

# Urban development of informal areas: Case study: Ezbet El Zabaleen (Garbage city), Manshiet Nasser, Cairo, Egypt

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**Abstract**— in numerous parts of the world a huge number of individuals live in informal urban settlements especially in developing countries. UN-Habitat (2006) gauges that almost 1 billion people all over the world ( 32 percent of the world's urban population) live in what are differently known as squatter settlements, slums, informal settlements or deterioration areas without access to fundamental services or state-accepted property or tenure rights. Enhancing quality of life in slums is one of the development goals for new millennium. This paper is centred on slums and slum inhabitant' life conditions in Egypt. Government must make an action and consider good policy options to prevent creating new slums and have appropriate upgrading programs for improvement life condition of slum dwellers which are proposed in this paper. The main aim of this paper is to study and examine slum areas and their living conditions, and finding out the most critical and hazardous zone of the slums.

**Index Terms**— Slums, informal Settlements, Ezbet El Zabaleen, garbage city, Manshiet Nasser, Land Readjustment.

## I. INTRODUCTION:

Numerous portray slums in Egypt as ticking time bombs holding up to go off at any moment. This paper gives a general his paper provides a general overview of slums which related to quick urbanization and other socio-economic transformations that took place in developing countries over the past four decades, whereby Egypt is no exception. Urban informality has now turned into the predominant component of Egyptian urban areas. It can be argued that it is planned urban development not informality that is becoming the exception. Indeed, even planned areas have significant informal aspects, from housetop inhabitants in Cairo to the uncounted floors recently added in defiance of the building code in normal residential districts and new cities Informality.

### A. Problem definition:

The slums issue in Egypt started with the quick urban extension of Egypt's cities at the beginning of the twentieth century. The centralization of government offices and huge businesses and industries in these cities prompted the creation of significant employment opportunities, and along these lines to the expansion of internal migration; a provincial mass migration to urban areas was made by people looking for job opportunities. Slums zones in Egypt are situated on the edges of the cities, and Slum inhabitants represent 37% of the nation's urban population and 20% of the total population.

### B. Objective:

It is to enhance the living conditions and subsequently lessen potential wellbeing dangers to poor inhabitants in Manshiet Nasser by rehabilitating, redesigning and upgrading the physical condition; this includes new construction instead of the deteriorated ones, the provision and extension of public spaces, secure water supply distribution system, the implementation of an organized sewerage system and to a lesser extent the upgrading of the road network.

### C. Methodology :

The main methodology used in this study is presenting qualitative and explanatory research focused on upgrading deteriorated and unsafe areas in which solve the situation of slums in Egypt. It explains a case study by using strategies of upgrading and development. It also uses professional experience and lessons learned from observation the slums and interacting with slum inhabitants in Egypt.

### D. Structure:

The structure of this paper is as follows: section one is a literal reviews on the History of Informal Settlements in Cairo, what constitutes it. Section two focuses on types of informal areas in Cairo with more details. Section three explains a case study (Ezbet El Zabaleen) and how to develop and upgrade this area and what is the strategy and policy. Section four includes the concluding remarks.

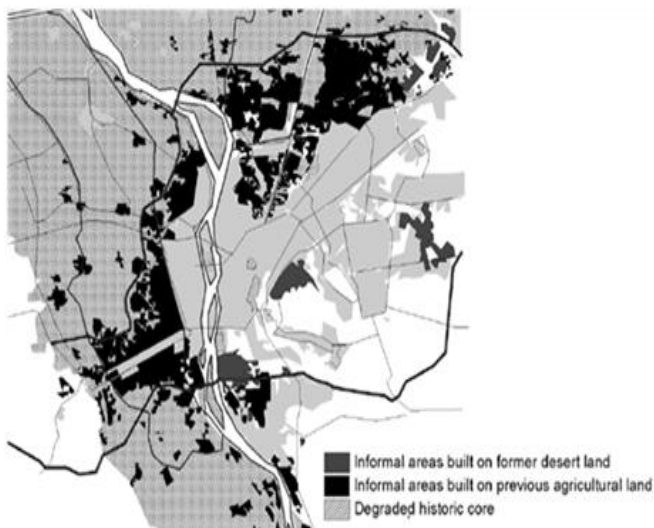
## II. THE HISTORY OF INFORMAL SETTLEMENTS IN CAIRO:

Informal development has been, and keeps on being, the predominant method of urbanization in numerous developing countries, including Egypt. In spite of 30 years of effort by the government to reduce and limit unplanned growth and urban expansion on agricultural land around Cairo, as it has in most Egyptian towns and cities, informal settlements around Cairo accommodate more than 7 million inhabitants in 1998. Starting of 2006, they are assessed to contain more than 65% of the number of inhabitants in the city (10.5 out of 16.2 million inhabitants), and the rate of population growth in these areas is higher than other city averages, growing 2% between 1996 and 2006. In Greater Cairo, these phenomena started soon after the Second World War, when movement from Upper Egypt and the Delta brought housing pressures to become critical. Migrants pulled in by financial improvement then happening in Cairo, matched with the huge industrialization approach dispatched by the president, Gamal Abdel Nasser. The earliest of these migrants, for the most part young fellows, settled in central or historical zones of the city, where they leased and shared houses or rooms. Later, accumulating a few funds, some of migrants were able to buy and build upon land on the edges of the towns situated in

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marginal part of the city, for example, Kit Kat in Imbaba or Mit Okba in Agouza, both of which are in Giza Governorate where the land market was less expensive than in the central areas. This period additionally saw the start of the phenomenon of squatting on state-possessed area, for the most part in the east of the capital, for example: Manshiet Nasser and Kum Ghurab in Cairo Governorate. Actually, the extension of Cairo's informal areas is expected to rising neediness levels, as well as has been encouraged by the combination of a series of deliberate policy choices and by business sector elements which were not appropriately managed. Public housing projects have been lacking to fulfill the expanding request, and since the 1970s the production of houses has been moved in the alleged New Towns, satellite settlements on desert land planned to occupy urban development far from rich and rare agricultural land. These New Towns were relied upon to assimilate a large portion of the anticipated population growth between 1998 and 2017 (General Organization for Physical Planning, 1998; Ministry of Housing Utilities and Urban Communities, 2000), however their separation from the center of the city, and in addition their absence of services and of economic opportunities made them unattractive to low-salary families. As indicated by the enumeration, the inhabitants of all New Town in 1996 added up to 149 000, and became 600 000 in 2006, an expansion of 14.9%. This figure around 3.7% of the number of inhabitants in Greater Cairo Region is well below the government's expectations. Indeed, the growth of Cairo's informal areas is expected to rising poverty levels, as well as has been fostered by the combination of a series of deliberate decisions, and in addition by business sector flow which were not appropriately managed.

### III. TYPOLOGY OF INFORMAL AREAS IN CAIRO:



Typology of Informal Areas in Cairo map

Source statement: Directorate General of Information and Documentation Release date: March 2012

In the Greater Cairo Region (GCR), the following types of slum and informal areas can be characterized:

Informal settlements on	Type A former agricultural land	Type B former desert state land	Type C Deteriorated Historic Core	Type D Deteriorated Urban Pockets
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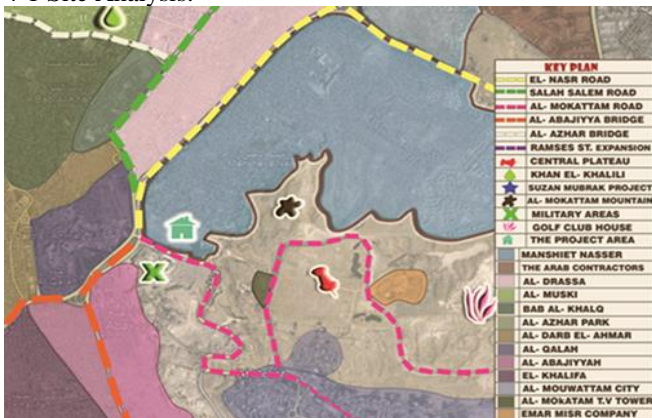
Emplacement	Agricultural land	Vacant state land	Neighborhoods with old, crowded, and deteriorated structures	Dilapidated storey structures
Layout/Pattern	Irrigation patterns / No open public spaces	Incremental subdivisions	Old buildings and medieval urban fabric	N/A
Plot	Smalls: Average 80m <sup>2</sup>	First: Quite large plot, then subdivided by owner or pioneer	N/A	N/A
Material	- Concrete frame - Floor slab construction - with red brick infill walls	Housing conditions are generally worse than Typology A	Generally deteriorated buildings	Very precarious type of housing
Process of construction	Incremental (Room by room and floor by floor)	N/A	N/A	This type represent less than 1 percent of urban population. Most are slated for removal or have already been converted in parks.
Legal situation	Completely illegal: No legal paper work	Completely illegal: No legal paper work but it is quite easy to become formal	As a result of confusing ownership and/or owner neglect	Due to precarious land tenure situations
Income sources	One can find professionals and other kind of workers, more related to middle class income	Income heterogeneity	Income heterogeneity	Income heterogeneity
Who lives there	- Illiterate female: 40.3% - Illiterate male: 28.9% - Households living in Single Room: 18.7% - Household without Public water supply: 21%	- Illiterate female: 65.9% - Illiterate male: 53.4% - Households living in Single Room: 26.5% - Household without Public water supply: 33.3% - Only in Manshiet Nasser people work in: - 12.4% public sector - 16% private sector - 65% Self-employment	Quite poor families: - Illiterate female: 48.9% - Illiterate male: 36.8% - Households living in Single Room: 32.7% - Household without Public water supply: 32.1%	Very poor families or "Ultra poor families"
Examples	Boulaq el Dakrou, Waraq el Hadir, Basatiin, and Embaba	Manshiet Nasser	Darb el Ahmar and El Gamalia, and parts of Masr el Qadima, Boulaq Abou Aala, El Khalifa, among other	Masr el Qadima, Hekr Sakakini in el Wali, and Teraa el Towfiqia in Mataria.

According the above stated four types of slum/informal areas, we find that types A and B are widely spread in Cairo.

IV. MANSHIET NASSER ‘GARBAGE CITY’:

Manshiet Nasser is one of Cairo's biggest informal settlements. The territory among the foothills of the Mokattam Mountains has been developed subsequent to the late 50s and mid 60s by rural migrants from Upper Egypt. Manshiet Nasser is home to between 800,000 to 1 million inhabitants. While still an exceptionally poor zone of Cairo. The former slum has developed such a great amount over the previous years that it is currently practically situated in the downtown area. There are a little industrial area has generated income from recycling and traditional hand craft works; in between the multistory buildings, small enterprises, shops and teahouses. The people in Manshiet Nasser are working towards their own future, in any case, settlement of the government owned land mostly occurred with no approval, land titles and construction arranges simple dwellings being raised along the Autostrada, slowly extending toward the east as more migrants arrived. Subsequently the urban development is very aimless and completely deficient with regards to any legal basis and proper administrative infrastructure. The Egyptian government had neglected its initial plan to demolish the squatter settlement in 1997, and chose rather to transform Manshiet Nasser from an informal area into a legalized area.

4-1 Site Analysis:



Source: Shirwet Hassan, Google earth.

The Map above defines the areas which surround Manshiet Nasser, the main roads, bridges, and important Landmarks.

4-2 Manshiet Nasser consists of 12 parts:



Source: Shirwet Hassan, Google earth.

Num.	Area
1	It called Ezbet Bekhit.
2,3,4,5	The most densely populated areas appear to be the oldest and more consolidated core of the district. With peaks of 1503 people per feddan.
6	The percentages of people who are attending the University is almost negligible and tend to increase in older areas.
7	Ezbet El Zabaleen is the one with the lowest level of unemployment.
8	It called Wadi Faraoon. The urbanization process started only recently (and is still ongoing) presents low residential densities.
9	Is the poorest, with more than half of the residents relying upon less than 250 EGP per month, and 50% of the residents are illiterate.
10	It called Duweika. More than 100 people killed in 6 Sept. 2008 and wounded dozens of others in the collapse of boulders. Large proportions of poverty.
11	New extension, as Suzan Mubarak project was built.
12	Extension of Manshiet Nasser areas.

Source: GTZ-MN planning areas (Elena Piffero, 2008).

V. CASE STUDY: EZBET EL ZABALEEN:

It's also called garbage city, Elzaraib or pig city. This part from Manshiet Nasser is eminent for having every space of it covered in garbage, including the streets, buildings and rooftops of the settlement. These heaps of garbage are the consequence of the Cairo Metropolitan Area having never settled an efficient garbage collecting system, regardless of having a population of almost 20 million. The inhabitants of Manshiet Nasser mostly Coptic Christians have filled this area for as long as 70 years. These informal garbage collectors gather the waste of Cairo's inhabitants in a door-to-door service for a little fee and afterward transport it by donkey carts or pick-up trucks to their homes in Manshiet Nasser. They sort the waste and garbage for recyclable material. The gathering of the waste is customarily the men's work, while ladies and kids sort the rubbish.



The map above defines the part from Ezbet El Zabaleen which the development and the upgrading will be applied.as:

Total area of the study = 13 feddan.

General density = 385 person/ feddan.

Current population = 5000 person approximately.

Population in 2025 = 8000 person approximately.

5-1 The maps below show the survey of the current situation after visiting the site location and then listing the data:

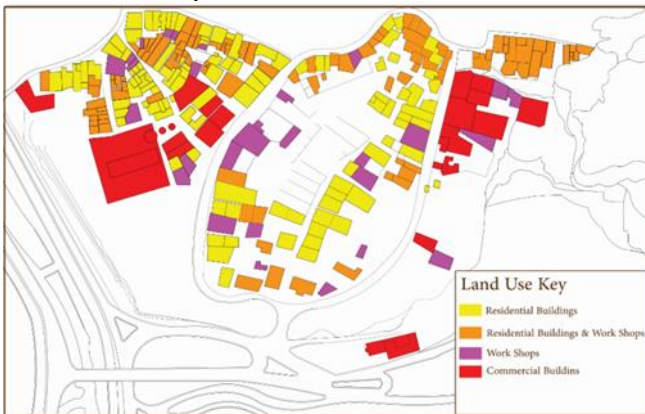
5-1-a Building Condition map:



5-1-b Building heights map:



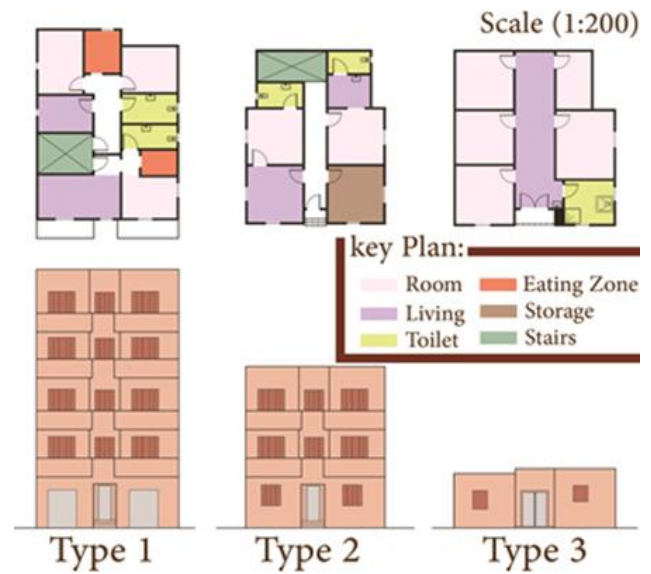
5-1-c land use map:



5-1-d population density map:



5-2 Existing housing types:



5-3 SWOT analysis:

5-3-a Strengths:

- S1: Using the productivity of the Zabbaleen in collecting and rendering waste gathering and elimination services to a city as huge as Cairo to set a base for recycling and solid waste project creating job opportunities.
- S2: the ability of increasing the service capacity of Ezbet elzabbaleen.
- S3: The Integration between the NGOS and the inhabitants of this local community.
- S4: Area upgrading and project infrastructure project.
- S5: Creating job opportunities for the unemployment problem through the small industries project.
- S6: The soil in the area is rocky soil so we don't need a deep foundation in the new constructions and developments.

5-3-b Weakness:

- W1: Lacking for water supplies in zabbaleen and the aggregate ignorance from the government.
- W2: the absence of the effective investment and participation from the government with the inhabitants of local community and NGOS.
- W3: The absence of the government participation in solving the issue and considering it as a hopeless case.
- W4: The government doesn't take any actions or responsibility towards any upgrading actions in zabbaleen.

5-3-c Opportunities:

- O1: Community Participation.
- O2: Connecting Environmental Improvement to Enterprise Development.
- O3: The ability to coordinated and cooperative partnerships between funding, development and community agencies and the government.
- O4: Partnership including Funding Organization to support the development projects.

5-3-d Threats:

- T1: the unacceptable living conditions.
- T2: the overcrowded population with the bad living conditions.

T3: the lack of security and safety.

T4: the lack of services educational, health, commercial, or infrastructure.

#### 5-4 Problem definition:

##### 5-4-1 Environmental problems:

a- High incidence of poverty and unemployment.

b- Insufficient market space as its only two markets covering the whole district.

c- Unavailability of garbage recycling workshops in sufficient numbers.

d- a lot of people works in temporary and irregular business.

##### 5-4-2 Environmental problems:

It includes environmental pollution such as:

a- collecting and burning garbage and aluminum factories which helped to spread eye diseases, deafness and respiratory diseases due to exposure to dust and silica, which leads to disease ossification respiratory.

b- Raising pigs in the residential areas causes poor health and environmental pollution.

c- Lack of open spaces and green areas.

##### 5-4-3 Physical problems:

a- Access:

There are many severe problems of accessibility for inner areas and difficult pedestrian circulation. Street not paved and too narrow to allow vehicles to circulate, frequent cliffs and steps, dead-ends.

b- Construction:

There are unsafe areas, which rocks Collapse on the kiosks and residential buildings. Some buildings have a bad construction as it may fall in anytime.

c- Infrastructure:

The area of the case study lacks of facilities like water network, electricity, sewage, and phone networks. Most residents is not connected to sewage network and that leads to pollution of the environment and the spread of germs. The sale of water: spread the problem of the sale water in high prices as a result of permanent water cuts in these areas.

##### 5-4-4 Social problems:

a- Unemployment.

b- Spread bullying and thefts among youth and adolescents due to the unavailability of security services to control all areas of the neighborhood. In addition to the spread of the (under the ladder factories) for forging products with brand name, whether local or global.

b- It lacks of fire units, medical centers, children's libraries and youth centers.

##### 5-5 Measures of Intervention:

Land Readjustment strategy by keeping slum dwellers on the same site that accommodates their residence and other activities they used to have as essential for their livelihood. This new blended use improvement either involves the entire site or can be heightened in part of the site while leaving another part for different uses. This strategy is encouraging both public and private sector to develop slums to make utilization of the discharged area. The rights of slum

inhabitants have to be well guarded against pressures of developers to leave the site or accept unsuitable deal within the new development. Including the slum inhabitants in the new uses, be it commercial development, social services or open spaces, is gainful for both the maintenance of these facilities (observation by nearby inhabitants) and also for their socio-economic inclusion. This intervention mode gives physical infrastructure and basic public services to informal settlements. It targets informal areas with good construction conditions and in a combined phase of development. In the case of squatting on public land, servicing and upgrading can run together with area titling and deals. The methodology concentrates on the physical development of informal areas by executing some or all of the following measures:

a- Build new residential buildings with good conditions.

b- Upgrading the deteriorated constructions in the area.

c- Improving main and safe access to the area.

d- Paving and lightening main roads.

e- Upgrading infrastructure (water, sanitation, electricity).

f- Introducing and improving the solid waste collection system.

g- Constructing or upgrading public services (schools, health units, bakeries, youth centers, police and fire fighting stations, markets, etc.).

##### 5-6 Steps for implementation of the strategy:

a- Conduct a detailed survey and identify the unsafe and deteriorated zones based on the classification of buildings and then select the zones to be assigned for on-site redevelopment.

b- Gather detailed information about land owners, building owners and renters.

c- Temporary relocation of the inhabitants (with their participation).

c- Demolish the deteriorated structures of the selected area, based on detailed studies.

##### 5-7 Methodology of dealing with informal areas in Cairo:

a- urban criteria (size, history, location, urban type, building density, uses, potential for horizontal extension, type of structures, condition of structures, connection with regional roads, accessibility to utilities).

b- Population criteria (population density, population ratio of increase).

c- Social criteria (ratio of crime, civil society, institutions).

d- economic criteria (economic value, ownership).

e- Environmental criteria (environmental hazards and pollution).

f- Financial criteria (foreign cooperation, foreign corporations, private sector, NGOs.)

##### 5-8 Methodology to deal with such areas is as follows:

a- establish a stakeholder council for each area representing all parties concerned.

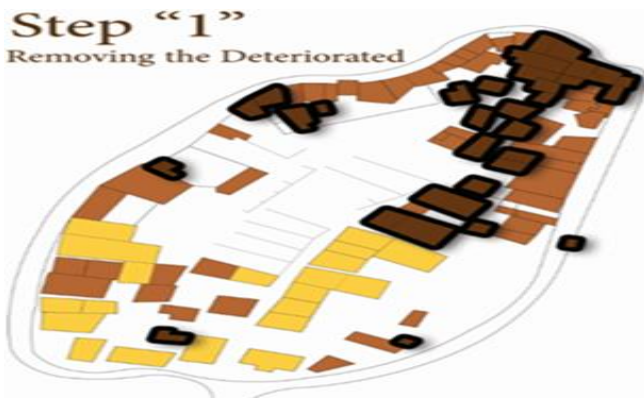
b- Finalize urban plans and determine the required services.

c- Define in the layout a minimum number of access roads and determine the required services.

d- Set the construction terms and criteria, and obtain elected councils' approvals.

d- Implementation and monitoring.

5-9 Steps of intervention:



Survey the buildings condition and Remove the deteriorated buildings.



Open new roads to improve the accessibility of cars.



Upgrade the area with its needs and open public spaces.

5-10 final proposed plan:



VI. MAIN OBJECTIVES OF THE PROPOSAL:

According to case study, it is important to define an integrated proposal for roads, new construction and open spaces, which aims to solve existing conflicts and weaknesses maintaining “the residential scale” and the special characteristics of the community. The main objectives of the proposal are: build new residential and public building with a good condition. Keep the existing conditions of the urban fabric improving the accessibility and internal mobility. Define open spaces for common activities. And improve the existing conditions and provide the conditions for an organized use of roads and open spaces.

VII. CONCLUSION:

The main challenge of the proposed approach is to achieve maximum results with minimum impact. For this, to improve the available resources and implement the first actions, a phasing plan was created dividing physical and organizational interventions. Most of the physical interventions can be achieved in short term and can result in qualitative improvement of living conditions. Therefore, the interventions of short term are essential steps for the long-term interventions due to the flow of continuity proposed in the plan. The strategy behind the phasing plan is to create a chain of actions that brings fast solutions for the most urgent problems and builds awareness not only regarding the community rights, but also regarding the potential of self-organization within the area.

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