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Solid waste management cycle in northern Cairo

Lise Debout

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SOLID WASTE MANAGEMENT CYCLE

IN NORTHERN CAIRO

RESEARCH ACTION

IN ZAWIA DISTRICT

FINAL REPORT

JUNE 2010



LISE DEBOUT

In the framework of:

“Poverty Alleviation and Environmental Enhancement in Northern Cairo” Project

Special terminology	3
Special thanks	4
Remark of COSPE	5
1. Research project description	6
1.1. BACKGROUND	6
1.2. METHODOLOGY	8
1.3. ZAWIA DISTRICT	8
2. Solid waste management in Cairo	11
2.1. THE PRIVATE COMPANIES	11
2.2. THE ZABBALEEN COMMUNITY AND ITS ACTIVITIES	11
2.3. ZAWIA DISTRICT WASTE MANAGEMENT	12
3. Shortages of the service in Zawia district	13
3.1. SWEEPING	13
3.2. COLLECTION	13
3.3. EQUIPMENT	15
4. Informal sector dealers in Northern Cairo	17
4.1. INFORMAL ACTIVITIES DESCRIPTION	17
4.2. INFORMAL ACTIVITIES CATEGORIZATION	18
4.3. COLLECTION ESTIMATION AND INCOMES GENERATION	20
4.4. IMPACTS OF INFORMAL ACTIVITIES ON THE AAEC GARBAGE COLLECTION SERVICE	21
5. Lessons learned: recommendations and conclusions	21
5.1 SERVICE ENHANCEMENT	21
5.2 INFORMAL SECTOR INTEGRATION	24
Bibliography	26
Annexes	27
ANNEX 1: TIME SLOT ONE	28
ANNEX 2: TIME SLOT TWO	34
ANNEX 3: TIME SLOT THREE	40
ANNEX 4: TIME SLOT FOUR	44
ANNEX 5: TIME SLOT FIVE	48
ANNEX 6: TIME SLOT SIX	51
ANNEX 7: QUESTIONNAIRE FORMS	54

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Special terminology

AAEC: AMA Arab Environment Company, company responsible for waste management in Northern Cairo area

APE: Association for the Protection of the Environment, NGO actively involved in environmental education and solid waste management

CCBA: Cairo Cleaning and Beautification Agency, local governmental authority responsible for waste management and greens areas care. The private companies working in waste management signed their contracts with this authority. The CCBA has a representative in each district

Gounia: Big plastic weaved bag used to collect waste

Mo'allemeen: Middlemen, buyers of recyclable materials. They live either in the same neighbourhood as the garbage collector, or in a different area. Some of them used to be collectors themselves in the past, and later on managed to acquire some space for storing the garbage

Sarih (*Sarheyya, pl.*): They are roamers, who use to collect recyclables from containers or from streets piles. They are not part of the *zabbaleen* community (see below "*zabbaleen*")

SWM: Solid Waste Management

Zabbaleen (Zabbâl, sing.): An Egyptian community and Cairo's historical informal garbage collectors. Second migrants. Mainly Coptic Christians

Zabal: singular of Zabbaleen, see above

Zarayeb: Sty inside the garbage collectors' neighbourhood

Wahy (*Waheyya, pl.*): Prime migrants arrived to Cairo in order to collect waste. Muslims

Special thanks

This study was realized by the consultant with the precious help of her assistant Khaled Kandil for the fieldwork during which he showed great adaptation capacity and various skills.

We also want to thank all the different actors that were generous with their time and resources. A special thank you to Mohamed Reda, the AAEC Zawia district manager, for his patience.

We are also grateful to the inhabitants of Zawia, who proved always ready to talk and to share their problems and knowledge with us.

Remark of COSPE

The work done by the author in collaboration with COSPE does not pretend to be exhaustive of the topic treated. On the contrary, it should be considered a small step and another contribution towards the analysis and understanding of the complex situation of solid waste management in Cairo.

1. Research project description

1.1. BACKGROUND

Since the privatization of the garbage collection in Greater Cairo at the beginning of the years 2000, the SWM cycle involves different formal and informal actors at the same time. It is known that, beside the international and national companies and their local subcontractors, many informal pickers collect the waste on the streets, sorting and recycling or selling different kind of materials. This involves the well-known communities of areas as Moqattam, Torah, but also groups coming from out of Cairo.

It is evident that from the first “door to door” step up to the formal dumping site, there are many actors involved in the SWM cycle, and it is our assumption that most of the recycling materials take different ways from the contracted companies, that mainly deal with organic waste.

- Northern Cairo

AAEC, one of the biggest SWM companies in Egypt, has been contracted by the CCBA to be the “sole and main service provider” in Cairo’s Northern area (7 districts, 3.000.000 inhabitants circa) for fifteen years, starting in August 2002.

AAEC’s working philosophy is the combination of modern technique and know-how, together with participation and cooperation from the citizens of the area, according to their culture and their habits. The Company’s mission includes awareness activities for the communities on how to deal with waste, aiming at changing people’s behaviour towards a cleaner environment.

The process is customer-oriented, with major involvement of the population to make the social and public awareness wide shared. This methodology requires a permanent improvement of the service to be effective, which is only possible with a field “research and development” system (R&D) involving all the social actors towards a community capacity-building strategy in the environment protection and sustainable development.

Since February 2008, AAEC established a partnership with the Italian NGO COSPE (Cooperation for the Development of the Emerging Countries) within the framework of the project “Poverty Alleviation and Environmental Enhancement in Northern Cairo”.¹

A third partner of the project is APE, a local NGO with the aim to spread knowledge about the environmental and promote the importance of the recycling process for health, education and job creation internally and internationally. APE has built a deep and long experience in the community work in the field of sorting and recycling garbage, in particular with the *Zabbaleen* community in Torah and Moqattam areas. APE is currently coordinating the health component of the Northern Cairo Project.

“Northern Cairo” is a three-year project co-funded by the Italian Ministry of Foreign Affairs (MAE). The goal of the project is to strengthen the community networking and the inhabitants’ ownership of their environment for a better solid waste management. This goal is to be reached through awareness and capacity-building activities, in a joint effort

¹ Hereafter also mentioned as Northern Cairo project, or simply the Project.

involving also local authorities, private enterprises and the community as a whole in dealing with the urban management.

- Recycling Materials

A starting point of our research is the knowledge that AAEC currently deals mainly with organic compost and construction waste in Cairo North. The following research questions became implicit: Who is practically dealing with other recycling materials from the collected waste? Does AAEC know all the levels and actors involved in the SWM cycle? What is the market of these materials and how does this informal system affect the situation of the waste management in Cairo? Who manages this cycle and who benefits from it? What are the main problems generated by this partially unknown cycle?

- Objectives

The first range of objectives of this survey is:

- to throw light on the informal dimension of the SWM cycle in Northern Cairo districts;
- to understand how this system affects the environmental situation and the efficiency of the garbage collection process;
- to gain knowledge about the interest and management of all the organic waste which was used by the *Zabballeen* as nourishment for the pigs before 2009, when the animals were eliminated as a health precaution measure adopted by the government against the virus A/H1N1;
- to identify the actors dealing with garbage collection and the stakeholders involved in the unofficial business of recycling materials.

A second range of objectives looks into the potential ways of involving informal pickers in income generating activities together with local communities and NGOs dealing with the urban management, environmental problems and community development.

- Actors involved

In order to implement the survey, different stakeholders have been involved according to their skills, knowledge and background: 1) The Northern Cairo Project partners, APE and AAEC, contributed their presence and knowledge of the local, daily life. Their role was fundamental because of their daily contacts with informal collectors; 2) CEDEJ (Centre d'Etude et de Documentation Economique et Juridique), a research centre that boasts long-term experience in this domain, promoted a Round Table on the issue of SWM in 2009, and has been involved in carrying out part of the present research; 3) Informal collectors themselves have been identified and contacted during the research process; 4) Local institutions have been involved as well, in particular the Zawia District Manager and part of its technical department.

- Outputs

The output is a detailed and participated research on the SWM cycle in the chosen pilot area of Zawia. This will enable us to better identify the stakeholders involved and the business rules guiding the system of collection, while allowing for a better understanding of possible ways to improve the quality of the environment, the efficiency of the garbage collection and the recycling system as a whole. Finally, the result of the present research may represent the starting point of designing income generating activities, potentially involving the informal collectors willing to be part of such activities.

1.2. METHODOLOGY

- Location

The study took place in the Zawia district, a choice motivated by the existence in this area of an active local committee established by the Project. However, only a limited part of the district was selected, given the limited resources available and the short time frame.

- Information collection and objectives

The process of information collection was divided into two types of approaches, interviews and observation. The **interviews** concerned all actors: informal (*zabbaleen*, informal pickers), formal (AAEC, CCBA, inhabitants, NGOs). This allowed for an evaluation of the different actors' knowledge about the situation and regarding the other actors, and consequently a better view on the misunderstanding that can harm the service performance. By interviewing the core actors of the Project, namely AAEC and APE, we benefited from their general and specific knowledge as central players in the SWM process. The **daily observation** beyond interviews, aimed at understanding the reality of the situation and identifying all actors that take part in the SWM cycle (collection, recycling, littering, etc).

- Planning

A first planning phase was dedicated to general interviews with key actors involved in the global project "Poverty Alleviation and Environmental Enhancement in Northern Cairo": APE and AAEC. A second phase was dedicated to the analysis of complaints map, drawn by AAEC's hotline department. The map pointed out the strategic problematic places. Consequently, and according to the complaints map, the ground approach helped in ensuring that real problematic places were singled out. As a result, a limited urban sector was selected from the crosscheck between complaints map and observation.

The third planning phase was the extended in-depth observation divided in several time-slots (8-11am/11am-1pm/1pm-4pm...). The extended observation contained two aspects: passive observation and interviews (short informal questionnaires). On the one hand, the passive observation focused on actors involved in activities related to solid waste, inhabitants' behaviours, urban morphology and occupation, waste disposal, waste burning, etc. On the other hand, the questionnaires targeted inhabitants, shops, *zabbalin*, informal pickers, people involved in scavenging activities, schools, religious institutions (if any).

Finally, the fourth phase saw the restitution of the final report and the presentation and sharing of results with the staff of the Project in the premises of the CEDEJ centre.

1.3. ZAWIA DISTRICT

Zawia district is located in the Northern area of Cairo. It is about 315 465 inhabitants². The district is characterized by its industrial activities. It hosts the biggest electricity station of the Middle East and a big water treatment station³.

- **Zawia: an informal area**

Zawia is one of the so-called informal settlements in Cairo, that is, one of the illegally urbanized areas. These areas are not slums as the ones that can be found in South America or in India. Indeed, what we are used to call «slum» does not exist in Cairo, where we talk about real constructions.

2 CAPMAS, 2006 census.

3 Interview with Mr. Abdel Aziz Mohamed Tolba, district manager of Zawia.

In Cairo, informal constructions take place in two different types of land, desert and agricultural land. Constructions on desert land are illegal since they consist of the occupation of public land without authorization. Agricultural land, on the other hand, is private property of the peasants; however, when the latter sell their land, constructions on this terrain remain illegal, as land previously used for agriculture cannot be used for construction purposes.

Informal urbanization characterizes Cairo, with more than 65%⁴ of Greater Cairo's inhabitants living in illegal constructions. The first phase of informal urbanization (Séjourné, 2009) started in Cairo after the first World War. At that time, motivated by the massive industrialization policy launched by Gamal Abdel Nasser, many migrants from Upper Egypt came to Cairo. The phenomenon grew faster in the 1960s, when selling agricultural land for construction was more rentable than working on the soils. Thus, informal urbanization on agricultural land spread mostly in Giza and in North Cairo.

The second and most important wave of informal urbanization started in the 1970s, a period when 84% of the construction process was informal. Different elements supported this phenomenon. First, the savings generated by Egyptian immigrants based in the Gulf region during the oil booms (1973, 1979). Meanwhile, most of the public funds were allocated to war efforts (1967 and 1973 wars), a situation which led to a lack of investment in public housing. In the 1980s informal urbanization slowed down, although the population living in informal areas continued increasing due to demographic growth processes. During those decades, informal urbanization provided housing to all Cairo population regardless of their social status, while numerous public programmes failed in that aspect.

For many authors, the main reason of informal urbanization phenomenon is the lack of sustainable public housing policies. As those areas are illegal, the government is not obliged to serve them with public services as water, electricity, transportation, etc. This translates in to illegally and privately provided services. Overall, informal areas are among the most dynamic parts of Cairo, which offer people jobs, housing and services in a unique district.

In the past, Zawia used to be an agricultural zone on the Nile bank. In 1977 however, almost all of the current Zawia district was built. According to the Manager of the popular local council, Zawia was regularized four years ago. While in the past this area enjoyed inexpensive rents, prices are now high (as in all informal areas). In our selected area, rents are about EGP 500⁵ (72,6 Euro) per month, which represents a big amount of money considering that the average salary in the public sector is about EGP 394 (51,9 Euros) per month⁶. Finally since most of the population in informal areas work in the informal economy, people do not benefit from social and medical insurance.

4 Most of this historical approach comes from Séjourné, M. (2009), *The History of Informal Settlements. Cairo's Informal Areas. Between Urban Challenges and Hidden Potential. Facts. Voices. Visions.* Cairo, GTZ: 147-150p

5 Interview with an inhabitant of Zawia living in el Gama' Street, 25.05.2010.

6 Tâla' el-Mazîd, (2010), "Darâsa rasmeyya: dakhal el-fard 98 guouneyyan chahriyan... wa "khat el-faqr" yehadadoh bi 164", el-masry el-youm, 7.05.2010.

Map 1. Situating Zawia on the Greater Cairo map

Source: Google Earth adapted by the author.



- **Zawia presentation**

Map 2: Selected area perimeter

Source: AAEC



The selected area is in the middle part of the Zawia district. The area is north Manchiat el Gâmal Street. Its borders are Manchiat Gâmal Street, Charkat el Petrol Street, el-Gazaher Street, Mahmoud Salâma Street, Ahmed Farouk Street, el-‘Achîr men Ramadân, el-Ma’hed el-Izhary. This perimeter corresponds to two collection zones of AAEC.

The chosen area is divided into two types of urbanization. The southwestern side (zw 12a on map 2) belongs to an informal area and was regulated four years ago. The streets are very narrow and with no asphalt, the population density is high. The northeastern side (ZW 12b on map 2) is part of a social housing programme. Here the streets are bigger and paved, there are some gardens and green areas, and the density is much lower (less than 1/3 if compared to the density in the other part of the area).

Table 1. Selected Zone occupation

Source: AAEC

	Population	Density	Average occupation per unit
ZW 12 a	32,438	187,502	4.65
ZW 12 b	9,412	53,782	4.65

2. Solid waste management in Cairo

The solid waste management in Cairo is the responsibility of CCBA, the local governmental authority responsible for waste collection created in 1983. In 2003, according to a Prime Minister decree, the CCBA published international calls for tenders for solid waste management in four zones of the Cairo Governorate.

2.1. THE PRIVATE COMPANIES

Currently different private companies are working in the Cairo Governorate. Cairo East is served by the Spanish company EES (Egyptian Environmental Services) an Egyptian company, held by the Spanish group Fomento de Construcciones y Contratas (FCC), waste leader group in Spain.

Cairo North and West are served by the company AMA Arab Environmental Company (AAEC), a joint venture of Italian and Egyptian companies. AAEC is part of the Gesenu group.

Cairo South – now included in the Helwan Governorate according to a 2008 law – is served by different Egyptian companies. Here the service has been divided as follows: the sweeping, solid waste collection and transportation services have been delegated to the Egyptian company Europa 2000; the solid waste treatment and disposal have been assigned to the Egyptian company Ecaru, while the medical waste (and its relative collection, transportation and treatment) has been put in charge of the Egyptian company Ecoconserv.

2.2. THE ZABBALEEN COMMUNITY AND ITS ACTIVITIES

At the beginning of the last century, migrants from the oases, called “Wahy” (from “wâha:., oases) came to Cairo to collect the waste. Most of them were Muslims, and they used to sell old paper as fuel for the *hammâm* or to the *Foul Mesdames* cookers. The Waheyya had contracts with Cairo’s residents and used to receive small monthly remunerations in exchange for the garbage collection. With the increasing importance in the use of fuels derived from petrol and gas, the fuel produced from waste became obsolete, pushing towards the need of finding other opportunities for waste reuse. Around 1930-40s, new migrants from Upper Egypt arrived in Cairo in order to breed pigs on organic waste. Most of them were landless peasants of Coptic Christian religion. They installed their *zarayeb* in Cairo’s suburbs, and progressively assumed the ownership of waste collection by signing contracts with the *Waheyya*. The latter became responsible for the distribution of workforce and became the middle-men between people and collectors. The system is still in place today, the *Waheyya* are still the owners of the land, while the *zabbaleen* (pigs breeders/waste collectors) have to deal with them to be allowed to work (CID 2008).

When the government decided to privatize the system of garbage collection, the *zabbaleen* community, that was not involved in the decision, was deeply affected by it. Some of them went on strike, and all of them led sabotage actions meant to penalize the work of the foreign companies. After a few years, both companies and authorities started considering the option of enrolling the *zabbaleen* community in the waste management cycle in a more official manner. Nowadays the most representative example of this kind is AAEC’s work with the community.

In Cairo North and West, AAEC is subcontracting the door-to-door collection through the informal sector. These two zones, which represent more than 50% of AAEC's collection area, are sub-contracted to the *zabbaleen*. In the sub-contracted zones, the Company is responsible for the collection and transportation of waste containers, the treatment and disposal of waste, as well as the street sweeping. The payment method used by the company to pay the sub-contractors is as follows: first of all, AAEC conducts an analysis of the specific zone and the number of workers needed for the garbage collection; consequently, the Company pays the sub-contractor the relative amount for the workers provided. Each sub-contracted worker is paid almost EGP500 per month, a salary that is higher than the one paid by the Company to its own workers, as these wages do not include social and medical insurances; finally, the contract – usually annual and renewable – is signed between AAEC and the *Waheyya*, whereas the latter is responsible for providing the workers as needed.

2.3. ZAWIA DISTRICT WASTE MANAGEMENT

As explained above, in Zawia the Company is responsible for sweeping, collection, transportation, treatment and disposal of garbage. The major part of the collection zones are sub-contracted to the *zabbaleen* community through the *Waheyya*.

The zone we selected corresponds to the sector labelled by the Company as ZW 12, an area divided into 14 door-to-door collection zones. There are sixteen collectors assigned to work in this area, for a total of 8991 households. They are endowed with four cars for a capacity of 5 tons each and two cars of 2.5 tons each for the entire Zawia district.

Table 2 : AAEC Zawia employees and local situation

Source: AAEC

Zone	Number of workers (collection)	Number of flats	Number of workers (sweepers)	Streets length	Waste collected per day
ZW 12 a	12	6,669	4	7,969 m	12.9 tons
ZW 12 b	4	2,022	2	2,923 m	3.7 tons
Total	16	8,891	6	10,892 m	16.7 tons

The **door-to-door collection** is carried out three times per week from 4am to 12am depending on the way of collection: sub-contractors collect earlier (from 4am to 7am), while AAEC workers collect from 7am to 12am. In our selected area the collection takes place on Saturday, Monday and Wednesday.

There is one daily shift for **street sweeping**, from 7am to 3 pm each day of the week.

For the **containers collection** there are three shifts per day: 7 am – 3 pm; 3 pm – 11 pm; 11 pm – 7 am.

For the **mechanical sweeping**, two shifts per day: 7 am – 3 pm; 11 pm – 7 am.

In ZW 12 area, the two collection zones have been sub-contracted to the *Waheyya* of the *zabbaleen* community. K. is responsible for the perimeter delimited by: Mahmoud es-Salâma Street, el Gaza'er Street, el Charqat el-Petrol Street and Manchiât el Gâmal Street. S. is responsible for the rest of the ZW 12 area, in Masakan ez-Zoubât.

Both K. and S. are *Waheyya*. That is to say that the collectors must have a kind of contract with them in order to have the right to work there. The collectors might have to pay for signing this contract. The *Wahy* signs the contract with the Company and then he recruits and pays the collectors who will serve the area.

3. Shortages of the service in Zawia district

This chapter will focus on the practical shortages of services in the area of Zawia, shortages which affect the environmental situation on the ground.

3.1. SWEEPING

- **Workers**

There are six workers assigned to zone ZW12. The street length is about 10.892 km, which means that workers have 1.815 km to sweep per shift (three hours). The situation appears feasible, and the conclusion is that shortages in sweeping are not necessarily related to the number of assigned workers.

- **Main streets**

According to our field observation, the main streets are swept on a regular basis, although people dispose of plastic, biscuits cardboard, etc. getting the streets dirty again in between the two shifts. The sweepers do not face major problems in those main streets, except for the parked cars that do not allow for proper sweeping.

- **Secondary streets**

Sweeping in secondary streets constitutes a real problem which cannot be considered as only the responsibility of the Company and its workers. In our selected zone, most of the streets are unpaved, that makes the sweeping operation more complicated. The streets are dusty, a fact confirmed by the dust ratio in the district that reaches 33% of the collected waste. Sweeping these streets is not an easy undertaking also due to their usage especially for the many informal activities, such as bread-selling, mechanics shops, etc. It is also not rare to see sweepers engaged in activities other than sweeping: parking cars, carrying bread, sorting materials, etc., in order to earn some extra money. These activities divert them from their work and slow down the service. In this it can be stated that there is a lack of supervision on the Company side.

3.2. COLLECTION

- **Household collection**

- *From the inhabitants' point of view*

The main problem according to the population is the door-to-door collection. People say that the collection is not done on a regular basis. They have to carry their waste to the collection points set by the Company, which are located outside the area they live in, mainly in Manchiat el Gamal Street or in Gama'at el Madare streets.

The problem faced by the inhabitants is the extra cost of the service. They complain about paying 5EGP on the electricity bill and having to sweep and to carry their waste outside the area. Moreover, they are asked to pay the garbage collector as well. All the inhabitants

say that the system was better in the past, because they were paying only once and had a better system in return. Currently, the inhabitants pay twice for the service, first on a formal basis, second on an informal basis. Finally, sometimes they have to pay for the sweeper to sweep and collect their garbage.

In 2009, the Local Council asked the Governorate to review the fees and lower the paid amount from 5 to 3 EGP, but the request did not go through.

- From the Company's point of view

The Company explains that it is not satisfied with all the sub-contractors. Most of the problems occur with K., who is not supervising his workers properly and is always unreachable by phone. As the Company is not in charge of supervising the collectors directly – a task reserved only to the sub-contractor himself – the Company cannot have a real influence on the collectors' work. In this situation, the Company intends to not renew K's contract.

- The situation on the ground: problems and particularities of our selected area:

As other informal areas, our spot of intervention is accumulating many difficulties.

Firstly, although poor people generate less waste per capita than rich people, the density of population leads to a higher waste production per square kilometre. Another aspect to be considered is that people's flats are small and intensely occupied, making it impossible for them to store their garbage at home. As the inhabitants dispose of their garbage daily, if there is no container around, they drop their waste on the sidewalk or throw it from the window.

Secondly, the garbage produced in this area is not valuable for the *zabbaleen* recycling activities. One reason for this is that poor households produce less recyclable materials than the rich ones. Another reason is that people sort their garbage at home to increase their incomes. Finally, in such a situation where the waste is mostly organic, the *zabbaleen* are no longer interested in collecting it, after their pigs slaughtering back in Spring 2009. These waste characteristics are not an incentive for collecting the waste on the sub-contractors' side.

The solution found by S. in order to face this problem and manage his relationship with the Company was to hire people from the Delta region (Qaliyubeyya and Sharqeyya) and employ them as collectors in the Masakan Ez-zoubat area. Since these people are not waste recyclers or pigs breeders, they are collecting the waste without taking into consideration its value. At the end, the Company is more satisfied with S.'s work in the district than with the other sub-contractors' work.

- The collection schedule:

The household collection is provided on a three times per week basis. The daily production of waste is about 16.7 tons, and the overall number of units (shops and institutions included) is about 9,935. That is to say that each unit is producing 1.68 kg of waste per day. If the population had to store their waste at home, awaiting for the collection day, they should store about 3.36 kg in their homes, a significant amount if compared to the dimension of the flats.

- **Shop collection**

We registered fewer complaints from shop owners than from the residents. One explanation might be the fact that the shops are located in the main streets or in commercial streets, making it easier for the AAEC cars to pass by and collect the garbage directly from the shop owners. When asked how much they pay for this service, the shop owners did not have an exact answer, many of them saying that they often reward the

collectors simply with a sandwich, a juice, or a small *backshish* (Arabic for “tip”). However, this system did not seem to represent a problem for the shop owners, who are also served by informal collectors coming either from the *zabbaleen* community or independent ones.

- **Collectors**

There are sixteen AAEC collectors in the observed area, which produces, as said above, 16.7 tons of waste per day and consists of 8,991 habitation units. That is to say that the single collector carries one ton of waste per day and has to collect from 500 flats in the ZW12 b area, and from 580 flats in ZW12 a. In the area ZW12 b there is an average number of four floors per building. Most of the buildings have the same structure, which is two flats per floor, for a total of eight flats per building.

That means that the single collector has to climb 62.5 buildings in the ZW12 b sector. This average number of flats is not that high if compared to the number of flats collected by the informal sector, which can reach up to 300 buildings per day (Florin and Debout 2010). Our conclusion is that, when it comes to door-to-door collection, the problem is most certainly related to the manpower.

3.3. EQUIPMENT

- **Cars**

In the entire Zawia district the Company employs a total of five trucks of about 5 tons each, and two trucks about 2 tons each. According to the district monthly report, there is an important shortage of cars, as follows⁷:

Washing and sweeping cars: 50% shortage (1 instead of 2)

Collection cars (2 tons): 75% (4 instead of 12)

Trucks (5 tons): sufficient

Hock lift cars: 25% shortage

Washing cars: sufficient

- **Containers**

According to the Company, there should be eight containers on the ZW12 zone (both a) and b) parts). Nevertheless, according to our fieldwork, there are only three containers in place. The Company justifies this shortage by the stealing of the containers, either for the value of the metal, or to be used in any other function (meat refresher, storage place, etc). However, one surprising situation we encountered during our field research refers to Manchiat al Gâmal Street. Here, just a few months ago, there were two containers in place, but they have been removed on the Governor’s request.

7 Zawia district monthly report to the Cairo Governorate, May 2010.

Map 3: Available containers in ZW12



Source: Fieldwork observations. Map background: Google Earth.

The shortage in street containers corresponds to the District’s monthly report, that shows a 45% shortage in Zawia, where there are only 60 containers available out of the 110 supposedly needed. This lack of containers is a significant problem that leads to a situation where people dispose of their waste on the curb side or in public gardens, as they are not willing to walk long distances searching for a container. Moreover, this situation makes it more difficult for AAEC’s employees to perform their job, as they have to collect all the waste overflowing the container (picture 1 and 2).

If the door-to-door collection were provided on a regular and sufficient basis, people would not have to drop off the waste by themselves. However, the combination of insufficient door-to-door collection and the lack of containers leads to waste dumping sites in central parts of the district.



Picture 1. Container collection in El Gama' el Madares Street. / Picture 2. Collection point in Manchiat el Gâmal Street

The shortage in baskets reported by the District is about 83%. We found a 100% shortage in the area of our case study⁸.

8 Zawia monthly report to the Cairo Governorate, May 2010.

4. Informal sector dealers in Northern Cairo

4.1. INFORMAL ACTIVITIES DESCRIPTION

Several informal actors were approached during the fieldwork, in order to gather information on their related activities. Below we report according to the typology of actors and the material they deal with.

- **Materials:**

Bread

Concerning the bread deal, we saw two typologies of dealers. On the one hand, the ones that pass by the streets with a horse or donkey cart, shouting to draw the attention of bread sellers, who respond to the call by coming out to sell their bread. On the other hand, there are dealers who have a fixed location, awaiting for people to come and sell their old bread to them. The bread price seems to be fixed, as all the dealers gave us the same information regarding the prices.

Cardboard

Cardboard is collected by two different type of actors. Some of them belong to the Manchié Nasser *zabbaleen* community, and they do not work under sub-contractors. The cardboard collection is their main activity: they pass by the street with a hand cart and collect the cardboard mainly from the shops, without paying for it.

There are also some cardboard dealers that are working on demand. They are usually linked to the single shop owner, who requests their service directly by calling them to collect the cardboard, which the cardboard dealer will have to pay for. For these actors, the cardboard deal is just a supplementary activity.

Plastic

We met one person that used to collect plastic bottles from the hostels outside the district, consequently to sell them to the inhabitants of the area who use them to store water or other liquids.

Moreover, some shop owners informed us that they buy plastic bottles from Attaba market area in Cairo and use them to sell liquid soap.

Finally, an inhabitant reported that someone passes by from time to time to collect only the plastic shampoo bottles (the information is not verified).

The members of the *zabbaleen* community also used to collect plastic materials.

Animal bones

Animal bones can be used in soap production or honey filter confection. There are actors who collect animal bones by buying them from the butchers, either monthly through informal contracts, or per kilo each time they collect them.

Eggs Cardboard

Some collectors are interested in the 30-eggs cardboard; however, we were unable to identify the final use of these items.

Textile

We met one person who collects textile and fabrics, either on demand or from people who approach him directly to sell to him. Finally, the textile collector, in turn, sells the material to clothes factories close to or in Zawia.

The materials that seem to generate more activities are bread, cardboard and animal bones.

- **Actors**

Roba Vecchia

As in all Cairo, some dealers pass by in the streets of Zawia asking for «roba vecchia» (which literally means “old stuff” in Italian, and includes almost anything that people want to dispose of). They collect almost everything: plastic material, wood material, old broken things, etc. All these materials are then sold on the sidewalk next to the railway just outside the area.

There are also some fixed locations where people bring their old stuff and the “Roba Vecchia” dealers pay them back.

Sarih

These actors are literally scavengers. They collect waste (all kind of recyclables or old things) clandestinely as they do not have any agreement with the *Waheyya*. They collect from garbage containers or piles, mostly those located in the main streets.

Inhabitants are aware of all these activities and are used to sorting at source (directly at home) in order to resell their materials.

All these activities lead to a situation where the remaining waste – which is then collected by the Company – is mostly organic. Most importantly, these organic materials are of high quality and value, due to the previous sorting.

4.2. INFORMAL ACTIVITIES CATEGORIZATION

Many different informal activities were identified in the selected area. For the purpose of this research, we will differentiate the actors in two ways:

- 1) by the material they deal with, and
- 2) by their origins (insiders or outsiders).

Furthermore, their activities are differentiated according to their way of dealing with the materials:

- a) Sellers are those who sell the collected material;
- b) Buyers are those who buy the material from the producer;
- c) Are considered “Mobiles” the dealers that go into districts to collect the waste, although it is not necessarily a door-to-door collection;
- d) The so-called “Fixed” category includes both those actors to whom people bring their materials, and those that collect on demand; These actors do not go to collect the waste on their own initiative, unless they receive the demand from the people selling the material;

- e) When talking about “Main activity” we mean that those actors deal only with that specific material; On the other hand, if we talk about
- f) “Supplementary activity”, we mean that the actors belonging to that category deal with that particular material in order to increase their incomes coming from other activities.

Table 3. Informal activities description

Dealers	Reuse or recyclable market	Sellers	Buyers	Mobiles	Fixed	Main activity	Supplementary activity
Material and origins							
Bread / outsider	Reuse	YES	YES	YES	NO	YES	NO
Bread / from Zawia	Reuse	YES	YES	NO	YES	NO	YES
Roba Vecchia / outsider	Reuse	YES	YES	YES	NO	YES	NO
Roba Vecchia / from Zawia	Reuse	YES	YES	NO	YES	NO	YES
Textile / outsider	-	-	-	-	-	-	-
Textile / from Zawia	Reuse	YES	YES	NO	YES	NO	YES
Cardboard / outsider	Recyclable	YES	NO	YES	NO	YES	NO
Cardboard / from Zawia	Reuse	YES	YES	NO	YES	NO	YES
Plastic bottles / outsider	-	-	-	-	-	-	-
Plastic bottles / from Zawia	Reuse	YES	NO	YES	YES	NO	YES
Bones / outsider	Recyclable	YES	YES	YES	NO	YES	NO
Bones / from Zawia	-	-	-	-	-	-	-
Eggs cardboard / outsider	Reuse	YES	YES	YES	NO	YES	-
Eggs cardboard / from Zawia	-	-	-	-	-	-	-

Source: Fieldwork interviews

The table above shows different elements.

The two main geographical elements are that all the fixed dealers are from the ZW 12 zone, there is no mobile dealer in the district. And all the fixed dealers are having this activity as a supplementary activity, contrary to the mobile dealers for whom the concerned material is their main activity.

Also, from the economic point of view, we can observe that the fixed actor needs to be a buyer: only mobile dealers can be sellers only. That is to say, people are ready to give away their waste for free if someone passes by to collect it, as they see it as a service, but pretend to be paid if they bring their waste themselves to the collector (bread and textile are the main examples). Unsurprisingly, that is to say that people who are making efforts in taking their waste to the specific collector are not acting in an environmentally-friendly way, but are driven by economic reasons.

A distinction should also be made between reuse and recycling markets. The insider dealers that have informal activities in waste are more focused on the reuse market, more than on the recyclable market. In the reuse market, the prices are higher than in the recyclable market, and are fixed singly rather than per ton, as in the recyclable market.

The second buyers that recycle or reuse the waste are from different places.

In recycling, they are either from the *zabbaleen* community, or from formal recycling factories. In the *zabbaleen* community, the *Mo'allemeen* use to buy the material. They are people living inside or outside the garbage collector neighbourhood. Some of them were collectors themselves before, some others were not; they are simply people who were able to acquire space for garbage storage (CID 2008). They sell the recyclables to wholesalers and large buyers of inorganic waste.

Beyond the garbage collectors neighbourhood, the main recycling centre of recyclable materials is Manchiet Nasser. The other settlements are more *zarayeb* than recycling workshops.

The other collectors, which are independent from the *zabbaleen* community, sell their material either to the *Mo'allemeen* or to private recycling companies.

In the reuse market, most of the waste is re-sold in the district or around it. The collectors go to sell their old materials to the inhabitants of the district (old bread, plastic bottles, cardboard, etc) or to some factories in the district (textiles). The *Roba Vecchia* have their special place to resell it (on the railways in Zawia).

As there are more middlemen in recyclables deal than in reuse deal, the reuse market of material benefits more the collectors than the market of recyclables.

4.3. COLLECTION ESTIMATION AND INCOMES GENERATION

Since it is almost impossible to meet all the dealers, we cannot estimate their collection part in the district. We present here first the reported revenues, and then we try to estimate the economic potential of the collected waste according to the known prices and the known generated amounts.

Table 4: Reported incomes related to material reuse deal

Sources: Fieldwork interviews

Material	Prices	Quantity collected per week	Generated revenues
Bread	Bought: 0.50 EGP per kg	150-250 kg (fixed dealers)	15 to 25 EGP per week
	Sold: 0.60 EGP per kg	500 kg (mobile dealers)	50 EGP per week
Textile	Bought: 0.30 EGP per kg	100 kg	20 EGP per week
	Sold: 0.50 EGP per kg		
Cardboard	Bought: small piece: 0.75 middle size piece: 1 big size piece: 1.25	-	-

The table above shows us the small amount of generated money by the reuse dealers. They do not generate more than 200EGP per month with that activity, and sometimes even less. That gives also an idea about the social level of the Zawia population.

4.4. IMPACTS OF INFORMAL ACTIVITIES ON THE AAEC GARBAGE COLLECTION SERVICE

One of the main reasons stated by AAEC as to why there is a limited number of garbage containers in the streets is that they want to avoid the scavenging activities that harm the service. While it is true that some *Sarih* use to empty the containers and sort the waste on the ground around the container itself, according to our observation it is also true that some of them just sort into the container itself, or around it, without spreading the waste on the ground. Even if some of them empty the container, the situation is that often the containers are already overflowed and waste is spread all around them, because people do not drop off their garbage into the container itself or because it is over-full. As we will see below, the *Sarih* are the only actors that can harm the service, even if they are not necessarily spreading the waste on the ground.

All the other activities described above –which are also the most important informal activities – do not harm the service. On the contrary, they take charge of a big amount of waste that the Company is discharged from collecting. Those activities in fact allow the Company to save money in waste transportation and/or valorisation (sorting and recycling).

5. Lessons learned: recommendations and conclusions

In view of providing recommendations, we can approach two different issues: the service enhancement and the informal sector integration. In the case of service enhancement, recommendations are to be considered mere suggestions. Actually, according to the known elements, precise costs cannot be taken into consideration.

5.1 SERVICE ENHANCEMENT

- **Three times per week collection**

In order to have a clean area while keeping the three times per week collection, the Company would have to review its management. More specifically, three elements should be review: one regarding the involvement of sub-contractors, and two elements regarding the provision of containers.

- *Facing the sub-contractors' irregularity*

We can assume two scenarios

First scenario: Maintaining the collection system based on sub-contractors

In this case, our suggestion is that the Company would need to change its supervision. As per today, the collectors employed by AAEC's sub-contractors are supervised by the sub-

contractor himself: this system leads to an irregular service, and to the Company's dissatisfaction.

The sub-contractors should ensure that their employees provide for the waste collection on the same schedule as that of the Company's workers, in order to fit in the working hours of the AAEC supervisors. If this is to be put into practice, the collectors should clock-in when they arrive and clock-out when they leave. If the work is not carried out as agreed, penalisation methods other than the non-renewal of the contract should be available in order to enforce the agreement (the reason for this is that a one-year contract would be too long to wait before its end). Another possible method could be through fines.

Advantages

The advantage of such a system is that the sub-contractors would feel as service providers, not only as mere beneficiaries involved in the economic side of the waste collection deal.

Inconvenient

This option would entail a complete change in the sub-contractors' collection system, and would also demand for more manpower from the Company.

Second scenario: Changing the collection system

Changing the system would mean renouncing to the sub-contractors in areas where they are not interested to provide their service due to the low value of the waste in those zones. Here, AAEC could provide its own workers and supervise them accordingly.

Advantages

This option would give AAEC a better control on its workers and the service itself, as the value of the waste will have no influence on the workers' decision to collect the waste in the specific area.

Inconvenient

It would generate an extra cost for the Company. Furthermore, AAEC might face some problems with the *zabbaleen* community that might be unhappy for having been replaced by the Company's employees.

- Provision of street containers

In the present situation, where people do not benefit from a daily door-to-door collection, and are asked to store 3,36 kg of waste in their small homes, the Company should provide more containers.

Advantages

A situation where supplementary street containers are provided could translate into cleaner streets, as the inhabitants would be given the possibility to drop their waste in the containers opposite or close to their home.

Inconvenient

Given the density of the area and its narrow streets, an entire part of the area cannot be provided with street containers. The latter can only be provided in the main streets, that is to say that an extensive number of inhabitants would still be subject to long distances in order to drop their garbage.

- Provision of small plastic containers, or «gounia» containers

Another option that would allow the Company to maintain the three times per week collection is the provision of each building with either small plastic containers (about 120 litre capacity), or with the so-called «gounia». These containers can be installed in the small hall located before the stairs, a room that can be found in each of the buildings of the area under observation, and that can easily contain this type of containers. In order to avoid their disappearance, the containers should be the property of the building. The first one should be provided free of charge to the inhabitants of the building; in case of its disappearance, the inhabitants should be charged for the provision of a new container (which can be ordered at the Company); if they refuse to pay for a new one, they can be over-charged by the Company. It must however be noted that the 120 litres plastic containers are more expensive than the «gounia» containers.



Picture 3.
Plastic containers

Advantage

People that are used to dispose of their garbage at any time during the day will find a place to satisfy their needs. In addition to this, shorter distances will encourage people to dispose of their waste in the proper place. The cost of placing «gounia» containers in each building can be less expensive for the Company than ensuring a daily collection.

Inconvenient

Supervision against the stealing of the gounias might be complicated to be implemented. Although this system would lead to an extra cost for the Company, it can be compensated by the decrease of the penalties imposed by the CCBA due to littering. Also, it could be a problem to charge inhabitants in case of robbery since most of them are non creditworthy.

- **Daily collection**

Considering that this is a densely populated area, with a significant generation of waste, a daily collection seems necessary. The Company should provide a daily door-to-door collection.

Advantage:
No waste littering.

Inconvenient:
Significantly high extra costs for the Company.

5.2 INFORMAL SECTOR INTEGRATION

The Northern Cairo project aims, among other objectives, to integrate the informal and marginalised actors in activities related to environmental sector, as a means of environmental enhancement of the area. Considering that the informal sector is the main material recycler, its activity should be supported for environmental sustainability.

The sustainability of the informal sector integration lays on two aspects. Firstly, the protection of the environment during the recycling process; secondly, the economic sustainability of these activities, as they have the potential to provide incomes to poor people.

- **Economic potential**

As mentioned above, if people in the area make the effort of sorting their waste and carrying it to a specific point, that is not for environmental purposes but for economic reasons. Thus, sorting and recycling of materials should have an economic potential to attract people in these areas.

The table below briefly shows the economic potential of waste recycling in the selected district, considering the waste generation and the market prices of the recyclable material.

Tables 5: Estimation of waste recycling economic potential in the area

Sources : Calculation of the author on the 2009 prices communicated by the Véolia Company

Material	Prices	Quantities generated	Economic potential
Cardboard	On the recyclables market: 250 EGP/ton	1.67 ton/day	417 EGP per day
Plastics	On the recyclables market: 1,000 EGP/ton	2 tons/day	2,000 EGP per day
Total			2,417 EGP/day

The above economic potential of about 2,417EGP/day amounts to 72,510EGP/month. That is to say, 8.06EGP/household per month. Even if this is a low amount, it must be stressed that it was calculated considering only the cardboard and plastic deal, leaving out the P.E.T. plastics (polyethylene terephthalate) and glass products which have the biggest market value.

Table 6 shows the prices of different materials in 2009, notably the P.E.T. price, an interesting material to recycle.

Table 6: Recyclable materials prices in 2009
 Source: *Bénédicte Florin, personal communication.*

Material	Price per ton
P.E.T.	1,600EGP
Cardboard	250EGP
Sorted glass	EGP400

- **How to integrate the informal sector?**

The mobile dealers (area outsiders) are the most difficult actors to approach. Because they work illegally, they are afraid to talk and give information about their activity. What seems more possible is to approach the insider dealers and help them develop their activity.

Nevertheless it was possible to approach some informal actors. They can be involved as resource people in order to learn more about the situation and potential ways of intervention.

- *A possible scenario?* A possible system that could help in enhancing the recycling would see the involvement of people of the area in collecting and selling the recyclable materials outside the district. The materials could be sold either to recyclable dealers or – and preferably – to waste recyclers (factories or workshops), as in the latter option the selling prices could be higher (due to less middlemen).

Waste pre-sorters and providers: inhabitants

We learned that inhabitants need to see their own economic interest in order to be motivated to participate in this operation. An incentive could be the selling of sorted materials. People should be trained to sort organic and solid elements, and be informed on the potential buyers for their pre-sorted waste.

Waste collectors and first sellers: youth

We can think about enrolling the unemployed youth of the district in collecting the waste. The system may be more suitable if people voluntarily bring their sorted waste in a collection point, as this would avoid the collection cost to the collector. The collector (that would also be the first seller) will have to sort the waste him/herself (per different plastics, cardboard, etc), a task that would also require training. If we consider that the collectors make a profit margin of 10% of the monthly economic potential of the recyclable materials in the area (72,510EGP, see above), this means an income of 7,251EGP per month. Out of this amount, almost 7 persons could be recruited to work in that field (1,035EGP/month as income per person). All the above is even more interesting if we keep in mind that the public wage is about 394EGP/month.

Waste second buyers: recycling factories or workshops

As a second step, the waste could be sold to factories or workshops recyclers. In order to identify these infrastructures, we can rely on the informal dealers we have contacted in the district.

Advantages

Better environmental management, while providing revenues and jobs to the inhabitants from inside and outside of the area.

Inconvenient:

A different informal system would be compiled (*zabballen*, reuse dealers, mobile collectors), which could lead to a conflict of interests in all aspects of this activity.

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Annexes

Annexes should be used as follows: the fieldwork report is divided into two parts. Firstly, a document based on our observations, showing the map of the area and the different points under observation. Secondly, the reports based on the interviews. On the map, observation locations correspond to numbers, while interviews correspond to letters.



A total of six time-slots were conducted, amounting to a total of 17.5 hours of ground observation.

ANNEX 1: TIME SLOT ONE

Zawia
Report

05/16/2010
Time slot:
11am-2pm

Symbols:

-  School
-  Mosque
-  Church
-  Container



Little interviews points
(reported in the writing report)

1. AMA Sweepers waiting for the car
2. Bread woman seller
3. Fool Restaurant
4. Fourn (Bread oven)
5. Women sat in front of the mosque
6. The Mosque in Mahmoud es-Salâma street
7. Roba Vecchia in el Gaza'eer street
8. Pharmacy, 33 el-Gaza'eer street
9. The bread collector in Hamid Sahiny street
10. Sweepers in the north part of Mahmoud es-Salâma

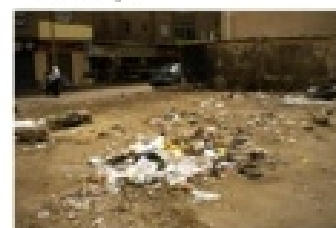
Observations

A. Waste burnout (trails of soot on the wall),
waste dump and cattle

At 11:40 am



At 1:40pm



In two hours, cartboard disappeared as some plastic.

B. Waste dump and spontaneous burnout



Zawia
Fieldwork report
16/05/2010

From 11am to 2pm

Interviews

We have first surrounded the area delimited by El Charkat el Petrol Street, El Gaza'eer Street, Mahmoud el Salâma Street and Manchiet el Gamal Street.

Successively, we went inside the area and walked in the main streets asking questions to people we met (inhabitants, shop owners, people having activities related to waste, etc). We located on the map all specifically problematic places, as well as the mosques and schools we encountered.

1) 11:00 am. The AAEC sweepers awaiting for the Company car

We approached two sweepers of AAEC, who were sitting in Manchiet Gamal Street. During our conversation, they told us they were waiting for the AAEC car to come and pick the waste up. As documented in picture 4 below, we found two big bags (*gounia*) full of waste and some smaller bags next to them. The AAEC sweepers informed us that only one month ago there used to be a container instead of the *gounias*. Nowadays, they said, there are no containers in the entire Manshiet Gamal Street.



Picture 4. 11:00am Manchiat Gamal Street

2) The bread seller in Hasan 'Atamâ Street

As shown in pictures 5 and 6 below, we noticed a pile of bread on a weave, so we tried to gather information on the owner and his/her activity. We talked to the man sitting next to the pile of bread, who sent us to a nearby biscuits shop, where we found the owner of the bread-related activity, Mrs. O.M., who explained her activity to us. People of the area bring their old bread and sell it to her; she buys it for 0.50EGP/kg, then sells it to cattle owners for 0.60EGP/kg. In doing this, she sorts between clean and dirty bread (that is, between bread with and without mould). She gets around 150 to 250 kilos per week, which means that she earns between 15 to 25EGP per week with this activity.



Picture 5: Old bread drying in the sun



Picture 6: Sorted dried bread ready to be sold

3) Foul restaurant in Mahmoud es-Salâma Street

The person we interviewed from the restaurant informed us that the car of the Company comes daily only in this street (not in the other streets nearby), and that he pays between 14 and 16EGP per month (which means he does not really know, as the taxes are fixed). He also said that he pays 0.50EGP and two sandwiches to the AAEC collectors each time that they come.

4) Fourn (bread oven) in el Gâma Street

People from the *fourn* informed us that usually the AAEC car comes every day (although at that particular moment it had not come for three days, and had finally passed the same morning of our interview). On the service costs and payment method, they were not aware of the precise amount; they only stated that they pay through the electricity bill. Finally, they justified the workers asking for money with the fact that their salaries are low.

5) In front of the Mosque in Mahmoud es-Salâma Street, women await for children to come out from school

All the women we talked to complained that there is no service at all, although they pay for it several times: 5EGP per month on the electricity bill, plus 2 or 3EGP to the workers each time they come to collect the garbage from their homes. However, women complained that the workers do not go up inside the buildings to collect the trash. One woman in particular said that, if she makes a complaint, the result is that the workers might come once, but – as there is only one chance for making complaints – the following times the workers will continue not coming. She added that the week before our interview, one of the AAEC employees asked her to say that the service was good in case someone came for inspection.

6) The Mosque in Mahmoud es-Salâma Street

The guard of the mosque complained to us that no one does anything related to the waste collection at the mosque, and that several times the *Imâm* himself preached about issues related to cleanliness.

7) Roba Vecchia in el Gaza'eer Street

We managed to interview a man who collects all different kind of things (aluminium, plastic, etc). Since one year he also works with Roba Vecchia. The man told us that he came from Mustad, and that he worked in every district. He refused to give us his name, and left, afraid to answer other questions.

8) Pharmacy, 33 El-Gaza'eer Street

In a very productive interview, the owner of the pharmacy, Dr. M.K., provided us with information on several points as follows.

On the collection times, Dr. K. said that, although the Company is supposed to come to collect the medical waste daily, there has been no collection in the last three years. His pharmacy produces almost 100 syringes per day. According to his calculations, there are 30 pharmacies in the area, amounting to a daily average production of 300 syringes in the area. He says that when the Company does not come, he buys a big bag and passes by the other pharmacies to collect the syringes. He then throws them in the container in a different bag.

Regarding the garbage collection costs, Dr. K. told us he pays 15EGP/month on the electricity bill. He spent time with us calculating the average of money collected in the area for the cleansing service.

Other men who were in the pharmacy at the moment of our interview, themselves shop owners from the area, said that they sweep in front of their own shops. They concluded bitterly that people pay the Company for a service that is not provided by the Company, but by people themselves.

When asked about the past, more than one of the present people agreed that the situation was better before the arrival of the private companies. The pharmacist told us about the work of the *zabballîn* from Manshiet Nasser, who used to come every day and charged 3EGP per month, a cheaper and better service, he concluded. Dr. K. went on explaining how the syringe plastic was one of the most expensive plastic materials, and also a very dangerous object if disposed of improperly, that is, thrown in the same container with the

rest of the waste. He said that people who make use of drugs use these unclean and old syringes they find in the containers.

Dr. K. told us that ENSER – the Spanish company that was working in this area before AAEC — used to collect the syringes partly every day. Nowadays he is instead obliged to dispose of his waste in the nearest container at the end of Mohamed Moustafa Street. However, Dr. K. said that there is still some *zabbalîn* from Manshiet Nasser who pass by to collect. Summing up, the man told us that he pays three times for his garbage:

- to the *zabel* who passes by three times a week: 0.50EGP each time;
- to the AAEC employees: 0.50EGP each time;
- through the electricity bill.

The pharmacist explained to us why – in his opinion – rich areas are properly cleaned, while poor ones are not. He sustains that it depends on whether there are so-called “important people” living in that area: if so, the government takes care that that part of the city is well cleaned. He gave us several examples, such as the time when the vice governor of Northern Cairo came visiting, and how the Company came the day before and cleaned the streets. Another example was referred to the areas where the author of this report used to reside: first in Sayyeda Zeinab in Lazukhli, which – according to the person interviewed – was a clean area because Mr. A.F.S., the president of the People’s Assembly, resided there; secondly, the area of Mashrou’, which he defines as a clean area near Mohendessin. He mentioned the el Masri el Youm campaign, saying that they took care of cleaning that area after the pigs’ slaughtering back in 2009.

9) The bread collector in Hamid Sahiny Street

We managed to talk to a bread collector that we met during our fieldwork. He was walking down the streets with a horse pulling a cart, with his wife sitting on it, while he was loudly announcing his presence. His activity consists in buying bread from people for 0.50EGP and selling it again for 0.60EGP. He collects almost 500kg per week (which means he earns 50EGP per week) working in as many streets as he can, both in our area of observation and in the Ahlam district. Our conversation concluded quickly, as the bread collector and his wife were afraid to speak and chose to leave.

10) Roba Vecchia in Al Asheer Street

The Roba Vecchia buyer we met rode a cycle-cart and announced himself loudly with the characteristic shout for «roba vecchia». Unfortunately he was also afraid to speak to us. The only information he gave us was that he sells his products to some boss of the district who has a contract with a factory.

11) Sweepers in the northern part of Mahmoud es-Salâma Street

We noticed two sweepers on that occasion, one coming with his handcart to throw the waste in the container, while the second one was inside the container jumping to press down the waste inside it. Although the container was not fully filled, a lot of waste was littered around it. We saw another person who was searching through the waste on the ground.

We gathered some information from the two AAEC employees. They told us that the waste truck comes every hour. Regarding their salaries, they said they gain about 550EGP per month, including the social insurance, working from 7am to 2pm every day. From this amount, they have to pay 100EGP for transportation. They explained that they have to

come every day, otherwise they incur a two-days penalty for each day that they miss. Both of them reported to have been working for the Company for three months, and they found the job through M. R., the AAEC recruiter for Zawia, who was then in need of hiring people. They stated they liked their job, which they did not find tiring.

We noticed they had some plastic bags on the handle of their handcart, so we asked them whether they used them to sort some waste. The answer was negative, and one of them showed us that the bag contained his clothes. However, he told us that he keeps some carton to sell it to some people «like him», referring to another man who was leaning his back on the car next to the waste pile, an independent recycler.

We then went to talk to this man, who stated that he was not a scavenger but he just took a plastic basket from the pile. Indeed, he had no cart or *gounia* with him. He gave us some information on different points, such as: the fact that the car comes three times a day; that in the past there were two containers where now there is only one (he is not aware of the reason why); that people do not throw their trash in the container, but around it even when it is almost empty; finally, that the workers have two-days penalties if they do not come every day.



Picture 7. AAEC employees emptying their handcart in a container

ANNEX 2: TIME SLOT TWO

Fieldwork report Time slot 2

17/05/10
Time slot: 2pm to 5pm

Observations

For numbers legend see the fieldwork report.



The area highlighted in green in the map above represents the streets where we went during our observation.

a. Waste hidden under a truck in Manchiat el Gamal Street



Picture 8.

b. Waste pile in el-Nasr Street



Picture 9.

c. Waste pile on the top of a damaged building in Mahmoud Ibrahim Street



Picture 10.

**Fieldwork report
17/05/10**

Time slot: 2pm to 5pm

Interviews

Agenda: Cover all the secondary streets in the southern area.

1) AAEC workers waiting for the car in Manchiat el Gamal Street at the beginning of the centre-dividing strip

One of the workers stated that the car comes three times per day. Referring to the waste thrown directly on the ground waiting to be collected (see picture 11 below), the worker said that the Company took away the container. From his point of view, the container was better, but he does not know why the Company decided to remove it.



Picture 11: Waste waiting to be collected by the AAEC car, located at the beginning of the centre-dividing strip in Manchiat el Gamal

2) AAEC workers waiting for the car in Manchiat el Gamal Street at the end of the centre-dividing strip

This is a place where many people of the area come to dispose of their waste. During our observation, we noticed that some carry the garbage in plastic bags, others bring their plastic bowls and ask the AAEC workers to empty it somewhere.

We met two workers who were waiting around a pile of waste, some of it in the *gounias*, the rest littered on the curbside. The workers did not know where to empty the bowls of waste brought by the people, since their *gounias* were fully filled. They told us that three months ago there was a container there, but the Company took it away, for a reason

unknown to the workers. They only allowed us to take pictures of the waste, not of themselves.

However, they sustained that people usually do not dispose of the waste in the container itself, as most of the times it is either children who are too short to throw the garbage into the container, or women who do not want to get too close to the container afraid of getting dirty.

On the side next to the pile of waste there was also a cardboard with bread inside. We were told that people of the area come to collect it.

One of the workers spoke to us for a long time. His name was A. H. M., a man from Qalubeyya. He told us he has been working in this sector for nine years, first with the company Europa 2000 in Nasr City, then with International Environment Services in Giza, where his salary was about 300 EGP/month. He started working with AAEC when he heard that they were looking for people in Zawia for 500EGP/month. However, he explained that in Doqqi, Mohendessin, etc. people were giving “*bakshish*” (Egyptian word for tips), but this was no longer the case in the area where he works now.

When the AAEC car came, we noticed three people aboard: the driver, the dumper and another man. We talked to the latter, who explained to us that they work 26 days per month (with one day off per week) for a monthly salary of 550EGP (which includes the medical insurance). The car passes by three times a day, at 7am, 3pm and 11pm. The workers incur penalties (*Intizâm*) of about 50EGP if they miss a day of work. Moreover, they pay 100EGP for transportation from Qalubeyya. Indeed, we found out that this is an area where many of the workers come from, almost one hundred people move with two buses from Qalubeyya everyday. All the workers we met - also during our interviews the previous day - came from Qalubeyya, it is therefore our conclusion that people in that area are well informed about the job opportunities with AAEC.

The man moreover explained to us that the people who collect directly from the flats do not belong to the Company (which is in contradiction with the information that we had from the inhabitants). Instead, we found out that the responsible of the district is A., a *zabbal* who charges 2EGP per flat per month. M.H. is from the *zabbalin* community also.

After the departure of the car, the workers showed us how clean the place was, saying that the *gounias* were better than the container.



Picture 12: Waste pile at the end of the centre-dividing strip in Manchiat Gamal Street



Picture 13: Workers loading the heavy *gounia* in the dumpster.

3) Owner of a mattress workshop in Hassan Mahmoud Street

Walking in the street we saw a huge pile of fabrics bags in front of a mattress factory. We went to meet the owner of the workshop, who explained to us that he collects old fabrics or clothes from the area, a trade he has been involved in for one year and a half. He buys the material for 0.30EGP/kg and sells it for 0.50EGP/kg. Using a Vespa scooter, he collects almost 100kg per week, which means he earns 20EGP per week. He told us he pays 15EGP/month on the electricity bill. He sells it to the Zawia and Makawi factories. The bigger factory is Dalydress (around 5,000 machines) located in Charkat el Petrol Street.

4) Centre for Qur'an, English computerizing and Nursery. Ministry of Social Development in Ahmed Hussein Street

We went to the Centre in order to interview the responsible person. The building was composed of about four rooms, and three women - all wearing integral *burqa* - were working there. We also found some children in two of the rooms, having an English lesson. When the Centre Director arrived, she asked us for an ID or a letter of authorisation, explaining to us that, in her quality as a Ministry's employee, she needed to see our authorisation before talking to us. However, we managed to ask her some questions on whether they were doing any awareness campaign or actions related to waste management. Her explanation was that she teaches about the *hadith* (Arab word referring to oral communications of the Prophet Mohamed, gathered together in an antonymous collection) which says «cleaning for the faith», but that she cannot teach about waste management since there are no bins or baskets in the streets. She refused any pictures.

5) Bread buyer and seller in Sif el Nasr Street

This man told us about his bread selling and buying activity. We learned that he buys at 0.50 EGP/kg and sells at 0.60EGP/kg. Apparently people go to him to sell their bread, and he collects around 100-200kg per week. Bread buyers also come up to him, he told us. He informed us that he also worked as a “roba vecchia” dealer. His small shop (about 3m²) was full of all different things.

However, the man was uncomfortable speaking to us, and did not want us to take any pictures. Finally, he told us he has been working in the bread collection deal for four months, but it was our impression that this was not entirely true, as he seemed to be quite well equipped for this activity.

6) El Sif el Nasr Street

This was one of the dirtiest streets we saw in the area. It was not swept and a lot of waste and plastic bags were littered at the buildings' doors (see picture 14). We noticed people throwing their waste from the windows.

Firstly, we talked to a woman we met, Mrs. O.A.. She complained about the bad AAEC service and the money they pay for it. She said she often collected the waste on the streets herself, when the AAEC workers did not come. To do that, she used a handcart for Pepsi that she borrowed from a shop owner, and collected the garbage from the street for free, littering it in Manchiat el Gamal Street.

Secondly, we interviewed the owner of a shop in the same street. The man complained as well, sustaining that the service was better before they started paying on the electricity bill. At that time – he went on – the *zabbel* used to come daily for 3EGP per month. The shop owner complained that the collectors do not come anymore, and when they do, they ask for money (almost 1EGP two times a month), even though people like him already pay for their garbage on the electricity bill. As an example, he said that the collectors did not come since Friday the week before, and only came that day just before our arrival in the area.



Picture 14: El Sif el Nasr Street

ANNEX 3: TIME SLOT THREE

Fieldwork report
18/05/10

Time slot: 5pm to 8pm

Observations



The area highlighted in green in the map above represents the streets where we went during our observation.

For numbers legend see the written version of the report for this time slot.

A. Principal activity in this area was wooden furniture workshops.

B. Littering point without waste at 6:00pm.

C. Waste pile where they used to burn waste in the middle of a residential area.

See picture 15



Picture 15

D. Waste pile where an AAEC worker came to take some of the waste, while another man was waiting and looking at his work. The worker collected the waste in a small plastic bag and transported it to the truck. We asked the person watching if he paid the other to come, and he denied anything related to the payment, although he admitted that he asked him to come. We followed him until the car.

E. The car was parked at point “E” on the map above. The driver came up to talk to us, and he explained that he was responsible to collect waste only from the shops in a certain zone. He said the problem was related to the houses, which were not collected.

F. Pile of waste in front of a wall on which it was written «Do not litter your trash. Keep the streets clean». An inhabitant we met close by told us the garbage collection car comes daily, but the production of waste is too high. See picture 16



Picture 16

G. Pile of waste in the middle of the crossway. We suppose that this location is due to the fact that people do not want to have the pile of garbage in front of their shops. See picture 17



Picture 17

**Fieldwork report
18/05/10**

Time slot: 5pm to 8pm

Interviews

Agenda: Checking the streets that we had not checked, going to el Gaza'er Street to ask about informal collectors

1) 5:30 Collection point at the beginning of the centre-divider strip

No waste was found here.

2) Pile of waste under the truck

We had found the same pile of garbage the day before, in the same location.

3) 5:30 Collection point at the end of the centre divider strip

No waste.

4) Inhabitants in el Gaza'er Street

We met three inhabitants in front of a shop, and one of them sustained that the reason of unclean streets was the lack of control. He gave the example of the metro, saying that the reason why it is so clean is the fact that there is a strict control and penalties for people who throw garbage improperly. The shop owner (hardware shop) said the shops do not produce a lot of waste, and also that the AAEC employees pass by sometimes. On the other hand, he went on, the problem was for the inhabitants, as there was no collection in the houses. Two of them talked about the former system, defining it better. They used to pay 3EGP per month and the *zabbel* used to come three times per week.

A hairdresser came and showed us how people throw their waste in the backyard of the buildings (see picture 18 below).



Picture 18: Trash thrown in the backyard of a building, seen from above

Finally, the people we talked to told us that some people come with handcarts to collect the recyclable materials. They collect plastic, cardboard, aluminium, etc. without taking money.

5) The *zabbel* from Manchiat Nasser in El Gaza'er Street

We met a ten-year old boy, I., who collected plastic, cardboard, aluminium, etc., using a handcart. He told us that there are other two members of his family who come in Zawia to collect waste. He comes with public transportation. Their shift is 7 hours long. He pays to the *maalem* (the traditional owner of that zone) to be allowed to come and collect here. They give him 5 or 10EGP each time they see him. We asked him how many kilos he collects per day, and he said he was not counting in kilos but in *gounias*. He said some other person from Manchiat Nasr come here also for recycling activities of different materials. He is going to Waily district also.

6) Plastic bottles seller at El Gaza'er Street no. 24

We talked to M, and he told us he collects plastic bottles from the hotels on the Corniche or other places. In the past, he was going every two weeks, but since the collection of El Nadi el Chams has been privatized, he does not go there anymore. He sells for a price of 0.25EGP for the Pespi, Coca bottles, and of 0.35EGP for the mineral water bottles. He prefers the mineral water bottles because they are cleaner. But since he cannot go to the hotel anymore, he sells Pespi bottles. Finally, he asked us for plastic bottles and provided us with his number in case we had a sufficient amount of plastic bottles for him to collect, but also polystyrene materials, juices bottles, etc.

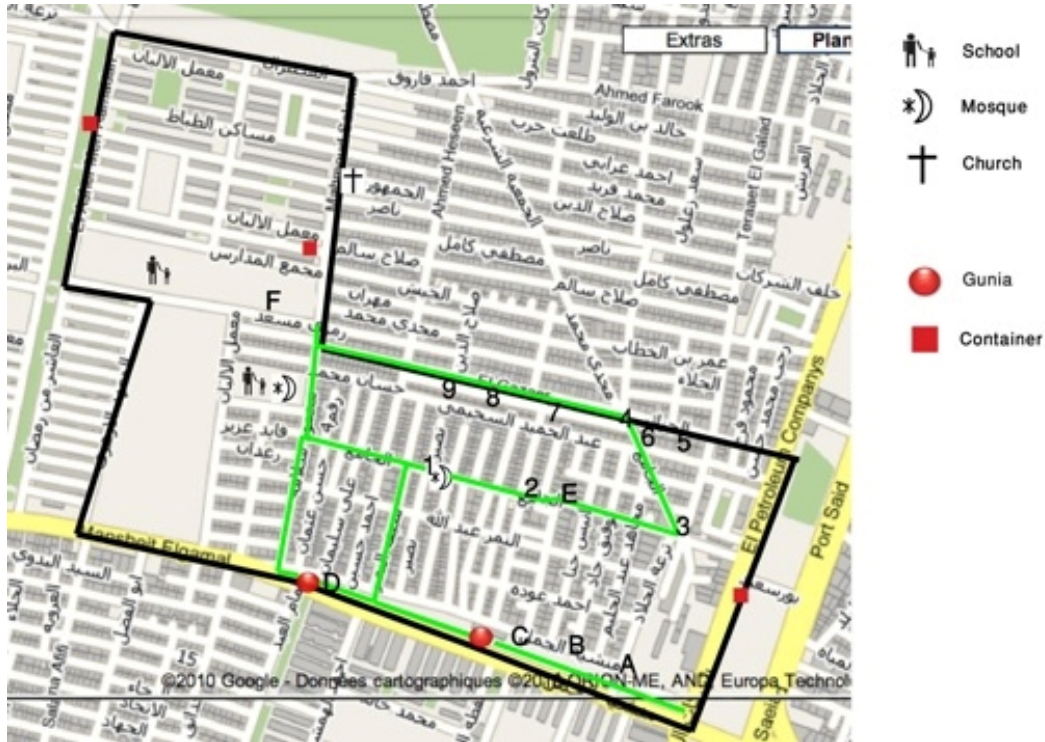
7) Bread buyer and seller in the El Gama' Street

We met this bread buyer while he passed by the streets with a cart pulled by a horse. He told us he buys bread for 0.50EGP per kilo and sells it for 0.60EGP. He said that people trust him because they know him. He came from Qalubeyya.

ANNEX 4: TIME SLOT FOUR

Fieldwork report
23/05/10
Time slot: 8:30 to 11:30 pm

Observations points



The area highlighted in green in the map above represents the streets where we went during our observation.

The numbers refer to the interviews reported related to the time slot number four.

- A) Pile of waste bigger than usual.
- B) AAEC small car pass by full of sugarcane branches.
- C) At 8:45 big accumulation of waste composed only of organic materials and plastics bags.
At 11:10 pm the pile grew up. More cardboard.
- D) At 8:45 pm more accumulations than usual. Two children came to throw their plastic bags. Most of the materials are organic or plastic bags.
At 11:15 pm a lot more waste.
- E) Under the sign «Do not throw your waste, keep the streets clean», there is a big amount of waste.
- F) Herd of cattle grazing on the waste.

On our way back to the metro station at 12:20pm, we passed in front of a huge AAEC container in the Charkat el Petrol Street, where we saw a truck preparing the container to be loaded and *zabbalin* passing by trucks emptying waste in the big container.

Fieldwork report

23/05/2010

Time slot:
8 to 11pm

Interviews

We checked out our spot points and walked through Manchiat el Gamal Street, Moustafa Mahmoud Street, el Gama' Street and el Gazae'er Street. Our objective was to see some informal collectors.

The area was more crowded than usual, and untidier as well.

As it was during night time, it was difficult to take pictures.

1) O. A. in el Gama' Street

While we were walking in the abovementioned street, we met Mrs O. A., the lady we talked to in the pervious interview, where she had told us that the Company never came and that she was responsible for carrying out the waste from her street. We found her sitting on an old sofa in the street, and asked her for news. On this occasion, she told us that the Company collects the trash every day from 7 to 9 am, a totally different version of what she had previously told us.

2) Crossing between Mahmoud el 'etta and el Gâma' Streets

At this crossing we found a big pile of garbage. Two inhabitants told us the same story, that the workers never come unless you go and bring them, or call them and ask them to collect the trash.

Not all the people we talked to agreed on the service. Certain said that the car is coming every fifteen days, others talked about one time per week.

An AAEC driver approached us, saying that they pass by one time a day. We learned that he lived in that area, but worked in Hedayyaq. He admitted that the collectors ask for money to take the trash from the households. We were told that the subcontractor in that area, K., is making problems. He said K. does not do his job, both here and in Hedeyyaq. Inhabitants said that they have K.'s phone number and, when they call him for the collection, he comes only if he wants to. A man said that the area of Hedayyaq for example is cleaner than this one because it is a military officers' area with important persons living there.

During the conversation, the AAEC driver explained to another inhabitant who says that the foreign Company is not working in the right way, that the Company is not only Italian but also Egyptian, that the mother-Company is Italian but the shareholders are Egyptians.

At a certain point, we were surrounded by many people, all complaining at the same time. The main argument they made was that it was better before the arrival of the Company, when the *zabba* was coming, taking his 3EGP per month and the service was good. A teenager said that nowadays the area was dangerous for children, who are afraid of cats and dogs which now come in this area to eat the trash, a situation that did not exist in the past.

One of the inhabitants brought a notebook with the phone numbers of sub-contractors. He says he took their phone numbers when he saw them one time in the streets. He explains that he will move to another area because here there is no air and too much waste. Apparently, as the inhabitants informed us, the rent in this area is 600-700EGP/month.

Finally, the AAEC driver gave us his phone number before leaving, saying we may call him in case we need anything.

3) Juice maker at the big crossing in Tara' el Halâl Street

He said the car passes by every day around 3-4 pm, and that he pays 25EGP per month. On our insistence in knowing if he gives them any tip, initially he denied, but finally admitted to a tip and a juice.

4) Supermarket in the crossing of El Gamâ' and El Gaza'er Streets

We saw a pile of cardboard so we went to the supermarket to ask whether they usually keep the cardboard aside.

An employee answered they do, saying that he stores the cardboard to then sell it to a collector who passes by two or three times per week, without any fixed schedule. The collector buys the carton for 0.25 to 0.50EGP the piece according to its state (clean, old, damaged). We learned that the collector comes from Mustad, and that the shop owner deals with only one person and has his phone number.

5) Butcher in El Gamâ' Street

The butcher told us that he pays 15EGP per month, but the Company does not sweep every day. He usually sweeps in front of his own shop.

With his activity, he produces around 30-40kg of bones per week, which he then sells for 0.60/kg. The person collecting the bones comes every day between 4-6 pm, except Mondays. The butcher thinks the collector is from Daweyya. He is keeping some bones' marrow and gristle until the night for people that want to buy it for soup. If no one buys it, he throws it. The butcher is not aware of what the collector does with the bones. He remembers that in the past they used bones to make honey filters, or in the soap production. The butcher did not seem to have a very positive opinion about the collectors of bones in general. He said that most of them are Christians and come from the same – very rich – family, so to him they are only business partners.

Finally, the butcher asserted that he did not need the Company's service at all, since he took care of the sweeping, whilst the bones end up with the collector.

6) Butcher in Tala't el Ghalâl Street

This other butcher we interviewed said that the Company cars pass by two or three days per week, around 4-6pm. However, he sustained that the AAEC cars do not pass in the small residential streets, but only in El Gaza'er and in the commercials streets. Moreover, if the car is full, the workers do not take more waste. He pays 15EGP on the electricity bill, while the AAEC employees do not ask for money.

Regarding the sweeping, he provides for himself, while for the collection of the bones he produces in his activity, there is a person who comes and buys them for 0.25 to 0.30EGP/kg. The collector comes from Amareyya. However, the butcher finally said that he does not really work with the bones collectors.

7) Butcher in el-Gamâ' Street

This was the third butcher we interviewed in this area. He told us that the AAEC car comes at the juice shop in front of his shop, three times per week, but not at his shop.

He first said he pays 25EGP, but after verification he corrected himself saying he pays 15EGP/month. He sweeps the street by himself. The bones collector, a person from Manshiet Nasser, passes by around 4pm, but does not buy them.

He says the AAEC service is not well planned and not clean. His own daily production of waste is not very high, amounting to around 20 to 30kg per week. He lives in Middan el Gish, and he pays about 100EGP/month for the rent of his shop, as his flat is under the old laws on rent.

8) 2,5 pounds Shop in El Gamâ' Street

The shop owner we interviewed told us that the AAEC car comes to collect three times per week. On the other hand, the cardboard collector – a 15 year-old boy – comes every hour between 4pm and midnight. He sorts the waste and does not want to collect all the materials, so the shop owner forces him to collect everything. He does not buy the cardboard, he only takes it.

9) Supermarket in el Gamâ' Street

We saw that at a supermarket they were selling soap in plastic bottles, so we tried to interview the people involved. One man told us he buys his plastic bottles in Ataba, because he cannot sell the soap in plastic bags, as the soap affects the bags. He added that he pays 25EGP/month on the electricity bill.

We interviewed also the shop owner, who was the owner of a carpet shop in front of the supermarket as well. He told us that the Company comes four or five times per week, and that the workers do not ask for money, although he sometimes gives them 0.50EGP. They throw their waste in the nearest container which is in Gama' el Madares. Another man said that they did not see the sweepers in the last five months.

The shop owner, who lives in Masakan el Zoubat, said the Company comes to sweep there. Regarding the garbage collection, it is not always collected, and sometimes the workers say that is not a street under their responsibility. He says the service is better in the area where he lives because it is close to the District and the Police station.

10) Guard of the school in Mahmoud es Salâma Street

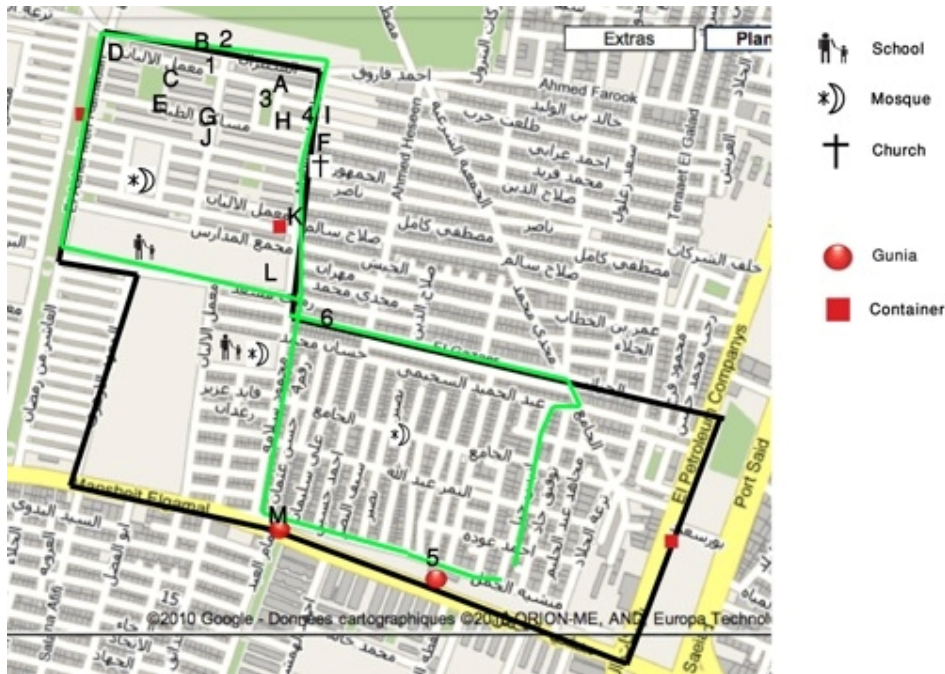
The guard is responsible for the school cleanliness. He told us that the last time he saw the Company workers was the day before, and that they come around 1-2pm. The school waste production is of one *gounia* a day, and most of it is paper and plastic chips bags.

ANNEX 5: TIME SLOT FIVE

Fieldwork report
25/05/10

Time slot: 7am to 10am
Observations

The objective was to come and check if S.'s employees were there to collect the waste from the households in Masakan el Zoubât.
Then we focused on that and just went to check our points.



A) Lots of plastics bags and piles of waste in the «garden» (N.B. the green spaces are not the responsibility of AAEC, they are under the CCBA responsibility). Waste was obviously being thrown from the windows.
See picture 19 and 20 below.



Picture 19



Picture 20

It is 7:15am. We see the sweepers arriving to start their work.

B) A *gounia* is dropped off in front of the District.

C) A *gounia* full of organic waste is dropped off at the end of the street.



Picture 21

D) Association for literacy

E) *Gounia* full of organic waste at the corner of the garden.



Picture 22

F) In the Madghal (entry) 5. This street is cleaner than others.

G) A woman gets out of her building carrying her waste in a real garbage bag, and then she drops it on the curbside in the main street.

H) A woman gets out of her building dropping her plastic bag.

I) A woman gets out of her building and carries her waste a long way until the container, instead of dropping it at the waste pile on the curb side.

A horse and its cart wait in Salah el Din Street, carrying *gounias* and unsorted waste.



Picture 23

8:00 A small car of AAEC passes by.

J) Mosque and association for education.

K) 9:50 A woman is sorting the waste piled around the container. Some people come and drop off their plastic bags around the container, not inside it. The container is quite full.



Picture 24

When we pass by this point again at 9:50, the AAEC car is there collecting the waste. Workers have to collect the waste with shovels.

ANNEX 6: TIME SLOT SIX

Fieldwork report

26/05/10

Time slot: 10pm to 12:35pm



1) There is still a big pile of waste behind the barrier, the same one we have seen since we started working there. It has not been removed.

2) Big pile of garbage, while the AAEC workers are collecting. The one collecting the trash must use a *gounia* and a shovel to work, as there is no container. The worker asks us the reason why the Company took away the container. The man needed thirteen minutes to remove all the waste, which was highly organic. We were told that not everywhere the waste is highly organic as in Zawia. He explained to us that in Zawia everybody – young and old people – sort the waste. Moreover, there are also scavengers who pass by around 5am. The worker added that there is more garbage in the evening. As they pass by each 1.5 hours, it means that these big amounts of waste appeared during that timeframe. They are three on the car in the morning shifts and two in the evening shifts.

During our conversation, the driver received a call from a juice seller asking him to pass by his shop.

3) In a supermarket in Mahmoud es Salâma Street

The owner said that no one passes by to collect the cardboard.

4) Dishes shop in Mahmoud es Salâma Street

The shop owner said he paid 18EGP per month on the electricity bill. The car did not pass by in the last three days. Some people pass by the streets to collect cardboard and other materials, but he does not have a lot of waste. He asks for the Company's telephone number in order to complain.

5) Eggs seller in Mahmoud es Salâma Street

The lady told us that she sells the eggs cardboard to a *zabbel* who comes irregularly, with no fixed schedule. He only collects the thirty-eggs cardboard, and he buys one hundred pieces for 3EGP. The woman estimated that they sell from 300 to 400 cardboards per month. The man who comes to collect only works with egg cardboards.

6) Supermarket in El Gamâ Street

The man we interviewed said that someone passes by to collect the cardboard. He buys two small cardboards (as gum cardboard) for 0.25EGP, the cardboard for oil for example: 0.75EGP per piece, the biggest: 1.25EGP. He is from Matereyya.

Regarding the collection by the AAEC workers, the shop owner told us that he gives them cheese and pickles. The car passes by three times per week. The man does not know how much he pays on the electricity bill for cleanliness, since his bills are about 1,000EGP per month totally.

There are also A. and T. who pass to collect the trash. They are from Manshiet Nasser and they have been there since six or seven years.

7) Supermarket in el Gamâ' close to the crossing with el Gaza'er

The man we interviewed said that the AAEC car passes by every day and the workers ask for 1EGP. Moreover, a *zabbel* comes every day around 3am and charges also 1EGP.

A woman at the shop says the problem is not faced by the shops, but mostly by the inhabitants. She lives in Masakan al Genina and she has to walk ten minutes to throw her waste in the nearest container. She concluded that the situation was better in the past, when it was only the *zabbel* in charge of the garbage collection.

8) Supermarket at the crossing of Gamâ' and Gaza'er sStreets

We went back to the shop owner to ask him for the number of the cardboard collector, in order to interview him also.

9) A., the cardboard collector

A. told us that he has been working with cardboard since one year and half. He works on demand, only in Zawia, and his collection amounts to around 500kg per week. He then sells the cardboard to the factories in Zawia, Bab Charqeyya and Darb el Ahmar (which – he explained – are more properly workshops that use the carton to produce shoes or mirrors.

Our interview with A. took place in a glass shop. The owner said that many people pass by to collect waste, each of them specialised in a specific material. For example, the one collecting plastic passes at 4am.

A. buys his carton for 0.75EGP, 1EGP or 1.25EGP per piece, depending on the type of cardboard.

He said there are many people in Zawia working in this field. A. is working as a driver.

He says there is no workshop for plastics here. Those who buy plastic sell it in Shoubra el Keima. He explains to us that they break the plastic in small pieces.

There is also another man called A., a *zabbalin* who comes every day and charges 0.25EGP to the people. He is a subcontractor for the Company.

10) Supermarket in Mahmoud es Salâma Street

At this supermarket the man we interviewed said that he does not sell the cardboard because he does not have a place to store it. We asked him about the eggs cardboard, and he said he does not sell that either, but he knew the prices. The man told us he lives in the district of the wood workshop, and that someone comes to him once a week. His name is S. and he comes from Douwia.

11) Butcher

The butcher said he has a contract with a bone collector, who pays him 60EGP per month. He is from Tara' Street in Wayla. The butcher told us about the 400EGP fine he received one year ago from the District, because the land in front of his shop was untidy and the District considered him liable for this.

L) Only remnants of waste were found here (the waste was probably by the cattle).

M) Empty *gounia* belonging to the Company.

ANNEX 7: QUESTIONNAIRE FORMS

The templates we used were not systematic questionnaires, as we were well aware that people are reluctant to answering questions. We generally started by saying that we work in the waste sector by doing a study, and people started talking. If some of the points below were not spontaneously tackled during the discussion, we proceeded by asking questions.

Inhabitants:

- Do you know who is responsible for the cleaning service in your street?
- Who is the collector passing by your place?
- How many times per week the collector passes by?
- Where do you litter your waste?
- What do you think about the service?
- How much do you pay for the service?
- Do the collectors ask you for some tips?
- Do the collectors go up into the buildings?

Zabbaleen and informal collector:

- Where are you from?
- Where do you work?
- How many times per week do you collect?
- What material are you interested in?
- How much waste do you collect per week?
- Who are you selling the waste to?
- How much do you earn?
- Do you know someone of the Company?
- Who are you working for?
- How long have you been working in the waste sector?

Company workers:

- How many times do you sweep/collect per week/day?
- How long have you been working for the Company?
- How much do you earn?
- Is your work tiring?
- Are you happy about your work?

Institutions (schools, mosques, associations, etc.)

- What do you think about the service?
- Do you have any special activities related to waste?
- How much do you pay for the service?
- How many times per week does the Company pass by?
- Do you sweep the streets by yourself?

Shops:

- How much do you pay for the service?
- What do you think about it?
- Are there any informal collectors passing by your shop in order to collect materials?
- If so, do informal collectors pay for the collected material?
- What do you do with your waste?
- How many times per week the collector passes by?
- Do you sweep the street by yourself?