.3.2 Satisfaction with the Service

The aforementioned fact regarding the difficulty of setting a standardized scale for the concept of cleanliness also applies to the level of population satisfaction with the garbage collection service from the areas where their residences are located. The respective responses on their level of satisfaction reflected this fact. Only 9.5% of the interviewed beneficiaries were satisfied, while 32.4% were satisfied to a certain extent,

together totaling 41.9%. The percentage of those who were not satisfied is less than 58.1%. For the surveyed enterprises, about 26% of those owners were satisfied, while 26% were satisfied to a certain extent, together totaling 52%. The percentage who was not satisfied with the service was 46%, and about 2% did not report their attitude as shown on Table 4.24 below.

Table 4.24 Satisfaction Level with the Current SWM Services among the Surveyed Sample of Luxor Governorate

Response	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Satisfied	10	9.5	13	26.0
Satisfied to a certain extent	34	32.4	13	26.0
Dissatisfied	61	58.1	23	46.0
Missing			1	2.0
Total	105	100.0	50	100.0

- Reasons for Being Satisfied with the Garbage Collection Service

Although the study revealed that the percentages of interviewed population who are satisfied with the service are quite low, yet it was very important to identify the reasons for their satisfaction. The most frequent reason for beneficiaries' satisfaction was the regularity of the service (28.3%). This was also the highest frequency for the enterprises (34.8%). Other reasons that were mentioned with high frequency included that streets are getting cleaner and that the service quality is 'good'.

- Reasons for Being Dissatisfied with the Garbage Collection Service

The results of the survey showed a number for reasons for dissatisfaction with the level of service among beneficiaries and enterprises. The reasons for dissatisfaction were logical yet these results were contrary to the reasons for satisfaction by others. The main reason for dissatisfaction among beneficiaries (30.4%) is the absence of anyone to collect garbage. This was followed by very close percentages given to the irregularity of the collection service and the unclean image of the streets. The same reasons for dissatisfaction were reported by enterprises which referred to the inefficiency and irregularity of service and attributed their dissatisfaction to the final result, which is the uncleanliness of the streets.

More details about the SWM service fees by income groups, service providers and type of surveyed areas in Luxor Governorate are presented in Annex C-3.

4.4.4 Profile of the Informal Sector in Luxor Governorate

The informal sector in Luxor is not homogenous in nature and it includes several categories and modes of operations. There are linkages between the different categories of the informal sector in Luxor through which recyclables are collected and traded. In

general, there is no conflict of interest, but a kind of covert cooperation. In case a specific type of recyclable is ordered, it is collected from all sources and the profits are shared among all parties concerned.

Other Smaller Private Warehouses	Redacom Warehouse	Aal Al-Bayt Warehouse
Official dumpsites Scavenger children	Official dumpsites Scavenger children & company's workers	Official dumpsites Scavenger children+ company's workers
Street containers & illegally dumped waste Scavenger children	Street containers & illegally dumped waste Scavenger children	Street containers + illegally dumped waste Scavenger children
Hotels not covered by private sector - Workers on 2 private trucks	LGU workers (residential waste)	LGU workers (residential waste)
Governorate Remote Areas - Scavengers from outside Luxor		

Figure 4.44 Dynamics of the Informal Sector in Luxor

4.4.4.1 Warehouse Owners

There are two types of warehouse owners in Luxor:

3- Type one includes three large warehouses owned by company owners (Aal Al-Bayt, Redaco, Al-Hoda companies). These are the largest warehouses in Luxor, and they are also owned by the private operator responsible for hotel waste collection. They store recyclables from their collected waste until they can be sold to large dealers or factories. They have an estimated number of five workers each. Warehouses depend on their workers, but primarily on children, to scavenge and sort the waste they collect from dumpsites. They pay scavengers in accordance to the type and quantities of recyclables collected. According to the warehouse owners, the collected waste is already sorted initially by staff on board the floating hotels.

4- Type two includes 15 small warehouses owned by either scavenging families (which will be discussed below) or by owners who are mostly not from Luxor. They are originally residents of adjacent governorates like Sohag, Assiut and Quos.

4.4.4.2 Youth Individual Scavengers

Individual scavengers sort in dumpsites, whether in areas dedicated to private companies or outside of them. They are youths and they sell their daily collectables of recyclables to warehouse owners, whether to the three warehouses owned by the owners of private

companies or owners of smaller warehouses owned by outsiders coming from other governorates. The deals are determined according to the highest price set on a daily basis. There are no contracts and or agreements with any parties. They sell to the highest bidder. They work for themselves as individuals and have no obligations towards others. They refer to themselves as the group "Daa'een alla zeraahom," which translates into the group "wearing tattoos on their arms." The meaning of the statement is not literal, but refers to their status as being "independent and that nobody can control them."

"Daa'een alla zeraahom"

"Wearing tattoos on their arms."

Individual Scavenger

4.4.4.3 Individual Scavengers

This type of scavenger sorts waste only in areas which is dedicated to the private sector companies at the dumpsite. They are only allowed by the company owner to sort the waste after other scavengers finish their own sorting. Collected recyclables have to be sold to the private company owner, and they are not allowed to walk out with any recyclables. The age group working as this type of scavengers is higher. They are usually men responsible for families. They work without any official contract or verbal agreement and the company owners have no social obligations towards them.

There are two ways by which they sell their collected recyclables to the company:

1- Deals are made either daily or weekly meaning that buying and selling are practiced at the daily market prices for the items collected.

2- Deals are made daily or weekly, but under the credit system. Sorted items are supplied to the trader provided that he pays on a later date after he delivers his aggregated recyclables to the larger dealer. In this case, the selling price is higher than the one the scavenger will normally get if he settles for the daily market price. It was notable that the scavengers prefer the first type of agreement as immediate deals are more guaranteed even if the prices are lower.

Box 4.14 Profile of an Individual Scavenger

Name: Ali Nubi Mohamed Allam
Job: Waste scavenger for Aal Al-Bayt Company dumpsite, self-employed

Employment History:

- Worked in Saudi Arabia for two years. Came back to Egypt and bought two trucks under installment payments conditions. Disability of his old father prevented him from repaying due installments on time.
- He lost the two vehicles. His family's circumstances deteriorated completely so they left their residence and lived in a place on the road to Al-Haubil (1) dumpsite near

Al-Zanaqettah (2) under harsh living conditions. The house is composed of two rooms and a yard.

- He used stone bricks in construction. No furniture except for two wooden sofas, some plastic rugs and a TV set.
- In 1997, he began to work (without wages) in waste collection and sorting at the dumpsite of Aal Al-Bayt Company. They allowed him to sort out what was left after other scavengers finish their work.

Current Employment:

- In the summer, he starts work at 3:30 am after dawn prayers directly.
- In winter, he starts work at 7:00 am.
- During good times, income ranges between LE 30-40 per day. During hard times, it is only LE 10.

He collects his recyclables using a small bag/small gonya which is large enough to contain up to four kilograms of sorted wastes. He then carries his sorted items on his back to an open space outside his house, and then starts re-sorting with the assistance of his wife. The re-sorted waste is loaded again. He then goes out every week to Al-Zanaqettah to sell them to the owner of the private company.

Family:

He is the main and sole breadwinner for a family of eight persons.

- The eldest son is unemployed and suffers visual disability. He is also married and has a two year old daughter.
- His second son is 18 years old and works at a bakery at a daily wage of LE 10, which covers his own expenses and shares some limited expenses with the family in case of necessity.
- His third son is 16 years old and assists the father sometimes, but runs away from work most of the time to practice training for sports at the youth center.
- His fourth son is still in grade 2 at the primary school.

All the children are dissatisfied with their father's job although he is the main source of family income.

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(1) Al-Haubil is an area of the main garbage dumpsite located east of Luxor and is the section designated for Aal Al-Bayt company.
(2) Al-Zanaqettah is an area in Luxor.

4.4.4.4 Families Working in Scavenging and Sorting

There are five families working in sorting and scavenging in Luxor: Elzarzor, Awlad Sekinah, Aal Radwan, Awlad El Hosan, and El-Dayih. These families depend on uneducated children who start scavenging work usually at the age of seven. The children are commonly known as "El Zarazir." They scavenge waste at the dumpsites or from streets (hotel waste and municipal waste), and sell it to the owners of large scale

warehouses who store and process waste until it is sold off to dealers and/or factory owners outside of Luxor. The owners of the large warehouses are the operators responsible for hotel waste collection. They are Aal Al-Bayt and Redaco and in addition, there are around 10 smaller warehouses owned by residents and/or individuals originally from the Sohag, Qena and Quos Governorates. "El Zarazir" families have storage places within their households to store the waste until it is sold to the large warehouse operators. Only three girls work with the El Zarazir[93]. Girls work in sorting the waste at the warehouses or at the warehouses at home. Once waste is sold off to the large scale warehouses, Aal Al-Bayt, Redaco and Al-Hoda, further sorting at their warehouses is male-dominated once more. Sorters are predominantly males over 18 years of age.

The number of scavenger children is estimated to be between 25 and 30. They are either itinerant buyers using donkey carts ranging between 7 to 14 years of age or scavenger children working on foot. The relationship between the families and the large scale warehouses and other warehouses is based on mutual benefit. The families have the right to sell their collected recyclables to any of the warehouse owners depending on the offered prices or to the other smaller warehouses.

Scavenger children settle their daily collectables with the "head of the family," known as the "Qamatt" in two ways:

1- The Qamatt can pay the child scavenger the worth of his recyclables. In this case, the Qamatt will have no social or financial responsibility towards the child.

2- The Qamatt gives the scavenging child a sum of LE 5.0/day in return for his work, as pocket money only. In such a case, he will be socially and financially responsible for the scavenger and should prepare a place for him to get married and provide for the full expenses of his marriage in the future.

4.4.4.5 Scavengers Employed by Private Companies

This type of scavenger is employed by Al-Hoda Company with a monthly salary ranging from 300-350 LE in return for sorting waste in the area dedicated to the company at the dumpsite. They sort waste for the benefit of the company and are not allowed to take what they have sorted away.

4.4.4.6 Intermediaries ("Qamatt")

A dealer in Cairo pays a sum of money of up to 100,000 LE to be considered as *"Ardia."* This sum is paid for one or two kinds of recyclables. It is paid to the local dealer who employs a number of Qamattin, who in turn, manage a number of scavengers to collect the needed recyclables.

Scavengers are provided with a donkey cart, a sum of money and even some goods such as bags, detergent powder, cotton candy, and plastic utensils to barter in return for the needed recyclables. The scavenger brings the recyclables daily to the Qamatt. The

[93] According to the personal estimation of one of the interviewed dealers.

scavengers start working under the supervision of an older scavenger to ensure they undertake the job efficiently. They go on their own after this.

Box 4.15 Example of Financial Accounting Method for Local Dealers

Assuming that the outcome of collection per day = LE 100. The sum of money paid in advance is deducted + value of commodity used in barter = (for example) LE 50.

This remaining LE 50 is to be divided as follows:

- First: one-third = 16.50 is set aside for equipment (sometimes tricycles are used in collection) or to pay for feeding the animal (donkey) in case of using a donkey cart.
- Second: The remaining two-thirds = LE 33 is divided between the Qamatt and the scavenger. The remainder = LE 16.50 and is kept with the Qamatt.
- Third: The Qamat collects these amounts from all his subordinate scavengers every day and records these amounts. Then, accounting proceeds on a weekly basis with the local trader as follows: The remaining sum LE 16.50 will be divided into three parts:
  - One-third for the Qamatt
  - One-third for the local dealer
  - One-third for the large dealer (business financier from Cairo)
- Fourth: The local dealer assembles the weekly accounts from the Qamatt to record these as well as to record the quantities of sorted items that have been sent throughout the month to the large dealer (his share as a financier). Accounts are settled with the large dealer on the basis of the value of sorted items supplied after deducting the two thirds shared with the Qamat and the local merchant.
- Fifth: In the case of exceptionally high priced sorted items in the market, the excess amount is divided between the Qamatt and the local dealer.

4.4.4.7 Municipal City Council Crew

This category encompasses 935 workers in City Council workers who collect from street containers or collection trucks. This is in addition to the labor at the hotels on land who all participate in sorting and reselling the waste items to the warehouse owners to raise extra income. A specific space is identified for each individual to place his collected items where he is charged by the Qamatt on weekly basis.

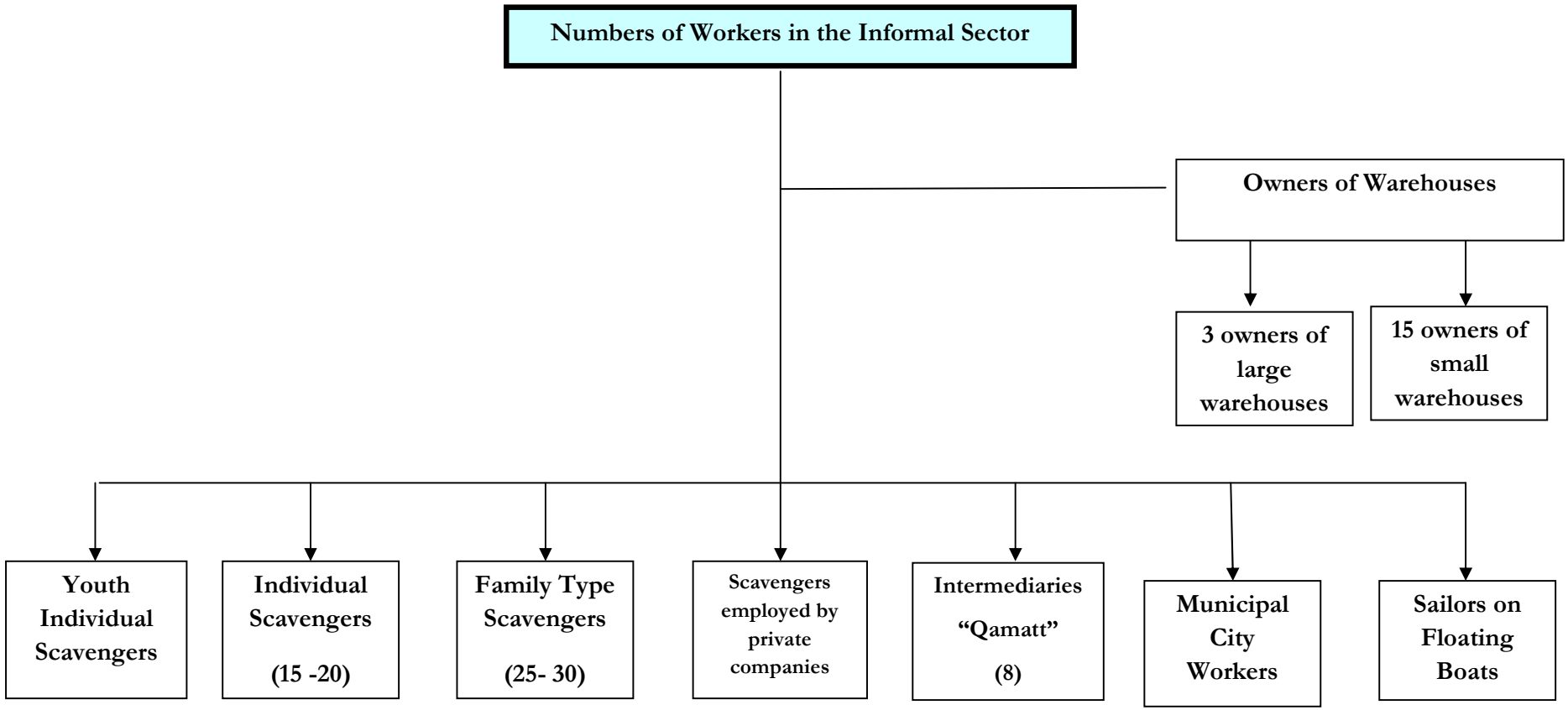
4.4.4.8 Sailors on Floating Hotels

All sailors on floating hotels (except for four senior sailors) come to Luxor from other governorates. They almost always have contracts to supply empty mineral water bottles, juice bottles, and soft drinks cans. Sailors, in cooperation with cleansing workers on board of the floating hotels, who are collecting items before they are placed in bags designated for waste to be handed over to the workers of private companies.

"Waste is already half sorted when we collect it. We are only left with 50% of the waste."

Al Haj Badawi Kenway, Aal Al-Bayt Company

Figure 4.45 Estimated Numbers of Workers in the Informal Sector



4.4.5 Demographic Characteristics of the Informal Sector in Luxor Governorate

4.4.5.1 Age

Children start working in this field as early as seven years old. Young scavengers' age usually range between 10 and 20 years of age. There is a very big age range for groups who are working in this field for complementary income.

4.4.5.2. Gender Role

The role of females is limited in the informal sector in Luxor. The percentage of girls working in street picking or scavenging does not exceed 1%. Their ages ranges between 7 to 10 years.

The number of females working in waste increases significantly once waste is scavenged by the boys and transferred into the household in the warehouses owned by Al Zarazir where sorting takes place. Mothers of the scavenger girls, in addition to older sisters and females in the household, all join in the sorting effort. However, compared to males, their role is still limited.

4.4.5.3 Educational Status

The vast majority of males and females working in scavenging and street picking are illiterate.

4.4.6 Child Labor

Children play a big role in the informal sector in Luxor. The Zarazir families depend entirely on the work of children. They are responsible for scavenging and sorting in both the warehouses and dumpsites.

4.4.7 Social Organization Supporting the Informal Sector

There are no social organizations that provide support for the informal sector.

4.4.8 Description of the Working Environment (Health and Security Risks)

The working environment has major occupational and health hazards for those working in the informal sector. Dumpsites are located in the desert hinterland of Luxor in mountainous areas. Scavengers (children and others) work there from early morning and then wait until the company workers finish their work. They resume work again at noon when the temperature is very high. They are exposed directly to severe sunlight for long periods of time. They wear no protective clothes, suffer injuries from sharp objects and are exposed to infections from contaminated waste. In addition to this, self-ignition or deliberate burning of waste can cause respiratory diseases. In addition, the mountainous area of the dumpsite could be home to dangerous insects or rodents.

4.5 Ismailia Governorate

Ismailia Governorate is one of the six governorates of the Suez Canal region, along with the governorates of Port Said, Suez, North and South Sinai, and Al-Sharqia. The governorate's location had its impact earlier in shaping the political and national realities of the governorate. Today, it similarly affects its social and economic realities. The area of Ismailia is about 5066.96 km^2, which is equivalent to 1205.9 thousand feddans,[94] and it is administratively divided into five markazes and seven cities. The governorate also encompasses 25 mother villages and six satellite villages and 592 hamlets.

4.5.1 Socioeconomic Characteristics of Ismailia Governorate

4.5.1.1 Description of Ismailia Governorate

The urban structure of Ismailia is composed of five main provinces that include seven cities in addition to three districts. There is Abu Sweir City that is affiliated with the Ismailia Markaz, the El Qassaseen El Gededa City at the El Tal El Kebeer Markaz. The cities of New Qassaseen and Abu Sweir are independent cities with no smaller administrative affiliations. Each markaz, beside the capital city, includes a cluster of mother and satellite villages, which contains in total, on the level of the governorate, 25 mother villages and six satellite villages as well as 592 ezba.

Table 4.25 Ismailia Administrative Division

District	Number of Markazes	Number of Cities	Number of Districts	Number of Local Governorate Units (LGUs)	Number of Ezba
Ismailia	1	1	3	7	282
El Tal El Kebeer	1	1	-	8	263
Fayed	1	1	-	3	141
El Kantara Gharb	1	1	-	4	203
El Kantara Shark	1	1	-	3	30
Abu Sweir	-	1	-	-	-
El Qassaseen El Gededa	-	1	-	-	-
Total	5	7	3	25	919

Source: Ismailia EMU (produced 17 January 2010).

[94] Ismailia Environmental Profile, 2007.

4.5.1.2 Ismailia Population

According to the 2006 census, Ismailia Governorate population reached 942.8 thousand inhabitants. Thus, Ismailia governorate ranks number two in terms of the population size among the six governorates of the Suez Canal region and number nineteen on the level of Egypt. Ismailia Governorate is a rural governorate where the rural population constitutes 53.6% of the total governorate population.

The rate of population growth in Ismailia is estimated at around 2.8% annually (1996/2006), and is expected to witness a continuous decline to 1.53% in 2027 as a result of urbanization pressures and the continuous outside migration from the governorate, as well as the decline in natural growth rates as a result of family planning initiatives[95].

Table 4.26 Ismailia Population, 2010

Markazes and Cities	2008			2009		
	Urban	Rural	Total	Urban	Rural	Total
Ismailia	323713	214922	538636	331482	220081	551563
El Tal El Kebeer	33278	107896	141174	34076	110486	144562
Fayed	30934	79547	110481	31676	81456	113133
El Kantara Gharb	22038	89453	111491	22567	91600	114167
El Kantara Shark	20761	22530	43290	21259	23070	44329
Abu Sweir	16777	9061	25838	17180	9278	26458
El Qassaseen El Gededa	11429	6291	17721	11704	6442	18146
Total	458930	529701	988631	469945	542414	1012359

Source: Ismailia EMU (produced 17 January 2010).

4.5.1.3 Educational Facilities[96]

The data on educational status as a proportion of the population over 10 years, according to the 2006 census, indicates the proportion of the governorate's education is below average for the whole Suez Canal region. However, it has been noted that the proportion of middle school education and higher levels in the Ismailia Markaz is above the general average on the governorate and the region levels.

Ismailia Governorate is home to several educational institutions and schools that annually qualify a large numbers of workers with a variety of experiences and competencies that enable them to access

[95] Ismailia Development Plan, General Organization for Physical Planning, 2008.
[96] Ismailia Environmental Profile, 2007.

various fields of economic activity. The governorate's higher education institutions include 10 faculties at the Suez Canal University and two institutes, in which 18,923 male and female students are enrolled. In addition, there are Azhar educational institutions (125 institutes/579 classes) and public education institutions (744 schools/6347 classes), including some 47 technical education schools (commercial/agricultural/industrial/touristic), in which approximately 207 thousand students are enrolled. Additionally, there are 35 vocational training centers in various provinces in the governorate, which contribute to the development of skilled labor in several occupations and activities.

4.5.1.4 Economic Activities [97]

According to 2006 statistics, the agricultural and fishing sectors employ the largest portion of the governorate labor force (80,820 individuals). This is followed by other sectors like services and governmental jobs (32,780 individuals), construction (27,560 individuals) and commercial activities (25,190 individuals).

Ismailia is considered a rural governorate as the cultivated area is estimated at about 209.4 thousand feddans representing 17.2% of the total governorate area. The governorate's agricultural land is characterized by its high fertility and productivity levels. Most of the land is of second and third class and both account for 45.6% of the cultivated area, while the land of the fourth class accounts for only 15.4%.

The governorate is characterized by cultivation of traditional crops such as wheat, peanuts, cotton, rice, and maize over an area that reach up to 62.35 thousand feddans (24.3% of the cultivated areas), in addition to vegetable and fruit crops. The fruit-cultivated area is 61.8 thousand feddans, while the vegetable-cultivated area reaches 75.4 thousand feddans.

The governorate of Ismailia is home to many industrial activities that depend primarily on utilizing agricultural production. The governorate hosts several industrial facilities for foodstuff processing, manufacturing textiles, fertilizers, oils, soap, pesticides, chemicals, paper and perfumes, as well as the construction materials manufacturing products (cement bricks and tiles primarily).

In addition to the public sector, subsidiary companies, joint venture companies, and public business sector companies, the governorate hosts many registered industrial establishments and small workshops operating in various industrial activities.

In general, the governorate includes more than 150 industrial facilities, and around 1370 workshops, with an estimated employment therein of about 15.4 thousand people in the public and private sectors. Employment is concentrated in the provinces of Ismailia and El Kantara Sharq.

[97] Ismailia Development Plan, General Organization for Physical Planning, 2008.

4.5.2 Municipal Solid Waste Management System

4.5.2.1 Description of the Current MSWM System in Ismailia Governorate

4.5.2.2 Mapping of Different Actors in the MSWM System in Ismailia

Ismailia Governorate generates an amount of waste that reaches around 572 ton/day. The governorate has two composting plants. Table 4.28 below presents that amount of waste generated by each markaz.

Table 4.27 Amount of Waste Generated by Markaz

Markaz	Amount of Waste Generated (ton/day)
Ismailia	336
Fayed	73
El Kantara Gharb	117
El Kantara Shark	26
El Tal El Kebeer	13.5
El Qassaseen El Gededa	2
Abu Sweir	4.5
Total Governorate	572

Source: Ismailia EMU, January 2010-10-18

The interviews and consultations with stakeholders showed that the responsibility for MSWM in Ismailia Governorate is divided among some key responsible parties. This includes the local governorate units (LGUs)/municipalities/districts, private companies and CDAs. Figure 4.46 below presents the main SWM actors distributed through the different governorates cities and villages.

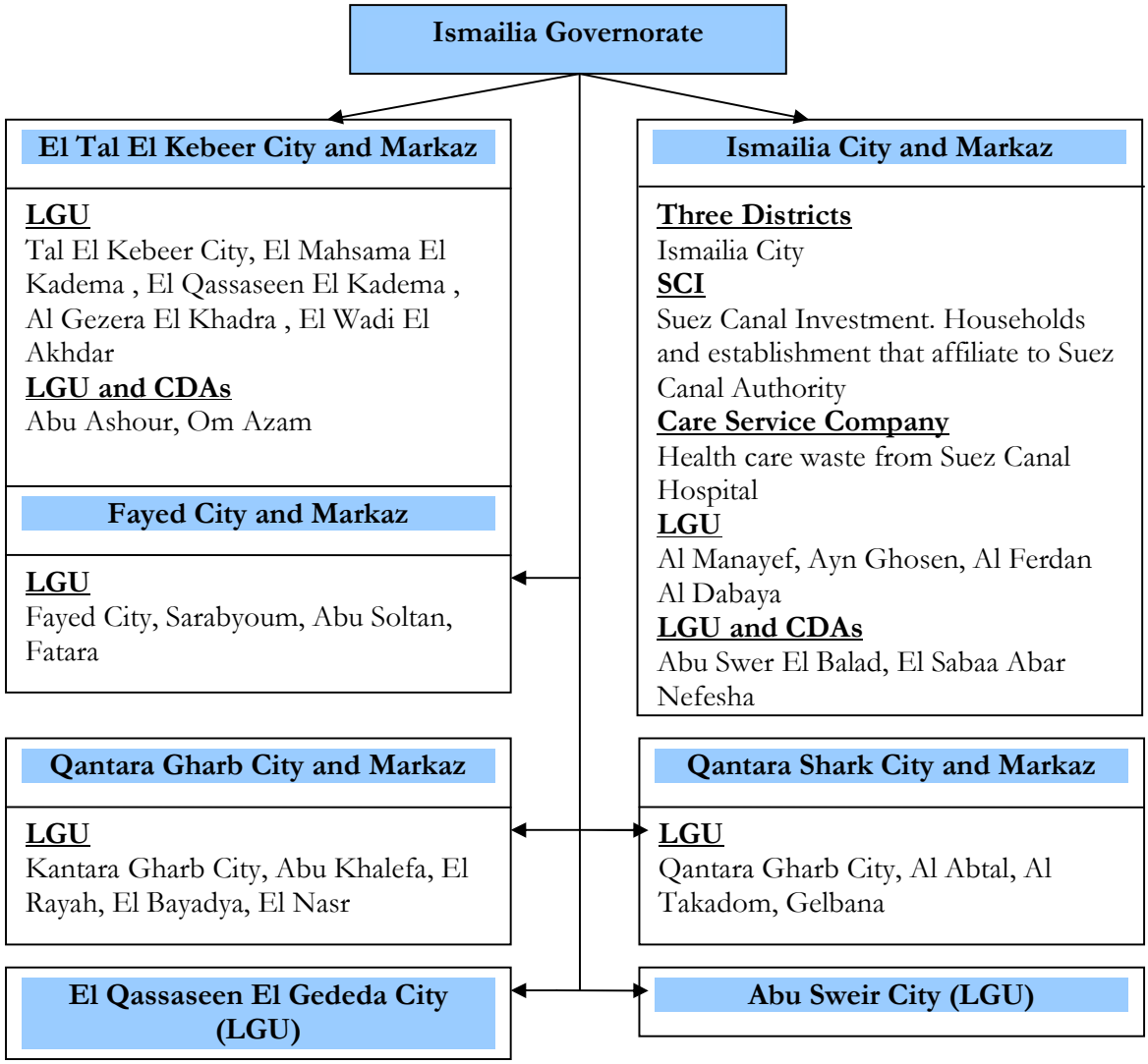


Figure 4.46 Divisions of SWM Responsibilities in Ismailia

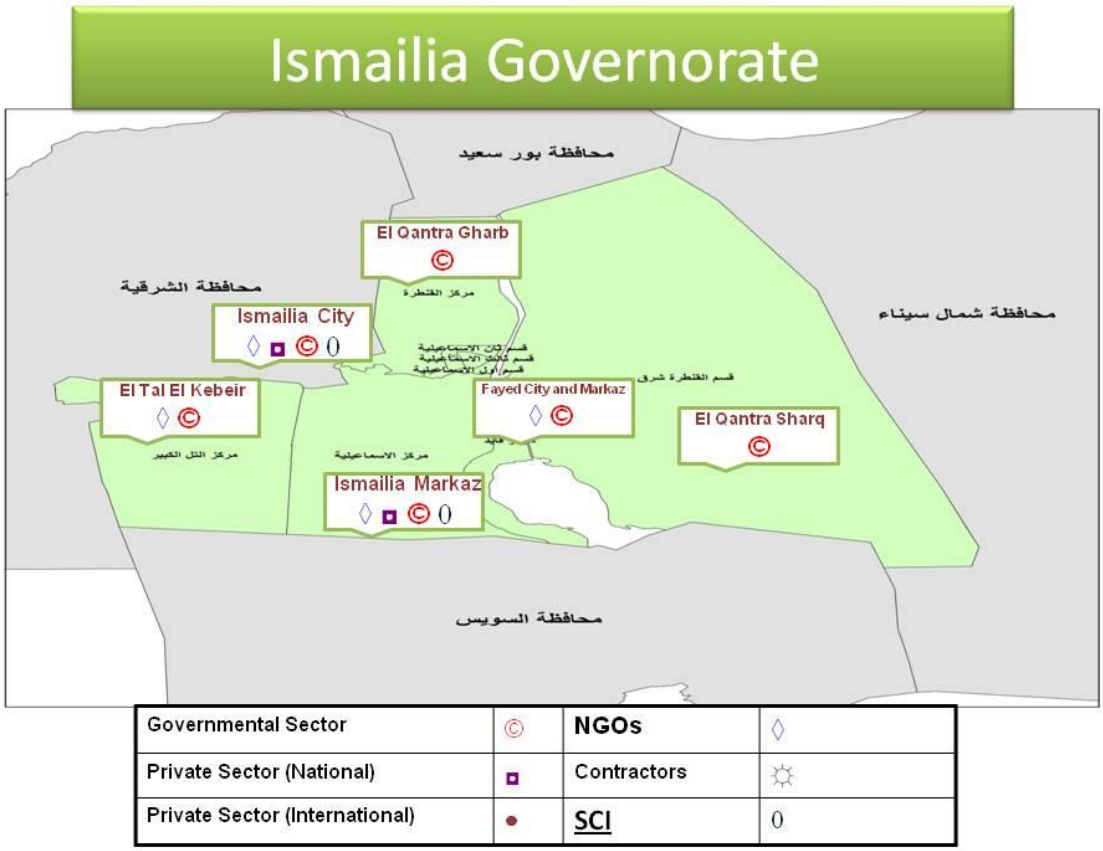


Figure 4.47 Ismailia Map Indicating the Waste Collection Services in Ismailia Governorate

4.5.2.2.1 Local Government

Solid waste management in Ismailia Governorate is predominantly undertaken by the local government. The survey carried out confirmed that as shown in Table 4.29 below, the majority of respondents (80.5% of beneficiaries and 17.7% of enterprises) are served by the LGU/district services.

Table 4.28 SWM Service Providers for the Survey Sample

Service Provider	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
The Governorate (LGU/District)	99	80.5	65	82.3
Private company	1	0.8		
Zabbaleen (garbage collectors)	1	0.8		
None	22	17.9	14	17.7
Total	123	100.0	79	100.0

Three districts in Ismailia City in addition to local governorate units (LGUs) at the level of other cities and mother villages are formally responsible for managing SW. They are responsible for the collection, transfer and disposal of waste. The three districts/LGUs are responsible for sweeping and collection of solid waste from the streets of the neighborhood and for transporting these collected wastes either to the transfer stations in the neighborhood and then to controlled public dumpsite or directly to the controlled public dumpsite. This is done often in the absence of a transfer station as is the case in District Two (Hai Tani). There are also two transfer stations in District One, namely the Mustafa Kamel transfer station and El Mahatta El Gadida. In District Three, there is no official transfer station, but a site in El Talateen is assigned for collecting waste.

Figure 4.48 One of the transfer stations in Ismailia City

They operate various collection equipment and tools including manual tools and transfer equipment including trucks and trailers to transfer waste to the final disposal dumpsites. Ismailia Markaz waste is transferred to Abu Balah dumpsite which is the main dumpsite for Ismailia Markaz, in addition to other smaller dumpsites in Al Mostakbal and Qantara. There are two composting plants adjacent to Abu Balah which are not fully operational.

According to the interviews with Ismailia EMU and the governmental officials in the LGUs visited, the governorate has six dumpsites. This includes the controlled dumpsite of Abu Balah located on Ismailia Suez Road, the official disposal site for Ismailia City waste. Moreover, there are five other disposal sites.

Ismailia City Council is the competent authority in charge of the management of the controlled dumpsite located in Abu Balah (Sarabium). The City Council is also in charge of the two composting plants whose operations have been suspended since the year 2000.

Abu Balah/Sarabium dumpsite is occupying an area of 88,111 feddans[98]. It is located about 3 km outside the city of Ismailia in a desert area, and waste is accumulated in large areas, all of which are not covered and not buried.

[98] Interview with Dr. Salah Saeed, Head of Ismailia EMU, July 2010.

Figure 4.49 Abu El Balah Dumpsite, Ismailia

Figure 4.50 The composting plant at Abu El Balah Dumpsite

A mechanical workshop serves the SWM equipment of the three districts by providing for the needed maintenance to the SWM fleet.

Figure 4.51 Model of waste collection equipment in El Qassaseen El Gededa

On the level of Ismailia City, the average number of workers in each of the three districts is about 100 workers, of which about 60% are not permanent workers[99]. These workers are all men. Each of the workers is in charge of one main street and its side streets. In District One (Hai Awal), workers are hired through annually renewable contracts and are enjoying all the rights of permanent workers except the annual bonus and the risk allowance. This is unlike the workers in District Two who are hired through daily contracts.

[99] Dr. Salah Saeed, Head of Ismailia EMU.

In the meantime, in El Tal El Kebeer City, a different model of labor exists where there are 76 permanent workers and 34 casual workers. All are male workers and the latter have no rights except their daily wage and performance allowance. However, what distinguishes those workers is the fact that they come from the same city and are in need of work, so they are quite active and focused on their work. They are divided into three groups and each group is responsible for one working shift. They are given some seasonal financial or in-kind gifts. The permanent worker is paid a holiday allowance and risk allowance of 60%, as well as performance allowance.

The field results showed that the situation in villages, in general, there are no more than two workers working in collecting and loading waste in addition to the tractor driver. Workers' daily wages in villages are not more than LE 7 for six hours of work[100].

For the three districts in the city of Ismailia, the deputy chief of the district oversees the supervising manager. Each region has a supervisor or overseer. Each sector has its assigned supervisor general. All those officials are supposed to pass by the streets every day.

In the city of Al-Tal Al-Kebeer, the monitoring/follow-up system is characterized by assigning two supervisors for each of the three sectors, in addition to the Council's Follow-up Department which includes five members who are present daily at the three sectors and report to the officials. Then there is the Financial and Administrative Inspection Department whose officials are ready to be available onsite upon the arrival of complaints. This system helps to make the worker watchful and continuously anticipate the presence of a supervisor onsite, which results in the disappearance of any accumulations. A number of 5-12 fines are issued every month.

In the meantime, if LGUs experience a shortage in staff (e.g. Al-Manayef Village), no staff is allocated for the monitoring responsibility.

Regards following-up activities at the dumpsite (landfill) by Ismailia Province and City Council, these activities proceed through the presence of a Landfill Manager who reports on the quantities and the work done at the landfill. Also, the Head of the EMU is in constant contact with the landfill manager who is constantly available onsite alongside another 10 workers assigned to work in three shifts every 24-hour. In cases of emergency, the Director of the EMU is available onsite at the landfill (for example, during the period of the bird flu epidemic, the director would confirm the burial of infected birds).

4.5.2.2.2 Private Sector

The private sector is contributing to the MSWM in Ismailia with two companies which are working in the City of Ismailia as follows:

A) Suez Canal for Investment (SCI)

In addition to the above mentioned main governmental actors, Suez Canal for Investment (SCI) is a company contracted by the Suez Canal Authority (SCA) to undertake collection, transfer and disposal of waste from various residential areas and establishments affiliated with the Suez Canal Authority (SCA). The staff members of SCA reside in District One (Hai Awal) and District Three

[100] Reda Hussein, one of the workers in Abu Sweir Village.

(Hai Talet) and workers reside in District Two (Hai Tani). SCI has been working in SWM for 15 years. According to the staff interviewed at SCI[101], they serve at least 30,000 families which constitute, at a minimum, 40% of Ismailia City population. SCI operates collection equipment comprised of three large compactors trucks, three large tipping trucks (12 m^3), four small Suzuki trucks as well as street containers that they distribute in the areas served by SCI.

SCI service includes door-to-door domestic waste collection, street sweeping, cleaning buildings' stairs on weekly basis, transferring waste to Abu El Balah Dumpsite in coordination with the governorate which permits SCI to use the dumpsite in return for 5 LE/emptying each truck as a tipping fee. The direct field observations and transect walks in the city showed that streets in the areas served by SCI are very clean.

SCI workers provide daily door-to-door collection from the apartments including Fridays. They transfer the garbage to the street containers until it is transferred by the company's vehicles to the public dumpsite. SCI workers also clean the staircase of the buildings once a week.

In terms of the workers and cleansing crew, SCI hires most of its workers on temporary daily basis. According to SCI[102], they cannot secure longer term contracts for workers since their contract with SCA is renewed every year. SCI provides protective tools to the cleansing crew. According to SCI staff, their workers have to use these tools. This will be investigated in more details during the course of the PSIA.

According to the interviews with SCI officials, beneficiaries do not pay any service fees in return for the SWM collection service. SCA pay the SCI contract and provide the service for free as part of its corporate social responsibility activities among other services the SCA provide to its staff and their families.

SCI has an internal monitoring system for workers through field inspectors who pass in different served areas and report on the level of street cleansing, regular emptying of containers, etc.

Concerning employment in the Suez Canal Investment Company, there are about 200 to 300 male/female workers. More than 60% of those workers are women and girls who do not have any contracts and are hired on casual basis. They are paid monthly but they have no rights to any rewards, incentives, or insurance. 20-30% of the female workers are wives of the doormen in Zone No. 6, Golf Land, International Police, Anis Helmi, and Al Foroseyah areas. The majority of them originally come from the suburbs and squatter areas in Ismailia City, particularly El Balabsa.

SCA is following-up on the work of SCI through its assigned supervisors, who are responsible for monitoring cleaning and waste collection activities. There is one supervisor in each administrative building who provides a monthly report about the level of cleanliness and collection. In addition, the cleaning sector is following-up on daily work by assigning one supervisor for a specific number of workers. For each group of supervisors, a senior supervisor is assigned.

[101] Eng. Saad Sayed Naassar- Branch Manager of Suez Canal for Investment.
[102] Mr. Wael Mohammad- SCI Accountant .

B) Care Service Compnay

Care Service is the second private company working in Ismailia City. The company won the service contract by entering the tender process prepared by the Suez Canal Authority (SCA) to serve the SCA Hospital. Under the Care Service Contract, the company is in charge of the domestic and healthcare waste of the various Departments within the SCA Hospital. Health care waste is disposed of using the shredders of SCA and then the remains are packed in red bags, while other domestic wastes are packed in black plastic bags. Both types of packed wastes are then transported by Care Service vehicles to the public dumpsite. The company also provides a number of street containers in the neighborhood of the SCA Hospital.

Figure 4.52 Health care waste is mixed with domestic waste in Abu Balah Dumpsite and scavenging activities are ongoing

Figure 4.53 Care Service Company containers at Suez Canal Hospital

There are about 32 workers (male/female) in the Care Service Company. 90% of the crew consists of women who work morning and noon shifts. Four male workers are assigned to the waste loading responsibilities. The temporary labor constitutes mostly 55-60% of the workers. Most workers come from the suburbs of the city of Ismailia, such as the Kilo Etnene Zone, Sarabium, Ain Ghosein, and Nafisha areas. Care Service Company provides them with transport from Ismailia's public bus stop to the hospital and back. Supervisors are the only staff members who receive health insurance. 65% of workers only receive contractor insurance for the interest of the worker in case of accidents and end of service. Seasonal bonuses are distributed to all workers. Permanent workers are compensated by daily wages (15 LE as a holiday feast reward) if worked during the feast days. Day-long leisure trips can be organized during the summer provided that work is not affected. In case of worker's death, his/her family shall receive compensation for funeral expenses and end-of-service compensation after official identification of valid inheritors. Also, protective clothing and gloves are distributed for the cleansing crew.

At the Suez Canal Hospital, there are five supervisors (two females and three males) during the morning shift, four male supervisors during the noon shift, and one supervisor during the evening shift, to monitor activities and all of their work is overseen by the Senior Site Supervisor.

4.5.2.2.3 CDAs

CDAs are a different model of service provision in Ismailia Governorate rural areas as shown in Figure 4.46 and 4.47 above. Generally speaking, CDAs are able to carry out SWM project when they have access to donor funds. In Ismailia, several programs have worked in funding solid waste and sewage collection project. The main sources of funding included SENACT and Danida. For thess type of projects, donors usually provide funds for equipment which usually include collection equipment (in the case of the targeted CDAs, this included a tractor trailer and a vacuum tank). The CDA is then responsible for operating and maintaining the project. The issue of sustainability was found to be a key determinant of the success of the project as will be elaborated in details below.

The PSIA studied two models of CDAs serving two different villages. These two CDAs were selected in order to study the key ingredients for projects' sustainability and the main risk factors that should be considered. The PSIA also assessed local communities' views about the services.

Box 4.16 Al Kholafaa Al Rashedin CDA

The village of Abu Sweir El-Balad is located 8 km away from the city of Ismailia. The area tends to be a semi-urban area and the local administrative unit is responsible for the management of solid waste in the village and the affiliated 28 units, with an average of 100,000 households.

There are four collection points in the mother village, and people dump waste at the point close to them. Household and agricultural wastes are transported daily using a loader to the public dumpsite in Sarabium (Abu El Balah). The suburb of Kilo 2 is affiliated with this village and includes eight points for accumulating waste, where collection occurs every 10 days. The village hosts Al Kholafaa Al-Rashedin CDA which operates a solid and liquid waste project in the area of "Al-Wasfyah" since 2007. The project started with 50 subscribers and has currently reached 250 families paying fees of 2.5 LE/month in return for transporting the solid waste to the interim dumpsite at the end of the city of Al-Mostakbal, located about 2 km from the village. The project tractor drives by three times a week for collection of waste in front of the residences, unlike the local unit whose vehicles pass the main streets only.

The solid waste project created jobs for two workers, an accountant, a project manager, and five female leaders. It is known in the village of Al Manayef that the the hired labor does not consist of more than two drivers and one worker whose daily wages ranges from 6 to 7 LE after deductions.

The village of Um Azzam, affiliated with Al-Tal Al-Kebeer, is host to the Um Azzam development association and an environmental improvement project. Through this project, the assigned worker who works with the tractor either collects waste placed in front of homes, or the landlord throws waste in the tractor himself/herself. The tractor, which drives by twice a week, transfers the wastes to the dumpsite in the specified section, allocated to the village by the City Council for this purpose, on the mountain of Al-Doawees. There are no more than 1500 households subscribing to this service out of the total population of 200,000 inhabitants.

4.5.2.2.4 The Informal Sector

The informal sector workers are widespread in Ismailia Governorate and they encompass groups of scavengers/street pickers and dealers. Many of the workers in the formal sector are also engaged in waste recovery.

> "I am paid 150 Egyptian pounds by the company, but I pick some useful items from wastes and I sell them back for about 500 Egyptian pounds a month…also I do not buy things like utensils, dishes, knives, clothes, as we find enough of these items in wastes, and this is the same story for my daughter Zeinab."
>
> Um Taha (Amal), a female worker hired by the Suez Canal Investment Company

4.5.2.3 Evaluation of the Current System in Ismailia Governorate

4.5.2.3.1 Level of Street Cleanliness

The survey showed that around 60% of the beneficiaries sample and 54% of the enterprises perceive their neighborhood as not clean.

Table 4.29 Perception of Street Conditions in the Neighborhood

Response	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Very clean	3	2.4	6	7.6
Fairly clean	44	35.8	30	38.0
Not clean	70	56.9	42	53.2
Extremely dirty	6	4.9	1	1.3
Total	123	100.0	79	100.0

4.5.2.3.2 Level of Satisfaction with the Current Situation

The survey that has been carried out as part of the PSIA in Ismailia Governorate clearly showed a high level of dissatisfaction with the current SWM situation among the surveyed beneficiaries and enterprises. As shown on Table 4.31 below, 63.4% of the beneficiaries and 76% of the enterprises are totally dissatisfied.

Table 4.30 Level of Satisfaction with the Current Situation among Beneficiaries and Enterprises

Response	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Satisfied	10	8.1	9	11.4
Satisfied to	35	28.5	10	12.7

Response	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
some extent				
Not satisfied	78	63.4	60	75.9
Total	123	100.0	79	100.0

In investigating the reasons for the dissatisfaction, the survey revealed that the highest frequencies among beneficiaries were due to the unclean streets appearance (31.7%) and the unavailability of convenient tools (containers or door-to-door collection) for waste disposal (21.7%).

The field observation recorded several illegal dumping spots on the various streets of Ismailia City as well as the other surveyed areas. There are many spots where people throw waste: in Al-Bahari street next to Ataka Post Office at Al-Obour area/Al-Balabsa, near a school and many other spots, including one large spot at the end of Friday Marketplace (Souk Al-Goma'a). This phenomenon of the random dumping is a symptom of the lack of efficiency of the system and the low level of awareness among community members.

Figure 4.54 Burning waste by the canal bank

Figure 4.55 Waste accumulations next to one of the Ismailia Markaz basic education schools

The field survey also showed that random dumping of waste, although not the most widely practiced behavior, is still practiced by around 59.3% of the surveyed sample of beneficiaries (dump on the street, throw into a pile of garbage, dump in waterways, canals, drainage and burning) and 25.3% of enterprises (dump on the street, put in a waste collecting vehicle, throw into a pile of waste, burning) as shown in Table 4.32 below.

Table 4.31 Method of Disposing Garbage

Method	Beneficiaries		Enterprises	
	Number of Questionnaires	Percentage	Number of Questionnaires	Percentage
Door-to-door collection by garbage collector	33	21.2%	29	32.2%
Door-to-door collection by garbage collection company	15	9.6%	5	5.6%

Door-to-door collection by NGO	1	0.6%		
Place in street containers	15	9.6%	9	10.0%
Dump on the street	41	26.3%	24	26.7%
Burning	22	14.1%	14	15.6%
Dump in waterways (canals, drainage)	7	4.5%		
Throw into a pile of garbage	22	14.1%		
Throw into a pile of waste			5	5.6%
Put in a waste collecting vehicle			4	4.4%
	156	100.0%	90	100.0%

Moreover, the interviews with the officials and the in-depth interviews with community groups showed that following challenges:

- The lack of enough supervisors is a big challenge that faces the governmental operators and prevents them from having proper control over the performance of the workers. According to the interview with the Head of the EMU, each district is divided into four sections and a supervisor is allocated for each section. Supervisors are not able to provide monitoring and control over these large areas particularly due to the lack of adequate means to perform the job (e.g. vehicles) that could facilitate their jobs. The result is that main and important streets are given the priority in collection and supervision and consequently side streets are usually left in a bad state in terms of collection efficiency.

- Several officials commented on the low salaries paid to workers, which results in their failure to provide reliable service. It was made quite clear that casual/temporary labor represents more than 55% of workers, with a high number of female workers in the private sector. On the contrary, the government authorities do not depend on female workers. Various systems deal differently with labor in terms of services, wages, and insurance. Too often the salary of the permanent worker is higher than the casual workers, and the former enjoys the services and insurance not available to the latter. The monthly salary of casual male/female worker ranges from 150 to 250 LE (estimated per diem at 5 to 8.50 LE), while the permanent worker's per diem payment may reach up to 15 LE.

More details about the SWM service fees by income groups, service providers and type of surveyed areas in Ismailia Governorate are presented in Annex C-4.

4.5.3 Profile of the Informal Sector in Ismailia Governorate

There is an interrelated and large network of MSWM informal operators who are working and making a living solely out of waste recovery and sorting in Ismailia. In addition to this, municipal solid waste management workers are also involved in collecting and sorting recyclables from this waste in order to resell them as an additional source of income. Informal activities in general are closely related to the current inefficiencies associated with the service provided by the official operators; particularly the governmental systems which usually gives an opportunity for the informal

operators to access recyclables that are available and unutilized. In some cases, references were made to hidden deals and arrangements in this business in order to prevent any conflicts of interests.

4.5.3.1 Scavengers/Street Pickers

Scavengers and street pickers could not be distinguished as different categories of the informal sector in Ismailia. Individuals involved in the informal sector in waste recovery usually work interchangeably inside dumpsites and on streets. There are of two types, family type and individuals.

A) Family Type

In Ismailia, there are whole families who work in waste recovery, sorting and trading. They follow many patterns. Most of these families have family members: youths, husbands, and wives, and sometimes children, working in this business. 60-70% of the families are not originally from Ismailia, but mainly from the governorates of Sohag, Qena, and Al Sharqia (only one belongs to Arab El Akharsah from Sinai). However, most of these families have settled in Ismailia for decades. Families usually are involved in scavenging in dumpsites as well as street picking (70-80%) on streets. Some own donkey carts and some tricycles. After they collect the waste, families sell the waste to small dealers; some have become small dealers themselves.

> "In the area of Al Qassaseen, there are five families - they include street pickers and dealers too."
>
> Focus group discussion

According to a governorate employee in the village of Al Manayef, Al-Manayef includes six warehouses (including Abou Nasr-Allah warehouse), where their sons work as street pickers collecting items and come back with their recyclables which is sorted and packed by women for sale to dealers.

At the dumpsite level, different types of recyclable businesses are operational through informal arrangements between the dumpsite manager, dumpsite guard and informally subcontracted recyclables pickers (scavengers) who work in the Abu EL Balah dumpsite every day. Those recyclable pickers are allowed to get into the dumpsite, sort and segregate waste to sell on their own account. This is done for daily payment of LE 100 that each of the scavengers pay to the dumpsite manager. According to the resource person who provided this information, this amount is negotiable particularly in the cases where waste that comes to the dumpsite is of low value[103].

> "The three families of Ahna, Al-Khashaynah, and Abdel Satter, control Abu EL Balah dumpsite." (This information was confirmed by an official employee at Ismailia City and Markaz

[103] Dr. Salah Saeed, Head of Ismailia EMU.

and another Environment Local Unit employee.)

Mr. Moussa, Dealer

Diversity in the patterns of the family type informal sector has been detected as reflected above. However, a distinctive model was that of Um El-Hana who has been working in waste recovery for eight years with her husband.

Um El Hana

35 year old Um El-Hana holds an intermediate commercial diploma. Without any official contract with the Metro supermarket chain, she and her family (including her husband and his two brothers) are responsible for cleaning the supermarket twice daily in return for obtaining all supermarket waste including recyclables such as cardboard, carton boxes, stained cans, torn plastic bags, unsold/expired foodstuff, and any other remnants. She benefits from all the disposable items that Metro gets rid of because they are not salable. Um El Hana said that she was one of the scavengers eight years ago. "I used to search the garbage bins on the streets, and there are many street pickers in different places in Ismailia, including about 80 street pickers in Al Balabsah area, 50 in Al Hekr, 30 in Al Shohadaa, 50 in Al Salam District, and 20 in the Public Arena. As for the suburbs of Ismailia, there are 45 street pickers in Kilo 2 area, 50 in Nefisha, 50 scavengers in Abou Nasr Allah warehouse, 15 at Ezbet Umm El Sayed warehouse, and also in Mostaqbal City."

B) Individual Scavengers/ Street Pickers

These are young street pickers working individually and independently. They collect from street containers, transfer points of waste, illegally dumped waste as well as from public dumpsites. They work as street pickers in two shifts daily and sometimes twice in the morning (8 a.m. to 1 p.m.) and twice in the evening (6 p.m. to 11 p.m.). Some others work from dusk to dawn. The majority has carts, or "gonya", and some have tricycles in which they collect their recyclables such as clean cardboard, transparent plastics, foil, glass, metal, tinplate, bread, and mango seeds. The last two types are sold to the livestock dealers and farmers respectively. They sell off their recyclables without any further processing. Scavengers and street pickers belonging to this category do not buy from anyone, but only sell to others, mostly to dealers and can sell also items by the ton to the large dealers who have quotas in factories.

Figure 4.56 Recyclable picking from street containers

4.5.3.2 Small Dealers

Small dealers work by and for themselves but also hire others to work for them. They buy items from individual scavengers. These dealers sell their recyclables either to large dealers who have quotas in factories and a very small number sell directly to industrial facilities. In general, small dealers undertake simple processing of their recyclables (e.g. compact and tie cardboard with ropes, sort the plastic items into soft and coarse types, transparent and non-transparent and remove plastic caps). They also compress cans to reduce the volume, etc. As for scrap metals, some of them do purchase this waste from shops or from demolished houses, etc. The majority of dealers prefer to sell to the large dealers who have quotas, to ensure liquidity all the time.

The team interviewed five of the small dealers who hire about 15 street pickers including youths from their own family as well as others, mainly from Al Sharqia Governorate. For example:

> "Mousa is an old expert dealer in this field. He and all his family members, including his wife, his three sons and their families (about 30 individuals) work in the s wastes trade. They live in an area called "Nefisha" and their warehouses are located near the public dumpsite. They own a minor Toyota truck and another minor dump truck."

Figure 4.57 Sorted PET bottles in a warehouse

Figure 4.58 Cardboard loaded to be transferred to dealers

4.5.3.3 Small Enterprises

The small enterprises are not a part of the informal sector, but the informal sector feeds into them. The industrial zone in Ismailia includes three industrial facilities that work in recycling black plastic pipes. These facilities are Al Marwa Factory owned by Mr. Gamal Mohamed Abdel Razek, Al-Baraka Factory owned by Hag Ashraf, and Al-Safa Factory for plastic bags owned by Mr. Ahmed Abdel Ghani. This is in addition to another factory owned by Chinese businessmen; they recycle transparent plastic and export it to China. All factories except for the Chinese one refused to specify their raw material sources.

> "The transparent plastic recycling factory is located at the Ismailia Free Zone and purchases items up to 20 tons on daily basis from street pickers and dealers despite the fact that the factory's operating capacity are only four tons. At the facility, caps are being removed, collected, and sold to electricity piping manufacturers. Transparent plastics are sorted by color, then washed, dried, granulated, and collected in bags to be later exported to China. The worker did not inform us of the price of buying the transparent plastic."

4.5.3.4 Municipal Waste Crew/ Private Companies Workers

In addition to the informal sector, our in-depth interviews with some official, private, and non-governmental agency representatives have revealed the laborers working for the formal sector, namely authorized waste collectors appointed either by the City Council or the local governorate units, whether full-time permanent, seasonal, or those who work on daily basis, are all involved in waste recovery and sorting collected waste while being transported to transfer points or public dumpsite(s). The worker on the dump truck and the driver divide the sorted waste between them and resell it to generate an additional source of income to their wages. All 400 male workers, working at the level of the investigated areas, are paid very low wages, and most face the threat of

being fired because they do not hold any contracts. In addition, supervisors collect bribes from the scavengers who sort in specific dumpsites.

In addition to this there are 40 Care Service Company workers, 90% of whom are female workers, and 300 Suez Canal Investment Company workers, 60% of whom are also female workers, engaged in waste sorting. These workers are paid very low salaries that typically range (in the government sector) between LE 200-250. Moreover, seasonal workers receive LE 210 if he/she works for 30 days. At Care Service, salaries are only LE 160 while at the Suez Canal Investment Company, they can reach up to LE 220. In conclusion, all workers do scavenge and collect items that can be sold at a minimum of LE 10 (plastic items only as they are light and expensive).

4.5.4 Demographic Characteristics of the Informal Sector in Ismailia Governorate

4.5.4.1 Age

As indicated above, whole families sometimes work in this field. The age range for men is usually between 30 and 45 years old. Boys between 10 to 15 years of age work with their families or others.

4.5.4.2 Gender Roles

Women play a significant role in waste business in Ismailia. Some take the lead in scavenging such as Um El-Hana. Um El-Hana has introduced many people to the business. Young girls help mothers to sort waste when waste is moved back to the house. In one case, a girl was scavenging along with her mother Lawahez and when the team asked about her daughter's acceptance of her mother's job, Lawahez said, "She is happy because whenever she sorts with me, I give her one pound." Among the financially better off families, there was a tendency to educate girls, like the case of the daughters of Um El-Hana and Adel Belyah. In addition to this and the reference above, 60% of the laborers working for Suez Canal Investment Company are adult and young female workers, while female workers constitute 90% of the laborers working for Care Service Company.

4.5.4.3 Educational Status

Most of the people interviewed were illiterate.

4.5.4.4 Child Labor

Many scavengers/street pickers who work within families or as individuals are children between 10 - 15 years old.

4.5.4.5 Social Organization Supporting the Informal Sector

There are no social organizations that provide support to the informal sector in Ismailia. One of the distinguishing features of the informal sector in Ismailia is that its members are scattered in their areas of residence, living in many different communities. This scattering has contributed to the problem that no social organization can assemble and provide support for them. This is one of the reasons for the deterioration of their social life conditions. They are suffering from social problems such as a high rate of divorce which is increasing among these communities. Each family has at least one divorced daughter, as in the case of the family of Um Mohamed Doko who has two divorced

daughters and the family of Ahmed Mohamed who has one divorced daughter, his second daughter's husband is in jail, while his third daughter rejected marriage due to problems of her two sisters. Mona has one divorced daughter and Lawahez's husband has abandoned her. These stories may help us to recognize the disintegrating living conditions and the need for introducing a social worker to help them solve their problems.

4.5.4.6 Description of the Working Environment (Health and Security Risks)

Workers in all levels of the informal sector work under very bad conditions. There is a risk of occupational and health hazards. Waste comes mixed together from different origins. Self-ignition and foul smells and fumes are part the working environment of the informal sector. Sharp objects pose a serious hazard. Health hazards also come from the mixture of domestic waste with hospital waste which can lead to the spread of serious infectious diseases.

Outside of their work environment most of the informal sector live under very harsh conditions. They lack water or power supplies and their houses are mostly built with clay bricks so as to be expanded to host a big number of family members because scavengers' families are usually extended in nature.

During the in-depth interviews and the focus group discussion meetings about the shortcomings, problems, and hazards of working in the municipal solid waste system, the team received a number of reactions.

> "If I lose my job at Metro Supermarket I will never go back to scavenge in trash boxes again...it is a work full of disease and filth," said Ahmed El Saieedi.
>
> "Look at my hands, they are injured from glass collection," said Magda.

One of the female scavengers, Lawahez, she had a broken leg from falling off the donkey cart while driving back home. Other interviewees talked about dermatological diseases and the bad odor that never leaves them despite showering several times and the backaches from bending while scavenging and picking, in addition to the lung diseases.

> "I get pain in my chest, when I experience respiratory problems, I use my inhaler and then I resume work when I feel better."
>
> One scavenger

During the field work, the team recorded the arrival of the health care waste vehicle to the Abu El Balah Dumpsite. It has been noted that the medical waste is not chopped or shredded and therefore this waste is not sterile. Workers in the dumpsite do not care.

The team asked one of the scavengers, Fatma, if she knows that red bags have health care waste which is highly contagious, she responded:

> "It doesn't matter really what is in the bag, diseases or not, what is important is that if we find other useful items."
>
> One scavenger

4.5.4.7 Security Hazards

No security or safety is guaranteed for those street pickers/scavengers. On the contrary, they are officially mostly pursued by policemen, by environment officials, and by governorate officials responsible for executing decrees (utilities, district authorities). Also, in case of fire or the occurrence of any similar accident at their own residences, they cannot notify the authorities because they are considered outcasts dealing in illegal businesses

It is interesting to see how those working in the sector view themselves:

> "I don't know how our business is illegal while we are removing two thirds of waste from the streets and the street containers. Can you imagine Madame if we don't sort the wastes, how will the situation be?
>
> Gharib, scavenger

Moreover, in the event of any crime, workers of the informal sector are usually prime suspects for the police because some of them have criminal records, even during their youth years. Unfortunately, even those who have repented still face problems from both officials and society.

> "A long time ago I did some foolish things, but I repented and started to earn my living legitimately from the waste business, but people and the government do not want to believe that."
>
> Scavenger

When we discussed the issue of changing their profession if there was a possibility, some said that it would not work out because they do not have any official papers, and some even have criminal records. The rest said that they are considered "notorious" by others and that no one will hire them.

There is also a negative societal impression of the informal sector workers. During the discussion group meeting and upon raising the issue of the informal sector and its existence in Al Qassaseen, the attendees moved directly to the crimes of theft perpetrated by informal sector workers although

they were no eyewitnesses to these accusations. However, this is how some parts of society view them, as theives of aluminum, railway bars, water pipes, etc. This is not just the attitude of ordinary people, but also a number of officials expressed a similar attitude when we questioned them about warehouse owners at the Kilo 2 area.

> "There are no warehouses here and if there are, we would have taken action," said one official.

Another official recounted the story of items stolen from the unit where he works. Accusing the scavengers of stealing, he went to the warehouse owner who in turn searched for the stolen items and returned the stolen items from the dealer who specializes in dealing with these types of items. In a similar vein, whenever the team mentioned their intention to meet a street pick to another official employee, the employee usually declined to come along or to contact any of these groups.

4.6 Estimation of Numbers of Informal Sector Workers in the Municipal Waste Sector

4.6.1 Introduction

Estimation of the number of workers in the informal sector was very challenging given the characteristics of this sector and the type of employment. Limitations related to this can summarized as follows:

- The informal sector, with regards to waste in Egypt, is a dynamic sector that largely attracts individuals who are unskilled and usually have no alternative employment opportunities outside of this sector. Hence, the sector constantly attracts a large number of the poor, who move in and out of the sector. In this regard, figures are not fixed and can be highly changeable.
- Employment is not homogenous within this sector. There are several types of employment. The first type is permanent and it refers to those who are solely working in this field. The second type of employment is temporary in nature, for example workers suffering from seasonal unemployment in the agricultural field often resort to this field to raise an income. Thirdly, temporary employment can extend to those who enter this sector to secure a complementary source of income, for example, municipal waste crew.
- The mobility between different groups of the sector is high. There is always an overlap between one category and the other, e.g. Sarreha and street pickers, who are sometimes used interchangeably. This feature makes it very difficult to draw the line between categories and makes the estimation difficult.
  The informal groups, particularly the street pickers and scavengers, are socially stigmatized groups who are negatively perceived by local communities, the police, municipalities and other groups. Many live in slum areas, and some make a living out of illegal activities and even have "criminal records". They are widely perceived by police and communities as outcasts of the community. This fact makes them try as much as possible to work invisibly on the streets. They are generally suspicious of others and are reluctant to reveal information out of fear of being legally accused.

4.6.2 Methodology

The PSIA team adopted a methodology to estimate the number of street pickers/Sarreha which form the largest group in the informal sector at the four study governorate level, and at national level. The actual number of scavengers operating in the dumpsites/composting plants across the four governorates was obtained by the team, so no estimations were attempted for the number of scavengers. There are many small dealers working in this field. It has to be taken into consideration that some dealers are registered and are formalized while others are not. It was impossible within the scope of this study to determine the number of dealers operating in each governorate. Whenever possible, estimates were made based on educated approximations of those working in the field or stakeholders who deal directly with them. Variations between estimates were generally noticed. The number of large dealers was identified in most of the governorates under study since they are few in number.

The methodology for estimating the number of street pickers/Sarreha was based on the quantity of waste generated per governorate and the corresponding estimated number of informal sector workers per each ton of generated waste.

4.6.3 Given Input

1- Generation rate of MSW per governorate, based on EEAA documented figures.
2- Collection Efficiency, based on EEAA documented figures.
3- Waste Composition, based on averages made by EEAA solid waste management department for different types of governorates (urban, rural, touristic, etc.).

4.6.4 Assumptions

4- Based on collection efficiency, collected waste in a given governorate is transferred to the composting plant/dumpsite without being sorted.
5- The remaining uncollected waste is left in the streets and is sorted out by Sarreha/street pickers.
6- Sorting rate/picker[104] was estimated with reference to the efficiency of the Zarrabeen and given the nature of the governorate under study. In Giza, high efficiency was assumed (70 kg/picker per day), given the fact that it is a large urban settlement with a big recyclable waste content and that competition is very high between Sarreha and now Zarrabeen to collect the waste. Gharbia, Ismailia and Luxor were all assigned the same rate of 40kg/picker/day).

Based on the above variables, the number of Sarreha/street pickers was estimated as follows:

Generation Rate/ton/day = X
Collection Efficiency = Y%
Amount of Uncollected Waste = X- (X*Y %)
Ratio of Recyclables in Waste = Z
Quantity of Recyclables on the Street = Z* {X- (X*Y %)}
Sorting Rate/Picker = N per ton
Estimated Number of Pickers = Z* {X- (X*Y %)} /N

7- In order to get estimation on the national level, governorates were grouped geographically as: Greater Cairo Region, North Coast (Alexandria and Matrouh), Canal, Sinai, Red Sea, Delta and Upper Egypt. Apart from Greater Cairo region and Alexandria, which were assigned higher rates of sorting/picker/day, given the dynamics of the waste systems and the existence of the Zabbaleen, all other governorates were assigned a rate of 40 kg/per picker per day.

Based on these estimations, the number of Sarreha/street pickers at a national level is **54,941.** It is worth mentioning that the figures produced in Table 4.33 are conservative figures. The first assumption made that sorted waste is only uncollected waste, is not accurate given evidence from across all governorates. Waste in many instances has already been sorted before being transferred to the dumpsite/transfer stations or composting plants. The model can be used to assume larger amounts of waste being sorted and accordingly a larger number of Sarreha/street pickers.

[104] These rates were discussed with EEAA solid waste management department.

Table 4.32 Estimated Numbers of Street Pickers at the National Level

Area	Governorate	Generated Waste (Ton/Day)	Collection Efficiency Rate	Collected Waste (ton)	Uncollected Waste (ton)	% of Recyclables	Quantity of Recyclables at collection point	Quantity of Recyclables on the Street	Sorting Rate/picker (ton)	Estimate of street pickers
Greater Cairo	Cairo	11000	0.68	7480	3520	0.3	2244	1056	0.08	13200
	Giza	**4000**	**0.55**	**2200**	**1800**	**0.3**	**660**	**540**	**0.07**	**7714**
	Helwan	4000	0.65	2600	1400	0.3	780	420	0.7	600
	Qalubia	3500	0.45	1575	1925	0.3	472.5	577.5	0.05	11550
	6th October	2500	0.7	1750	750	0.3	525	225	0.05	4500
Alexandria + Matrouh	Alexandria	3700	0.8	2960	740	0.3	888	222	0.07	3171
	Marsa Matrouh	250	0.7	175	75	0.15	26.25	11.25	0.04	281
Canal +Sinai + Red Sea	**Ismailia**	**600**	**0.65**	**390**	**210**	**0.15**	**58.5**	**31.5**	**0.04**	**788**
	North Sinai	200	0.7	140	60	0.15	21	9	0.04	225
	Port Said	650	0.8	520	130	0.3	156	39	0.04	975
	Red Sea	450	0.7	315	135	0.3	94.5	40.5	0.04	1013
	South Sinai	350	0.8	280	70	0.3	84	21	0.04	525
	Suez	400	0.7	280	120	0.15	42	18	0.04	450
Delta	Behira	3000	0.6	1800	1200	0.1	180	120	0.04	3000
	Daqahlia	4500	0.55	2475	2025	0.1	247.5	202.5	0.04	5063
	Damietta	900	0.7	630	270	0.1	63	27	0.04	675
	Gharbia	**3000**	**0.7**	**2100**	**900**	**0.1**	**210**	**90**	**0.04**	**2250**
	Kafr El-Sheikh	2500	0.65	1625	875	0.1	162.5	87.5	0.04	2188

Area	Governorate	Generated Waste (Ton/Day)	Collection Efficiency Rate	Collected Waste (ton)	Uncollected Waste (ton)	% of Recyclables	Quantity of Recyclables at collection point	Quantity of Recyclables on the Street	Sorting Rate/picker (ton)	Estimate of street pickers
	Menofia	2000	0.75	1500	500	0.1	150	50	0.04	1250
	Sharqia	1800	0.5	900	900	0.1	90	90	0.04	2250
Upper Egypt	Al-Minya	1000	0.65	650	350	0.1	65	35	0.04	875
	Aswan	650	0.75	487.5	162.5	0.3	146.25	48.75	0.04	1219
	Asyut	700	0.6	420	280	0.1	42	28	0.04	700
	Beni Suef	750	0.65	487.5	262.5	0.1	48.75	26.25	0.04	656
	Fayoum	600	0.5	300	300	0.1	30	30	0.04	750
	Luxor	**250**	**0.75**	**187.5**	**62.5**	**0.3**	**56.25**	**18.75**	**0.04**	**469**
	New Valley	100	0.65	65	35	0.1	6.5	3.5	0.04	88
	Qena	1000	0.65	650	350	0.1	65	35	0.04	875
	Sohag	900	0.6	540	360	0.1	54	36	0.04	900
Total		**55250**								**54941**

4.7 Market Value for the Informal Sector Activities

Experiences in different developing countries have proven that the informal sector activities in the waste sector can contribute significantly to the economy. There is a value added to collecting recyclables from waste and transforming them into tradable goods. In addition to this, such activities have numerous economic benefits including the establishment of new enterprises, mainly SMEs, the development of trading networks, capital accumulation and investments. Moreover, the reuse of recyclables translates into savings in terms of raw material, transportation cost and energy usage[105].

Value is added to waste through a series of processes which includes, for example, sorting, washing, changing the physical form or by aggregating large amounts of a raw material to make use of economies of scale. The informal sector activities in the waste sector are usually organized in a hierarchial form. Value added along the hierarchy is skewed towards the top, the higher the hierarchy, the higher the value. At the bottom of the hierarchy are the street pickers and scavengers who are engaged in extraction of recyclables, and at the top are the end user factories where recyclables feed into their manufacturing processes, and where the highest value of the product lies (Figure 4.59).

The organization and work dynamics of different groups of the informal sector involved in the waste system in a given market directly influences the value chain of traded recyclables in this market. Unorganized markets decrease the ability of those at the bottom of the waste hierarchy to add value to the recyclables they collect. In addition, they become more prone to exploitation from groups higher in the hierarchy especially intermediate dealers[106]. Figure 4.59 reflects the typical waste hierarchy in the four governorates under study[107].

Figure 4.59 The Typical Waste Hierarchy in the Four Governorates Under Study

Highest Value		Manufacturing Industries
		Large Dealers
		Small Dealers
		Family type scavengers
Lowest Value		Individual waste scavengers/pickers

[105] The Waste Experts: Enabling Conditions for Informal Sector Integration in Solid Waste Management Lessons learned from Brazil, Egypt and India, GTZ, 2008.
[106] David C. Wilson, Costa Veils, Chris Cheeseman. Role of informal sector recycling in waste management in developing countries, Habitat, 2005.
[107] This figure is adapted from David C. Wilson, Costa Veils, Chris Cheeseman. Role of informal sector recycling in waste management in developing countries, Habitat, 2005.

The vast majority of those working in the informal sector in the four governorates investigated (scavengers, street pickers and Sarreha) occupy the bottom of the hierarchy. They tend to work as individuals or families. It is essential to have an organized supportive network and access to financial and technical means to allow these groups to have further involvement in the processing of the material to increase its value added[108]. These pre-requisites are mostly not available for the groups in the four governorates under study. Scavenger, street pickers and Sarreha are not able to negotiate the price of the recyclables they collect and moreover, many of them, as reflected above in the report, sell their recyclables to a pre determined dealer for whom they work or even have to pay a fee to be able to access the waste.

> "I collect the recyclables and hand it to the head of scavengers he weighs the objects at the end of the day gives me whatever he wants. I don't know anything about the prices. He never informs me about the prices of anything."
>
> Female scavenger

Table 4.33 Processes which Add Value to Waste and Groups Involved in the Process[109]

Collection	Identification and picking of items or collecting mixed waste allows the sector to acquire the waste and turn it into a resource, e.g. glass, plastics, etc. Treated as commodities as they all have a market price	Sarreha, Scavengers, Street Pickers
Sorting	Main process that increases the value of the waste recovered. The deeper the sorting differentiation, the higher the value of waste. For instance, if plastic is grouped into one major category, its value is lower than when it is further separated into sub-categories of hard and soft, then HDPE, PET, LDPE. Sorting according to color, size, shape and potential use or re-use of the materials so as to meet the end-users quality specifications.	Sarreha, Scavengers, Street Pickers and sometimes Small Dealers
Aggregation of Large Quantities	Additional volume adds value: larger volumes command higher per-unit prices. The greater the quantity, the better	Small Dealers to a small extent Large Dealers

[108] Ibid.

[109] This table is adapted from David C. Wilson, Costa Veils, Chris Cheeseman. Role of informal sector recycling in waste management in developing countries, Habitat, 2005 based on adaptations from Scheinberg (2001a) and from Community and Institutional Development (CID), Cairo, private communication).

	bargaining power the trader has.	
Processing	For instance: washing, changing shape through cutting, granulating, compacting, baling.	Some Large Dealers e.g. Ismailia, Giza
Recycling/SMEs	Creation of micro-enterprises that use the special skills of informal recyclers to transform recyclables into articles traded directly to the community and affordable for the poor	Nonexistent across the four governorates, except in Giza
Trading	In informal or formal markets. Links to the secondary materials network are crucial. Traders should be financially capable of adding and preserving the value of recyclables.	Large Dealers

As reflected in Table 4.34, most Sarreha, scavengers and street pickers engage in the first two activities, either collection only, or collection and sorting. Their profit margins are minimal. As for dealers, most large dealers own warehouses across the four governorates and resort to aggregation of large quantities of waste to make use of the economies of scale. This model exists across the four governorates. A small number of dealers are engaged in simple pre-processing such as washing or bailing. Across the four governorates, except for Ismailia, there are no micro-enterprises engaged in recycling. Recyclables are traded directly to larger dealers outside of the governorates or in some cases to end user factories. The recycling market in the four governorates, hence, is neither reaping the optimal benefits from manufacturing nor the benefits related to job creation and higher profits are not secured.

Box 4.17 Estimating the Significance of the Municipal Solid Waste Management Activities in Incomes of the Informal Sector

The Informal Sector, including street pickers and dealers, even those in the formal sector depend greatly upon their waste related activities in their incomes. The vast majority of those interviewed in-depth have confirmed that they are mostly dependent on the waste business to make a living.

To get an idea about the income of this category, the average daily income of the street picker owning an animal-driven cart is estimated at LE 50 from selling cardboard only, at the value of 25 PT/Kg. Performing two picking shifts daily, with the output per shift 100 kg, hence the weekly income is LE 350. This is similarly applied to the plastic items, which are more expensive and widely available and other items such as tinplates and glass. All dealers refused to mention the prices at which they sell to the large dealers. Even the worker interviewed in the plastic recycling enterprise said he never knows about the price at which plastics are bought from the large dealer.

It is interesting how each group perceives the others with respect to income. Some believe that the street pickers are the highest beneficiaries since they earn money effortlessly without any capital investment needed. The dealers on the other hand believe that the large-scale dealer are the second highest income-generating group in this business because he has nothing to do except maintain the

name of his business, his deal with one of the factories and provide some trucks to transfer the waste.

Figure 4.60 Example of Value Added in Plastic Processing in Mensheyat Nasser – Greater Cairo[110]

Mixed Plastic	2500 LE/ton
↓	+
Sorting by Color	100 LE/ton
↓	+
Crushing (Granules)	200LE/ton
↓	+
Washing & Drying	150 LE/ton
↓	+
Manual Check	100 LE/ton
↓	+
Plastic Granules (Pelletizing)	500 LE/ton

The value chain of prices from the bottom of the hierarchy to the top has been estimated across the four governorates. There are some variances in prices between governorates which usually range between 5 to 10 PT.

Table 4.34 Value Chain of Prices (Greater Cairo average market prices during the srvey)

Item	Small Dealer Buying Price from Sarreha/Scavenger per Kg	Small Dealer to Large Dealer Selling Price per Kg	Large Dealers to Manufacturers	Large Dealers to Exporters
Ordinary Plastic	PT 15- 180	PT 180-210	250 kg- ton/ 500 LE	
Transparent Plastics	PT 250	PT 300	PT 320 -330 + 500 if recycled into granules	
PET	PT 150	PT 180	PT250	
Cans	PT 35-4	PT 40		
Unclean Cardboard	PT 35	-PT 50	PT 150	
Clean Cardboard	PT 25-35-40	PT 45	-	
Glass	Pt 15	PT 20	PT 30	
Aluminum	-	-	-	
Foil (Sheets)	-	-	-	

Mango seeds are collected each 100 seeds are sold to farmers for 15 LE.

[110] Interview with Mr. Ibrahim Sawares, Dealer and Manufacturer in Mainsheet Nasser, September 2010.

Box 4.18 Model 1 – Transactions between a Dealer Buying from Street Pickers and Selling to a Large Dealer

- The dealer buys waste items from shops, juice package companies, and from about ten street pickers/scavengers. He undertakes some pre-processing of these items, such as arranging, compacting, and packing the cardboard with special ropes, cans are compacted and folded to reduce their size. Plastics are sorted into soft and coarse types. Flexible steel items are cut. Three workers are with the dealer/warehouse owner.
- Buys daily 50-100 Kg of cardboard at 35-40 PT/Kg, and then sells these items to the large dealer at PT 45. Monthly sales may reach about 3.5 tons.
- Buys daily 18-20 Kg of plastics at 180 PT/Kg, and then sells these items to dealer at PT 210. Monthly sales may reach about 1.2 tons.
- Buys daily 50 Kg of cans at 35-40 PT/Kg, and then sells to the dealer at PT 45. Monthly sales may range from 500 to 700 Kg.
- Buys daily 100-300 Kg of steel (iron) at 100-110 PT/Kg, and then sells these items to the contractors at PT 125. Monthly sales may reach about 5 tons.

Box 4.19 Model 2 – Transactions of a Dealer who Hires Street Pickers to Collect for Him

- Buys crushed transparent plastic in 3 gonya on daily basis, at a price of PT 150 and then sells it at PT 180.
- Buys three tons of cardboard every three days at LE 250 per ton and sells it at LE 300.
- Ordinary plastics in 3 gonya, each of which contains 150 Kg. Buys at PT 110 and sells at 150 LE/Kg.
- Glass: Buys 0.5 tons on daily basis at 15 PT/Kg and sells it at 20 PT/Kg.
- Cans: Buys 200 kg on daily basis at 35 PT/Kg and sells it at 40-45 PT/Kg.
- Mango seeds: during the 40-day high season in Ismailia, buys 2000 seeds/day and sells to farmers at LE 15 per 100 seeds.

Chapter Five: The Sustainable Livelihoods Analysis

5.1 General Introduction

The Sustainable Livelihoods Approach (SLA) adopts a distinctive perspective on the understanding of poverty and how to intervene to improve the conditions of the poor. It acknowledges poverty as insecurity of income rather than only a lack of wealth. It understands the sustainability of the livelihoods as the ability of individuals to be resilient to shocks and stresses, and which does not adversely affect the environment. The PSIA team, adapting the sustainable livelihoods approach (SLA), has analyzed the livelihoods of the informal sector group working in SWM in the targeted governorates.

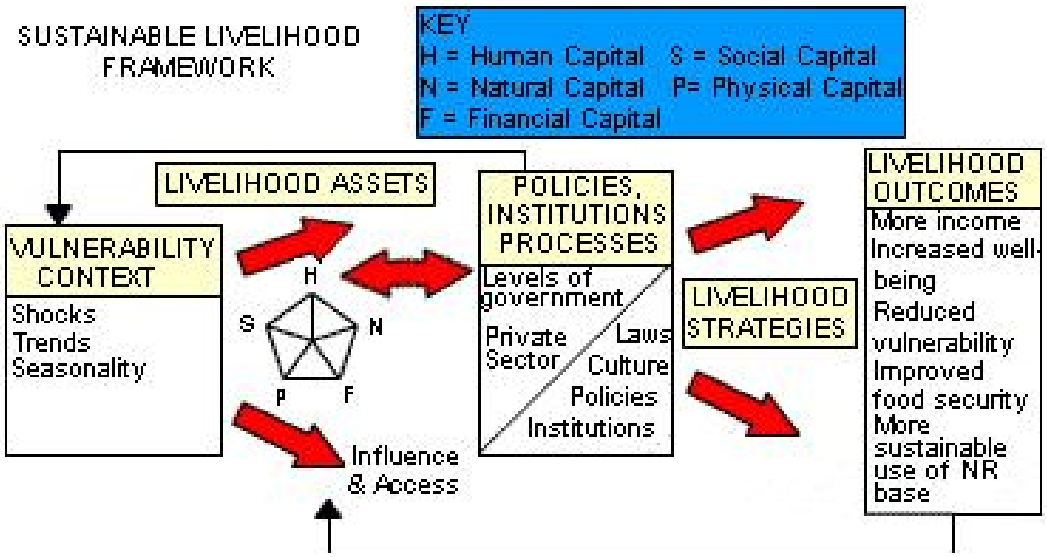


Figure 5.1 Sustainable Livelihoods Framework (DfID, Sustainable Livelihoods Guidance Sheet, 2001)

The PSIA team acknowledges the heterogeneity of the informal sector groups and the fact that categorizing them into groups should be done very carefully since the dynamics of the various groups are largely different. However, for the purpose of this PSI analysis, and due to the obvious overlap in the nature of business and the dynamics of the various sub-groups both within the traditional groups (Zabbaleen and Wahys) outside them (street pickers, scavengers, Sarreha and various scale dealers). The PSIA team, thus, has packed some sub-groups in the analysis of the SLA and highlighted main traits these groups have in common. The main and key finding related to this analysis is that the various informal sector groups are using their asset base, including the human, financial, social, natural and physical assets, in order for them to cope and create survival strategies and confront the various shocks they face.

5.2 The SLA Analysis for the Informal Sector Groups

5.2.1 SAL for Zabbaleen Community

Social Assets

- Garbage collectors (Zabbaleen) and their families have **a structured household system** for utilizing the various assets in order to enhance their collection, segregation and recycling business. This involves strict **gender roles and domestic labor distribution** among the family members. Women and children used to play a major indoor role in waste sorting. Women currently are facing challenges in meeting their demands.

> "I did not use to have a salary in return for my work but all my requirements used to be fulfilled because the household income was much higher."
>
> A wife of one of the garbage collectors

- Zabbaleen are widely perceived to be **unorganized and have high sense of individualism** that prevents different efforts to collect and organize. In response to limitation over access to waste after the engagement of private companies, **Wahys networked and associated in legal forms. Zabbaleen were not able to do the same except the elites among them who established NGOs** and managed to reap the benefits.
- Perceived by other operators as an **unmanageable group and their role is unacknowledged.**

> "I do want them to work within the company but they do not want to maintain a living."
>
> Responsible official in IES

> "We get used to working without managers. We cannot accept orders from strangers."
>
> One of the Zabbaleen community in Mensheyat Nasser

> "They [Zabbaleen] do not have business skills…they failed in running organized business since they are accustomed to doing random work. FCC, the Spanish Company working in Cairo has tried to contract Zabbaleen."
>
> A representative of the National SW companies in Giza Governorate

- **Negative attitudes from other operators** (GCBA, national companies and international operators) towards Zabbaleen.

> "They are backward, unorganized and illegalized community. The way they operate is unhygienic and they do not know how to benefit from the collected garbage. They are generally incompatible with a modern waste management system."
>
> Responsible official in IES

- In the meantime, there is a widely prevailing belief that the category of Zabbaleen is making a lot of profit. More accurately, this was the case before the slaughter of the pigs. This, in a way, created **an increased sense of malice towards them**, particularly from governmental officials.
- Zabbaleen live in an **extended family set up** in order to allow for more labor to strengthen their businesses.
- **The internal hierarchy** of the Zabbaleen community is a main determinant for who gains and who loses.

> "Those who own large scale business have not been influenced by the pigs' crisis. They might even become better off. The problem is in the poor who do not own. They are unable to confront the situation."
>
> A garbage collector in Ard El Lewa

- Garbage collectors (Zabbaleen) have strong social networks that they utilize in different ways to improve their livelihoods outcome. **Intermarriage and early marriage** is an important social arrangement which allows the families to extend their business through younger generations of men and women. **Lately, lack of income after the slaughter of the pigs, which used to form the backbone of the household economy in Ard El Lewa, does not allow many of the families to continue in this social arrangement of the early intermarriages.** This means a decline in an important social strategy due to the lack of financial resources required for marriage.
- **Constant conflict and clashes between the District Authority and garbage collectors** because the latter are formally prevented from removing recyclables from street containers. In practice, this is difficult to enforce. Garbage collectors continue scavenging in street collection points and containers to sort valuable item to sell.

> "We do it now very quickly in order not to be caught. The district officer breaks our donkey carts if they see us scavenging on the street."
>
> A garbage collector in Ard El Lewa

- Working with garbage is associated with **social stigma.**
- The Zabbaleen group does not have any **political voice or representation in various political arenas**. **The existing NGOs are weak and are unable to protect the interest of the poorest and most marginalized groups**. The only organization that cares about Zabbaleen is the church.

Human Assets:

- They are utilizing **their physical ability** to perform the labor intensive job of collecting waste and transferring it from various districts to Ard El Lewa.
- They are exposed to **constant health and physical hazards** due to their direct handling of waste, including sharp and hazardous materials **with no preventative tools**.
- **They have the know-how skills** that they gained by practice and efficiency and speed in sorting recyclables from piles of waste.

> "We know the work. Not everyone accept to do our job. It requires physical ability from men to get upstairs carry waste, pack and load it."
>
> A garbage collector in Ard El Lewa

- Their **skill base for other types of work is very limited**. This is particularly true and applicable for the old generation who are not willing to obtain new skills. Youth also seemed to be confused and do not know the types of skills that re required if they are obliged to find an alternative source of income.
- **Their need for the labor input of children** in both indoor and outdoor activities, including collection and sorting in most cases **discouraged them from sending children to schools.** Lately, after their income crisis, a **higher need for educating children emerged** but some interviews showed that they cannot afford the costs associated with schooling and this is a factor that discourages them from educating children.
- **The households' hygienic and living conditions** represent a serious threat to the health of the houses residents, particularly children. Household conditions are relatively more hygienic after the end to accommodating organic waste.
- **The level of family nutrition is poor.** The families use food items found in garbage as a source of food.

> "We observe the impact on the family's income by noticing the amount and quality of snacks that mothers used to give to her children at the nursery compared to the situation now. Some children do not bring any food with them now. We have cut the monthly fees of the nursery from 20 LE to 10 LE and fully exempted some poor cases and still some families cannot cope."
>
> Supervisor in children nursery home, St. George Church

Financial Assets:

- Zabbaleen in Giza Governorate used to have three main sources of income:

1) **Service fees** collected from households which varied from LE 3 to LE 5/month.
2) The income from **selling recyclables.**

> "We used to bring 40 tons of waste to Ard El Lewa every day. The daily household share was 30 to 40 filled large bags "gonya" per day, now the number of "gonya" per day does not exceed 2 to 3. We are 70% less on what we used to make before."
>
> Garbage collector in Ard El Lewa

3) **The income from selling pigs** that they used to raise on the collected organic waste. Large scale Zabbaleen at the head of the hierarchy would give a number of pigs to small scale Zabbaleen and they were responsible for keeping and raising the pigs in their rented Zarayeb for fees (the owner of the pigs would pay for each load of organic waste which equals LE 100/medium size truck).

- Lack of income is reflected in **their inability to meet financial obligations** related to various aspects (e.g. installments for trucks, preparation for marriage, schooling costs, etc.)
- As a coping strategy, it was estimated that **5% of the families have already left the garbage business.**

> "In response to the crisis of slaughtering pigs, it is estimated that 5% of those who used to work in collection and sorting left this economic activities. They work as drivers or any other low-skilled jobs. Let alone the impacts on women and children who used to work."
>
> GCBA officer

- The field observation suggests that around **70% of the households in Ard El Lewa currently depend only on the physical abilities and the gathered sellable recyclables for making a living.** Those are the category of the poor and most vulnerable that do not have any sellable assets or capital to rely on.

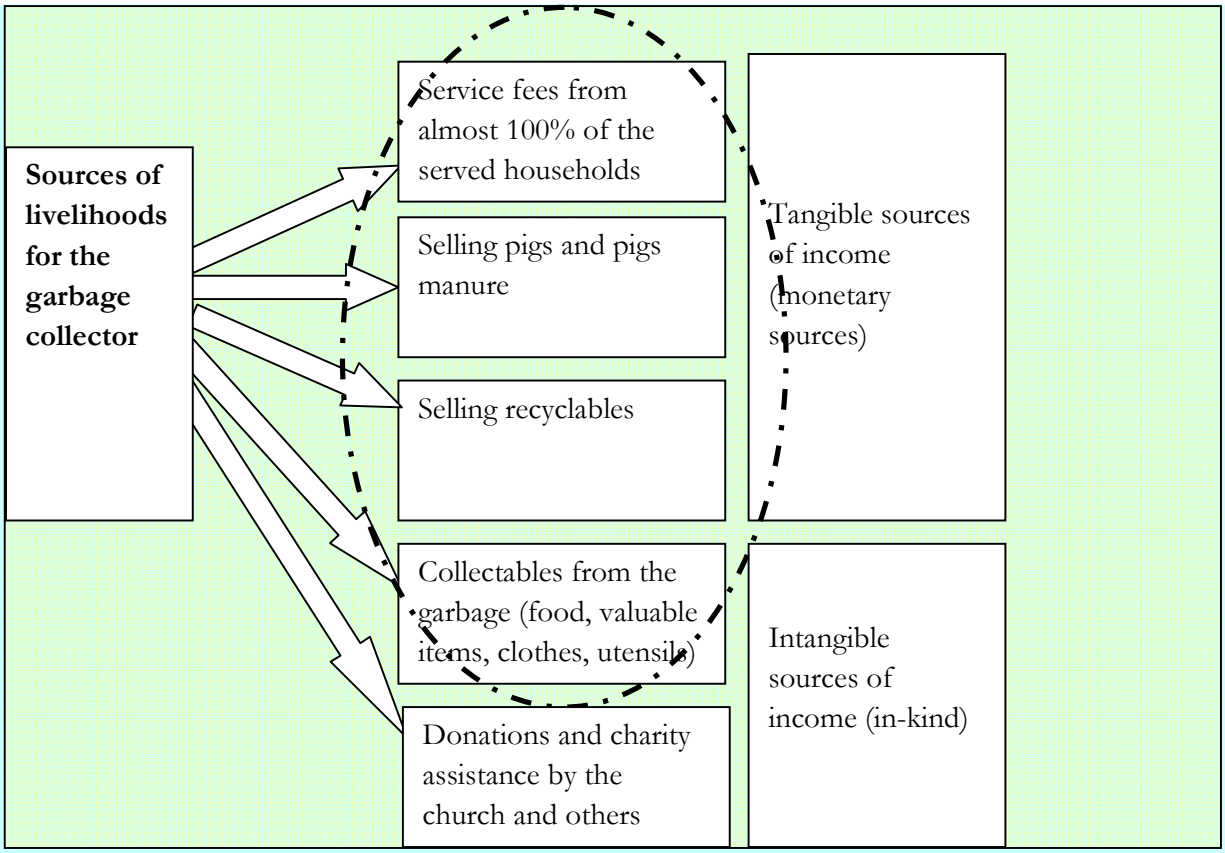


Figure 5.2 Main Sources of Livelihoods for the Informal Sector Groups in Giza Governorate
(their access to the items surrounded by dashed line have been drastically affected)

5.2.2 SLA Analysis for the Informal Sector outside the Traditional Zabbaleen Community

Social Assets

- **<u>Social stigma of society.</u>** This group is generally looked down at by others. Workers in the informal sector are aware of this problem. Social stigma is very evident and some groups even accept working at a dumpsite where the community cannot see them rather than on the streets, even if the second is more financially rewarding.

> "People look down on us. That is why many youth refuse to do this job."
>
> Young scavenger, Focus group in Ismailia

> "Don't take a photo of me. Can't you see the horrible kind of job we are doing. There is nothing really to take a photo of!"
>
> Young female Scavenge, Defra Gharbia

"Here is better than the street…we are not humiliated as the case in the street. Street scavengers make more money than us but we can not do his work."

One of the scavenger in Shoubramant Dumpsite, Giza

"They affect our work here in the dumpsite. Every jobless person now uses a bike and two large bags and start picking from street containers. They need the State Security not the Utilities Authority."

Al Farounia representative at Shoubramant Dumpsite

- They **<u>are even looked down upon by the Zabbaleen who were observed to have strong negative attitudes towards them.</u>** Zabbaleen usually feel that street pickers are spoiling their work and get them into trouble with the government by leaving scattered waste on the streets.

"They are the jobless…yes they are Seya's wa Shammamen. Any person who finds nothing today…drives a toktok or scavenges in garbage. They spoil our work by cutting garbage bags and scattering waste in the street. They even steal our recyclables."

Boules Adel, Zabbal in Ard El Lewa

- This attitude from society, encourages **<u>intermarriages within the same group,</u>** this was confirmed both in Ismailia and in Luxor. However, in Ismailia, it was observed that divorce rate among the newlywed was high.

"They should marry from each other. This way they understand each other, don't create problems, they belong to each other."

Qamatt in Luxor

- These groups are **<u>generally individualistic and heterogeneous</u>**. In Luxor, a group of young scavengers call themselves "the independents- nobody controls us."

"Daa'een Alla Zeraahom"
"Wearing tattoos on their arms."

Individual Scavenger

- Few family types were detected within these groups. In Ismailia, there are some examples of families living in extended families where all members of the families are working collectively. In Giza, scavengers in Shabramant all come from Shabramant Village which is administratively affiliated with 6th of October Governorate. They **<u>have strong social relations and mostly come from one family.</u>**

> "We support each other financially and socially. The whole family works in this field. However, we insist on educating our children."
>
> Member of El-Sokkary Family, Gharbia Governorate

- However, many cannot be considered the standard family type. In Luxor, **families are supported by children, mothers or disabled or unemployed fathers. The family does not play its traditional role in society.** It is interesting to see that scavenger children and youth in Luxor have to choose between taking a daily wage for their work and in return the Qamatt secures a living and marriage for them, and between selling their collected recyclables without expecting any social obligation from anybody (they are responsible for their own futures). In Gharbia, the two families identified had their children educated (even though some assisted on sorting). The waste business was a source of income for the family heads, who also worked as dealers. One family in Gharbia had major conflicts and violence over waste.

> "Everybody should take care of himself. Let the child scavenger support himself."
>
> A Qamatt in Luxor, intermediary who manages children and young scavengers

- **Relationships outside of the families are utilized for mutual benefit.** In Luxor, for example, groups use the empty spaces in between their residences as shared storage areas. Also, they share in paying the fees of the trucks for transporting the sorted items to the tradesmen and in paying the rental fees of the trailer which is used to compact tin cans.
- They build social networks through their neighbors. **Many temporary workers found out about work through such social networks.**
- Information in this business is very important. **Exchange of information** about the prices of sorted items as well as the supply and demand for specific types of items empower these groups however, it is not always true that they can use this information for their benefit.

> "I collect the stuff they tell me to collect and give it to the head of scavengers he weighs it and at the end of the day gives me whatever he wants. I don't know about the prices. He never informs me about the prices of any item."
>
> Female Scavenger in Gharbia

- It has been observed that a large number of these groups are not original residents but **immigrants from other governorates** who came to make a living.

> "We used to live in Fayoum but came here a year ago. We used to sell fruits there but certain circumstances happened to us and obliged us to come. We are a family of six siblings, a father and a

> mother. None except the two of us work. We store recyclables at home and gain around LE 200 a week from selling cartoon and plastics...It happened to us several times that the municipality (referring to GCBA) took our donkey cart and destroyed it…another time they give us a slip of paper (referring to the fine report) and we pay LE 200 and get the cart back."
>
> Two male street pickers, ages 15 and 17 years old, Giza Governorate

- Similar traits were detected in Luxor.
- It has been recorded across governorates that **work promotion is very rigid**. Those at the head of the business, intermediaries and or dealers, are not interested in helping the groups at the bottom grow and share their profits.
- Across the four governorates, no social organization providing support for this group of people was detected.

Human Assets

- They are utilizing their **physical ability to undertake this kind of job.**
- They are **mostly illiterate** and a few have very little education. This is evident across all governorates investigated.
- They have **very limited skills for any other type of job.** That is the main reason they enter the informal waste market. Limited numbers are employed and work in the waste sector to gain extra income. These individuals also have limited skills and education to help them go into any other sector.
- Although illiterate, **they resort to work strategies to help them make get the best out of their work and maximize their profit.**

> In Luxor, scavengers came up with an idea to press sorted cans using an agricultural tailor that they rent instead of using a compressor to save on costs and increase their profit margin.

- **No aspirations** have been reported by this group to change their job. They view waste collection as their only work option.

> "We don't dream of anything. We live day by a day."
>
> Child scavenger, Gharbia

- **Child labor** is evident and has been detected across all governorates. In Giza Governorate, the team met several teenagers who are heading their families.

> "We are a group of children, we sleep by the mosque. We have been working here for 3 years. We are all illiterate. We find clothes, food and useful objects in the garbage. Our income is about 15 EGP per

day. This is good. People near to the mosque send us food and clothes. Glue is our favorite drug. We have it after working hours."

Child scavenger in Dawakhlia

- Living conditions are generally harsh. Some share houses collectively like in the case of Luxor. Others are street children. In Ismailia, some areas where they live were tagged as dangerous and known for drug dealers operations. Amongst these groups are addicts. For example, in Gharbia, some reported addiction to drugs such as glue and marijuana to enable them, according to them, to face their own difficulties and accept such a life.

Financial Assets

- **Daily wages** are the main financial assets for these groups. Across governorates, averages were estimated around 50LE/day, a maximum of 100 LE/day was recorded by some in Ismailia. However, even this asset is not fixed. There is no financial stability for these groups of workers.
- **Valuables occasionally recovered from waste** are considered among those financial assets.
- They do not possess **any other significant financial assets**.

Physical Assets

- **Access to waste** is considered the main physical asset upon which they make a living. This includes containers, bins, and dumpsites.
- **Access to storage areas** by some. For example in Luxor and Ismailia, where they have open space on the roof or between houses to sort the waste.
- **Living near a dumpsite**. For example in Giza, most of the scavengers come from the neighboring village.
- Family type scavengers sometimes own the houses where they live, e.g. in Gharbia

5.2.3 Polices, Institutions and Processes (PIPs)

- Certain provisions of related laws (e.g. **Public cleanliness Law No. 38 of 1967 are used to prosecute some of these groups).**

> "It happens several time, they (referring to the municipality) fined me and took my cart and destroyed it and take the donkey to the zoo."
>
> A street picker in Giza

- Some decisions adopted may be considered a direct threat to this category. A decision on assigning MSW to another party or changing the current system could mean unemployment and destroying the sources of income not only for these individuals but for the whole families they support. An example is the proposition in Luxor for the local government to take over and the new proposed MSWM in Greater Cairo which will directly impact these groups in Giza and force them out of work.
- Changes like imposing taxes or exporting a recyclable (e.g. on exporting PET) affect result in reducing the financial revenues for this category that depends largely on this kind of recyclable.
- They are often pursued by the police as outcasts. They are allowed to work at dumpsites and compositing plants but not on the street. In Ismailia, a governor decree to ban the donkey carts resulted in harassment by the police all the time. This is the case in all other governorates. In Gharbia, they remove the sides of small carts to be similar to furniture loading carts, as a maneuvering strategy.
- The relationship with the private sector differs from one governorate to the other. In Giza, private sector detests them and accuses them of recovering most of the recyclables before it is transferred to the dumpsite. In other governorates, like Luxor, the private sector depends on them to recover the waste.

External Circumstances

- Changes like imposing taxes or exporting a recyclable (e.g. plastic bottles) may result in reducing the financial revenues for these individuals that depend largely on this kind of recyclable.
- Seasonality of work, in general in summer and in Ramadan months, recyclables are more valuable. In Luxor, there are more recyclables in the winter given the touristic season
- The avian flu problem induced constant inspection of dumpsites on the part of the government, which sometimes hinders their work.
- The economic crisis and fluctuation of the international prices of recyclables and lack of liquidity affected the market, and hence can affect their work.

Chapter Six: Alternatives and Suggestions for the SWM Reform

6.1 Introduction

The Government of Egypt, represented by MoLD and EEAA, is expressing a serious commitment and dedication to improving the MSWM systems all across Egypt and in particular in the large urban centers where the problem is more evident. The international organizations are widely assisting in this regard with several strategies and studies which are currently underway including this PSIA which is sponsored by MoLD and is funded by the UNDP and the World Bank. The WB is also assisting the MoLD in the preparation of a Strategy for the Private Sector Participation (PSP) in MSWM. Moreover, the preparation of the National Solid Waste Management Programme (NSWMP) is currently under preparation by EEAA with funding from KFW. The outcome of these studies will contribute to creating the features of the reform program of MSWM. One positive aspect about these efforts is that they are fully coordinated. There is, generally, a trend towards encouraging the private sector involvement in the sector. However, this trend will not be developed as a 'one model fits all' but rather should be tailored to the special characteristics of each governorate and the various characteristics within each of the governorates.

The PSIA analysis made it evident that in order for the future reform of the MSWM sector to be successful and sustainable, irrespective of the reform directives adopted, ample attention to the various social aspects should be paid and the concerns of various sub-groups should be to the extent possible safeguarded. Attaining sustainable social outcomes requires full orientation with the complexity of the dynamics, interests and capabilities of various groups, including local community groups and the informal sector. The alternatives analysis will, thus, present suggestions to consider the interests of the main potentially affected groups, firstly local community groups and secondly the informal sector groups. This Chapter of the PSIA will also help in drawing a proposal for an institutional framework that can play the role of the home/owner of these alternatives.

The alternatives as well as the institutional frame were developed in full collaboration with stakeholders during review sessions that were organized after producing the first draft of the PSIA.

It is worth noting that the technical aspects of the SWM system are considered to be out of the scope of the PSIA alternative. Thus, the technical aspects will be only touched upon in the parts that have relevance to the social groups (e.g. the collection service type).

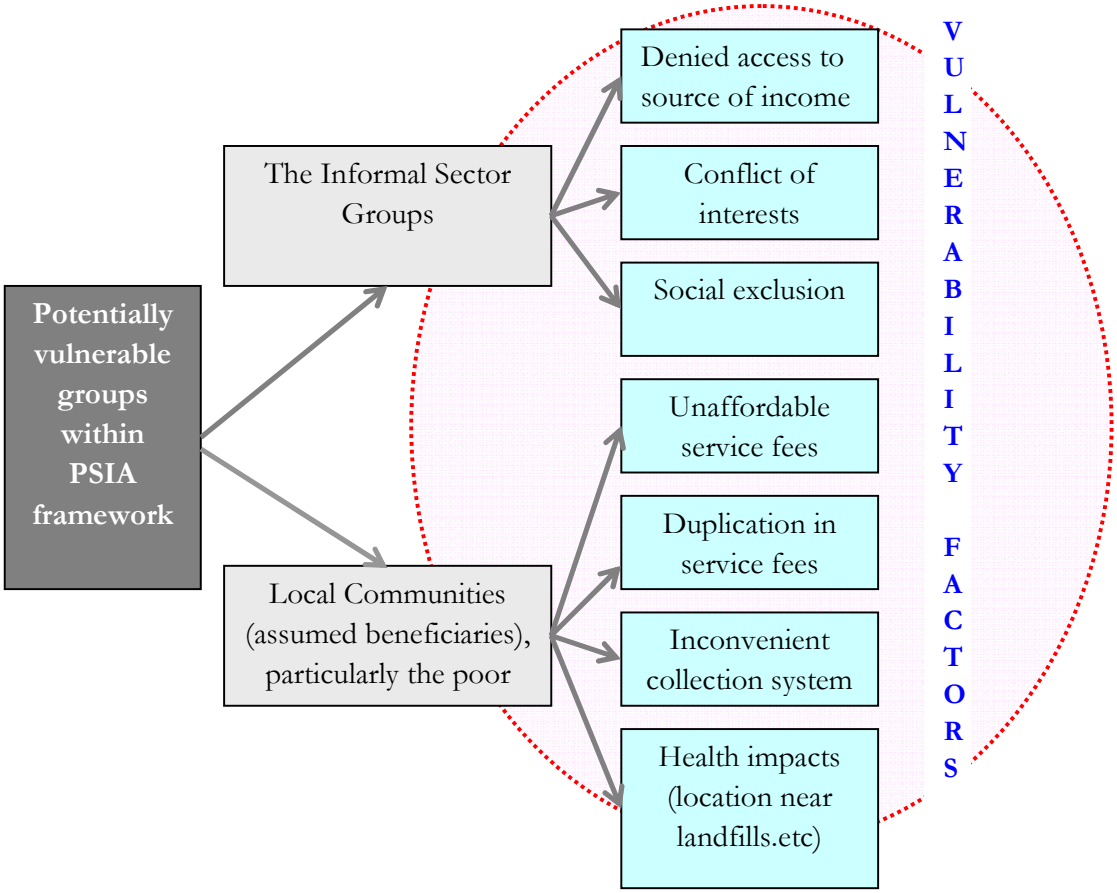


Figure 6.1 Summary of the Main Potential Vulnerable Groups within the Reform Context and the Potential Impacts

As shown in the analysis across the PSIA and summarized in Figure 6.1 above, plenty of shortfalls of the current systems stem from an emerging conflict of interest among the various actors including local communities groups who are financially overloaded with excessive fees without receiving an efficient level of service. The interest of the informal sector, particularly the traditional groups (Zabbaleen), in getting involvement and being empowered by the various interventions has not been attained by most of the sub-groups who are even becoming more economically and socially vulnerable. Moreover, the newly emerging groups of the informal sector are vulnerable stigmatized groups who are socially and institutionally rejected.

«المصري اليوم» ترصد انتشار القمامة فى شوارع المهندسين والمنيل والنزهة

رئيس «النظافة والتجميل»: عمال الفرز السبب فى الأزمة.. وجامعو القمامة: اشتغلنا فى الفرز بعد ما منعونا من العمل الحر

كتبت - ياسمين القاضى:

لم تعد أزمة انتشار القمامة مقصورة على الأحياء الشعبية والعشوائية فقط، بل طالت أيضا شوارع الأحياء الراقية فى القاهرة والجيزة، وذلك ما كشفت عنه جولة «المصرى اليوم» فى عدد من الأحياء، ففى النزهة الجديدة وبالتحديد شارع طه حسين المجاور لحى النزهة تنتشر القمامة فى الحديقة التى تتوسط الشارع وبجوار صندوق القمامة.

وتقول نيفين إبراهيم، إحدى سكان الشارع: «حارسو العقارات المجاورة يلقون القمامة فى الحديقة المقابلة لعقارنا لأن الصناديق لا تكفى، فبأتى جامعو القمامة ليلتقطوا ما ينفعهم منها فقط، ويتركوا الأكياس مبعثرة»، وتضيف: «القمامة وصلت لدرجة إعاقتى عن مرور الشارع».

والحل من وجهة نظر «نيفين» وسكان عقارها يتمثل فى الحراسة والمراقبة، وتوضح قائلة: «نوصى حارس عقارنا كل يوم بمراقبة الحديقة ومنع أى حارس آخر من إلقاء القمامة أمام عقارنا»، وتستطرد: «كل واحد لا يهمه غير نفسه، وأهم حاجة إنه يرمى الزبالة بعيد عن بيته ومش مهم بيت مين اللى يترمى قدامه».

ما يؤرق سكان آخرين بالنزهة الجديدة هو تركهم شقتهم فى المناطق الشعبية، ودفع مبالغ طائلة فى شراء شقق بهذه المنطقة بحثا عن النظافة، التى لم يحصلوا عليها بسبب القمامة.

لم يختلف الحال كثيرًا فى المهندسين، ففى شارع شهاب الذى يتوسطه رصيف يحمل أعمدة دعاية، تنتشر أكياس القمامة بين كل عمودين، بينما تتصدر أكوام القمامة مدخل شارع عدن بجوار محل تجارى، ويقول معتز عبد الباقى، صاحب شركة بالمهندسين: «المشكلة ليست فى القمامة فقط ولكن فى ما يترتب عليها من ناموس وفئران وأمراض»، وحمل عبد الباقى كلا من الحى والسكان مسؤولية انتشار القمامة، قائلا: «الحى لا يهتم بشارع رئيس مثل شهاب، والسكان أيضا يهملون ويلقون القمامة فى الشوارع».

محمد رجب، جامع قمامة، استطاع أن يفسر لسكان المناطق الراقية انتشار القمامة فى الشوارع بجملة واحدة: «على آد فلوسهم»، موضحًا أن شركات النظافة هى السبب الأول لما يحدث، بسبب منعه من العمل الحر، وتوظيفه براتب ٣٠٠ جنيه فقط، ويقول: «كنا بنشتغل زى الفل أيام الكارو، ومفيش حد كان يلاقى ورقة على الأرض، لكن بعد ما منعونا نشتغل وشغلونا فى شركة نظافة مبقاش حد يشتغل بنفس عشان الواحد منا كان بيحصل أضعاف المبلغ ده شهريا».

وعلى الرغم من نجاة المنيل من أزمة القمامة، حيث يحيط عمال النظافة صناديق القمامة فى ميدان الباشا، فإن موقع الصناديق عند ملف بالميدان يتسبب فى انتشار القمامة على طول الشارع أحيانا، ولفت بعض سكان الشارع إلى أن وجود الصناديق بجوار الملف يتسبب فى اصطدام بعض السيارات التى تمر بالملف بالصناديق، مما يؤدى لقلبها وامتلاء الشارع بالقمامة.

من جانبه، أرجع أحمد على، رئيس هيئة النظافة والتجميل بالقاهرة، انتشار القمامة فى الشارع إلى عمال الفرز الذين يجمعون البلاستيك والمواد المعدنية والورقية من داخل أكياس القمامة، وهو ما يتسبب فى بعثرة القمامة من داخل الصناديق والأكياس، مؤكدا أن الهيئة تنسق مع شرطة المرافق لمنع عمال الفرز من العمل فى القمامة.

فيما نفى المهندس أحمد نصار، رئيس هيئة النظافة والتجميل بمحافظة الجيزة، وجود قمامة بشارع شهاب وقال: «ذلك شىء غير منطقى، قد يوجد أوراق شجر أو أكياس قمامة صغيرة يضعها أصحاب المحال أمام محالهم فقط».

..وفى شوارع المهندسين

..وفى النزهة الجديدة

القمامة تنتشر فى المنيل

El Masry El Youm (October 24th, 2010)

The fifth page of El Masry El Youm (October 24th, 2010) presented a short reportage that comprehensively summarized the current garbage crisis in Giza and Cairo Governorates which is increasingly felt in the high income areas of the two governorates. By pinpointing the problem in the El Mohandeseen District, the report clearly explained the interests of various stakeholders. The following is a summary for the relevant parts:

Mouataz Abdel Baqi, an owner of a company in Shehab Street, Mohandeseen mentioned: "The problem is not only in waste accumulations but the health consequences, the mosquitoes and mice. The municipality does not care about a main street like Shehab!! And people keep dumping waste randomly!!"

The report mentioned that Mohammad Ragab, a garbage collector, managed to illustrate the reasons of the problems with only few words: "Ala A'd Feloshom" which means that they [the Cleansing Authority] are getting what they are paying for. He explained that the Cleansing Authority is the main party responsible because they prevented garbage collectors from working as freelancers as they used to be and because the Authority employed Zabbaleen with a monthly salary of LE 300. He added, "Everything was going as easy as pie during the donkey carts days, not a single paper was dumped on the ground. But they prevented us from work and hired us in a company. We are discouraged from work because we used to earn as several times as our current income. We work in sorting recyclables after they denied us our job."

The report stated that Ahmed Ali, the Head of Cairo Cleansing and Beautification Authority (CCBA), strongly condemned the street pickers and said that CCBA is coordinating with the Utilities Police to prevent them from this work. In the meantime, Ahmed Nassar, Head of GCBA, strongly denied the existence of garbage in Mohandeseen street saying, "This is not logic…there might be leaves, small plastic bags that shop owners place in front of their shops."

The set of alternatives presented below, particularly for the informal sector groups, involve only preliminary thoughts that will be further developed during the regional workshops and will be integrated comprehensively in the final version of the PSIA.

6.2 Alternatives Analysis

6.2.1 Alternatives for Community Groups

The various community groups (beneficiaries and enterprises) have their own views for the planned reform which the PSIA helped significantly in exploring. The carried out social survey came out with the main features of local communities expectations from an improved system and their willingness to pay for that. This section on the alternatives for the community groups will be presented by Governorate out of deep belief in the specificities of the context of each Governorate and the benefit of using the survey results as guidelines for the design of systems with similar patterns. However, the heterogeneity of context of various places within each of the Governorates should also be highly considered in designing the various systems. Out of this, this PSIA should be used as a starting point or a mechanism for further surveys and community consultation activities that should precede projects' designs.

6.2.1.1 Community Perspective on an Improved System

- Need for Improved System

The survey results showed that a large majority of the surveyed communities think that the current system should be improved. Giza Governorate showed the highest percentage of respondents (93%) as shown in Table 6.1 below.

Table 6.1 Local Communities Reply When They Were Asked if They Want the Current System to be Improved

	% of Respondents			
	Giza	**Ismailia**	**Gharbia**	**Luxor**
Yes	93.1	92.7	92.5	84.8
No	6.1	6.5	7.5	15.2
Total	99.2	99.2		
Missing	.8	.8		
Total	100	100.0	100.0	100.0

- Preference for the Service Provider

The survey also meant to measure local community preferences for the service providers for the improved future system. As shown in Table 6.2 below, the highest frequencies were for the governmental operators and the private companies and the figures for these two service providers appeared to be very close in all the targeted governorates except Luxor where beneficiaries showed higher preference for the private companies as a service provider. It worth noting here that the field observations of local communities reactions to this question during the survey and the FGDs showed that the preference for private sector and the government service providers as stated by the respondents is an indictor that should be carefully dealt with. It seemed to the survey team that what

really mattered for local communities are the pattern and frequency of the collection system and the fees, regardless of the service provider.

This might justify the reason why no more than 14.5% of the Giza sample nominated Zabbaleen as a service operator although much higher percentage (63%) of the survey sample stated preference for the old Zabbaleen system as indicted in Chapter Four above. This might be also attributed to the increased level of awareness among local communities of the need for technology and experience in managing the SW problem which is currently changing in nature.

Table 6.2 Service Provider Preference in the New Improved System

	% of Respondents			
	Giza	**Ismailia**	**Gharbia**	**Luxor**
Government	35.9	48.0	46.6	31.4
Private Company	35.9	46.3	45.9	52.4
Zabbaleen (garbage collectors)	14.5	.8		
NGO	1.5	.8	6.0	8.6
Any one	9.2	3.3	1.5	6.7
Total	96.9	99.2		99.0
System	3.1	.8		1.0
Total	100.0	100.0	100.0	100.0

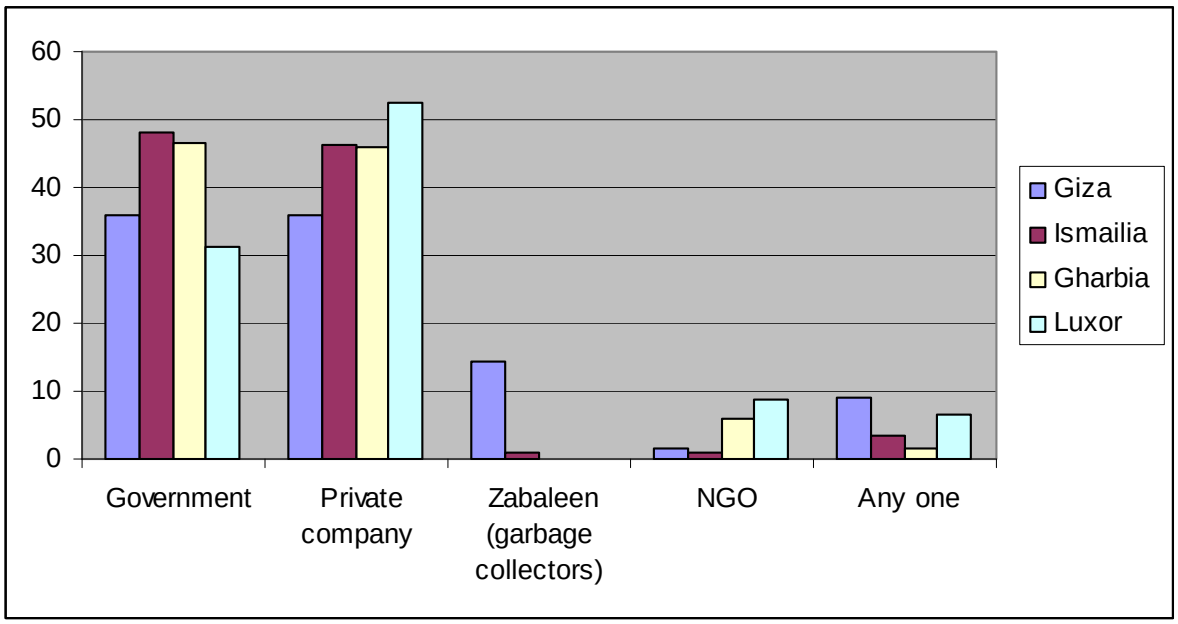


Figure 6.2 Service Provider Preferences in the New Improved System

- Preference for the Type of Collection Service

As indicted in the PSIA analysis above, the inappropriateness of the collection system for local communities resulted in an increased level of dissatisfaction among various groups. It was, thus, very important for the PSIA to measure beneficiaries preferences for the type of collection service that they suggested within the frame of the improved system. The responses to this question among the governorate showed significant differences that could be attributed to the nature of the governorates and local communities' familiarity with specific systems. Door-to-door collection appeared to be the most preferred collection system in Luxor and Giza while it appeared to be less preferred in the other two governorates. In Giza, the preference for door-to-door collection is expected and could be justified by the failure and negative impacts of the other systems currently in place. In Luxor, this could be justified by the fact that around 55% of the questionnaire was applied in urban and semi-urban areas. In Gharbia, local communities seemed to be in favor for the street collection system and in Ismailia the building-to-building collection system was the preferred collection model.

Table 6.3 Preference for the Garbage Collection System

	% of Respondents			
	Giza	**Ismailia**	**Gharbia**	**Luxor**
Door-to-door collection	69.5	30.9	30.1	61.0
From the building entrance	19.8	48.0	27.1	17.1
From collection points/streets containers	6.9	19.5	42.9	20.0
No matter how it is collected	.8			1.9
Total	96.9	98.4	100.0	100.0
System	3.1	1.6		
Total	100.0	100.0	100.0	100.0

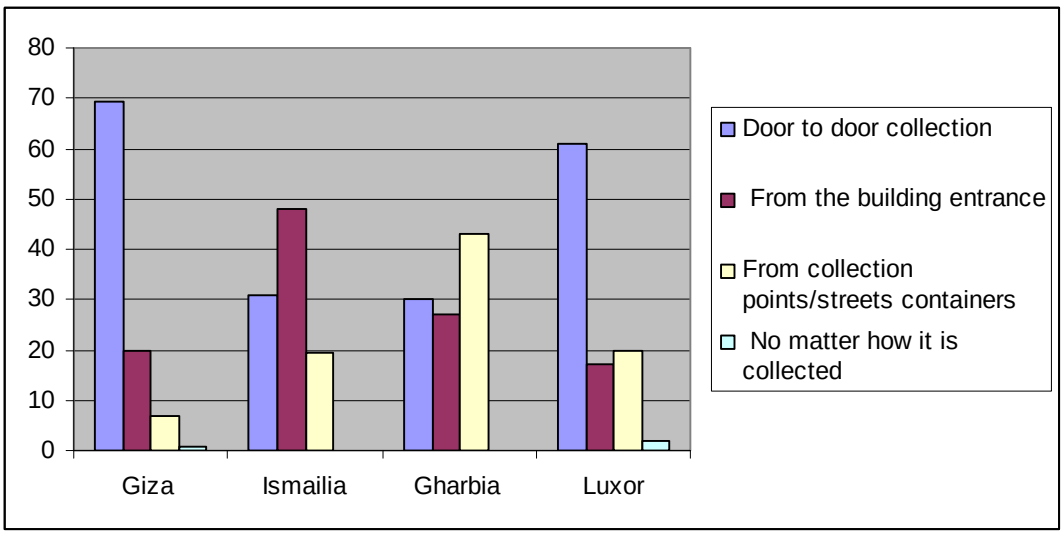


Figure 6.3 Preference for the Garbage Collection System

- Collection Frequency

As shown in Table 6.4 below, the results of the governorate about the preference for waste collection frequency was consistent. There is a general preference for collection every other day. This was followed the daily collection in all the governorates.

Table 6.4 Preference for the Collection Service Frequency

	% of Respondents			
	Giza	**Ismailia**	**Gharbia**	**Luxor**
Every two days	65.6	64.2	75.9	38.1
Twice a week	2.3	14.6	2.3	26.7
Once a week		.8		5.7
Daily	29.0	18.7	21.8	26.7
Twice a day				1.9
Total	96.9	98.4	100.0	99.0
System	3.1	1.6		1.0
Total	100.0	100.0	100.0	100.0

- Key Considerations for the Success of the New System

A question about the key aspects that should be taken into account in order to guarantee the success of new system was asked as part of the survey. Although the survey team asked this question as an open ended question, the suggestions that came out from the respondents across the governorates were found to be very similar. The PSIA team strongly believes that this happened because of the big similarities in the deficiencies of the system, at least from the community perspective which, as mentioned above, is more concerned with the issues of collection and practices. The suggestions with highest frequencies included:

- Regular waste collection
- Monitoring system should be applied
- Waste to be collected directly from shops and houses
- Increase the number of street containers
- People should be committed to the system (and this involved both awareness raising and law enforcement)

Other alternatives with lower frequency included:
- Increase worker salaries and incentives
- Increase the number of cleaning worker
- Increase waste collection vehicles
- Provide larger street containers

6.2.1.2 Local Communities' Willingness to Pay for an Improved SWM System

Within the focus of the PSIA, measuring community willingness to pay for an improved SWM service was an important issue to explore. The survey results have been cross-tabulated linking two variables, namely, the household level of income and the respondent willingness to pay for improved SWM service.

The cross tabulation results showed a strong positive relationship between the level of income and the fee amounts the local communities are willing to pay. This is visualized in Figures 6.4, 6.5, 6.6 and 6.7.

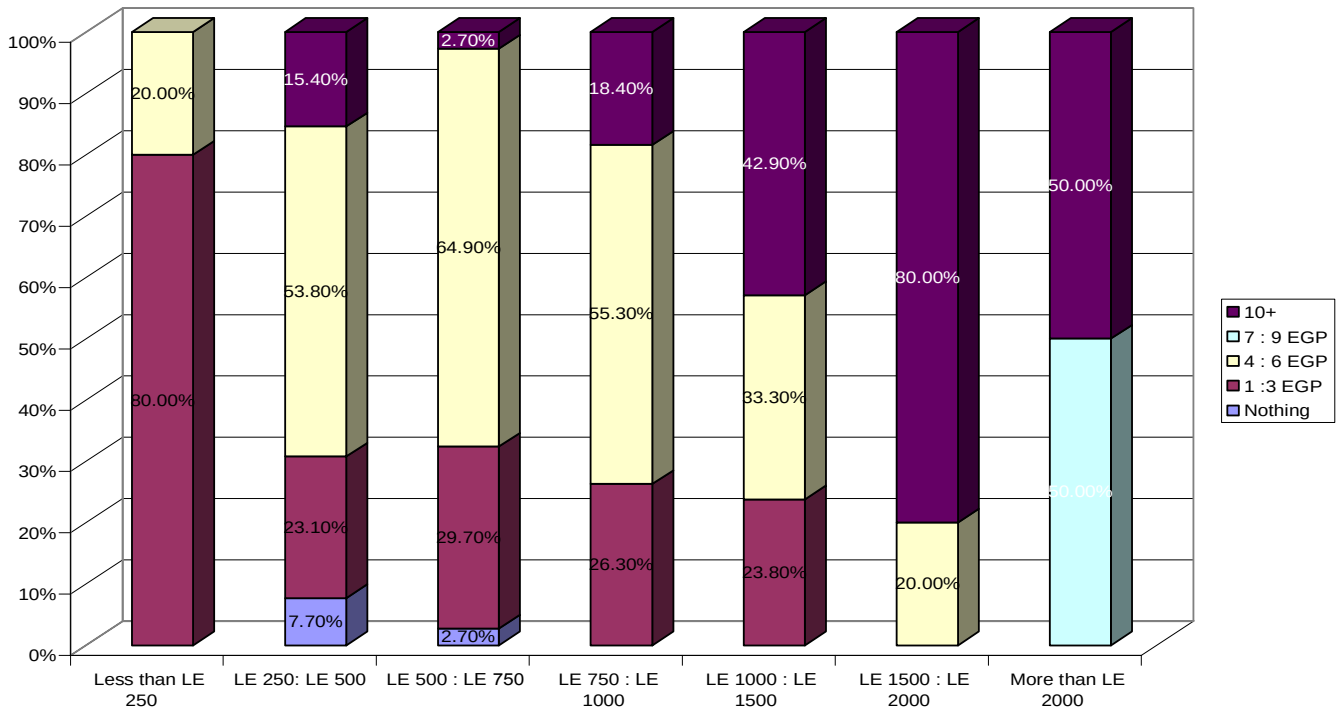


Figure 6.4 Giza Beneficiaries Willingness to Pay and Link to the Level of Income

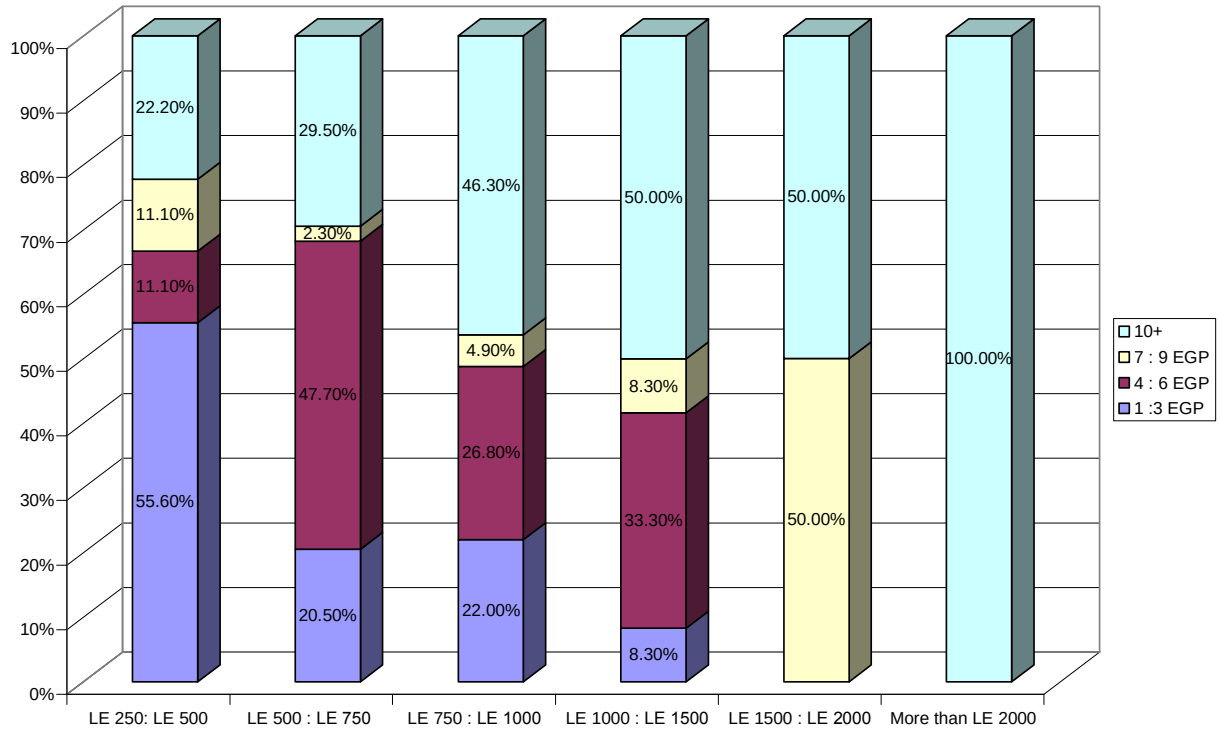


Figure 6.5 Ismailia Beneficiaries Willingness to Pay and Link to the Level of Income

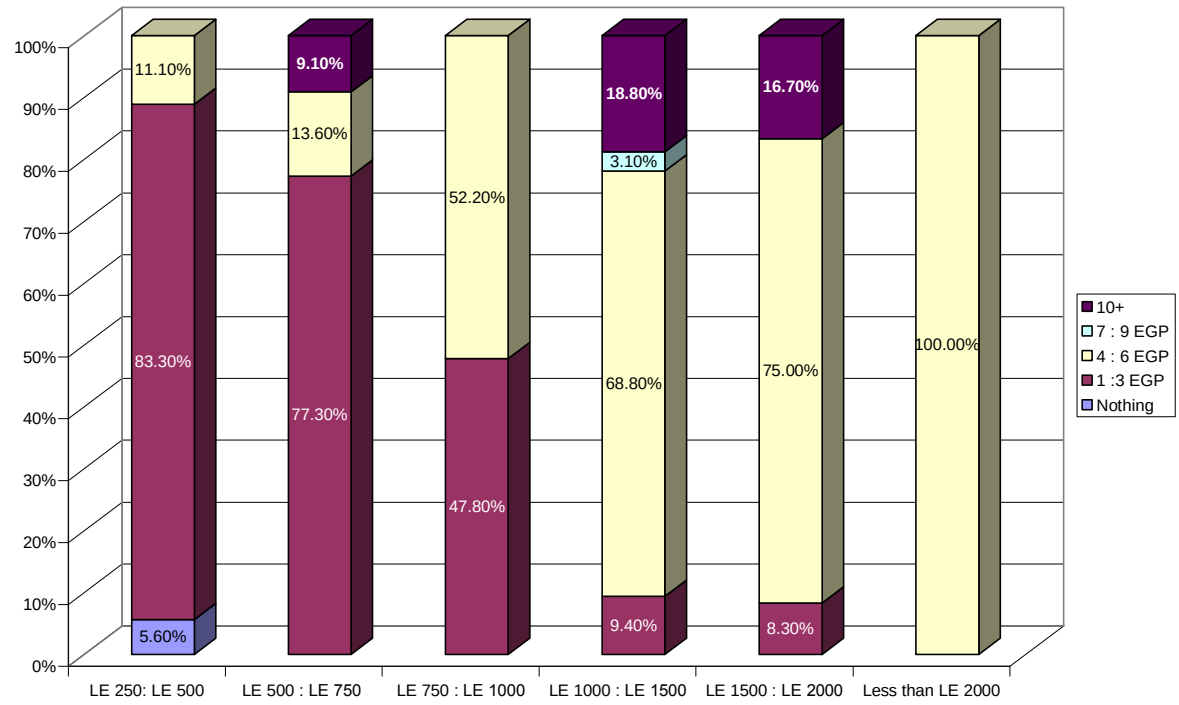


Figure 6.6 Gharbia Beneficiaries Willingness to Pay and Link to the Level of Income

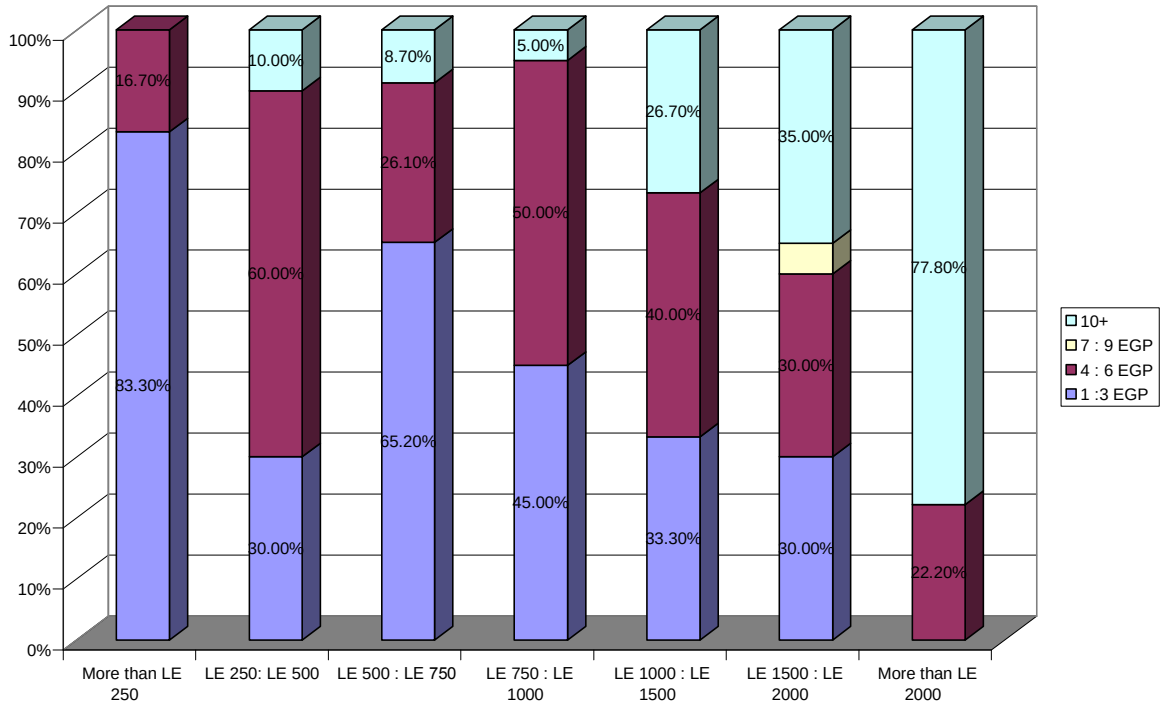


Figure 6.7 Luxor Beneficiaries Willingness to Pay and Link to the Level of Income

6.2.1.3 Enterprises' Willingness to Pay for an Improved Level of Service

The enterprises survey results showed that enterprises are willing to pay for improved SWM service. The results, however, varied considerably from one governorate to the next. In Giza Governorate, the largest portion of enterprises (65%) showed willingness to pay more than LE 10 per month for an improved service. Ismailia results were very close to Giza results. The results for Luxor and Gharbia were also very close to each other, with the majority of enterprises (around 42% in both the governorate) willing to pay an amount between 4 and 6 LE.

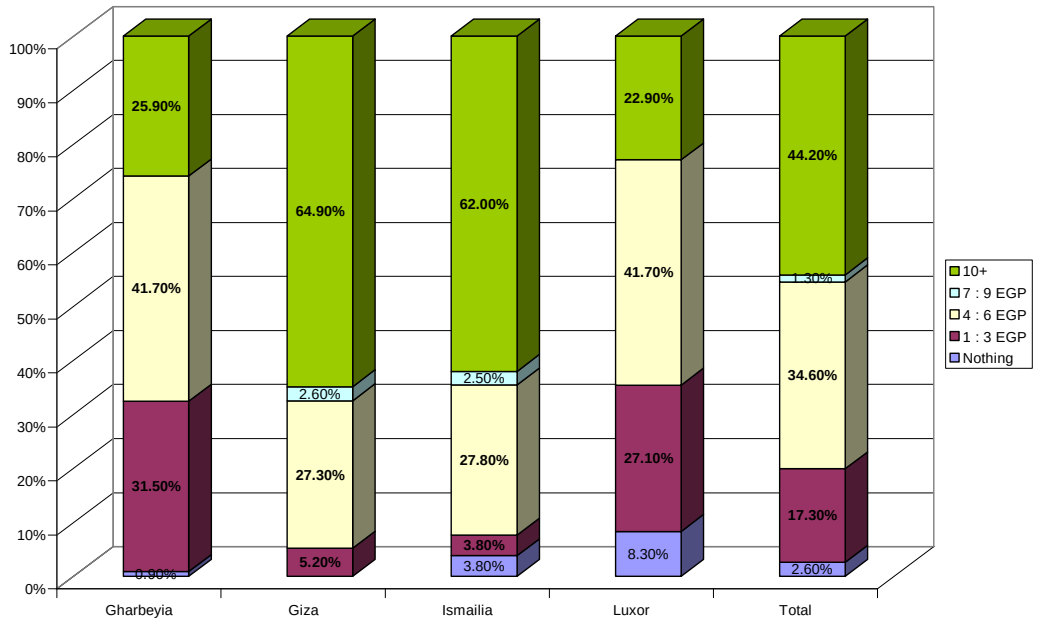


Figure 6.8 Enterprise Willingness to Pay for an Improved SWM System

To sum up, the social survey carried out as part of the PSIA showed a number of proposed actions from the local community perspective. Paying attention to these community suggestions is crucial to ensure that the future reforms are developed in a socially sensitive fashion that contributes to the sustainability of the reform technically and financially. Despite the limitation of the size of the survey sample, the findings of the survey, complemented by the qualitative findings, suggested that the following social aspects should be strongly considered:

- The engagement of the private sector is welcomed as long as the service offered will be efficient and the amount of service fees are not going to pose a financial burden for the local communities. In most of rural areas, the government is perceived to be the best service provider, particularly in the absence of NGOs/CDAs that could assist in this regard.

- Given that the survey sample was a fair representation of the various income categories, the results showed that proposed service fees should be linked to the economic standard of the

communities. In that sense, categorization by areas could be considered in the future planning of SW service tariff. This should be accompanied by further surveys to assess willingness of communities to pay for the service and the features of the needed service.

- Duplication of payment is a major concern for various types of beneficiaries (local communities and enterprises) who had strong negative reaction. Any planned reform should establish a controlled service fees collection to eliminate the duplication of payment. To enable practical implementation, there is a need to consider the appropriate system from communities' point of view and provide this system under full satisfactory coordination between various types of operators (government, private sector and the informal operators) to avoid any duplication of payment claims. The interests of the informal sector should be given the highest priority here as will be elaborated in more detail.

It is strongly recommended, throughout the various steps of any SWM project, to adopt a participatory approach that engages local communities and encourages them to have a say in designing the appropriate systems from their perspectives. It is also essential to move away from the conventional technical model of service monitoring and evaluation to a more participatory monitoring and evaluation (PM&E) that encourages local communities to give feedback on the system operation from their own perspective. Proposed mechanisms to ensure this include:

- Carry out consultation activities including social surveys during the phases of detailed design of various systems in different governorates.

- Precede any SWM interventions with detailed Social Impacts Assessment (SIA) and ensure the allocation of sufficient funds for this purpose. SIA should involved conducting tailored surveys to assess the potential impacts of the designed planned interventions on the local communities and propose mitigation measures to eliminate any potential negative impact.

- Carry out awareness raising campaigns in different areas and develop the campaigns to fit with the contextual specificities of the targeted areas.

Under this Chapter of the PSIA, the proposed institutional framework for implanting these mechanisms will be presented in more detail.

6.2.2 Alternative for the Informal Sector

The field work clearly revealed that the informal sector groups, particularly those who are working in an exhaustive mode, cannot tolerate negative impacts on their sole source of income. Affecting the livelihoods of these groups will not merely result in increased level of poverty and vulnerability, but might have unpredictable and serious social implications including but not limited to violent reactions.

> "We will steal…yes we will."
>
> Ali, Shabramant Dumpsite (when asked about his/their plan after the dumpsite transfer)

> "If the government is to take our livelihoods…we will react badly."
>
> One of the private companies in Luxor City, Luxor

The alternatives proposed below focus on two scenarios. The first is an integration of the informal sector within any proposed solid waste management program. The second looks at an empowerment scenario which would provide the informal sector with the means to find livelihood opportunities in other sectors outside of solid waste management. The PSIA team strongly believes that the first alternative of integration would present a win-win situation where the informal sector integration can enhance the solid waste system while providing these groups with a more legitimatized means of living. Consultation with governmental entities such as EEAA and MoLD shows that the government is interested in means of including these groups within the system. Initiatives are currently under way in Cairo Governorate to organize the involvement of the traditional Zabbaleen groups in Cairo in the new proposed reform system. In spite of these indications, the study will still present an analysis for an alternative scenario in case of exclusion from the waste sector, especially for the newly emerging groups who are not usually recognized at all by the governmental agencies.

Both traditional and newly emerging groups will be discussed solely. Although the alternatives' analysis for both groups will mention many common needs, the different setup for each group necessitated addressing each group as a standalone case. It should be noted that the traditional groups within the context of these alternatives are not limited to the Zabaleen groups but rather includes other families that have been historically engaged in the trade of recyclables, for whom this business is the backbone of the family income.

6.2.2.1 Alternatives for the Traditional Groups, including Zabbaleen in Ard El Lewa

As shown in the analysis above, the community of Zabbaleen in Ard El Lewa is suffering from serious deficiencies with regards to most of their assets. Currently, Zabbaleen families are trying to cope with the various changes that they encounter but their limitated assets translates to limitated choices and alternatives.

Scenario A: Integration Scenario

With a long historical involvement in the waste sector, the Zabbaleen groups are more rigid and inflexible in changing their traditional profession. Unlike the new emerging groups, families have built hands-on experience in collection and sorting over the years, which has allowed them to achieve very high daily rates of collection and sorting/person[111].

[111] Based on interviews with Farounia company and EEAA officials, rates of collection and sorting among zabbaleen is much higher.

Prerequisites for Integration

- The national policy orientation towards SWM is one of the main determinants for the future role of the traditional informal sector. It is crucial to have recycling and waste minimization at source as one of the main pillars in waste management to visualize an active role of the traditional sector in waste management.
- Political will is another prerequisite for the success of any integration initiatives.
- The need to find an institutional house to adopt and coordinate any integration scenario, given the current fragmentation in roles and responsibilities with regards to waste management.
- The ability of the sector to organize itself internally.

Table 6.5 below will provide a framework for the integration of the traditional sector within the waste management system.

Table 6.5 Framework for Scenario A for the Integration of the Traditional Informal Sector Groups

Objectives	Activities	Output	Key Responsible Agency/ies
Immediate Term			
Addressing the basic needs	- Improve access to infrastructural services - Improve access to education through opening one-class schools and community school models - Improve access to health facilities	- More acceptable living conditions which provides the basic humanitarian needs - Lower rates of child labor	- NGOs and civil society organizations - Ministry of Education (literacy programs) - The Governorates
Improving working conditions	- Mobilize resources to address poor working conditions and improve the households conditions - Improve access to electricity supply needed for basic processing - Mobilize resources, plan and implant awareness programs on health hazards related to handling waste and the protective measures - Develop guidelines for recovery and recycling of material - Increase monitoring and inspection	-Better business opportunities in the short term - Lower rates of diseases	- GOPP - EEAA - Ministry of Health - NGOs
Organize the sector internally *"The private sector in Egypt has spelled out before that the the lack of organizational structure of the informal sector was a direct reason for the insufficient and or failure of cooperation between the two*	- Revise existing initiatives for organization of the traditional sector (*Association of Garbage Collectors for Community Development (AGCCD), Association for the Protection of the Environment, The Spirit of Youth for Environment)* - Examine new models of organization which would take the poor and vulnerable into account and prevent influential Zabbaleen from exploiting others	- Ensure representation in any national or policy level initiatives - Enhance negotiations powers of the group - Ensure equitable opportunities and fair compensation for Zabbaleen especially the poor and vulnerable ones in new	- NGOs (AGCCD and others) - Leaders within the traditional group

[112] GTZ, The Waste Experts: Enabling conditions for informal sector integration in solid waste management: Lessons learnt from Brazil, Egypt and India, 2010

Objectives	Activities	Output	Key Responsible Agency/ies
parties. They pointed to the lack of 'interlocutors for the negotiation of arrangements.' "[112]	- Examine and extract lessons from the new negotiations currently taking place in Greater Cairo with Mensheyat Nasser Zabbaleen	contracts	
Legal recognition	-Revise laws and regulations related to solid waste management	-Legal clauses that integrate the informal sector entities and activities in SWM[113] -Decrease harassment by the police by having a legal entity	- MoLD - EEAA - GCBA
Longer Term			
Economic & social empowerment	-Arrange experience and business exchange programs between Ard El Lewa Zabbaleen and Mensheyat Nasser -Facilitate access to micro-finance	-New business opportunities for growth to start new small recycling and recyclables trading business	- Mensheyat Nasser NGOs (particularly AGCD) showed a high willingness to get into business deals and build the capacity of Ard El Lewa Zabbaleen - EEAA providing support through the planned state of the art center of excellence for recycling in Mensheyat Nasser - Micro-credit organizations (e.g. SFD and others)
Capacity building	-Designing and implementing skills development programs on	- A knowledgeable informal sector with the ability to expand	- EEAA - NGOs

[113] This was done in many countries such as India.

Objectives	Activities	Output	Key Responsible Agency/ies
	entrepreneurship -Design skills program in recyclable processing including low cost waste technologies		- Mensheyat Nasser NGOs
Socially and economically sensitive resettlement plan *"Zarayeb Ard El Lewa is one of the unplanned/unorganized settlements in Giza Governorates. Relocating the residents of Zarayeb Ard El Lewa will happen sometime in the future."*	-Comprehensive resettlement programs in place -Participatory consultation with the community	-Successful resettlement with minimal socioeconomic impacts on the community -Land ownership or usage guaranteed to provide security for living and working	- GOPP - The Governorates

Scenario B: Scenario for Alternative Livelihood Opportunities Outside of the SWM

Although unfavorable, a scenario to empower the traditional informal groups through livelihood opportunities outside the waste sector should still be considered as an alternative to ensure their welfare on the long run. Field work has shown that many of the youth previously involved in the Ard El Lewa area have resorted to other jobs especially after the slaughtering of pigs and the conflict with the private sector companies.

Table 6.6 Framework for Scenario B for the Integration of the Traditional Informal Sector Groups

Objectives	Activities	Output	Key Responsible Agency/ies
Immediate Term			
Addressing the basic needs	- Improve access to infrastructural services - Improve access to education through opening one-class schools and community schools models Improve access to health facilities	-A more acceptable living conditions which provides the basic humanitarian needs - Children to acquire an education to enhance future opportunities	- NGOs and civil society organizations - Ministry of Education (literacy programs) - The Governorates
Capacity building	- Improve access to vocational training - Improve females access to training for other home based economic activities		- Vocational training programs - SFD - NGOs - The Governorates - Other relevant organizations
Economic & social empowerment	- Facilitate access to micro-finance	-New business opportunities for growth to start new small businesses outside of the waste sector	- Micro-credit facilities (e.g. SFD) - NGOs
Socially and economically sensitive resettlement plan *"Zarayeb Ard El Lewa is one of the unplanned/unorganized settlements in Giza Governorates. Relocating the residents of Zarayeb Ard El Lewa will happen sometime in the future."*	- Comprehensive resettlement programs in place - Participatory consultation with the community	-Successful resettlement with minimal socioeconomic impacts on the community -Land ownership or usage guaranteed to provide security for living and working	- GOPP - The Governorates

6.2.2.2 Alternatives for the Newly Emerging Informal Groups

The newly emerging informal groups, except for some small scale families, are strongly characterized by individualism. Social networks exist between different actors in the system (waste pickers, middlemen and dealers), however, the sector is characterized by being highly volatile with the sector attracting large numbers of the poor who have no alternative work opportunities. Types of employment in this sector also include both exhaustive and temporary types. These facts make attempts for integration of these groups in the any SWM reform initiatives challenging. In addition to this, one of the main reasons for the rise of these groups is the inefficiencies of the waste system which resulted in waste accumulations in the streets, giving them an opportunity to sort the waste for recyclables.

Moreover and from a more generic perspective, understanding the problem of the growth of the newly emerging group of the informal sector as a clear manifestation of poverty suggests that tackling the root causes of this problem needs broader understanding and handling of the issues around poverty. Poverty is a national challenge and a daily political concern. Thus proposing solutions for the social integration and empowerment of this group cannot be envisioned only within the lens of the PSIA and the agencies of relevance to SWM. It is part of the main route of the poverty reduction efforts and the national strategy that Egypt is adapting for tackling poverty.

Based on the above, the PSIA will be proposing the same scenarios that were proposed for the traditional informal groups. However, the team is very cautious about indicting a favorable scenario between the two proposed scenarios. This is primarily due to the practical challenges of absorbing and integrating all these groups within a legalized system and large variance in the possibility of implementing this scenario from one governorate to the other.

Scenario A: Integration Scenario

Prerequisites for Integration

6- Political will to legalize these groups and to find them a role in the SWM system
7- Appreciation of the economic input of these groups in the SWM system
8- Building bridges of trust between the government and these groups in order to survey, organize and mobilize them
9- Coordination of work between traditional groups and newly rising group to develop a complementary relationship rather than one of rivalry
10- The ability of these groups to mobilize themselves

Table 6.7 Framework for Scenario A for the Integration of the Newly Emerging Groups

Objectives	Activities	Output	Key Responsible Agency/ies
Immediate Term			
Understand the size and dynamics and input of the informal sector nationally	- Mobilize local municipalities and NGOs to create a national inventory of informal sector workers and their activities	-A clear vision of the size of the informal sector in Egypt - A clear vision of the economic contribution of the sector	- Municipalities - NGOs - EEAA
Addressing poverty issues *Most of the informal sector workers are either marginalized groups or children.*	- Mobilizing NGOs to address the basic needs of informal workers - Improve access to education through opening one-class schools and community schools models - Improve access to health facilities - Improve access to housing facilities - Enforce child labor related laws and regulations	- Better living conditions - Lower rates of child labor -	- NGOs and civil society organizations - Ministry of Education (literacy programs) - Municipalities - Ministry of Social Solidarity - National Council for Women
Organize the sector internally	-Providing a framework of action organizing the relationship of different parties within the informal sector -Advocating for different groups (e.g. waste pickers) to organize themselves through NGOs or cooperative unions	- Ensure representation in any national or policy level initiatives -Enhance negotiation powers of the groups - Minimize conflict and exploitation among different groups -A more equitable distribution of income within the informal sector groups	- MoLD - EEAA - Civil Society
Improving working conditions with other stakeholders	-Put clear guidelines and regulations organizing working relationship with other stakeholders	-A more equitable distribution of income between groups	- Municipalities - EEAA - Ministry of Health

	- Examine existing models of cooperation between different parties (e.g. private sector and informal sector in sorting) - Increase inspection at dumpsites - Develop guidelines for recovery and recycling of material	-Defined work relationship to avoid exploitation - Lower rates of diseases	- NGOs
Legal recognition	Revise laws and regulations related to solid waste management	- Legal clauses that integrate the informal sector entities and activities in SWM[114] - Decrease harassment by the police by having a legal entity	- MoLD - EEAA - Municipalities
Longer Term			
Economic & social empowerment	-Facilitate access to dumpsites and transfer points -Facilitate access to micro-finance - Strengthen social networks with traditional groups of the informal sector	- Better working conditions - Better opportunities for advancement (e.g. owning a vehicle or a storehouse)	- EEAA providing support through the planned state of the art center of excellence for recycling in Mensheyat Nasser - Micro-credit organizations
Capacity building	- Basic capacity building on health hazards related to handling waste and the protective measures needed - Design skills program in recyclables processing including low cost waste technologies	- Lower rate of accidents and diseases -Knowledgeable informal sector with the ability to expand	- EEAA - NGOs - Donors

[114] This was done in many countries such as India.

Scenario B: Alternative Livelihood Opportunities Outside of the SWM

Unlike the traditional informal sector, the newly emerging groups face a higher probability of exclusion from the system. This is especially true given the individualistic nature of these groups and the high rate of movement within and out of the sector. However, the main reason for these groups for moving into the waste sector remains poverty. It is difficult to offer alternative empowering and employment programs for these groups unless they are first surveyed and identified.

Table 6.8 Framework for Scenario B for the Integration of the Newly Emerging Groups

Objectives	Activities	Output	Key Responsible Agency/ies
Immediate Term			
Profiling the sector	- Mobilize local municipalities and NGOs to create a national inventory of informal sector workers	-A clear vision of the size of the informal sector in Egypt - Clear segmentation of the sector in terms of gender and age groups	- Municipalities - NGOs - EEAA
Addressing child labor problem	- Mobilize on-going efforts to solve child labor problem		-Line Ministries - Initiatives for education and integration in society (Ministry of Tourism)
Addressing the basic needs	- Improve access to infrastructural services - Improve access to education through opening one-class schools and community schools models - Improve access to health facilities	- More acceptable living conditions which provide the basic humanitarian needs - Children to acquire an education to enhance future opportunities	- NGOs and civil society organizations - Ministry of Education (literacy programs) - The Governorates
Capacity building	- Improve access to vocational training - Provide training on management		- Vocational training programs - SFD - NGOs/ - The Governorates - Other relevant organizations and line ministries
Economic & social Empowerment	- Facilitate access to micro-finance	-New business opportunities for growth to start new small businesses outside of the waste sector	- Micro-credit facilities (e.g. SFD) - NGOs

6.2.3 Institutional Framework for the Implementation of the PSIA alternatives

As demonstrated above, integrating the informal sector within the waste management system is a multidimensional and complex task. The involvement of the informal sector groups in pursuing livelihoods through waste related processes adds further to the complexity of social issues by raising a crucial and serious poverty and income impacts that could strongly hit these groups unless reforms are developed within a socially-sensitive framework. In examining the institutional responsibilities related to the proposed alternatives, the following was found:

- The alternatives, as such, are relevant to a wide range of governmental, non governmental institutions and private sector.
- The political will of these institutions to accept the responsibility of these alternatives could not be guaranteed.
- Lack of dialogue among various actors is a serious challenge that might threaten the implementation of any alternatives.

6.2.3.1 The Social Development Department

The proposed institutional framework by the PSIA aimed line up with the wider policy directions. It seeks to utilize certain planned institutional reforms both at national and local levels, namely the establishment of a national entity for SWM[115] and the further institutional reform interventions planned under the decentralization program underway by the MoLD. The suggested institutional arrangements under this section of the PSIA will involve proposing certain mandates for these proposed new mechanisms in order to enable them to integrate the social aspects and establish a long-term institutionalized dialogue mechanism.

In order to ensure tailoring the proposed institutional set-up to the national context of the country, several consultative activities have been carried with the concerned authorities and the consultants working in the institutional reform of SWM. The proposals below are the results of these consultative activities as well as the PSIA team's views based on the previous analysis and the suggested need.

The core of the proposed institutional set-up for implementing the proposed alternatives is the establishment of a Social Development Department (SDD) within the proposed national SWM entity. The SDD is supposed to play the role of coordinator, stimulator and facilitator of implementing various socially-oriented activities.Such a department would be a longer-term objective, and might start as a function that is carried out by one or two officers in the entity, but which grows over time into a larger department with many activities.

The proposed structure of the SDD will involve four main units in charge of implementing the mentioned alternatives/proposed activities on the level of both local communities and the informal sector. The organizational structure of the SD is shown in Figure 6.9 below.

[115] Interview with Dr. Atwa Hussein, July 2010

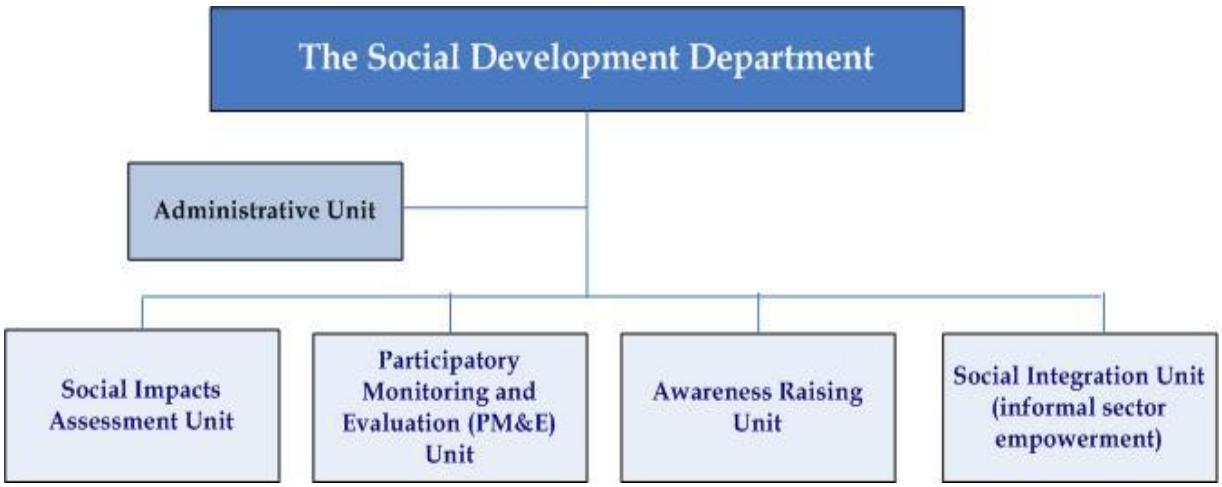


Figure 6.9 The Proposed Structure for the Social Development Department under the SWM National Entity

Box 6.1 Proposed Mandates for the SDD

Mandates/Main Responsibilities for the SDD under the National Entity for SWM:

- Develop policy and strategy related to the informal sector and other social aspects in consultation with relevant stakeholders and in line with overall national strategies in SWM.
- Strengthen the dialogue and communication among various actors related to the SWM, including the governmental sectors, NGOs, private sector, donor agencies, concerned line ministries and the informal sector.
- Safeguard the interests of the marginalized groups who have a direct stake in the process, particularly the informal sector group through designing and implementing programs that aim for their empowerment.
- Facilitate the design and implementation of awareness raising campaigns and encourage different relevant parties to participate (e.g. media)
- Design and carry out community related activities (e.g. social surveys) prior to the implementation of various SWM interventions. This might include seeking consultancy services to carry out the tasks.
- Assist the various informal sector groups in legalizing their situations and empowering them socially and economically.
- Build the capacities of relevant stakeholders either directly or through seeking consultancy services.
- Encourage the implementation of participatory monitoring and evaluation (PM&E) techniques that engage local communities in developing monitoring indictors, assess the systems and suggest areas for improvements.

6.2.3.2 Other Complementary Mechanism

In addition to the operation of the SDD as a main institutional home for the integration of the social aspects within the SWM reform, a "consultation forum" is also recommended to complement the function of the SDD. It is proposed to work as a networking tool and consultation pool that might facilitate the department functions. The "Consultation Forum" could function as a mechanism to ensure that various interests are transparently shared and that the interests of the various social groups are safeguarded. It is anticipated that the "Consultation Forum" will work as a key dialogue mechanism that will contribute to mitigating any potential conflict of interest. The forum will assist the SDD in channeling the various interventions related to other national and regional agencies. It is suggested that the "Consultation Forum" be represented on the level of governorates and be affiliated with the proposed SWM national entity.

Box 6.2 Proposed Structure for the "Consultation Forum"

The Forum Structure and Representation

- Ministry of Local Development (MoLD)
- The Egyptian Environmental Affairs Agency (EEAA)
- Representatives from relevant ministries (Ministry of Social Solidarity, Ministry of Labor, Ministry of Trade and Commerce, Ministry of Education, etc.)
- NGOs
- Academics
- Consultants
- Parliamentarians
- Local Assembly representatives
- Representatives from the informal sector groups

Chapter Seven: Dissemination and Capacity Building Plan

7.1 Key Findings from the PSIA

As could be observed from the methodology of the PSIA, the study adopted a participatory consultative approach that relied on intense consultation with various stakeholders. The consultation activities that have been carried out during the life cycle of the PSIA revealed some key findings that should be considered in designing the capacity building plan and in disseminating the PSIA mechanism and results. These findings mainly include:

- Generally, the level of awareness of the social aspects related to SWM is still limited among various stakeholders particularly the responsible government officials. This stresses a need for raising the level of awareness of those key actors about the complexity of the social issues related to SWM.
- Behavioral challenges are a key issue that need to be considered in designing and implementing SWM reform. This is never done on a structured basis by either governmental agencies or the private sector. There is a need to train the main SWM actors on designing awareness raising messages.
- Informal sector issues are dealt with and understood in isolation from the context of poverty that affects the whole country. In designing programs to tackle informal sector issues, it is necessary to place the various groups within a broader, holistic and multidimensional context in order to address their problem from a developmental perspective rather than by penalizing them.
- There is a need to promote the broadest possible range of measures and roles for various actors, including those who are not directly engaged in the SWM sector.

In that sense, the PSIA has developed a set of recommended training modules that could be considered in the future by the SDD. The delivery of these modules to the targeted stakeholders should be done as part of a comprehensive capacity building plan. The identified modules are the result of the PSIA team's views and analysis of the various training needs assessment that was included in the tools. The training modules are meant to facilitate the implementation of the developed alternatives in the previous chapter. Moreover, in several cases, the programs have been recommended by the stakeholders as is the case with the traditional groups who revealed during the FGDs the need for training on alternative sources of livelihoods, particularly for youth.

The development, review and dissemination of the PSIA are perceived to be valuable steps ahead on the route of building the capacities of stakeholders. The various dissemination activities that have been done on the regional and central level helped in directing the participants attention to a different scope related to SWM by presenting non-technical aspects that are seldom noticed or even if they are noticed, they are usually viewed within a very narrow perspective.

7.2 PSIA Dissemination Methodology

7.2.1 Regional Workshops

As part of the dissemination of the PSIA mechanism and results, a regional dissemination workshop has been carried out in Giza Governorate on November 11th 2010 after drafting the PSIA. The workshop was planned in particular in Giza Governorate as Giza represents a special case among the surveyed governorates and presents one of the complicated cases in terms of the actors involved and the conflicts of interest among those actors. The workshop has the primary aim of verifying, disseminating the results of the PSIA and building the capacity of the various participants on issues related to poverty and social aspects related to SWM. This regional workshop has been a useful tool to inform the team about the potential topics to be included in the capacity building plan. It also helped in developing the alternatives as indicted in the previous chapter as well as other relevant parts throughout the study.

The workshop involved a range of stakeholders including representatives from UNDP, MoLD, technical consultants, Giza Governorate, GCBA, Giza EMU, the National Companies and the PSIA team of consultants and surveyors. A list of the workshop participants is attached in Annex D-1. The workshop involved the presentation of the key findings of the PSIA study in Giza Governorate. This was followed by an open discussion that engaged all the participants. The key issues that have been highlighted during the presentation included the main findings from the community survey, the main actors involved in the SWM in the governorate, key interests and conflicts, categories of the informal sector and the proposed alternatives and capacity building plans.

The PSIA findings were well received and were described as a scientific and realistic piece of research[116]. Consensus was reached on the fact that SWM is a critical issue that touches our communities and negatively affects the civilized image of the country.

Several problematic issues were discussed including:

- Market dynamics are based on the demand and supply. The job of the SWM worker has very special characteristics. Generally, it is an undesired job. Their salaries (LE 600 including incentives for the permanent workers) is quite low compare to the effort that they are required to exert. This leads to very low interest in this type of job. The performance of the workers is currently much lower than it used to be. In the past, zabbaleen used to cover 300 apartments/8 hour shift. Now the maximum, which is very unlikely to be reached, is 150 apartments[117].
- The more actors involved, the more complicated the case and the more conflicts of interest. There is a need to consider as few actors as possible in the process[118].
- There is generally low awareness about SWM from an economic perspective and local communities still consider it as a service that should be delivered free of charge by the government. There is a need to raise the awareness about SWM as a strategic service linked to the market and prices[119].
- There is at least 35% gap in the Giza SWM budget.

[116] General/ Youseef Wesal – Giza Secretary General (SG).
[117] Eng. Salah Abdel Fatah, SWM Specialist GCBA.
[118] Eng. Youssri, Head of Giza EMU and Mr. Nasser, Head of one of the national companies.
[119] Eng. Salah Abdel Fatah, SWM Specialist GCBA.

The open discussion with the workshop participants and the conclusions that were reached helped the team significantly in drawing the alternatives as presented in Chapter Six above.

7.2.2 Central Launch Workshop

Shortly after addressing the various comments on the draft PSIA, a second draft of the PSIA was prepared. The PSIA results were compiled in a presentation that was delivered at the PSIA central launch workshop. Exhaustive Arabic and English summaries were prepared and distributed to the workshop audience. The launch workshop agenda is attached in Annex D-2.

The workshop included introductory speeches from the MoLD, UNDP, WB and Giza Governorate. These speeches highlighted the importance of the study and the fact that it is the first of its kind in the Middle East. The speakers also highlighted the importance of the PSIA findings in ensuring the social sustainability of the planned SWM reform in Egypt. These speeches were followed by a presentation by the PSIA team on the key findings of the PSIA and the proposed alternatives.

The central launch workshop was a good opportunity to bring together various stakeholders from the governorates, the donor community, academics, consultants and NGOs together to discuss the findings of the PSIA. The list of participants is attached in Annex D-3.

Figure 7.1 Representatives from the UNDP, MoLD and the PSIA team responding to the participants comments during the PSIA launch workshop

Figure 7.2 Some of the participants and representatives at the PSIA launch workshop

The various relevant comments of participants have been included into this final version of the PSIA. The main important comments that arose include:

- The previous experiences showed that bringing changes to the Zabbaleen living conditions, improving their livelihoods opportunities and providing new chances for their new generations are objectives that could be attained. The key is to help them feel proud of being "Zabbaleen." Mensheyat Nasser NGOs are a good example for empowering these communities and brining proper development to their lives by integrating them into the system and concentrating on other aspects like building their capacities[120]. The PSIA team replied on this comment by stressing the importance of the role that could be played by these NGOs in empowering a marginalized community like the Zabaleen in Ard El Lewa.

- Resettlement for large groups with deeply rooted business that are strongly linked to the areas in which they reside should be very carefully planned. The alternative of developing the resettlement plan in the future as a comprehensive work plan should be considered. The plan should consider only those who are engaged in the waste sector illegally. Attention also should be paid to the poverty factors which result in the frequent induction and withdrawl from the sector[121].

- APE has previous experience with segregation at source in Deir El Malak area. The model has been successful and we believe that such initiative should be considered in the future planning because it provides innovative and efficient solutions[122].

- The integration of the informal sector should be done carefully and within a framework of a controlled and efficient system[123].

- The Ministry of Investment is working to legalize the conditions of some of the workshops in Mensheyat Nasser in collaboration with EEAA and the Ministry of Trade and Industry[124].

- The concerned organizations are working individually in isolation from each other. There is a need for a coordination mechanism among these organizations[125].

- For the traditional groups, the integration scenario is highly favorable[126]. In the meantime, there is usually a need to consider the technological boom and the new potential areas of utilizing waste (for instance in generating power).

7.3 Capacity Building Plan

The findings of the PSIA showed that the various groups of stakeholders should be trained on the various related aspects in order to enable them to implement the proposed alternatives within the PSIA. Table 7.1 below presents an example of the potential areas for capacity building for the

[120] Seyada Seyada Gerges, Board Chairman- The Association for the Protection of the Environment (APE).
[121] Dr. Walid Abdel Rahim- KFW Deputy Manger.
[122] Adel Mounir - The Association for the Protection of the Environment (APE).
[123] Dr. Magda Khatab- Member of the environmental committee of the National Council of Women.
[124] Eng. Tawfik El Kheshen- GTZ.
[125] Eng. Yousrri Abdel Hameed, Head of Giza EMU.
[126] Dr. Khaleed Fahmy – one of the PSIA National Technical Experts.

various groups. The proposed SDD should be working to develop this list of modules and tailor them to the actual needs after carrying out needs assessment activities. It is crucial to notice here that the various actors, particularly the formal actors from the government, private sector and NGOs, need to have their capacities built on the social aspects related to SWM.

Table 7.1 Preliminary Proposed Capacity Building Topics and the Targeted Group

Proposed Topic for Capacity Building	Targeted Group
Recycling in Egypt and the contribution of the informal sector	Governmental officials, private sector, the informal sector (traditional and newly emerging groups)
Capacity building programs about environmental hazards, occupational health and safety programs	Governmental officials, private sector
Fundraising and proposal writing skills	Governmental officials, NGOs
Training on community mobilization, awareness raising and participatory survey tools	Governmental officials, private sector, NGOs
Literacy programs and basic education	The informal sector (traditional and newly emerging groups)
Capacity building programs to address the weak knowledge and skills base related to the SWM activities	The informal sector (traditional and newly emerging groups)
Create awareness for self-respect, human dignity, and hygiene for the beneficiaries	The informal sector (traditional and newly emerging groups)
Training on complementary SWM business activities (processing activities)	The informal sector, particularly the traditional groups
Training on alternative income generating activities	The informal sector (traditional and newly emerging groups)
Environmental hazards and hygienic issues in handling waste and methods for protection	The informal sector (traditional and newly emerging groups)
Networking and forming associations	The informal sector, particularly the traditional groups
Micro-enterprise management	The informal sector (traditional and newly emerging groups)
Negotiation skills	The informal sector particularly the traditional groups
Communication skills	NGOs

PSIA Conclusion

The PSIA main outcomes were predominantly directed towards improving the management of the SMW reform process, helping to achieve more equitable outcomes, mitigate the adverse effects of any reform and improve stakeholders' buy-in. The findings and the recommendations of the PSIA were aimed at helping to shape the design and the implementation of the suggested government reform program and to shape the development of the solid waste sector.

In order to fulfill the above mentioned objectives, the PSIA targeted four Governorates from various regions in Egypt. The Governorates were considered as a representative sample of the different types of Governorates including large urban Governorates (Giza), touristic Governorates (Luxor), small Governorates with urban characteristics (Ismailia) and large rural Governorates (Gharbia). Within these Governorates, the study identified two main social groups to focus upon, namely, the local communities and the informal sector (traditional groups and newly emerging groups)

The main PSIA findings and recommendations can be summarized as follows:

General Findings

Social aspects are very important in the solid waste management sector in Egypt. This is especially true in relation to threat to general public health as a result of poor waste management and the economic burden sometimes associated to lack of affordability for waste management tariffs. Other important impacts are more related to the informal sector practices and includes besides public health threats, impacts on livelihoods of these groups including women and children.

Generally, the level of awareness of the social aspects related to SWM is still limited among various stakeholders particularly the responsible Government officials. While, there have been numerous studies and pilot projects related to the social aspects of SWM. However, there is minimal overall coordination of these studies and initiatives, and importantly there is no clear institutional responsibility for implementation of the recommendations from the studies.

Local Communities

There is no mechanism in place to mobilize the local communities and or include them in the SWM reform process. The PSIA illustrates that a number of social impacts associated poor SWM services affect local communities. These include mainly public health related problems on the one hand and economic burden associated with the occasional lack of affordability for waste management systems and or the mismatch between tariffs paid and level of service provided.

There is full awareness on part of the local community of the importance of the SWM problem; communities recognize it as one of the priority problems. This recognition is however matched with increasing rates of dissatisfaction with the levels of services provided, a level which exceeded 90% at many instances. Communities are willing to pay for the SWM service, provided that the service is

"worth" what they are paying- a situation they strongly believe is not currently being fulfilled. Moreover, local communities are also sometimes suffering from duality in payment, especially in urban Governorates such as Giza, where payments are made on the electricity bill and additional payments are made to other groups such as the Zaballen. Communities envisioned the importance of improving the service provided, and scored almost equally in their preference for the service provider – be it the Government agencies or the private sector. In general, they viewed problems related to low level of collection service, as well as lack of supervision and monitoring as the main contributors to the situation. Communities were willing to cooperate when invited to share their opinions and views.

The PSIA hence recognizes and stresses on the importance of engaging local communities in planning the services to ensure that the services are tailored to their needs and expectations and to address their specific problems and issues. In addition to this, behavioral challenges on part of the local communities are a key issue that needs to be considered in designing and implementing SWM reform. This is never done on a structured basis by either governmental officials or the private sector.

Traditional Informal Groups

The traditional informal groups have been historically one of the key players in the SWM system in Egypt. The traditional informal waste collection and recycling sector in Egypt has particular importance, and studies indicate that there are an estimated 100,000 members of the "Zabbaleen" communities living in Greater Cairo Region, the majority of which make their family income mainly from informal waste collection and recycling activities. This sector is rich with different experiences in the SWM sectors, especially related to recovery of recyclables and recycling. These experiences will go to waste if they are not properly utilized within a system. To recognize and maximize the benefits and roles of these groups, it is important to realize that recycling should be at the core of the reform process for SWM.

The PSIA recognizes that inclusion of these groups within the SWM system could create a win- win situation for all parties involved. However, the inclusion process requires commitment on part of all parties, including the government. This commitment should include means of improving living and working conditions – which are currently very challenging for this group and can be maximized by mobilizing various international, national and civil recourses and adopting a holistic approach for the problem.

These groups also need to receive support to organize themselves internally, to be empowered socially and economically and to receive support to legalize their role. There are a number of successful stories within this sector; which can be utilized, however they are all outside the groups that the study focused upon. However, these efforts must be analyzed with care, since efforts to integrate these groups have often neglected the poorest and most vulnerable and favored the stronger parties.

Newly Emerging Groups

The newly emerging informal groups are a direct result of poverty and lack of alternative livelihood opportunities. The current pitfalls of the SWM system in the form of accumulations have created livelihood opportunity for these groups. The groups are generally labeled as outcasts of law and looked down upon. Tackling the problems of this group is not easy and might be out of the context of the PSIA study, however, the PSIA stresses that given the nature of this group it is essential that their issues are not dealt with in isolation form the poverty context within the whole country. In designing programs to tackle newly emerging informal sector issues, it is necessary to place the various groups within a broader, holistic and multidimensional context in order to address their problem from a developmental perspective rather than penalizing them.

Institutional Housing

The PSIA has contributed to raising the awareness of various stakeholders on the social problems of local communities as well as those of the informal sector groups. It stressed on the importance of adopting measures and to agree on alternatives to protect the interests of these groups. The PSIA stimulated collective brainstorming among the various groups to agree on these alternatives. However, without the ability to implement these alternatives, the social dimension will still be neglected. The PSIA proposes that social aspects should be mainstreamed within any planning process for SWM. One solid proposal which was favored by all stakeholders consulted was the inclusion of a social unit/forum within the national SWM entity currently planned under the NSWMP. The unit/ forum will assume roles and responsibilities to ensure the inclusion of social aspects in the SWM sector. In particular, the roles should include the co-ordination and integration of projects and initiatives related to the informal sector and other social aspects so that these activities are working towards consistent strategic objectives and so that lessons and good practices are shared. In addition, the unit/forum will work on mobilizing resources needed and coordinating efforts with governmental and civil entities to improve the living conditions of these groups, empower them and or provide assistance in organizing their sector.

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Annex A
Structured Survey Questionnaire
(Model of the quantitative tools)

Benificiaries Questionnaires

June - July 2010

The gathered information will be kept confidential and will only be used for research purposes

Interview number
Governorate
Type of Area: 1- Urban 2- Rural 3- Peri Urban 4- Slum
Date:
Time:
Name of Interviewee
Gender of Interviewee • Male • Female
Age of Interviewee
Interviewee education
Interviewee occupation
Martial status
Relation between Interviewee and the householder

Interview documentation and surveyor information

Date		
Name of surveyor		
Name of supervisor		
Name of field inspector		
Interview results 1-Totally accomplished 2- Partially accomplished 3- Postponed 4- rejected 5- Other (define)		
	Name	Date
Desk review Coding Data entry Checking data entry		

Good morning, my name is ……. We work with MoLD and are carrying out a study about solid waste problems. We would like to get your views in order to consider in designing the upgrades for the solid waste management system that will be carried out in the Governorate in the future. I will be asking you few questions and wonder if you have time to answer few questions

Ser	Question	Answers	Code	Moves
One: Measuring the current situation and the level of satisfaction *I would like to start by asking you few questions about waste in the area*				
.101	**Do you think that street in your neighborhood are clean?**	1. Yes very clean 2. Fairly clean 3. Not clean 4. Extremely dirty	1 2 3 4	
.102	How do you get rid of your garbage? (more than one answer is possible)	1. Door to door collection by garbage collector 2. Door to door collection by garbage collection company 3. Door to door collection by NGO 4. I place in street containers 5. Dump on the street 6. Burning 7. Dump on waterways (canals, drainage) 8. Other (to be defined)	1 2 3 4 5 6 7 8	
.103	How do most people in you neighborhood get rid of their garbage? (more than one answer is possible) -	1. Door to door collection by garbage collector 2. Door to door collection by garbage collection company 3. Door to door collection by NGO 4. I place in street containers 5. Dump on the street 6. Burning 7. Dump on waterways (canals, drainage) 8. Other (to be defined)	1 2 3 4 5 6 7 8	
.104	Who collect garbage from your district	1. The Governorate (LGU, the District, the Cleansing and Beautification Authority…etc) 2. Private company 3. Zabbaleen (garbage collectors) 4. NGO 5. Nobody 6. Other (to be defined)	1 2 3 4 5 6	

Ser	Question	Answers	Code	Moves
.105	Garbage is collected from: Outside your door From the building entrance From collection points in streets (the surveyors should mention the alternatives above)	1. Outside your door 2. From the building entrance 3. From collection points in streets 4. Not collected 5. Other (to be defined)	1 2 3 4 5	
.106	How often is garbage being collected?	1. Every two days 2. Twice a week 3. Once a week 4. Irregularly 5. Other (to be defined)	1 2 3 4 5	
.107	How much do people in the neighborhood pay for garbage collection?	1. Amount in LE 2. People do not pay 3. I do not know	[ ][ ] 0 98	
.108	How much do you pay for garbage collection?	1. Amount in LE 2. I do not pay	[ ][ ]	**114**
.109	In case the interviewee pay: To whom do you pay?	1. An officer from the Governorate 2. Fees collector from the private company 3. The garbage collector 4. Representative from the NGO 5. Electricity fees collector 6. Other (to be defined)	1 2 3 4 5 6	
.110	What do you think about the fees that you pay	1. Cheap compare to the service I get 2. Reasonable 3. High compared to the service I get	1 2 3	
.111	Why do you think so?	---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------	[ ] [ ] [ ] [ ] [ ] [ ] [ ]	
.112	Do you pay any additional fees for garbage collection?	1. Amount in LE 2. I do not pay	[ ][ ]	**114**

Ser	Question	Answers	Code	Moves
.113	To whom do you pay these additional fees?	1. Garbage collector 2. Representative from the NGO 3. Other (to be defined)	1 2 3	
.114	To what extent are you satisfied with the garbage collection system in your neighborhood	1. Extremely satisfied 2. Fairly satisfied 3. Not satisfied	1 2 3	
.115	Why? (the surveyor should investigate the reasons for satisfaction and dissatisfaction)	---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------		
.116	Do you observe any waste pickers (scavengers) in your neighborhood?	1. Yes 2. No	1 2	
.117	Are there any supervisors for the garbage collection and transfer?	1. Yes 2. No	1 2	 **119**
.118	What do you think about the monitoring/supervision?	1. Good/satisfactory 2. Bad/not satisfactory	1 2	
.119	Five years ago, who used to collect your household garbage?	1. The Governorate (LGU, the District, the Cleansing and Beautification Authority…etc) 2. Private company 3. Zabbaleen (garbage collectors) 4. NGO 5. Nobody 6. Other (to be defined)	1 2 3 4 5 6	
.120	How much did you pay for this service?	1. Amount in LE 2. I did not pay		
.121	Which system was better from your point of view, the current one or the old one?	3. The current system 4. The old system 5. Both are similar	1 2 3	

Ser	Question	Answers	Code	Moves
.122	Why? (the surveyor should investigate the reason for preferring one system over the other)	---------- ---------- ---------- ---------- ----------		
.123	Do you deal with the recyclables buyer (robabekia)	1. Yes 2. No	1 2	
.124	Apart from recyclable buyer, do you sort recyclables (plastic bottles, cans) and sell?	1. Yes 2. No	1 2	
.125	Do you think that the mismanagement of solid waste can result in any health, social or economic problems?	1. Yes 2. No	1 2	**201**
.126	What are these problems? (the surveyor should elaborate on each kind of problem)	---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------		
Two: Views and suggestions for improving the system				
.201	Do you think there is a need for improving the garbage collection system?	1. Yes 2. No	1 2	
.202	If an improved system to be introduced, which entity do you think should take the responsibility of managing the new project?	1. The Governorate (LGU, the District, the Cleansing and Beautification Authority…etc) 2. Private company 3. Zabbaleen (garbage collectors) 4. NGO 5. Other (to be defined	1 2 3 4 5	
.203	Which collection system do you prefer?	1. Outside your door 2. From the building entrance 3. From collection points in streets 4. Other (to be defined)	1 2 3 4	

Ser	Question	Answers	Code	Moves
.204	How often do you suggest that garbage should be collected	1. Every two days 2. Twice a week 3. Once a week 4. Other (to be defined)	1 2 3 4	
.205	What time do you suggest for collecting garbage?	1. Morning 2. Noon 3. IN the evening 4. Anytime 5. Other (to be defined)	1 2 3 4 5	
.206	What considerations should be taken into account in order to guarantee for the new system success?	1. The Government to work its own to improve the system 2. People should be committed to the system/pay regularly 3. Regularity of the service 4. Good and controlled monitoring 5. Increase the number of street containers 6. Sound design for the street containers 7. At source collection from households and other establishments 8. To pay incentives for the collection crew 9. Other (to be defined)	1 2 3 4 5 6 7 8 9	
Three: the categories that might be affected by the project				
.301	How Do you think the proposed project could affect the garbage collectors and other categories that are making a living out of garbage?	---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------		

Ser	Question	Answers	Code	Moves
.302	How could the impact on these categories be eliminated?	---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------		
Four: Willingness to pay for the service				
.401	In case the system is improved, how much will you be willing to pay in return for the garbage service?	1. In case garbage is collected on door to door basis 2. In case garbage is collected from the building entrance 3. In case you carry your garbage to street containers		
.402	What is the maximum amount that you can pay?	1. Amount in LE 2. I will not pay		
.403	From your point of view what is the most efficient way for stimulating people to participate in the service (only one answer)	1. TV 2. Radio 3. Newspaper 4. Seminars 5. Reduce the service fees 6. Other (to be defined)	1 2 3 4 5 6	
.404	What should be done in order to make sure that people will keep on paying service fees?	1. Provide satisfactory level of service 2. Consider the economic conditions of the poor 3. Raise the awareness with the project importance 4. Other (to be defined)	1 2 3 4	
Five: Awareness raising needs				
.501	Do you think that some of people practices related to waste need to be changed?	1. Yes 2. No	1 2	**503**

Ser	Question	Answers	Code	Moves
.502	Like what?	----------		
.503	If we will carry out awareness raising campaigns, what topics do you suggest for these campaigns	----------		

Six: Primary Information

I am going to ask you few questions about your family in order for us to complete our research information. The information will be kept confidential

601.	How many persons live together in this household?	Number of persons		
602.	Who is the householder?	3. Father/husband 4. Mother/wife 5. Sons 6. Daughters 7. Other relatives 8. Non relatives	1 2 3 4 5 6	
603.	How old is the householder?	Age in full years		

604.	Do any of the male children go to schools?	1. Yes all of them 1 2. Yes some of them 2 3. No 3 4. No male children 7	
605.	Do any of the female children go to schools?	1. Yes all of them 1 2. Yes some of them 2 3. No 3 4. No female children 7	
606.	How many males from the family work? (all the family including householder)	Number of persons ☐☐	
607.	How many males from the family work?	Number of persons ☐☐	
608.	Who is the main breadwinner?	1. Father/husband 1 2. Mother/wife 2 3. Sons 3 4. Daughters 4 5. Other relatives 5 6. Non relatives 6	
609.	What is the level of education for the main breadwinner?	_____ ☐	
610.	What is the economic activity of the breadwinner?	_____ ☐	
611.	What type of wage does he/she earn?	1. No wage 1 2. Stable wage 2 3. Unstable wage 3 4. He/she does not work 7 5. He/she does not know 8	

612.	The average household monthly expenditure	1. Less than LE 250 2. LE 250: LE 500 3. LE 500 : LE 750 4. LE 750 : LE 1000 5. LE 1000 : LE 1500 6. LE 1500 : LE 2000 7. Less than LE 2000	1 2 3 4 5 6 7	
613.	What is you average monthly income?	1. Less than LE 250 2. LE 250: LE 500 3. LE 500 : LE 750 4. LE 750 : LE 1000 5. LE 1000 : LE 1500 6. LE 1500 : LE 2000 7. Less than LE 2000	1 2 3 4 5 6 7	

Questionnaire ended ….Thank you

Seven: Interviewers observations about the area's characteristics				
701.	Nature of economic activity in the area	Commercial Industrial Residential with few shops Other	1 2 3 4	
702.	Nature of buildings in the area	Multi story buildings close to each other Multi story building on far distances One story buildings close to each other One story building on far distances Shanties Non residential area Other (to be defined)	1 2 3 4 5 6 7	

703.	Type of the main road leading to the area	Wide road that allows vehicles 1 Narrow road where vehicles pass with difficulty 2 Narrow road where vehicles can not pass 3 Other (to be defined) 4	
704.	Roads conditions	Leveled and paved 1 Paved but not leveled 2 Not paved (dusty) 3 Other (to be defined) 4	
705.	Existence of green spaces n the area	There are green spaces in the area 1 There are trees in front of the building 2 There are not any green spaces 3 Other (to be defined) 4	
706.	Is there garbage near the interviewee house?	Yes 1 No 2	
707.	Are there traces of burning waste? If yes, please ask who burn the waste	Yes (who burn it) 1 No 2	

Additional comments from the interviewer. Please document with pictures

_____

_____

_____

_____

_____

_____

Annex B: List of Interviewed Stakeholders during the preparation of the PSIA

Giza Governorate		
1.	Eng. Yousri Abdel Hameed	Head of Giza EMU
2.	Dr. Fatma Baha'a El Din	Environmental Inspector, Giza EMU
3.	Dr. Ala'a Abdel Hafez	Environmental Inspector, Giza EMU
4.	Eng. Adel Tawheed	Environmental Inspector, Giza EMU
5.	Eng. Ahmed Nabil	IES for SW services in Giza
6.	Eng. Islam Hegazy	IES for SW services in Giza
7.	Father / Elia	Priest of St. George Church, Ard El Lewa
8.	Ms. Olfat Noshy	Supervisor in Nursery home Ard El Lewa
9.	Mr. Shehata Ramzy	Resident in Zarayeb Ard El Lewa
10.	Mr. Mokhtar	Resident in Zarayeb Ard El Lewa
11.	Eng. Salah Abdel Fatah	SWM Specialist GCBA
12.	Three Families (of men, women and children)	Families of Zabbaleen in Ard El Lewa
13.	Eng. Mounir Nawwar	Machinery manufacturer and a key actor for recycling industry in Manshyet Nasser
14.	Dr. Atwa Hussein	Head of EEAA Branch in Greater Cairo and Fayoum
15.	Eng. Ahmed Saeed	SWM Specialists, SWM Department EEAA
16.	Mr. Adel Daoud and his family (3 women and 4 young men and 2 children)	Member of the Zabbaleen community in Manshyet Nasser
17.	Mr. Rezk	Member in the Garbage Collector Care Association
18.	Mr. Rezk Lama'ey	Member of the Zabbaleen community in Manshyet Nasser
19.	Mr. Romany Bader	Member of the Zabbaleen and dealers community in Manshyet Nasser
20.	Mr. Safwat Nazism	Large scale recyclables dealer in Manshyet Nasser
21.	Mr. Ibrahim Sawares	Large scale recyclables dealer in Manshyet Nasser
22.	Mr. Bader Besada	Member of the Zabbaleen Community in Ard El Lewa
23.	Mr. Boules Adel	Member of the Zabbaleen Community in Ard El Lewa
24.	Mr. Gerges Adel	Medium scale recyclables dealer in Ard El Lewa and El Moatamadya
25.	Mr. Mohammad Ibrahim	Member of El Farounia National Company (subcontracted by Shabramant Dumpsite)
26.	Eng. Ahmed Ali	The General Supervisor of Shabramant Dumpsite

		and the Composting Plant
27.	Mr. Ahmed Abdel Fadel	Security officer at Shabramant Dumpsite
28.	Mr. Sabry Mahmoud	Supervisor on GCBA crew at Shabramant Dumpsite
29.	Abbas Mohammad Abbas	Waste picker at Shabramant Dumpsite
30.	Ragab	Waste picker at Shabramant Dumpsite
31.	Ali	Waste picker at Shabramant Dumpsite
32.	Mohsen Agamy	Street scavenger
33.	Ahmed Agamy	Street scavenger
34.	Mr. Nasser Sayyed Eid	Head of Al Farounia Company
35.	Mr. Sherif Abdel Moneim Refa'ay	Al Obour Company
36.	Ms Galela Mohammad Mahdy	Head of the Statistics Dept., Giza Governorate
37.	Ms. Gehan Keriakos	Statistics Dept., Giza Governorate
38.	Ms Mona El Mallah	Statistics Dept., Giza Governorate
39.	6 scavengers at Shoubramant Dumpsite	

Gharbia Governorate		
1.	El Mohamady Ghanem	Technician in the recycling plant and the transfer station, Dawakhlia
2.	Yousef Mahfouz	Technician in the recycling plant and the transfer station, Dawakhlia
3.	Sherif Abd El Aziz	Worker in the recycling plant and the transfer station, Dawakhlia
4.	Saleh Aly Mohamed	Member of the Supervision Committee of the recycling plant and the transfer station, Defra
5.	Sherin Abd El Wahab	SFD Cairo, the Information Unit
6.	Ahmed Anwar	Deputy of Tanta LGU
7.	Ahmed Fakhry Mansour	Deputy of the Head of Hai Awal (District 1), Tanta
8.	Hussein Mohamed Hasaneen	Head of the Cleansing Department Hai Tany (District 2), Tanta
9.	Mohamed Fathy El Fakharany	Head of the Cleansing Department Hai Awal (District 1), Tanta
10.	Abd El Aziz Mahfouz	Head of Gharbia EMU

11.	Amr Effat	EEAA
12.	Aly Fadel	Head of the Community Development Department SFD, Gharbia
13.	Ramadan Mohamed Eid	Head of Qotor City Council
14.	Salah El Din Reyad El Askary	The head of environment enhancement and cleansing department in Basyoun Markaz
15.	Ibrahim Abd El Hamed El Dally	Head of Defra transfer station
16.	Aly El Aryan	Head of El Mehalla El Kobra EMU
17.	Ahmed Fahmy	Head of the Beautification Authority of El Mehalla El Kobra
18.	Adly Moharram	Journalist
19.	Farouk Ahmed El Gohary	Head of Basyoun City Council
20.	Samy Abd El Fatah El Aoudon	Head of the Beautification Authority of Qotor
21.	Gen. Abou El Seoud Saleh	General Manger of Care Service, Gharbia
22.	Brg. Ahmed Mohamed Omar	General Manager of Defra transfer station (appointed by Care Service)
23.	Sa'ad Mohamed Abd El Khalek El Naqeb	Worker in Care Service, El Mehalla El Kobra
24.	Ashraf Mohamed	Worker in Care Service, El Mehalla El Kobra
25.	Magdy Mohamed Khalil	Worker in Care Service, El Mehalla El Kobra
26.	Ashraf Oraby	Supervisor in Care Service, El Mehalla El Kobra
27.	Adel Mohamed Ezz El din	Driver in Care Service, El Mehalla El Kobra
28.	Fathy Amin Atayya	Chairman of Noureg CDA for Development
29.	Adel Hassan El Guindy	Loans Executive Manger – Gharbia NGOs Federation
30.	Magdy Anter	Chairman of Segen CDA
31.	Wageh Tawfik El Guindy	Chairman of Masha'al CDA
32.	Abd El Aty Ibrahim Abd El Halim	Chairman of Kom El Nagar CDA, Basyoun
33.	Brg. Hamada Ahmed El Kast	Chairman of Neshel CDA, Qotor
34.	El Shazly Ahmed El Nagar	Chairman of CDA in Emiout Qotor
35.	Eng. Mohamed Mahmoud Mabrouk	Chairman of the Cooperative CDA and the Head of Mabrouk International Co.
36.	Ahmed El Bastawesy El Shwry	Small scale dealer in Mahalet El Borg, El Mehalla El Kobra
37.	El Shafe'y El Banna	Contractor
38.	Mohamed El Imam	Waste collector with a contractor
39.	Mohamed Abd El Khalek	Waste collector with a contractor (child)
40.	Qotb Khalil	Waste collection supervisor with a contractor

41.	Kamal El Sheshtawy	Contracted waste segregator with Care Service, El Dawakhlia
42.	Mohamed El Sheshtawy	Scavenger
43.	Mohamed Mahmoud	Scavenger (child)
44.	Ahmed Abd El Wahab	Scavenger
45.	Farouk Hussein	Scavenger
46.	Kamal Mohamed	Scavenger
47.	Mabrouka Hussein	Scavenger
48.	Fathy (nickname)	Scavenger (child)
49.	Ahmed (nickname)	Scavenger (child)
50.	Hussein (nickname)	Scavenger (child)
51.	Aida (nickname)	A scavenger works with care service in Defra (permanent)
52.	Wafa'a (nickname)	A scavenger works with care service in Defra (permanent)
53.	Am Aly	A scavenger works with care service in Defra (temporally)
54.	Mohamed Aly	A scavenger works with care service in Defra (temporally)
55.	El Sheikh Ashraf Ragab	Large scale dealer in Met El Let, Mehalla El Kobra
56.	Mohamed El Soukkry	Head of big family of dealers and scavengers
Community people participated in the FGD		
57.	15 persons participated	Villagers in Manshyet El Omara-El Mehalla El Kobra Villagers in Shobratna Qotor
Ismailia Governorate		
1.	Dr. Salah Saeed	Head of Ismailia EMU
2.	Dr. Faten Mohammad Abdel Fatah	Environmental Inspector, Ismailia EMU
3.	Mr. Shaker Maso'ud	Deputy of local council of Ismailia city and district
4.	Eng. Magda Keseba	Manager of environment department in Ismailia council
5.	Mr. Nabil Mahmoud Khalil	Deputy of local council of El Tal El Kebeer city and district
6.	Mr. Hamdy Mohamed El Mislemany	Manager of Environment Department in local Council of El Tal El Kebeer
7.	Mr. Metwally Hassan Mohamed	General secretary of local council in El Qassaseen city
8.	Mr. Nesem Abd El Melek Salem	Manager of environment department in Local Council of El Qassaseen city
9.	Mr. Mohamed Hefny	Deputy of the Head of Hai Awal (District 1) Ismailia

10.	Mr. Hassan??	Deputy of the Head of Hai Tane (District2) Ismailia
11.	Mr. Mohsen Barakat	General Secretary for LGU Abo Sweer village
12.	Mr. El Sayyed Atia Mohamed	Responsible for Abo Sweer village Environment
13.	Eng. Ali Mahmoud Mohamed	Chairman of LUG El Manayef village
14.	Mr. Ahmed Abdallah Basher	Head of Al Kholafaa El Rashedin CDA, Abu Sour El Balad, Ismailia
15.	Ms. Hoda Saeed Hassan	Women Programmers' Specialists, Al Kholafaa El Rashedin CDA, Abu Sour El Balad, Ismailia
16.	Eng. Mohammad Hassan Salem	SFD Regional Office
17.	Mr. Amr Shash	Head of SFD Regional Office
18.	Mr. Sa'ad Sayyed Nassar	Branch Manager of Suez Canal for Investment
19.	Mr. Wael Mohammad	Accountant of Suez Canal for Investment
20.	Mr. Magdy Abd El Moneam	Sector Director of Care Service Company
21.	Mr. Hosam Mohamed Nasser	Financial Director of Care Service Company
22.	Mr. Mahmoud Gharib Abdel Rahman	Chairman of Om Azam CDA
23.	Mr. Saeed Hassan	Project Manager in Om Azam CDA
24.	Ms. Om El Hana	Itinerant waste buyers (Sarreha)-A representative of the informal sector groups
25.	Abu Hussein	Recyclables buyer (street roamer)
26.	Ahmed El Sa'ede	Itinerant waste buyers (sarreh) - informal sector groups
27.	Salman Mohamed Salman	Street pickers - informal sector groups
28.	Adel Belia	Waste pickers/scavengers and Small scale dealer - informal sector groups
29.	Mohamed Tawofik	Street pickers - informal sector groups
30.	Taha Mohamed Hussein	Street pickers - informal sector groups
31.	Ahmed Sa'ad El Din	Street pickers - informal sector groups
32.	Mohsen Harby	Street pickers - informal sector groups
33.	Amany Abd El Moneim	Waste sorter - informal sector groups
34.	Mona Abd El Ghany	Street pickers - informal sector groups
35.	Sabah Gharib	Child street pickers - informal sector groups
36.	Mohamed Rashad	Street pickers - informal sector groups
37.	Lawahez Mustafa	Street pickers - informal sector groups
38.	Said Othman	Street pickers - informal sector groups
39.	Leila Am Mohamed	Street pickers - informal sector groups
40.	Magda Hegazy	Street pickers - informal sector groups
41.	Ahmed Mohamed Ahmed	Street pickers and Itinerant waste buyers - informal sector groups

42.	Mosa	Large scale dealer
43.	Mohamed Mosa	Large scale dealer and Waste pickers/scavengers
44.	Said Mosa	Large scale dealer and Waste pickers/scavengers
45.	Am Ahmed Esa El A	Large scale dealer
46.	Sabah Abd El Aziz	Large scale dealer and Waste pickers/scavengers and Street pickers
47.	Gharib Abo El Adab	Large scale dealer
48.	Hosny, Farok, Medany	Large scale dealer
49.	Salah Salem	Large scale dealer
50.	Abd El Nasser El Said	Programmer
51.	Galal Abd El Kareem	Technical Assistant
52.	Ahmed Yahiya	Accountant
53.	Mohamed Ibrahim	Librarian
54.	Samah Mohamed	Arabic language teacher
55.	Hend Ragab	University Student
56.	Mohamed Awad	Teacher
57.	El Sayyed Awad	Teacher
58.	Ibrahim Abd Ellatef	Worker
59.	Ibrahim	El Mashtal dumpsite Keeper
60.	Am Ibrahim	Resident in El Mashtal area
61.	Arabi	Resident in El Mashtal area
62.	Zeinab	Resident in El Mashtal area
63.	Sayed El Said	Street pickers
64.	Amany Abd El Moneim	Waste sorter - informal sector groups
65.	Ahmed Sa'ad El Din	Street pickers - informal sector groups
66.	Mohsen Harby	Street pickers - informal sector groups
Luxor Governorate		
1.	General Ahmed Abdel Aziz	General Manger of Luxor Governorate
2.	**Brig. Gen.** Salah El Din Abdel Aziz	Head of Al Tawd LGU
3.	Ahmed Mustafa	Al El Bet Private Company
4.	Abdel Fatah Ragheb	El Tawd Cleansing Department
5.	Badawy Hassan Kenawy	Redaco Private Company
6.	Essam Mabrouk	The Cleansing Department, Luxor LGU
7.	Hamdy Mustafa	Equipment Supervisor , Al El Beat Private Company
8.	Karam	PET Dealer
9.	Salah Radwan El Toubgy	Owner of warehouse
10.	Ahmed Amen	Deputy of Al Tawd LGU
11.		Head of the Cleansing Department, El Tawd
12.	Katam	PET dealer and owner of warehouse

13.	Hamdy	Recyclables dealer
14.	Ragab	Recyclables dealer
15.	Mohamed Saleh Rashwan	Al Tawd CDA
16.	2 women and 15 children	Working in scavenging in the

Annex C : Findings from the Survey Results

Annex C.1: Giza Governorate

Beneficiaries results, Giza Governorate

Table C.1.1: Service providers by income groups of the survey sample, Giza Governorate

Service Provider	Q614 Income of the household							Total
	Less than LE 250	LE 250: LE 500	LE 500: LE 750	LE 750: LE 1000	LE 1000: LE 1500	LE 1500: LE 2000	Above LE 2000	
GCBA	20.0%	33.3%	20.5%	10.3%	23.8%	14.3%		18.4%
Private company	20.0%	16.7%	23.1%	15.4%	4.8%	14.3%		16.0%
Zabaleen (garbage collectors)		33.3%	43.6%	41.0%	38.1%	28.6%	50.0%	38.4%
Nobody	60.0%	16.7%	12.8%	33.3%	33.3%	42.9%	50.0%	27.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.1.2: Service providers by type of area, Giza Governorate

	AREA_TYPE Area type				Total
	Urban	Rural	Semi-urban	Slum	
The Governorate (LGU, the District, the Cleansing and Beautification Authority…etc)	18.1%			19.6%	18.6%
Private company	19.3%			8.7%	15.5%
NGO	55.4%			8.7%	38.8%
Nobody	7.2%			63.0%	27.1%
Total	100.0%			100.0%	100.0%

Table C.1.3: Service fees by income group of the survey sample, Giza Governorate

	Income of the household							Total
	Less than LE 250	LE 250: LE 500	LE 500: LE 750	LE 750: LE 1000	LE 1000: LE 1500	LE 1500: LE 2000	Less than LE 2000	
Do not pay		9.1%	10.5%	10.5%	4.8%	16.7%		9.1%
LE 3	100.0%	45.5%	50.0%	50.0%	47.6%			47.9%
LE 4		9.1%		2.6%	4.8%			2.5%
LE 5		9.1%	2.6%	5.3%	14.3%			5.8%
LE 6		18.2%	36.8%	18.4%	23.8%	33.3%		24.8%
LE 7				2.6%				.8%
LE 8				2.6%				.8%
LE 9				2.6%		33.3%	50.0%	3.3%
LE 10							50.0%	.8%
LE 15				2.6%				.8%
LE 20		9.1%		2.6%	4.8%	16.7%		3.3%

	Income of the household							Total
	Less than LE 250	LE 250: LE 500	LE 500: LE 750	LE 750: LE 1000	LE 1000: LE 1500	LE 1500: LE 2000	Less than LE 2000	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.1.4: Service fees by type of area, Giza Governorate

How much respondent pays for waste collection per month	Area type		Total
	Urban	Slum	
Do not pay	12.2%	4.7%	9.6%
LE 3	37.8%	67.4%	48.0%
LE 4	2.4%	2.3%	2.4%
LE 5	6.1%	4.7%	5.6%
LE 6	31.7%	9.3%	24.0%
LE 7	1.2%	2.3%	1.6%
LE 8	1.2%		.8%
LE 9	4.9%		3.2%
LE 10		2.3%	.8%
LE 15		2.3%	.8%
LE 20	2.4%	4.7%	3.2%
Total	100.0%	100.0%	100.0%

Table C.1.5: Method of fees payment by income group of the survey sample, Giza Governorate

Income of the household	To whom respondent pays for waste collection				Total
	Fees collector from the private company	The garbage collector	Representative from the NGO	Electricity fees collector	
Less than LE 250				100.0%	100.0%
LE 250 : LE 500	8.3%	8.3%		83.3%	100.0%
LE 500 : LE 750	26.5%	8.8%		64.7%	100.0%
LE 750 : LE 1000	14.3%	5.7%		80.0%	100.0%
LE 1000 : LE 1500	5.0%	25.0%	5.0%	65.0%	100.0%
LE 1500 : LE 2000				100.0%	100.0%
More than LE 2000				100.0%	100.0%
Total	14.0%	9.6%	.9%	75.4%	100.0%

Table C.1.6: Paying additional fees for SWM by income group of the survey sample, Giza Governorate

Income of the household	Pay for extra amounts of money		Total
	Yes	No	
Less than LE 250		100.0%	100.0%
LE 250 : LE 500	33.3%	66.7%	100.0%
LE 500 : LE 750	54.3%	45.7%	100.0%
LE 750 : LE 1000	57.1%	42.9%	100.0%
LE 1000 : LE 1500	45.0%	55.0%	100.0%

Income of the household	Pay for extra amounts of money		Total
	Yes	No	
LE 1500 : LE 2000	80.0%	20.0%	100.0%
More than LE 2000		100.0%	100.0%
Total	49.6%	50.4%	100.0%

Enterprises results, Giza Governorate

Table C.1.7: Service fees by service providers, Giza Governorate

How much the respondent pays for waste collection per month	Who collects wastes from the area				Total
	Governmental actor	Private company	Zabaleen (garbage collectors)	Nobody	
Less than LE 5			38.1%		10.7%
LE 6-10	7.4%	9.1%	14.3%	6.2%	9.3%
LE 11-20	48.1%	45.5%	28.6%	18.8%	36.0%
LE 21-30	14.8%	36.4%	19.0%	56.2%	28.0%
LE 31-40	3.7%				1.3%
More than LE 40	14.8%	9.1%		12.5%	9.3%
Don't pay	11.1%			6.2%	5.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.1.8: Service fees by paying extra amount, Giza Governorate

Paying for extra amounts for waste collection	Who collects wastes from the area				Total
	Governmental actor	Private company	Zabaleen (garbage collectors)	Nobody	
Less than LE 5	6.9%	20.0%	22.7%	23.1%	16.2%
LE 6-10		20.0%			2.7%
LE 11-20	6.9%	10.0%	13.6%	7.7%	9.5%
LE 21-30	13.8%	30.0%		15.4%	12.2%
More than LE40	13.8%				5.4%
Changeable	24.1%	10.0%	4.5%	15.4%	14.9%
Don't pay	34.5%	10.0%	59.1%	38.5%	39.2%
Total	100.0%	100.0%	100.0%	100.0%	100%

Table C.1.9: Mode of payment by service providers, Giza Governorate

Who collects wastes from the area	To whom the respondent pays for waste collection per month				Total
	An officer from the Governorate	Fees collector from the private company	The garbage collector	Electricity fees collector	
Governmental actor	100.0%	100.0%	17.6%	40.4%	36.8%
Private company				19.3%	14.5%
Zabaleen (garbage collectors)			76.5%	15.8%	28.9%
Nobody			5.9%	24.6%	19.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Gharbia Governorate

Beneficiaries' results, Gharbia Governorate

Table C.2.1: Service providers by income groups of the survey sample, Gharbia Governorate

Service Provider	Q614 Income of the household							Total
	Less than LE 250	LE 250: LE 500	LE 500: LE 750	LE 750: LE 1000	LE 1000: LE 1500	LE 1500: LE 2000	More than LE 2000	
The Governorate		38.9%	54.5%	47.8%	12.5%			33.8%
Private company			4.5%	32.6%	53.1%	100.0%	100.0%	36.1%
NGO				6.5%	28.1%			9.0%
Nobody		61.1%	40.9%	13.0%	6.3%			21.1%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.2.2: Service providers by type of area, Gharbia Governorate

	AREA_TYPE Area type				Total
	Urban	Rural	Semi-urban	Slum	
The Governorate (LGU, the District, the Cleansing and Beautification Authority…etc)	44.9%	27.4%			33.8%
Private company	49.0%	28.6%			36.1%
NGO	2.0%	13.1%			9.0%
Nobody	4.1%	31.0%			21.1%
Total	100.0%	100.0%			100.0%

Table C.2.3: Service fees by income group of the survey sample, Gharbia Governorate

Payment	Income of the household						Total
	LE 250: LE 500	LE 500 : LE 750	LE 750 : LE 1000	LE 1000 : LE 1500	LE 1500 : LE 2000	Less than LE 2000	
Do not pay	64.7%	45.5%	13.0%				20.6%
LE 2				3.2%			.8%
LE 2.5		4.5%	17.4%	35.5%	25.0%	66.7%	19.1%
LE 3	35.3%	50.0%	67.4%	41.9%	50.0%	33.3%	51.9%
LE 3.5			2.2%				.8%
LE 10				19.4%	25.0%		6.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.2.4: Service fees by type of area, Gharbia Governorate

How much respondent pays for waste collection per month	Area type		Total
	Urban	Rural	
Do not pay	4.3%	29.8%	20.6%
LE 2	2.1%		.8%
LE 2.5		29.8%	19.1%
LE 3	72.3%	40.5%	51.9%
LE 3.5	2.1%		.8%
LE 10	19.1%		6.9%
Total	100.0%	100.0%	100.0%

Table C.2.5: Method of fees payment by income group of the survey sample, Gharbia Governorate

Income of the household	To whom respondent pays for waste collection				Total
	An officer from the Governorate	Fees collector from the private company	Representative from the NGO	Electricity fees collector	
LE 250: LE 500	14.3%			85.7%	100.0%
LE 500 : LE 750	8.3%	8.3%		83.3%	100.0%
LE 750 : LE 1000	2.5%	22.5%	7.5%	67.5%	100.0%
LE 1000 : LE 1500		34.4%	28.1%	37.5%	100.0%
LE 1500 : LE 2000		25.0%		75.0%	100.0%
More than LE 2000		66.7%		33.3%	100.0%
Total	2.8%	24.5%	11.3%	61.3%	100.0%

Table C.2.6: Paying additional fees for SWM by income group of the survey sample, Gharbia Governorate

Income of the household	Pay for extra amounts of money		Total
	Yes	No	
LE 250: LE 500		100.0%	100.0%
LE 500 : LE 750		100.0%	100.0%
LE 750 : LE 1000	2.5%	97.5%	100.0%
LE 1000 : LE 1500		100.0%	100.0%
LE 1500 : LE 2000		100.0%	100.0%
More than LE 2000		100.0%	100.0%
Total	.9%	99.1%	100.0%

Enterprises results, Gharbia Governorate

Table C.2.7: Service fees by service providers, Gharbia Governorate

How much the respondent pays for waste collection per month	Who collects wastes from the area				Total
	Governmental actor	Private company	NGO	Nobody	
Less than LE 5	75.0%	42.1%	100.0%	3.1%	35.6%
LE 6-10	16.7%	50.9%		18.8%	35.6%
LE 11-20		5.3%			2.9%

	Don't pay	8.3%	1.8%		78.1%	26.0%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

Table C.2.8: Service fees by paying extra amount, Gharbia Governorate

	Who collects wastes from the area				Total
Paying for extra amounts for waste collection	**Governmental actor**	**Private company**	**NGO**	**Nobody**	
Less than LE 5				2.9%	.9%
Don't pay	100.0%	100.0%	100.0%	97.1%	99.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.2.9: Mode of payment by service providers, Gharbia Governorate

	To whom the respondent pays for waste collection per month				Total
Who collects wastes from the area	**An officer from the Governorate**	**Fees collector from the private company**	**Representative from the NGO**	**Electricity fees collector**	
Governmental actor	100.0%	7.1%		11.4%	17.1%
Private company		89.3%		70.5%	68.3%
NGO			100.0%		3.7%
Nobody		3.6%		18.2%	11.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Ismailia Governorate

Table C.3.1: Service providers by Income Groups, IsmailiaGovernorate

Service Provider	Q614 Income of the household							
	Less than LE 250	LE 250: LE 500	LE 500 : LE 750	LE 750 : LE 1000	LE 1000 : LE 1500	LE 1500 : LE 2000	Above LE 2000	**Total**
The Governorate	100.0%	88.9%	81.8%	78.6%	75.0%	100.0%	100.0%	80.5%
Private company					4.2%			.8%
Zabaleen (garbage collectors)					4.2%			.8%
Nobody		11.1%	18.2%	21.4%	16.7%			17.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.3.2: Service providers by type of area, Ismailia Governorate

Governorate	AREA_TYPE Area type				Total
	Urban	**Rural**	**Semi-urban**	**Slum**	**Urban**
The Governorate (LGU, the District, the Cleansing and Beautification Authority…etc)	92.9%	40.9%	73.3%	50.0%	80.5%
Private company	1.2%				.8%
NGO	1.2%				.8%
Nobody	4.8%	59.1%	26.7%	50.0%	17.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.3.3: Service fees by income group of the survey sample, Ismailia Governorate

How much respondent pays for waste collection per month	Income of the household							Total
	Less than LE 250	**LE 250: LE 500**	**LE 500 : LE 750**	**LE 750 : LE 1000**	**LE 1000 : LE 1500**	**LE 1500 : LE 2000**	**Above than LE 2000**	
Do not pay		11.1%	26.8%	31.7%	17.4%			24.6%
LE 2	100.0%	44.4%	36.6%	19.5%	13.0%			26.3%
LE 2.5		11.1%						.8%
LE 3		22.2%	26.8%	43.9%	60.9%	100.0%	100.0%	40.7%
LE 5		11.1%	4.9%	4.9%				4.2%
LE 10			4.9%		8.7%			3.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.3.4: Service fees by type of area, Ismailia Governorate

How much respondent pays for waste collection per month	Area type				Total
	Urban	Rural	Semi-urban	Slum	
Do not pay	4.9%	65.0%	66.7%	100.0%	24.6%
LE 2	29.6%	30.0%	6.7%		26.3%
LE 2.5		5.0%			.8%
LE 3	58.0%		6.7%		40.7%
LE 5	3.7%		13.3%		4.2%
LE 10	3.7%		6.7%		3.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.3.5: Method of fees payment by income group of the survey sample, Ismailia Governorate

Income of the household	To whom respondent pays for waste collection			Total
	An officer from the Governorate	Fees collector from the private company	Electricity fees collector	
Less than LE 250			100.0%	100.0%
LE 250: LE 500			100.0%	100.0%
LE 500 : LE 750	6.2%		93.8%	100.0%
LE 750 : LE 1000	6.9%		93.1%	100.0%
LE 1000 : LE 1500		5.0%	95.0%	100.0%
LE 1500 : LE 2000			100.0%	100.0%
More than LE 2000			100.0%	100.0%
Total	4.3%	1.1%	94.6%	100.0%

Table C.3.6: Paying additional fees for SWM by income group of the survey sample, Ismailia Governorate

Income of the household	Pay for extra amounts of money		Total
	Yes	No	
Less than LE 250		100.0%	100.0%
LE 250: LE 500	25.0%	75.0%	100.0%
LE 500 : LE 750	6.1%	93.9%	100.0%
LE 750 : LE 1000	10.3%	89.7%	100.0%
LE 1000 : LE 1500	10.0%	90.0%	100.0%
LE 1500 : LE 2000	50.0%	50.0%	100.0%
More than LE 2000		100.0%	100.0%
Total	10.6%	89.4%	100.0%

Enterprises results, Ismailia Governorate

Table C.3.7: Service fees by service providers, Ismailia Governorate

How much the respondent pays for waste collection per month	Who collects wastes from the area		Total
	Governmental actor	Nobody	

	Less than LE 5	6.3%		5.2%
	LE 6-10	76.2%	14.3%	64.9%
	LE 11-20	11.1%		9.1%
	Don't pay	6.3%	85.7%	20.8%
Total		100.0%	100.0%	100.0%

Table C.3.8: Service fees by paying extra amount, Ismailia Governorate

Paying for extra amounts for waste collection		Who collects wastes from the area		Total
		Governmental actor	Nobody	
	Less than LE 5	6.3%		5.2%
	LE 6-10	1.6%		1.3%
	LE 11-20	3.2%		2.6%
	LE 21-30	1.6%		1.3%
	Don't pay	87.3%	100.0%	89.6%
Total		100.0%	100.0%	100.0%

Table C.3.9: Mode of payment by service providers, Ismailia Governorate

Who collects wastes from the area		To whom the respondent pays for waste collection per month		Total
		An officer from the Governorate	Electricity fees collector	
	Governmental actor	100.0%	96.4%	96.7%
	Nobody		3.6%	3.3%
Total		100.0%	100.0%	100.0%

Luxor Governorate

Table C.4.1: Service Providers by Income Group, Luxor Governorate

Service Provider	Q614 Income of the household							Total
	Less than LE 250	LE 250: LE 500	LE 500 : LE 750	LE 750 : LE 1000	LE 1000 : LE 1500	LE 1500 : LE 2000	Above LE 2000	
The Governorate		60.0%	75.0%	81.0%	86.7%	90.0%	100.0%	77.1%
Private company								
Zabaleen (garbage collectors)						5.0%		1.0%
Nobody	100.0%	40.0%	25.0%	19.0%	13.3%	5.0%		21.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.4.2: Service Providers by type of areas, Luxor Governorate

Governorate	AREA_TYPE Area type				Total
	Urban	Rural	Semi-urban	Slum	Urban
The Governorate (LGU, the District, the Cleansing and Beautification Authority…etc)	90.6%	61.0%	85.7%	75.0%	77.1%
Zabaleen (garbage collectors)	3.1%				1.0%
Nobody	6.3%	39.0%	14.3%	25.0%	21.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.4.3: Service fees by income group of the survey sample, Ismailia Governorate

How much respondent pays for waste collection per month	Area type				Total
	Urban	Rural	Semi-urban	Slum	
Do not pay	15.6%	26.8%	3.6%	25.0%	17.1%
LE 1		70.7%	53.6%		41.9%
LE 2	75.0%		42.9%	75.0%	37.1%
LE 3	9.4%	2.4%			3.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table C.4.4: Service fees by type of area, Luxor Governorate

Income of the household	Pay for extra amounts of money		Total
	Yes	No	
Less than LE 250		100.0%	100.0%
LE 250: LE 500		100.0%	100.0%
LE 500 : LE 750		100.0%	100.0%
LE 750 : LE 1000		100.0%	100.0%
LE 1000 : LE 1500	6.7%	93.3%	100.0%
LE 1500 : LE 2000	12.5%	87.5%	100.0%
More than LE 2000	33.3%	66.7%	100.0%
Total	6.9%	93.1%	100.0%

Table C.4.5: Method of fees payment by income group of the survey sample, Luxor Governorate

Income of the household	To whom respondent pays for waste collection	Total
	Electricity fees collector	
Less than LE 250	100.0%	100.0%
LE 250: LE 500	100.0%	100.0%
LE 500 : LE 750	100.0%	100.0%
LE 750 : LE 1000	100.0%	100.0%
LE 1000 : LE 1500	100.0%	100.0%
LE 1500 : LE 2000	100.0%	100.0%
More than LE 2000	100.0%	100.0%
Total	100.0%	100.0%

C.4.6: Paying additional fees for SWM by income group of the survey sample, Luxor Governorate

Income of the household	Pay for extra amounts of money		Total
	Yes	No	
Less than LE 250		100.0%	100.0%
LE 250: LE 500		100.0%	100.0%
LE 500 : LE 750		100.0%	100.0%
LE 750 : LE 1000		100.0%	100.0%
LE 1000 : LE 1500	6.7%	93.3%	100.0%
LE 1500 : LE 2000	12.5%	87.5%	100.0%
More than LE 2000	33.3%	66.7%	100.0%
Total	6.9%	93.1%	100.0%

Enterprises results, Luxor Governorate

Table C.4.7: Service fees by service providers, Luxor Governorate

	Who collects wastes from the area				Total
How much the respondent pays for waste collection per month	Governmental actor	Private company	Zabaleen (garbage collectors)	Nobody	

	Less than LE 5	40.7%		66.7%		31.0%
	LE 6-10	22.2%			10.0%	16.7%
	LE 21-30		50.0%			2.4%
	More than LE 40	3.7%	50.0%			4.8%
	Don't pay	33.3%		33.3%	90.0%	45.2%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

Table C.4.8: Service fees by paying extra amount, Luxor Governorate

Paying for extra amounts for waste collection		Who collects wastes from the area				Total
		Governmental actor	Private company	Zabaleen (garbage collectors)	Nobody	
	Less than LE 5	9.4%				6.1%
	LE 11-20	3.1%				2.0%
	LE 21-30	3.1%				2.0%
	Don't pay	84.4%	100.0%	100.0%	100.0%	89.8%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

Table C.4.9: Mode of payment by service providers, Luxor Governorate

Who collects wastes from the area		To whom the respondent pays for waste collection per month			Total
		An officer from the Governorate	Fees collector from the private company	Electricity fees collector	
	Governmental actor	100.0%		80.0%	72.4%
	Private company		100.0%	8.0%	17.2%
	Zabaleen (garbage collectors)			8.0%	6.9%
	Nobody			4.0%	3.4%
Total		100.0%	100.0%	100.0%	100.0%

Annex D: Documentation for the Launching workshops

Annex D-1: List of Participants in Giza Regional Workshop, 11 November, 2010

Ser	Name	Title/Organization
1	Ibrahim Salah El Din Arfa	Assistant of the Head of El Agouza District
2	Naser Said Eid Said	Chairman of Al Farounia and EnviroMaster
3	Hana Abass Ahmed	EcoConServ Surveyor
4	Mahmoud Radwan	EcoConServ Surveyor
5	Soaad Mohamed El Sayed	Giza EMU
6	Salah Abd El fatah Hassan	Giza Cleansing and Beautification Authority
7	Randa Mohamed El Zoghby	Program Coordinator at MoLD Decentralization Unit
8	Sherif Abd El Moneam Refaaey	Al Oubour for Services
9	Heba Salah Behary	Economist at EcoConServ
10	Mounir Boushra Mena	SWM Consultant and one of the PSIA National Technical Team
11	Amany Nakhla	Program Analyst UNDP
12	Mohamed Souliman	Environmental Committee Secretariat
13	Yousry abd El Hamed	Head of Giza EMU
14	Alaa El Din Abd El Hafez Mohamed	Environmental Inspector at Giza EMU
15	Dr. Tarek Genena	EcoConServ President
16	Amal Faltas	Social Development Expert at EcoConServ and PSIA Project Manger
17	General/ Youssef Wessal	Giza Secretary General

Annex D- 2: The PSIA Launching Workshop Agenda

Up Stream Poverty and Social Impact Analysis (PSIA) for Egypt's Solid Waste Management Reform

Wednesday 15th December, 2010

PSIA Launching

Workshop Agenda

Time	Activity	Speaker
09.30 -10.30	Registration	
10.30 – 11.00	Welcome speeches	1. **Gen. Ahmed Maher Arafa** – Consultant for HE the Minster of Local Development 2. **Ms. Amany Nakhla** – Program Analyst UNDP 3. **Mr. Robert Maurer -** Lead Urban Sector Specialist Sustainable Development Department
11.00 – 12.00	**PSIA Presentation - EcoConServ Environmental Solutions**	
	Background on the Solid Waste Management (SWM) Sector in Egypt	**Dr. Tarek Genena** EcoConServ President and Team Leader
	PSIA Methodology	**Ms Amal Faltas** Project Manager and Social Development Expert - EcoConServ
	Giza Governorate key results	
	Gharbia Governorate key results Luxor Governorate key results	**Ms Zeinab Hafez** Social Development Expert - EcoConServ
	Ismailia Governorate key results	**Ms Suzan Megally** Social Development Expert - EcoConServ
	PSIA Conclusions	**Ms Amal Faltas** Project Manager and Social Development Expert - EcoConServ
	Discussion on alternatives	**Ms Heba Behairy** Economic Expert - EcoConServ
12.00 – 12.45	Open Discussion	
12.45 – 13.00	Closing	
13.00 – 14.00	Light lunch	

Annex D- 3 List of Participants in the PSIA Launching Workshop, 15 December, 2010

Ser	Name	Title/Organization
1	Laila Arfa Hamed	Head of Luxor EMU
2	Adel Mounir Zakry	The Association for the Protection of the Environment
3	Seham Mohamed Mohamed Hafez	Researcher at American University in Cairo
4	Iman Hisham saber	University Student
5	Khaled Mohamed Fahmy	Environmental Economist
6	Mahmoud Abass ahmed	Freelance researcher
7	Amr Halmy Lashyn	Expert of Informal Areas to Qaliubia Governorate - GTZ/PDP
8	Tawfik El Khashen	Local Initiative Unit Leader -GTZ/PDP
9	Mahmoud Radwan	Freelance researcher
10	Ayman Ibrahim El Hefnawi	Vice Chairman, Research, Studies & Regional Planning – the General Organization for Physical Planning (GOPP)
11	Faten Abd El Fatah Hussein	Researcher at the AUC Social Research Center
12	Israa Nabill Abd El Fatah	Researcher at the AUC Social Research Center
13	Heba Askr	Sekem Group
14	Faten Mohamed Ahmed	Environmental Inspector at Ismailia EMU
15	Mohamed Mallak	
16	Iman Radwan	Development officer at the Swiss Embassy
17	Hala Abou El Hamd	Coordinator for the Bilateral Aid- EEAA
18	Dr. Waled Abd El Rahim	Deputy KFW manager
19	Sherif Ahmed Yousry	Senior Program officer - JICA
20	Abd El Meged Abd El Razek	Journalist at Al Ahram
21	Ramy Lotfy	Program Coordinator - CIDA
22	Dalia Abdo	Soil and More
23	Seyada Gerges	Board Chairman- The Association for the Protection of the Environment
24	Abeer Mohamed Saleh	Gharbia EMU
25	Mohamed Hassan Khalel	Gharbia EMU
26	Yousry Abd El Hamed	Head of Giza EMU
27	Alaa El Din Abd El Hafez Mohamed	Environmental Inspector at Giza EMU
28	Zeinab Mohamed Hafez	Social Development Consultant at EcoConServ
29	Abd Elrehim Selim	General Manager - The Arab German Company for Environmental Waste Technology
30	Mohamed Mahmoud Mabrouk	Chairman of Mabrouk International for Engineering Industries
31	Robert Mauror	Lead urban Specialist – World Bank
32	Walid Darwish	Manager – Social Fund for Development
33	Geral/Yousef Ahmed Wessal	Secretary General Giza Governorate
34	Riina Hynninen	Environemtnal Officer- UNDP
35	Mounir Nawar	The Association of Garbage Collector

Ser	Name	Title/Organization
36	Magda Mahmoud Khatab	Professor – Faculty of Agriculture – Cairo university
37	Safa El Baz	Director of RCT
38	Hesham Abdel Hamid	Consultant
39	General/ Ahmed Maher	Consultant for HE the Minster of Local Development
40	Randa Mohamed El Zoghby	Program Coordinator at MoLD Decentralization Unit
41	Ms. Suzam Megally	Social Development Consultant at EcoConServ
42	Heba Behairy	Economist at EcoConServ
43	Dr. Tarek Genena	EcoConServ President
44	Amal Faltas	Social Development Expert at EcoConServ and PSIA Project Manger