



The impact of privatization of solid waste management on the *Zabaleen* garbage collectors of Cairo

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This article is an edited version of a paper entitled "Urban sustainability and poverty alleviation initiatives of a garbage collectors' community: a stakeholder analysis of the Muqattam *Zabaleen* settlement in Cairo", which was presented at the European Network of Housing Research (ENHR) International Housing Conference organized by the Cambridge Centre for Housing and Planning Research, University of Cambridge, 2-6 July 2004.

SUMMARY: This paper investigates the recently launched privatization of local solid waste management in Cairo, focusing on its adverse effects on the economy and on the urban settlement system of the *Zabaleen* garbage collectors' communities. According to the official development strategy, the privatization of solid waste services is fundamental to overall government plans for the rehabilitation of areas of historical Cairo. But the objectives of the rehabilitation plans tend to favour business interests while threatening the interests of the local population. The findings of a study on the situation emphasize the significance of poverty alleviation initiatives in restructuring solid waste collection and developing the recycling industry, and the development of new channels for cooperation and partnership between the garbage collectors' association (*Gammiya*), grassroots organizations, local authorities and multinational waste management companies. In order to promote sustainable livelihoods and better opportunities for the urban poor, the study emphasizes the need among the low-income *Zabaleen* to draw on the sustainable flow of local resources, while seeking new means of supporting land acquisition and its development for improved housing standards, basic services and environmental quality.

I. INTRODUCTION

OVER THE DECADES, the *Zabaleen*, the traditional waste collectors of Cairo, have created what is arguably one of the world's most efficient resource-recovery and waste-recycling systems. Yet the continuation of this intricate relationship between community, environment and livelihood is jeopardized by the official privatization of solid waste services through contracts with technology-intensive multinational corporations. This approach threatens the sustainability of the garbage collectors' communities by removing access to their chief economic asset, waste garbage. The situation is exacerbated by an official policy of moving *Zabaleen* activities further out of the city, on the grounds that this will turn their neighbourhoods into cleaner living environments while still allowing the waste sorting, recovery, trading and recycling to take place. But this policy would increase the *Zabaleen*'s travelling distances and costs of their services, thus creating new risks for the sustainability of their livelihoods.

This paper considers these issues from the perspective of the *Zabaleen* settlement at Muqattam, established in 1970. It describes the evolution of

the *Zabaleen* garbage-recycling system, and provides a brief history of this particular settlement and an account of the *Zabaleen* Environmental Development Programme (ZEDP), funded by the World Bank in the early 1980s, and coordinated by local NGO Environmental Quality International (EQI). It then discusses the findings of a 2004 survey and compares these findings with the situation as documented in 1981⁽¹⁾ and in 1993.⁽²⁾ It also presents the findings of discussions with the *Zabaleen* and other stakeholders on their perceptions of current plans to change the solid waste management system for Cairo and to relocate their settlement and recycling activities.

II. BACKGROUND

a. The *Zabaleen* and the solid waste management system in Cairo

ABOUT 100 YEARS ago, a group of migrants from the Dakhla oasis in the western Egyptian desert settled in downtown Cairo. This group, known as the *Wahiya*, assumed responsibility for the collection and disposal of Cairo's household waste. Working under contract, the *Wahiya* paid owners an initial sum, then collected monthly fees from the tenants whose waste they collected.⁽³⁾ In the 1930s and 1940s, the *Wahiya* began to collaborate with another group of migrants, the *Zabaleen*, who had come to Cairo in search of work. Prompted by economic hardship, these landless farm workers from El Badary district in Assiut (a rural region in southern Egypt) purchased waste for use as pig fodder.⁽⁴⁾ Since then, the *Zabaleen* people, living in makeshift settlements on agricultural land at the western and northern fringes of Cairo metropolitan region, have emerged as garbage collectors and recyclers. They have maintained ties with their rural origins, preserving their community through intermarriage and extended family living, with an emphasis on kinship ties.

There is therefore a distinction between the *Wahiya* and the *Zabaleen*. The latter collect garbage on donkey-pulled carts, separate out recyclables and use the organic waste for feeding pigs, the meat from which is sold to big tourist facilities. They also sell the sorted secondary materials such as paper, tin, rags, glass and plastics, to intermediaries.⁽⁵⁾ The *Wahiya* have retained control over access to the waste and collection rights, acting as intermediaries between the *Zabaleen* and Cairo's households. The *Zabaleen*, typically, have had no share in the fees paid by those residents, but pay the *Wahiya* to gain access to the waste garbage.

A 1989 agreement between the *Wahiya* and the *Zabaleen* resulted in the establishment of a new mechanized waste collection company, the EPC, or Environmental Protection Company.⁽⁶⁾ Under this agreement, the *Wahiya* contract the *Zabaleen* to collect and dispose of solid waste. Although responsibility for solid waste management has long been shared between the municipal sanitation service and the *Zabaleen*, the formation of the EPC established the *Wahiya* and the *Zabaleen* as key participants in the local government's programme to upgrade solid waste management in Cairo. The *Wahiya* have administered the system, marketed the company's services, collected household charges and supervised service deliveries. The *Zabaleen*, many of whom might otherwise be homeless and without employment, have collected and transported the waste. More recently, as the *Zabaleen* have become more involved in the work, some have received a minimal fee from the *Wahiya*.⁽⁷⁾

1. Environmental Quality International (EQI) (1981), "People of the Gabbal: life and work among the *Zabbaleen* of Manshiet Nasser", Report No 3, Solid Waste Component, First Egypt Urban Development Project, Cairo.

2. Assaad, Ragui (1998), "Upgrading the Moqattam *Zabbaleen* (garbage collectors) settlement in Cairo: what have we learned?", Paper presented at the Macarthur Consortium on International Peace and Cooperation Symposium on The Challenge of Urban Sustainability, Minneapolis, USA, 22–24 May.

3. Haynes, K L and S M El-Hakim (1979), "Appropriate technology and public policy: the urban waste management system in Cairo", *Geographical Review* Vol 69, pages 100–108.

4. Neamatalla, M (1998), "*Zabbaleen* Environment and Development Programme, Cairo, Egypt", the Mega-Cities Programme, publication MCP-018D, accessible at <http://www.megacitiesproject.org/publications/pdf/mcp018d.pdf>

5. Assaad, Marie and Nadra Garas (1994), "Experiments in community development in a *Zabbaleen* settlement", *Cairo Papers in Social Science* Vol 16, No 4, The American University in Cairo, Egypt.

6. Volpi, E (1996), "The *Zabbalin* community of Muqattam. Community organization and development among the *Zabbalin* of Muqattam", *Cairo Papers in Social Science* Vol 19, No 4, pages 8–64, The American University in Cairo, Egypt.

7. See references 5 and 6.

8. Meyer, G (1987), "Waste recycling as a livelihood in the informal sector: the example of refuse collectors in Cairo", *Applied Geography and Development* Vol 30, pages 78–94.

9. See reference 2.

10. See references 1 and 2.

11. See reference 4.

12. See references 1 and 2.

13. See references 1, 2 and 4.

14. Motaal, D A (1996), "Reconstructing development: women of the Muqattam *Zabballin* settlement", *Cairo Papers in Social Science* Vol 19, No 4, pages 59–110, The American University in Cairo, Egypt.

15. See reference 4.

16. Plastic recycling became highly profitable as it increased machine owners' income significantly. Accordingly, a growing number of community members abandoned pig-raising in favour of recycling and trading. Others abandoned garbage collection and started buying the refuse from other members of the community or from other *Zabaleen* settlements in Cairo.

17. Responsibility for managing the composting plant was assumed by a local NGO, the Association for the Protection of the Environment (APE), which was established in 1984.

18. See reference 4.

19. Due to a lack of maintenance during the

b. The Muqattam *Zabaleen* community

The *Zabaleen* are now scattered over seven garbage collector settlements in the Greater Cairo Region (GCR). Most of these settlements have been moved to more peripheral locations as a result of urban expansion, and the largest *Zabaleen* community is situated at the foot of the Muqattam mountain, east of Cairo. The Muqattam settlement, established in 1970 when the *Zabaleen*, after a series of evictions, were assigned this abandoned quarry area by the municipality,⁽⁸⁾ is part of an administrative unit that also includes the squatter settlement of Manshiet Nasser. It is located between road traffic arteries and the foot of Muqattam mountain, which constrains future horizontal expansion.⁽⁹⁾ Secure tenure within the settlement, along with high land values related to its location, have resulted in land densification and diversification.

The settlement's population grew by nearly 9 per cent annually between 1981 and 1993, from 5,514 inhabitants in 1981 to 15,577 in 1993.⁽¹⁰⁾ About 20,000 people now live in the "garbage city" of Muqattam, and almost all live off, or are involved in, garbage-related activities. Infant and child mortality rates in Muqattam have dropped substantially, from 240 per 1,000 in 1979 to 117 per 1,000 in 1991, but remained higher than the average in Cairo (46 per 1,000) for the 1990–1995 period.⁽¹¹⁾ As with other *Zabaleen* settlements, the community is characterised by a high incidence of animal epidemics, illiteracy, poor environmental conditions and low incomes. A quarter of the household heads sampled in 1993 had moved to the settlement after 1981.⁽¹²⁾ Although the settlement's population has more than tripled since 1981, there has been little expansion of the settlement's physical boundaries. Most growth has taken place through densification and vertical expansion. The total number of plots increased from 905 in 1981 to 1,387 in 1993.⁽¹³⁾ In 1983, the average household income per month was estimated at LE 70 (approximately US\$ 11.50 in January 2005), placing residents within the lowest 10 per cent nationally for urban income.

c. The *Zabaleen* Environmental Development Programme (ZEDP)

In 1981, the Muqattam settlement became the focus of a World-Bank-funded upgrading programme, the *Zabaleen* Environmental Development Programme (ZEDP), and for more than ten years it has been the recipient of significant financial resources from international donors.⁽¹⁴⁾ As a consequence of ZEDP, which was coordinated by the local NGO, Environmental Quality International (EQI), the community's living conditions have greatly improved in terms of housing stock, water supply, sewage disposal, electricity and road infrastructure. Residents also began to enroll more of their children, especially girls, in schools, while introducing health programmes to reduce neonatal mortality.

A small-industries project, established by ZEDP, concentrated on establishing community-based recycling enterprises designed to maximize the resource value of waste.⁽¹⁵⁾ The project provided loans, which enabled *Zabaleen* families to buy plastic-granulating machines and rug-pulling machines.⁽¹⁶⁾ In order to develop the *Zabaleen* waste recovery system, ZEDP set up a composting plant⁽¹⁷⁾ designed for simple operation and maintenance. This plant aimed to transform the vast amount of accumulated organic waste in the settlement into saleable fertilizer for the purpose of generating income to fund development activities such as a rug-weaving

school and a paper-recycling project. Uncontaminated organic waste was sorted for the production of a higher-grade compost, with retrieval of 80 per cent of the materials and with the remaining 20 per cent being dumped on the outskirts of the city.⁽¹⁸⁾ This recycling system prevented the need for unsanitary landfills, as well as protecting the environment from the uncontrolled disposal of organic waste.⁽¹⁹⁾

Despite the physical improvements within the Muqattam settlement, poor management and leadership skills led to a state of dependency on EQI instead of full community participation.⁽²⁰⁾ Representation relied to a certain extent on the board of programme directors, most of whom, being outsiders, failed to reflect the needs of the whole community. The gap between rich and poor has grown wider, thereby strengthening existing power positions and exacerbating previous sources of conflict and tension.⁽²¹⁾ This situation was aggravated by the recent absence of participation characterizing the garbage collectors' association, Gammiya, as it became dominated by community leaders while no longer representing the interests of the poorest in the settlement.⁽²²⁾

After its establishment in the mid-1970s, community leaders had been instrumental in transforming Gammiya from a charity organization into a community-based development association.⁽²³⁾ As part of ZEDP's initiatives, the association had managed the credit programme that financed the micro-enterprise recycling industries, encouraged income-generating activities connected to garbage processing, and contributed to the mechanization of the *Zabaleen's* waste collection system.⁽²⁴⁾

d. Community-based micro-enterprises

It was estimated that, in 1997, the *Zabaleen* informally handled one-third of the garbage of Cairo's 14 million people, mainly that from poorer districts.⁽²⁵⁾ The *Zabaleen* collected up to 3,000 tonnes of garbage every day, with 85 per cent being recycled directly through micro-enterprises that generated jobs and incomes for the local community. According to a local NGO, Community and Institutional Development (CID), the average monthly wage for the waste-handling workers in Muqattam ranged from LE 360 to LE 450 (US\$ 60–75). The highest-paid workers were those in the recycling industries, while the lowest-paid collected and transported waste. In the mid-1990s, nearly 700 families owned collection enterprises, 200 owned and operated small- and medium-scale recycling enterprises, and 120 owned trading enterprises, in addition to maintenance workshops and community-based service businesses.⁽²⁶⁾ These micro-entrepreneurs invested an estimated LE 2.1 million (US\$ 350,000) in purchasing trucks, plastic granulators, paper compactors, cloth grinders, aluminum smelters and tin processors. The *Zabaleen* greatly improved the capacity of Cairo to manage its solid waste at minimal cost to the city administration, as their recycling methods for handling plastics, paper, cardboard, glass, metal and fabrics were constantly being upgraded and diversified.

e. Changes in land tenure practices

As a result of their long history in the Muqattam settlement, the *Zabaleen*, despite having no legal title, had relatively secure land tenure, which allowed them to invest in their settlement, turning it from a low-density rural area into a dense urban community with a diversified economy, including the ownership of plots for pig-raising (*zeriba*) together with a

first four years of operation, and to the inaccuracy of EQI's initial feasibility study, the composting machines experienced technical breakdowns. Contrary to EQI's recommendation, the *Zabaleen* were not paid for the manure they were supplying to the plant. Consequently, the *Zabaleen* supplied the plant with lower-quality sweeping manure rather than high-quality pure manure.

- 20. See reference 4.
- 21. See reference 4.
- 22. See reference 4; also see reference 6.
- 23. Kamel, L (2003), "Integrating local community-based waste management into international contracting", Paper No 31, CWG Workshop, Dar-es-Salaam, Tanzania, March.
- 24. In the early 1990s, the authorities introduced a new mechanization system to transport solid waste. With no government financial assistance being provided, the *Zabaleen* had to acquire capital to purchase trucks from personal savings or from selling remaining small plots of land or houses in their ancestral villages, or from credit loans. See reference 6.
- 25. See reference 8; also Hopkins, Nicholas and S Mehanna (1997), "Pollution, popular perceptions and grassroots environmental activism", *Middle East Report* Vol 27, No 1, pages 21–25.
- 26. See reference 5; also see reference 14.

garbage collection route. Since newly settled migrants lacked financial resources, a partnership system developed whereby residents helped finance the cost of setting up a *zeriba* for the new settlers while getting a share of the revenue from selling the pig meat. Long-term purchasing relations were therefore established between pig dealers and *zeriba* owners.

The ZEDP upgrading project within the *Zabaleen* settlement intended to use the regulation of land tenure through the transfer of legal title to occupants as the principal means of recovering the cost of introducing infrastructure. The cost of purchasing land would be made affordable by extending payments over a 30-year period at moderate interest rates. In 1984, as an outcome of an official law allowing the sale of public land to squatter communities, the *Zabaleen* were asked to register their claims to specific plots of land based on estimates of its current value.⁽²⁷⁾ While a few residents bought the land they occupied, most people considered the prices too high and refused to participate in the programme, demanding that the land be sold for what it was worth at the time they first occupied it as squatters. More than three-quarters of household heads interviewed in a 2004 survey claimed that they "owned" the land on which their dwelling was built, either individually or in partnership. While most of those "owners" acquired the land by squatting on it, others bought it in the informal land market, and a few claimed to have purchased it legally.

f. Privatization of waste management systems and the proposed relocation of *Zabaleen* activities

Recently, international waste management companies started taking over Cairo's waste collection routes, with annual contracts reaching US\$ 50 million. As well as the Egyptian Company for Garbage Collection (ECGC), these companies include FCC and Urbaser, Enser (Spanish), AMA (Italian), that are starting to venture into Egypt to take advantage of a potentially profitable niche in the market. Even more significantly for the *Zabaleen*, the Cairo governorate, in order to improve living conditions for the people of Muqattam and neighbouring communities such as Manshiet Nasser, decided to move sections of the *Zabaleen* operations (garbage-recycling procedures, animal-rearing activities) 25 kilometres away, to a 50-*feddan* plot (1 *feddan*=1.038 acres) in Cairo's eastern desert settlement of Qattamiya. A still more extreme solution is a proposed future relocation of the *Zabaleen* communities themselves to newly planned settlements in Qattamiya desert, as part of the Rehabilitation and Upgrading of the Manshiet Nasser Informal Settlement Project, initially proposed in 1982. According to officials at the Ministry of Housing, Utilities and Urban Communities (MHUUC) and at GOPP (General Organization for Physical Planning), the resettlement process, which consists of nine phases, aims to provide a total of 70,000 housing units together with public services and amenities. The suggested resettlement site is the same location to which other government plans have sought to relocate both activities and people from the old city and from the eastern cemeteries.⁽²⁸⁾ Official proposals by MHUUC stated that:

"...the new settlements will be equipped with water supply and sanitation systems, road networks, open spaces, public facilities, telecommunication services and environmentally friendly workshops. Residents will be provided with a soft loan, 90 per cent of which is required to be paid back over 40 years, giving the residents a sense of ownership."⁽²⁹⁾

27. See reference 1.

28. Sutton, Keith and Wael Fahmi (2002), "Cairo's 'Cities of the Dead': the myths, problems and future of a unique squatter settlement", *The Arab World Geographer* Vol 5, No 1, pages 1-21.

29. Personal communication with an official planner at the Ministry of Housing, Utilities and Urban Communities (MHUUC), February 2004.

III. THE FINDINGS OF THE 2004 STUDY

a. Method

IN JANUARY AND February 2004, the author administered a small area survey of 100 households. Initially, the *Zabaleen* householders feared that the data would be used against them by officials, for resettlement procedures. But personal contact with the garbage collector within the author's residential area, and coordination with one community leader, provided access to the community while reassuring the *Zabaleen* in the settlement about the author's intentions and study purpose. After a few months of negotiations, households were selected using random sampling, according to respondents' willingness to participate in the unstructured interviews. During interviews, the author was accompanied by two young members of the community, who provided further assistance in collecting quantitative information on housing history, construction, service facilities, spatial arrangements and size of household. More qualitative data were gathered by the author in focus group discussions, which examined *Zabaleen* householders' attitudes towards current housing conditions, infrastructure development and the future of the settlement. Conditions were compared to those recorded in 1981,⁽³⁰⁾ at the beginning of the World Bank project, and in a 1993 physical survey,⁽³¹⁾ following a rock fall in the settlement which killed 40 people. (This event brought garbage collectors to the attention of the public, and officials subsequently demanded their resettlement from the Muqattam area. However, the *Zabaleen* association, Gammiya, played a significant role in delaying government's resettlement plans.⁽³²⁾)

The study also made use of focus group discussions and in-depth interviews to examine the views and reactions of various stakeholders to the threat of forced eviction as a result of potential gentrification and land speculation in the area. The sample of individuals and organization representatives was selected to represent both primary and secondary stakeholders.⁽³³⁾ Primary stakeholders included 40 resident garbage collectors and five community leaders with whom in-depth interviews were held. Non-resident primary stakeholder groups, less affected by the relocation plans, were *Wahiya* and other local Cairenes. The secondary stakeholders included political representatives and CCBA (Cairo Cleaning and Beautification Authority) officials, as well as staff from both the EEAA (Egyptian Environmental Affairs Agency) and multinational waste management companies. Other secondary stakeholders were members of the two local NGOs – APE (Association for the Protection of the Environment) and CID (Community and Institutional Development).

b. Physical changes in the Muqattam settlement

Land use changes. Table 1 shows a decline in the small number of plots containing *zeriba* only since 1993. Plots combining residential, *zeriba* and commercial activities increased substantially in the same period, to include almost one-quarter of the 2004 sampled households. With the continuing rise in land values, this trend away from the relatively land-intensive activity of pig-rearing is expected to continue, along with the growth of more "urban" activities. The settlement has also become a place where rural migrants not directly engaged in the "garbage" business are increasingly willing to live. Single-use residential land use increased by

30. See reference 1.

31. See reference 2.

32. See reference 6.

33. Ahmed, Shafiuil Azam and Mansour Ali (2004), "Partnerships for solid waste management in developing countries: linking theories to realities", *Habitat International* Vol 28, pages 467–479.

Activity	% houses (2004)	% houses (1993)	% houses (1981)
Combined activity	53	54.9	59.6
Residential and <i>zeriba</i>	20	23.9	54.4
Residential, commercial and <i>zeriba</i>	22	3.7	0.4
Residential, commercial and storage	11	17.3	1.2
Other activities	0	0	3.6
Single-use activity	47	45.1	40.4
Residential	47	37.5	26.8
<i>Zeriba</i>	0	3.0	9.6
Storage	0	2.6	2.1
Other activities	0	2.0	1.9
Total number of houses	100	1,387	905

SOURCE: Field survey, January–February 2004.

about 10 per cent, to almost half the sampled houses in the 2004 survey. While in 1981 the settlement was regarded exclusively as a place where people resided and engaged in waste collection and sorting activities, it is now characterized by mixed land use, with most householders expressing a preference for multi-functional layouts combining residential, commercial and income-generating recycling activities.⁽³⁴⁾

There is a need to recognize the symbiosis between the *Zabaleen*'s domestic and productive activities and the significance of housing in their micro-enterprise recycling economy. This situation is similar to rural models of production and consumption, with a strong emphasis on household life-sustaining productive activities, where home and workplace are frequently combined and intimately interrelated.⁽³⁵⁾

Housing conditions. In 1981, there were 905 houses in the settlement, mostly one-storey structures consisting of several rooms, attached to a courtyard and a pig shed (*zeriba*). By 1993, there were 1,387 houses, many of them multi-storey structures. This building boom resulted in a decline in average density from 3.7 to 2.8 persons per room. Because of their history of precarious settlement and eviction, the *Zabaleen* residents adopted the practical option of flexible, temporary tin structures.⁽³⁶⁾

Even before ZEDP, and despite the lack of legal tenure, expectations of government-sponsored urban development encouraged the *Zabaleen* to invest on a self-help basis in improving housing quality. This was supported by the Gammiya-initiated credit programme to finance the creation of small recycling enterprises in the community, with the small-industries project contributing to the economic transformation. Initially, contractors from outside the settlement undertook all building and construction activities. Some individuals in the settlement started their own contracting businesses with the help of a local NGO, Environmental Quality International (EQI), which was eventually awarded most building contracts in the area. A number of subsidiary services and industries were created, such as carpentry, and the sale of construction materials and household appliances.

The *Zabaleen* settlement was selected as one of the urban upgrading sites in the First Egyptian Urban Development Project funded by the World Bank, with technical assistance being provided by EQI, as part of ZEDP. Housing project loans extended over a five-year period and were sufficient

34. See reference 1.

35. Kellett, P and AG Tipple (2000), "The home as workplace: a study of income-generating activities within the domestic setting", *Environment and Urbanization* Vol 12, No 1, April, pages 203–213.

36. See reference 2 for the experience of Sister Emmanuelle, a Catholic nun who worked with the *Zabaleen* to improve housing in the settlement.

Table 2: Measures of housing quality in 2004 (100 sampled houses)	
<i>Type of roof</i>	
Reinforced concrete	84
Tin	10
Wood	6
<i>Type of floor</i>	
Cement	43
Tile	47
Earth	10
Combination of reinforced concrete roof and cement or tile floor	78
<i>Type of wall</i>	
Brick or reinforced concrete columns	76
Concrete load-bearing walls	24

SOURCE: Field survey, January–February 2004

for the construction of a single room and toilet facility built of reinforced concrete and brick, with an area of 12–13 square metres. The housing programme contributed LE 700 (US\$ 116.50) towards the cost of each house, with beneficiaries contributing the remaining LE 250 (US\$ 41.50). Since 1981, the *Zabaleen* have spent a total of LE 31 million (US\$ 5.1 million) on the construction of over 2,000 new dwelling units.⁽³⁷⁾

By 1993, tin shacks had disappeared and had been replaced by reinforced concrete structures and brick walls. One-third of the housing stock consisted of two-storey structures and there was a trend towards a spatial separation of the living zones and pig-rearing and waste-sorting areas. Previously, most household activities (sorting garbage, cooking, eating, sleeping,) had taken place in the main courtyard by the entrance to the house. Pig sheds (*zeriba*) are now being built adjacent to the sorting area in the house’s backyard, with the ground floor being designated for sorting waste and for storing recyclable materials, and with the living quarters located on the second floor.

Although housing-quality indicators had improved substantially by 2004 (Table 2), one-third of the survey respondents complained about decaying housing stock (the result of bad maintenance and environmental degradation) and expressed anxiety about the possibility of being forcibly evicted from their homes. This anxiety was mainly attributed to housing speculation in the area as a result of the anticipated official upgrading of degraded housing stock for use by higher economic groups, and of the proposed future eviction of the local population within neighbouring Manshiet Nasser settlement.

The 2004 survey indicated that most of the poorest *Zabaleen* households have little saving capacity, with no possibility of accessing the financial resources needed to cover the cost of land purchase and to commission a local contractor. Low-income households, together with Gammiya, have managed to set up and sustain their own emergency credit programme, which then developed into a savings scheme for micro-enterprises, housing improvements and building, installing infrastructure, and setting up and managing basic services.⁽³⁸⁾

Infrastructure. ZEDP aimed to introduce low-cost, affordable infrastructure systems with cost-recovery through the sale of land to *Zabaleen* and long-term payments over 30 years, as a means of improving living and

37. See reference 1.

38. Anzorena, Jorge, Joel Bolnick, Somsook Boonyabancha, Yves Cabannes, Ana Hardoy, Arif Hasan, Caren Levy, Diana Mitlin, Denis Murphy, Sheela Patel, Marisol Saborido, David Satterthwaite and Alfredo Stein (1998), “Reducing urban poverty; some lessons from experience”, *Environment and Urbanization* Vol 10, No 1,

April, pages 167–186.

39. Private taps were installed on a self-help basis, with illegal house connections from the main water supply lines. Such technically illegal measures have led to frequent leakages and damage to the pipes, resulting in recurrent problems with low water pressure and thus frequent water supply shortages to the houses. Under these circumstances, people continued to use public taps.

40. Gray, BI (1989), *Collaborating: Finding Common Ground for Multiparty Problems*, Jossey-Bass, San Francisco, page 5.

housing conditions. The most dramatic change occurred with the introduction of three-phase electricity. This allowed for an increase in the number of small recycling workshops and for the provision of power to operate plastic-granulating, rag-pulling and other machines that are now extensively used in the settlement. The establishment of the composting plant helped in the disposal of unusable waste, thus reducing fire hazards and toxic fumes and contributing to improvements in environmentally degraded conditions. However, water supply and sanitation were still considered inadequate as a result of a limited budget allocation.

Planners had anticipated that most houses would not be connected to a central sewage system but would use pit latrines and public toilet facilities as a result of a ZEDP policy to avoid expensive pumping stations. By 2004, nearly half of the sampled households had hired contractors to make illegal connections to their houses from the main sewerage networks, and were thus able to introduce private toilets. But failure to anticipate these technically illegal measures has led to frequent leakages, damage to the pipes and overflowing sewage for two-thirds of the sampled houses with illegal sewage connections. Fifteen per cent of respondents adopted traditional methods of dumping wastewater on the street, in the *zeriba* or on vacant land, with one-third using septic tanks for drainage. Concerned about cost-recovery and affordability, planners of the 1980s upgrading programme had initially installed public taps in the settlement; these were still being used by three-quarters of the sampled households in 2004,⁽³⁹⁾ with one-quarter of the respondents remaining dependent on vendors who transport water by donkey cart to their houses from nearby Manshiet Nasser settlement.

Householder satisfaction regarding public spaces varied. One-third of those interviewed in 2004 emphasized the importance of multi-functional open areas for entertainment, socializing, animal-rearing activities and cultural events. Special attention was given to the need for spatial demarcation between semi-private pig sheds (*zeriba*) and semi-public transitional areas. Two-thirds of respondents expressed concern about traffic congestion and narrow unpaved roads within the settlement and the need for emergency vehicles to have better access. Despite their scepticism about the government's ability to deliver appropriate services, most respondents considered future urban improvements in the area to be the state's responsibility.

It is important to contrast the 1980s and 1990s developments and upgrading experience with the current 2004 changes within the *Zabaleen* settlement as a result of the official top-down privatization of waste management procedures and state relocation plans for recycling activities. These plans will endanger people's security of tenure and community investments in housing and infrastructure development while disrupting a sustainable waste management recycling and recovery system that provided the means of livelihood and micro-enterprise economy within the settlement.

c. Stakeholders' attitudes towards the privatization programme and proposed relocation plans

In focus group meetings, different stakeholders⁽⁴⁰⁾ were able to express their views regarding the privatization and relocation plans (Table 3). Table 4 reveals their opinions regarding the project's impact and influence. Stakeholders' attitudes and evaluations were affected by such factors as socioeconomic characteristics and political, institutional and

Table 3: Priorities according to both primary and secondary stakeholders	
Housing and public facilities	Community development initiatives
Upgrading old housing stock for low-income garbage collectors while developing long-term plans for relocation of middle- and high-income groups to new settlements.	Mobilization of community action groups and local participatory tools for the establishment of small-scale business enterprises.
Involvement of NGOs and housing corporations in short-term strategies for improving public spaces, open landscape areas and public facilities.	Consideration of <i>Zabaleen</i> settlement as an environmentally innovative community rather than a stigmatized, ghettoized enclave, through the encouragement of pilot environmental projects based on public-private partnerships (environmental city farms/urban agriculture).

SOURCE: Based on field survey, January–February 2004.

cultural affiliations.

The residents most affected by the relocation plans, the 40 *Zabaleen*, were either tenants or house owners. Their negative attitudes towards the government’s plans focused on the expected loss of their recycling economy and associated activities, and on the threat of eviction and lack of security of tenure among house and *zeriba* owners. The five community leaders (all Gammiya representatives), despite being residents of the Muqattam area, expressed less concern with the physical dimension of the relocation plans while emphasizing the consequences of economic loss on the community’s livelihood and social cohesion. Their upward social mobility enabled them to seek housing options in the adjacent district of Manshiet Nasser and in nearby central districts of Cairo.

Non-residents of the area were affected by the waste-restructuring scheme but not by the proposed future relocation plans. The *Wahiya* were pragmatically in favour of the government’s plans in terms of environmental improvements and job creation, based on their expectation of being included in future partnerships with multinational companies in sub-contracting solid waste distribution and in staff recruitment. Local Cairene householders, while initially enthusiastic about environmental improvements within their neighbourhoods, were sceptical about the economic benefits they might gain from the privatization project, rejecting the government’s plans to have them pay extra fees for services provided by multinational companies.

Secondary stakeholders’ views generally coincided with those of non-resident primary stakeholders, with an emphasis on the broader environmental and political aspects of the project. The political representatives and CCBA officials were less concerned with local garbage collectors’ interests than with improvements in Cairo’s environment and the economic gains from the new recycling business. Staff from both the EEAA (Egyptian Environmental Affairs Agency) and multinational companies stressed the technical aspects of the project in terms of the effective use of recycling resources and improved environmental quality standards. Local NGO staff members anticipated the positive impact of the project in developing environmental awareness and in creating community networking. Members of CID were more critical of the project’s consequences for the *Zabaleen* community in terms of the loss of their economic base and the threat to their

Table 4: Stakeholder analysis of projected project impacts			
Stakeholder	Respondents' expectations	Potential project impact*	Relative priorities of interest**
<i>Primary stakeholders</i>			
Residents: Local low-income garbage collectors (Zabaleen house-owners/tenants)	Improved job opportunities Infrastructural provision Housing security and affordable rents Clean environment Income-generating activities Sustainability of recycling economy	(-) (-) (-) (+/-) (-) (-)	1
Residents: Community leaders (Gammiya representatives)	Community livelihood Service facilities Social cohesion within community Recycling economy	(-) (+/-) (-) (-)	1
Non-residents: Wahiya (local contractors)	Improved job opportunities Participation in the programmes Investment opportunities Increased infrastructure and service accessibility	(+) (+/-) (+) (+/-)	2
Non-residents: Local Cairene	Improved environmental conditions Improved work opportunities for local community Clean and healthy environment for local community Improved waste management services within Cairo Increased recycling resources	(+) (-/+) (+) (-/+) (-)	2
<i>Secondary stakeholders</i>			
Official view – less local involvement	Removal of slums and environmentally degraded areas Control over resources	(+) (+)	3
Political representatives	Public support	(+)	
Cairo Cleaning and Beautification Authority (CCBA)	Job opportunities Access to funds Publicity and political achievement Environmental improvement Better service provision	(+) (+/-) (+/-) (+) (+)	2
Technical view – Less local involvement	Control over funds Political recognition Expansion of project to surrounding areas	(+) (+) (+/-)	2
Egyptian Environmental Affairs Agency (EEAA)	Improved environmental consideration Effective use of resources	(+) (+)	
Entrepreneurs and multinational companies	Increased business opportunities Garbage-free area Pollution-free environment Ownership of project Increased recycling facilities	(+) (+) (+) (-/+) (+)	3
NGOs' view – More local involvement	Institutional learning Achieving environmental awareness objectives Generation of additional funds Developing a credible programme Coordinated action Greater involvement of NGOs Educational opportunities	(+/-) (+) (+/-) (+) (+/-) (-/+) (+)	2
Association for the Protection of the Environment (APE)			
Community and Institutional Development (CID)	Improved job opportunities Security of tenure Additional public facilities Increased public awareness Networking and cooperating with local community Liaising with local municipality	(-) (-) (+/-) (+) (+) (-)	2

* Potential impact of project according to respondents:

(-) negative impact/negative response (+) positive impact/positive response

(+/-) more likely to have positive impact than negative (-/+) more likely to have negative impact than positive

** Relative significance of overall project in meeting respondents' needs:

1 highest significance 2 intermediate significance 3 least significance

SOURCE: Based on field survey, January–February 2004. See also Burton, Salma (1999), "Evaluation of healthy city projects: stakeholder analysis of two projects in Bangladesh", *Environment and Urbanization* Vol 11, No 1, April, pages 41–52.

security of tenure within the settlement. In contrast, those affiliated with APE were more strategically aware of the wider sociopolitical and economic significance and benefits of the project.

A more detailed examination now follows, drawing on the reactions of various sub-groups of stakeholders according to six main themes directly relevant to the privatization plan and proposed relocation scheme, as identified in Table 4.

Recycling activities and housing conditions. *Zabaleen* respondents pinpointed security of tenure as a problem. Most of them had no official documents to prove their ownership of buildings, and thus faced possible eviction with minimal compensation. Questions were raised about eligibility for compensation, about whether there would be enough replacement housing and where it would be located, and whether it would be accessible to employment and to such services as schools and health centres.

The situation was more stressful for those low-income garbage collectors who had set up small-scale recycling enterprises in the area, as they feared losing their livelihood sources and traditional economic activities. They were reluctant to agree to proposed relocation plans and to "...regularizing location of their recycling enterprises in the new areas". This regularization process is usually complex, involving bureaucratic delays and considerable expense.⁴¹ While they sought assistance and legal advice from local NGOs, they called for a sustained campaign in support of their case, particularly as they anticipated eventual eviction from Muqattam. A number of respondents expressed their anxiety:

"I will not work anymore if this happens. I won't be able to afford to. If I am forced to move my work to the desert and leave my wife and daughters to work 20 kilometres away from home, then I will stop collecting Cairo's rubbish... My family earns about LE 500 (US\$ 83) a month, which is more than enough... But moving to Qatamiya will cost more in transportation... This has been our home for many years now. We have grown up, worked and raised families here. We want things to change for the better, for systems to improve, for new equipment and technologies to be implemented.

It seems the decision has already been made. There are not many alternatives for us. But I don't want to move anymore. We have already been forced to move and change many times in the past. What will happen in another 30 years? When will this end?"

In spite of recent privatization plans and official restrictions on their activities, the *Zabaleen* continue to collect waste garbage alongside the operations of multinational companies and local municipalities, an indication of ongoing competition for Cairo's daily garbage. The *Zabaleen* work throughout the day in shifts, and each group sorts the garbage on-site into piles of cardboard, glass and plastic for later collection by donkey carts, mini-cabs and small trucks, as well as on foot.

Community livelihood and social cohesion. The five interviewed Gammiya representatives expressed dissatisfaction as a result of their lack of involvement in the initial launching stages of the waste-restructuring project, emphasizing that their influence would have been instrumental in developing awareness among the *Zabaleen* of the objectives of the privatization plans. While these community leaders were initially interested in the project in terms of its urban development potential, they suggested a six-month trial period to ascertain the possible damage to the local economy as a result of the relocation of recycling activities. This suggestion was opposed by most *Zabaleen*. These community leaders were anxious about the *Zabaleen's* fate as a consequence of the privatization plan, which would

41. See reference 28.

disrupt the economic structure, social ties and community networks in the area. They expressed a need to find employment for the *Zabaleen*, whose only skills are related to the labour-intensive garbage activities in which whole families are involved. They proposed a poverty alleviation programme to inform and convince officials to reverse their decision to evict and move the *Zabaleen*.

The political aspects. Officials from the Cairo Cleaning and Beautification Authority (CCBA) regarded the *Zabaleen's* indigenous methods of garbage collection as unhygienic, and were optimistic about the prospect of investors and businesspeople establishing 10 to 12 new recycling facilities in Cairo's eastern fringes. While the *Zabaleen* had previously recycled some 80 per cent of the waste collected, foreign companies are required to recycle only 20 per cent, with the remainder going into a new landfill. The *Zabaleen* would continue to collect garbage but they would be working for foreign companies that would also be responsible for street sweeping and placing garbage bins. Officials at CCBA, however, seemed to be overlooking the fact that the large companies cannot collect from narrow streets because their mechanized equipment is too big. The companies require residents to take their garbage to central collection points, whereas the *Zabaleen* were able to collect waste from individual houses, even if these were located in narrow alleyways. Local Cairenes, especially those in slums and shantytowns, care more about their municipalities' failure to collect garbage from their homes than about where the government chooses to dispose of the waste. Cairo's households are expected to pay for privatized garbage collection through a monthly rate based on their electricity bill. Objections to this were expressed by Cairo residents who preferred to maintain the traditional system of relying upon the *Zabaleen* for garbage collection. Recently, the High Administrative Court produced a verdict nullifying the extra monthly payment imposed on households as illegal and unconstitutional.

Technical improvements. In advocating the composting of garbage, a leading staff member of the waste management programme at the Egyptian Environmental Affairs Agency (EEAA), stressed:

"The recycling facilities are important because of the need to maintain a clean environment, rather than for making money. If the recycling facilities are aimed at maximizing profits, then they are unlikely to be interested in the garbage of the poor. Sixty per cent of the garbage can be turned into compost but the remaining 40 per cent cannot. This will be a particularly acute problem when facilities are set up in Upper Egypt. Where are they going to find the markets for recycled products such as plastics, metal and paper?"

Representatives from AMA (the Italian company responsible for Cairo North, an area housing 2 million inhabitants and approximately 400,000 households) claim that they plan to hire and train about 2,500 *Zabaleen*. A member of staff at AMA asserted:

"It is our strategy to employ the local Zabaleen. We want to avoid conflict and this satisfies the social component of our contract. We want to promote them to be up to international standards. Recyclers will still be able to go to landfills and take what they want before the garbage is buried. In the landfill, you'll get hotel waste, which might be 100 per cent recyclable. So I think the average recovery rate might be 50 per cent."

Yet despite the benefits promised under foreign management, and while company sources mention salaries ranging between LE 300 and LE 450 per month (US\$ 50–75), some *Zabaleen* claim that the salaries on offer are actually closer to LE 150 per month (US\$ 25). Similar figures were given by one garbage collector and sorter with eight children, who claimed to make LE

10 a day (US\$ 1.60) compared to the LE 5 a day (US\$ 0.80) offered by the foreign contractors. It appears that the companies realized that keeping the *Zabaleen* completely out of the system was not an option if they wanted the waste disposal job done. Instead, foreign companies have started hiring the *Zabaleen* as sub-contractors, paying them LE 0.85 (US\$ 0.14) for each apartment from which they collect garbage. While this is less than the previous collection fee of LE 3 (US\$ 0.50) received from the *Wahiya*, the new arrangement gives them access to garbage for recycling. However, the *Zabaleen* claim that they make 90 per cent of their income from recycling the garbage rather than from the collection fee.

Community empowerment and networking. Respondents at the local NGO, Community and Institutional Development (CID), expressed reservations about the impact of the privatization of garbage services on the Muqattam *Zabaleen* community and of the role played by large international waste collection companies. Members of CID are strong opponents of the decision to force the 27,000 Muqattam workers to relocate their recycling operations.⁴² While a leading member of CID appreciates the government's desire to keep the city clean, he admits to the adverse social effects of the project:

"The Zabaleen are facing a real crisis. The authorities need to look at the effects their decision could have on local income, employment, economic growth, trade, manufacturing and environmental conditions. I would like to see the operations of the Zabaleen formalized and given a fair chance to use new recycling technologies. The idea of moving them to the desert and squeezing them further out of their trade is not right....These contracts are costing the city big money. Why not spend just 10 per cent of such a budget to upgrade the Zabaleen system? It's a catastrophe. Overnight, 50,000 people could be out of their jobs. They have built so much with so little."

Several options for integrating the *Zabaleen* into the international companies' contracts were explored during interviews with staff members at CID, raising the issue of local-global confrontation and the possible contribution of a private-public partnership (PPP). The *Zabaleen* could act as sub-contractors, as they implement a "segregation system", separating organic from non-organic waste. They could continue to collect household waste while medical and industrial waste and landfill management could be handled by multinational companies. Transfer stations could be established where a major proportion of non-organic waste could be recovered and directed to existing traders. The *Zabaleen* could receive inorganic waste from companies as input to their recycling businesses, as small community-based composting facilities are established. In such ways the traditional informal *Zabaleen* system could be integrated into the new privatized large-scale waste collection system to the mutual benefit of both sides. Despite such suggestions, recent developments have demonstrated the unlikelihood of fruitful local-global partnerships. Instead, international companies favour training the *Zabaleen* as waged employees, while allowing them to search landfill sites for organic waste for their pig-rearing activities.

Environmental awareness. Since 1984, the local NGO, Association for the Protection of the Environment (APE), has been working with the *Zabaleen*, integrating literacy and health services with income-generating activities related to paper-recycling units and to an organic composting plant.⁴³ A degree of antagonism has developed between the APE and Gammiya, with the latter being criticized for representing only the privileged families and for failing to promote the interests of the poorest garbage collectors. This conflict was further aggravated when the APE asserted that

42. See reference 23

43. Association for the Protection of the Environment (APE) (1993a), "Paper recycling: a cooperative venture of the women of the *Zabaleen*", unpublished document, Cairo Governorate; also Association for the Protection of the Environment (APE) (1993b), "Proposal for upgrading and expansion of the *Zabaleen* paper project", unpublished document, Cairo Governorate.

moving garbage waste and animals away from the *Zabaleen*'s homes could improve environmental conditions within the settlement, thus expressing support for the plan to transfer waste services to Qattamiya. It is anticipated that the APE is more likely to act alongside both government agencies and the big companies in setting up and in administering new recycling activities at a local level, with the *Zabaleen* garbage collectors being engaged as waged labourers. One affiliated member of the APE stated:

"It's the best idea available. There is no reason why it won't work. I don't know why people are complaining. It will improve living conditions for everyone, especially women. I understand there is opposition now, but I'm sure in time the people of Muqattam will understand the benefits the government's move will have for them."

IV. CONCLUSION

THERE IS A need for an overall strategy that considers the *Zabaleen* community within the larger framework of an Egyptian economy that is unable to create sufficient jobs or provide affordable housing for a large proportion of its population. As with the tomb dwellers and residents of nearby cemeteries of the "Cities of the Dead", the popular perception of the *Zabaleen* is still negative. The uniqueness of the *Zabaleen* community and its comparability with dynamic squatter communities elsewhere should be appreciated before plans to move it to new desert locations are implemented. This drastic relocation of *Zabaleen* recycling activities, and the subsequent resettlement of people, is likely to meet with failure given the authorities' apparent misunderstanding of the complexity of this multifaceted society.

Both local NGOs, APE and EQI,⁽⁴⁴⁾ are likely to have new roles under these changed circumstances. While the *Zabaleen* are facing a dramatic and disruptive situation, the *Wahiya* and these local NGOs can be expected to develop new mechanisms for cooperation with the international companies and with their recycling businesses relocated to Cairo's eastern fringes. These expectations of collaboration between NGOs, the *Wahiya* and the international companies are based on APE's positive reaction to the privatization plans and to the claimed possibility of improving the *Zabaleen*'s livelihoods. Further support for this comes from EQI's reports that these moves would allow the *Zabaleen* to shift from being dependent on the professional assistance of the World Bank and various foreign funding agencies. Despite EQI's involvement with the *Zabaleen* since the launch of ZEPD in the 1980s, its reports raise the question of the NGO failure to empower these people through community initiatives and to assist them in building communication channels with government agencies. There have been conflicts between APE and Gammia community leaders regarding recycling activities since the 1980s, and APE's business interests now appear to prevail over their supposed role of supporting the *Zabaleen* community.

Despite an official policy in the 1980s that sought to regularize and legalize Muqattam *Zabaleen* areas, and despite denials concerning plans for future evictions of the local community, interviews with key government officials reveal that they justify such resettlement schemes as potentially "improving the environment" and "providing the *Zabaleen* with safer and more sustainable settlements". The *Zabaleen* have a far weaker legal position from which to fight eviction or to negotiate for compensation and concessions (time, and support for moving and acquiring alternative accommodation).

44. Environmental Quality International (EQI) (1982), "Strategies for upgrading solid waste management in Cairo: policies and programmes", Report No 5, Solid Waste Component, First Egypt Urban Development Project, Cairo.

Government “low-cost” resettlement housing schemes that are already established in Qattamiya have delivered too little for other relocated squatters, the tomb dwellers of the cemeteries,⁽⁴⁵⁾ since this housing has often ended up in the hands of middle-class groups. Selected sites for relocation in Qattamiya are too far from the city centre, and transport services are infrequent. Faced with increased travel costs, together with the unwillingness or inability of government authorities to increase the supply and reduce the cost of housing production, infrastructure and service provision, the poor garbage collectors might decide to abandon their sustainable traditional economic system and join Cairo’s underemployed poor. Alternatively, they might decide to return to their ancestral villages in Upper Egypt to seek work as landless temporary agricultural workers.

Behind the declared objectives of improving the *Zabaleen*’s livelihoods and the settlement’s environmental conditions lies a wider but hidden agenda involving urban redevelopment of this part of the city.⁽⁴⁶⁾ Recent efforts in the gradual resettlement of the squatter tomb dwellers of the “Cities of the Dead”,⁽⁴⁷⁾ and the relocation of supposedly noxious workshops from the old city would seem to act as precursors to the relocation of the *Zabaleen* to Qattamiya.⁽⁴⁸⁾ Since the *Zabaleen* settlements lower the value of the surrounding land and its housing, and in a bid to “beautify” Cairo and maintain and enhance land values, land developers and investors may make large profits by doing nothing more than clearing the site and holding the empty land for property speculation.

Ideally, community leaders should play a key role in empowering the *Zabaleen* to organize the struggle of the poor for land on which they could build their homes and for the right to manage their own settlements. There is a need to strengthen the capacity of low-income *Zabaleen* groups to negotiate with local authorities and to reach agreement on partnerships between community organizations, local NGOs and municipalities, in order to address poverty alleviation strategies, to improve access to public services, to seek legal solutions and official recognition for low-income households occupying land illegally, and to ensure greater flexibility in the application of building codes and infrastructure standards.

45. See reference 28.

46. Fahmi, Wael and Keith Sutton, (forthcoming), “Cairo’s *Zabaleen* garbage recyclers: multinationals’ takeover and state relocation plans”, Paper submitted to *Habitat International*.

47. See reference 28.

48. Sutton, Keith and Wael Fahmi (2002), “Rehabilitation of historical Cairo”, *Habitat International* Vol 26, No 1, pages 73–93; also Fahmi, Wael and Keith Sutton (2003), “Reviving historical Cairo through pedestrianization: the Al-Azhar street axis”, *International Development Planning Review* Vol 25, No 4, pages 407–431.