Rural Villages Encompassed into Urbanized Areas of Egyptian Developing Cities

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エジプト成長都市における既存周辺集落の市街化に関する研究

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The continuous sprawl of Egyptian developing cities, coupled with the dysfunction of its planning system, has caused the process of encompassing peripheral villages into their urbanized areas. These villages have recently been confronted with the problems concerning the rapid socio-spatial transformations. So, this study aims to make arrangement of these general issues, and analyze on data gained from a pilot survey in El-Minya City. As results, this study points out the lacking of the planning system's reforms to basic guidelines for the redevelopment practices in these areas, and portrays the rural-urban relationship and the growth trends of Egyptian Cities. Finally, it clarifies the negatives and positives of these areas.

Keywords: *Urban sprawl, Urbanized area, Informal settlement, Residential environment, Land use plan*
スプロール，市街地，インフォーマル居住，住環境，土地利用計画

1. INTRODUCTION

1.1 Background

The urbanization process, particularly in cities of developing countries, became crucial as their urban population are expected to double in the next thirty years from some 2 billion in 2000 to almost 4 billion in 2030, while approximately tripling the built-up areas of cities with a population of over 100,000 [1]. These trends have occurred while melting the boundaries formerly recognized as barriers between cities and their peripheral villages, and further encompassing these villages into their urbanized fabrics. Actually, these encompassed villages, in developing countries, vastly differ from those found in developed ones.

In developed countries, rural villages have generally enjoyed higher standards of life-styles and more modern cultivating techniques than those in developing countries. Moreover, theses villages which have been encompassed into cities of developed countries have been created by the sprawl of low density urban developments. These developments that are mostly low-rise structures with front/backyards can co-exist with such villages. Hence, in this case, the emerging problem is the fear of swallowing up the rural lands and consuming the resources.

Differently, the encompassed villages, in many developing countries, have been formed due to sequential expansions of high density, and unplanned urban development of cities towards them. Gradually, many of these peripheral villages have become enclaves within matrixes of suburban housing estates and sometimes cores of informal expanded settlements. In addition to their threat by the swallowing up of their rural lands, these villages have been suffering from severe socio-spatial problems.

Accordingly, debates concerning such encompassed villages have been raised in last two decades, observing similar issues with mega and big cities such as in Kuala Lumpur of Malaysia [2] , Delhi of India [3], Shenzhen of China [4], Greater Cairo [5] and Giza of Egypt [6].

In Egypt, urban statistics and scholars [7,5,6] emphasized that the encompassed villages have been occupying great areas of developing cities' fabrics, suffering from socio-spatial conflicts and contradictions, increasing cities' total population and built-up areas, as well as pressing on the capacities of cities' services.

Two main factors accelerated the prevalence of these villages encompassed into Egyptian cities' fabrics: one is the piecemeal urban development which resulted from the dysfunction of planning system; the other is the country's imbalanced urban structure due to the concentration of most of the cities and villages into the narrow strip (about 4% of the total country area) that borders the Nile and its Delta.

1.2 Research Issue

Besides the informal expansions at the expense of the intermediate rural areas between cities and their peripheral villages, the encompassed villages suffer severely from internal physical transformations and conflicts. This is due to quick and chaotic physical replacements and transformations which have been practiced, imitating urban development inside cities, but with no compliance

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to any planning or construction laws. Actually, such areas still lack specific urban guidelines, for development and redevelopment processes, concerning their distinct social and physical characteristics.

However, the central planning authority deals with this situation, for more control on growing informal settlements around these villages, by approving and diverting them into official neighbourhoods of the city. Moreover, it delegates the responsibility of preparing the upgrading projects for these villages to local governments, regardless of their failing experiences in this field, with no basic guidelines. To draw basic urban guidelines for such projects, it is very important to firstly establish extended studies concerning the socio-spatial aspects, transformations, and conflicts prevailing in such encompassed villages.

1.3 Objectives

The research aims to: 1) Make arrangements regarding the emerging issue of the encompassed villages through the Egyptian context, in light of the planning system dysfunction, clarifying its concept, driving forces, and the patterns of its formation process; 2) Find out the negative aspects of such areas on both their entities and their mother cities, for further study on improvement strategies; and finally 3) Find out the positive aspects of these villages which can be directed to successfully achieve the prospected improvement strategies.

1.4 Hypothesis

1) Dysfunction of the urban planning system is a main factor in the prevalence of the "encompassed villages" into Egyptian cities' fabrics.

2) The "encompassed villages" have practiced many transformations that negatively affect their characteristics, in addition to their pressing on services' capacities of their mother cities.

3) There are somewhat positive aspects of these encompassed villages that can be directed to fulfil their improvement strategies, and moreover serve for city sustainability.

1.5 Methodology

As a descriptive and analytical study, the research is constructed here depending on:

1) Literature reviews of previous researches and debates about the urban growth issue in the case of Egypt.

2) Secondary data collection included books, archival documents and academic researches concerning the urban structure of Egypt, its planning and construction laws, and maps for a sample of developing cities showing the rural villages encompassed into their borders.

3) Pilot survey together with a questionnaire for a sample of 100 heads of households, in El-Ekhsas area that was encompassed in El-Minya City-Egypt from the late 1960s, to check out the negative and positive aspects of these areas

4) Arrangement and data analysis coupled with indicative tables, diagrams and photos.

2. PLANNING SYSTEM AND NEW REFORMS

The urban encompassing processes, by formal and informal city's expansions, are actually affected by a bunch of leading factors widely persuaded by the dysfunction of the country urban planning system that will be explained as follows

2.1 Planning System

Until the 1950s, urban planning was not known in the way it is practiced today. Till that time, the responsibility of urban planning activities was scattered among organizational departments within different ministries [7]. However, planning in Egypt is carried out mainly in three levels: National (the country level), Regional (regions level), and Urban planning (local level including cities and villages).

a) National Development Plans

The urban development on the national level set several strategic objectives which include: achieving a balance between the population and existing natural resources; achieving balanced regional and urban development; facilitating balanced development of habitable and non-habitable areas; and developing new towns in desert areas to protect agricultural lands. In order to achieve those strategic objectives, the central government set several development plans and programs. The most recent pivotal plans are: The national program for the upgrading and development of informal areas, and the plans for constructing 44 new cities in desert locations until 2017 [8].

b) Regional Planning

Egypt was divided (Fig. 1 and 2), according to a presidential decree no.495/1977 to eight regions which have been amended, by a ministerial decree no. 81/1986, to seven regions: Greater Cairo, Alexandria, Delta, North Upper Egypt, Assyut, and South Upper Egypt region. These regions, in turn, have been divided into smaller administrative units represented in 29 governorates, 220 provinces (Marakez), 220 cities, 4641 villages, and 22 new urban settlements [9]. According to the presidential decree no.495/1977, regional planning departments, following the "Planning" ministry, have been established for the purpose of studying the regions' resources, capacities, and their optimum uses and improvement means. Actually, their role has been very limited (to just drawing regional plans) due to the full control of central government, and their lack of executive authorities [10]. The presidential decree no. 1093/1973 stipulated the establishment of the "General Organization of Physical Planning" GOPP following the "Housing, Utilities & Urban Development" ministry, and delegated to it the responsibility of planning and urban development for the country on all its levels. Accordingly, in 1990, GOPP established its regional branches in all the country's regions, which prepared their regional development plans through the last two decades. But the excution of these plans are still delayed due to weak coordination among the concerned ministries because of

their original marginalization when drawing these plans.

c) Urban Planning

In 1973, the urban planning in Egypt concerning the local level (city and village) has been officially recognized with the establishment of GOPP. Till this time, GOPP, as a consultative entity, has been working in cooperation with other concerned public organizations in preparing urban plans for all Egyptian cities and villages. Since then, the urban planning law no. 3/ 1982 and its executive bylaw were issued. According to this law:

i) GOPP has become the formal national organization responsible for: setting the national urban planning policy, preparing its physical development plans (structure plans) and programs, as well as monitoring the plans' execution.

ii) The law has emphasized the role of local governments in preparing physical plans (master and detailed) at city and village levels, in cooperation with GOPP or any other professional consulting entity. This action, in 1990, was prompted by the establishment of the regional centers of GOPP in all regions for supporting localities in accomplishing their urban planning tasks.

iii) The law ensured the "public participation" role by involving the "local popular council" in decision making.

iv) The law has emphasized the five-year revision of these plans.

v) The law articles stipulated the standards and procedures for land subdivision and districts' revitalization projects, and delegated their implementation responsibilities to local governments.

2.2 Construction and Deconstruction Law

Until the 1950s, the control of construction conditions was managed by certain articles set in the civil law. Then in1961, a law for organizing construction wo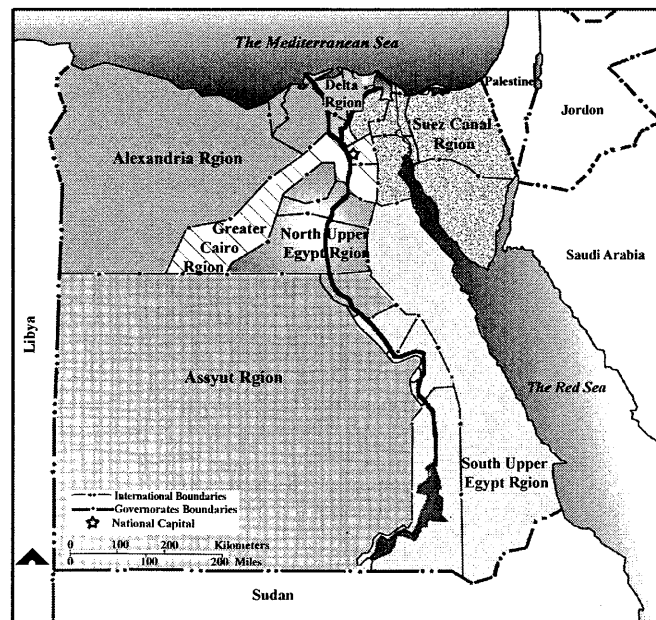rks (law no. 178/1961) was issued, and then followed by many amending laws. The most important one was law no. 106/1976, which in turn was amended by law no. 101/1996. However, the articles of the latter law stipulated: buildings' heights, areas of internal and external courts, requirements of ventilation, lightening, finishing materials, sanitation works, elevators, staircases, and cantilevers. Moreover, it stipulated the procedures for getting construction and deconstruction permissions. Monitoring the compliance to the law, in terms of construction or deconstruction works, is delegated to local governments.

2.3 Dysfunction of the Urban Planning System

By the former revision, it has been found that the dysfunction of the urban planning system and its practices in Egypt can be attributed to three main actors:

a) Decision making entities

The contradiction of responsibilities among decision making entities and the lack of coordination among them have negatively influenced the urban planning process, and sometimes delayed its progress. This is clearly shown in the practices of regional planning, such as the establishment of two separated regional planning centers in each region, one under the jurisdiction of the "Planning" ministry and the other under the "Housing, Utilities & Urban Development" ministry. Actually, both of these centers have been working separately, a matter which has lead to the contradiction, loss of time and effort, and also the delay of the plans' execution [10].

b) Laws Implementation

The dysfunction through laws implementation is shown through:

i) Lack of technical and financial capacity of local governments to prepare master and detailed plans forced the intervention of the central government GOPP in the preparation of these plans which exceeded its capacity.

ii) The prepared plans were just on the (structure) plans level and rarely on (master) plans level for just 50 cities and tens of villages, leaving about 150 cities and thousands of villages with no physical plans. Moreover, all cities' administrative borders (cities' cordons) were
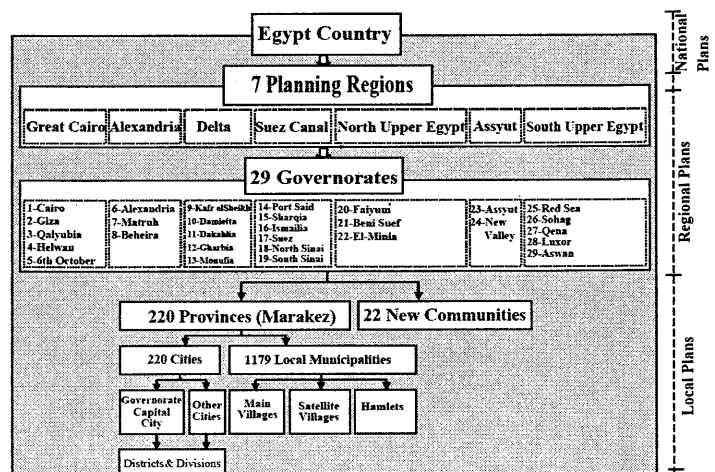

Fig. 1 Map of Egypt Sowing its Regions

Fig. 2 Egypt Urban Structure and its Planning Levels

not updated from the early 1980s.

iii) No detailed plans were even prepared for big cities (Cairo and Alexandria). Accordingly, urban development being managed inside the cities' administrative borders have become just independent development projects, with neither a comprehensive view nor an integrated urban strategy. Actually, the projects that have complied with planning and construction laws' standards inside the cities' administrative borders, and further approved by authorities, have been considered as a type of formal urban development. On the other hand, any other development that does not follow planning and construction standards and also is not approved by authorities has become a type of informal development. Hence, even approved by authorities, the unplanned disordered development of Egyptian settlements has become a direct result of the master plans' absence.

iv) Weak technical capacities in local governments for monitoring laws' application. Moreover, the principle of "reconciliation", by which the law broker just pays a small fine for his informal work, urges more informalities and urban development dysfunctions.

c) Regulatory Framework

Its distortion has been witnessed through:

i) Multiplicity of laws, presidential, prime ministerial or ministerial decrees that govern or influence the urban planning process have sometimes been misused in banning or delaying development plans execution.

ii) The planning and construction standards have been more suitable for high level or big development projects than the needs and capabilities of lower-income urban groups (Table 1), and moreover, their incompatibility with villages' conditions.

2.4 New Reforms in the Urban Planning System

To overcome the shortcomings for further well control, new reforms have been recently studied through

a cooperative work between GOPP and the World Bank in June 2008 [7]. The main pillars of such work include:

a) Institutional Changes

The study included main institutional changes as (Fig.3):

i) Establishing the "National Council for Urban Planning and Development" to be headed by the Prime Minister, and its responsibility would include approving urban development policies, resolving conflicts among ministries, and authenticating national and regional urban plans.

ii) GOPP will be responsible for: developing and adjusting urban policies and strategies; preparing national and regional urban plans; monitoring and guiding the preparation of local plans; encouraging the participatory planning process at local levels; and monitoring development through "urban observatories".

iii) The seven regional urban planning centers will be the decentralized arms of GOPP, which cooperate directly with the governorates and local authorities providing them with required technical support.

iv) Establishing Urban Planning Directorates in each governorate to delegate the responsibility of urban planning practices on a local level to them. Until now, there are just urban planning departments (mostly are dormant) existing under the housing directorates.

b) The Unified Planning and Building Law /2008

This law covers the planning and building regulations with the objectives of reforming the dysfunctions of urban planning legislations, practices, and avoiding any further conflict. The new law comprises five chapters: Urban Planning and Development, Building Code Conditions for Demolition of Buildings, Protection and Maintenance of Housing Buildings, and Preservation of Buildings with Cultural or Architectural Importance.

However, the main suggested changes of the new law

Table 1 Differences between Standards of Current Urban Planning and those of Informal Market [11]

Item	Current Urban Planning Standards	Informal Market features
Density	100 person/ feddan (238 person/ hectare)	960 person/ feddan (2000 person/ hectare)
Street width with side walks	Minimum 10 m	From 3-4 m
Minimum lot width	Minimum 10 m, with depth not exceed twice the width	3-6 m width
Building height	1.5 times the width of the road	No limit
Lot coverage	60%	90-100%
Public service area	33%	15-20%
Land use	Separation between residential and industrial areas	Residential areas are integrated with small workshops

Central Level	National Council for Urban Planning & Development	Local Level	Governorate General Directorate for Urban Planning	City Urban Planning Branch	District
	GOPP General Organization for Physical Planning	Regional Centers for GOPP		Makaz Urban Planning Branch	Village

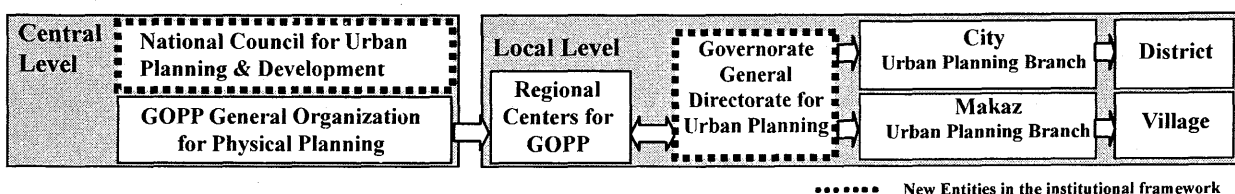•••••• New Entities in the institutional framework

Fig.3 New Proposed Institutional Framework for Governing Urban Planning Process in Egypt [7]

have included: i) the diversion from the master planning approach that mainly focuses on physical aspects, to the strategic planning process incorporating socio-economic and environmental issues; ii) emphasizing on decentralization of local plans' preparation, with provisions of technical assistance for localities in need through the regional urban planning centers; iii) delegating, to the governors, the responsibility of establishing adapted standards for upgrading projects that are suitable for the needs of local areas, instead of the replication of ineffective national standards.

c) Revising Localities Administrative Boundaries and Other Practices

To deal with the non-defined localities' boundaries for more control on informalities, GOPP has recently revised cities and villages' boundaries after more than 20 years of delay. This has been fulfilled through the preparation of strategic plans for all Egyptian villages and cities. Then, the responsibility of approving any further urban activities within localities' administrative boundaries would be delegated to the concerned governors, for more accurate monitoring and successful decentralization of the decision making.

However, regarding the upgrading and redeveloping procedures for deteriorated areas, it is found that the new "unified law" emphasized the same direction of delegating such projects to the concerned governors as did the old law. Hence, depending on the previous failed experiences of localities in such a field, the research finds that the new law still lacks general basic guidelines for development and redevelopment practices in these encompassed villages concerning their distinct characteristics.

3. ENCOMPASSED VILLAGE CONCEPT

To extract the concept of "encompassed villages" in the Egyptian context, the rural-urban relationship and villages' distribution in Egypt will first be analyzed.

3.1 The Rural-Urban Relationship and its Imbalance

In the past, and until the beginning of 1950s, the relationship between the city (urban) and the village (rural) was a reciprocal functional relationship. The village was the origin of food (by cultivation and animal breeding), and the city was the marketing center for the village's crops and products, in addition to its role in service provisions. Till that time, the Egyptian village has retained special traditional characteristics including:

a) **Physical fabric characteristics:** the main mass of the village's core was mostly a semi-circular shape, encircled by an outer ring-way (*Daier-Elnahia*), which in turn connected with internal bent cul-de-sacs (Fig.4). Its buildings were constructed from mud and wood, with one or two stories, and mostly included a barn area for animal breeding.

b) **Social characteristics:** villagers were highly often adhering with social connections and traditions such as cooperation and living with relatives nearby. A high percentage of them was illiterate, and isolated from the urban lifestyle.

c) **Economic activities:** the majority of the village's labour force was involved in agricultural activities with small percentages in trade, service, and handicrafts.

After the revolution in 1952, the political and economic reforms in the country were accompanied by many physical and social transformations in the Egyptian villages. The greatest leading factors for these transformations were represented in the improvement of transportation means, construction and pavement of connecting roads, prevailing of audio and visual communications which all contributed to the increasing rate of villagers' visits to the city, increasing their educational, cultural and health awareness, as well as transferring many of the urban lifestyle characteristics to the village. Coinciding with these improvements, an imbalance in the rural-urban relationship has occurred, whose most important manifestations can be detected through [10]:

a) **Function imbalance:** This has been caused by the change in the cultivation function with the decrease in ratios of the agricultural labour force from 77% in 1960 to just 45% (of the total labour force in villages) in 1996, and is further expected to reach 25% in 2020 (Fig.5). This has been accompanied by an increase in

Fig.5 Decreasing in Agricultural Labor Force

Fig.4 The Semi-Circular Shape of Old Villages and the Linear Subsequent Expansions [12]

the non-agricultural activities in trade, industries, and services. Hence, the village community has turned out to be somewhat of a consumer instead of a productive work force.

b) Settlement size imbalance: This is caused by the highly increase in village size, as the population of more than 60% of Egyptian villages exceeded 10,000 people, many villages exceeded 20,000, and some reached 60,000 and 80,000 people, becoming similar in size to small cities. Consequently, this represented overloads on services' capacities provided by the mother cities.

3.2 Villages' Spatial Distribution and Classification

The spatial distribution of Egyptian villages had the greatest effect on the transformations that villages experienced both in their physical and socio-economic environments. According to the country urban structure, formerly shown in Fig. 2, each province (Markaz) includes one city or more, as well as a number of rural settlements that are distributed through the urban influence sphere of this city. Based on that, Abou-Zeid Ragih[10] classified the Egyptian villages, according to their spatial distribution around their mother cities, into three tires (Fig.6):

a) The first tire: includes villages that are more vulnerable to urban invasion, loss of rural characteristics, and further urban encompassment by the expanded fabric of neighbouring cities.

b) The second tire: includes villages which get benefit from their relative proximity to cities by accessing their basic services, and also get benefit from their relative distance that keep them far from the encompassing threat of city expansion.

c) The third tire: includes the farthest villages that keep their rural characteristics for longer times.

Another scholar, Azza Amein [6] classified the Egyptian villages, according to their spatial proximity and vulnerability degree to the urban influence of their mother cities, into:

a) Traditional or isolated villages: These villages have highly retained their rural traditions and characteristics because of their relative isolation from the urban influence of cities. This has resulted from either bad connecting roads, a shortage in transportation means, or even bad economic conditions of settlers with which they have become unable to improve their houses and their surrounding urban environment. Consequently, these villages which have become unable to face the needs of the growing population, converted in order to be centrifugal for their settlers.

b) Urban villages: These villages have been urbanized separately from the city expansion influence. They have, partially or wholly, practiced transformations in their economic activities, and further in their physical and social characteristics. Nevertheless, these transformations have mainly happened due to settling either industrial or service activities within villages'

peripheries. The matter makes such villages attractive centers for more activities and residents (e.g. El-Hawamdeiah city, in Giza governorate, was originally a traditional village that became an urban village after the establishment of the sugar refining factory in 1881, and over time it attracted more activities and settlers and converted into a city).

c) Villages encompassed into cities' borders: These villages are located on cities' peripheries on the rural-urban continuum. And due to their locations, they have mostly been subjected to urbanization pressures by their mother cities in two directions: the first is through the internal transformations of the village's core; the second is through the external surrounding formations by city's expansions surrounding the village (at the expense of village's agricultural lands). Based on that, the village may expand on its surrounding agricultural lands to keep pace with their new urban needs, or may just becomes tangent to the city's expansions orienting toward it. In some cases, the village expands, merges with other adjacent villages forming a rural complex, which in turn expands and further gets encompassed by the city's expansions.

3.3 Differences from City's Traditional Districts, and Informal Expansions

Accordingly, the research here draws on the concept of "encompassed villages", as a study target, as: these villages which have originally lied on the urban influence sphere of their mother cities, gradually exposed to the neighbouring city's expansions (in absence of master development plans), been encompassed into their urbanized fabrics, and experienced physical and social transformations. These transformations are mostly quick on the village's
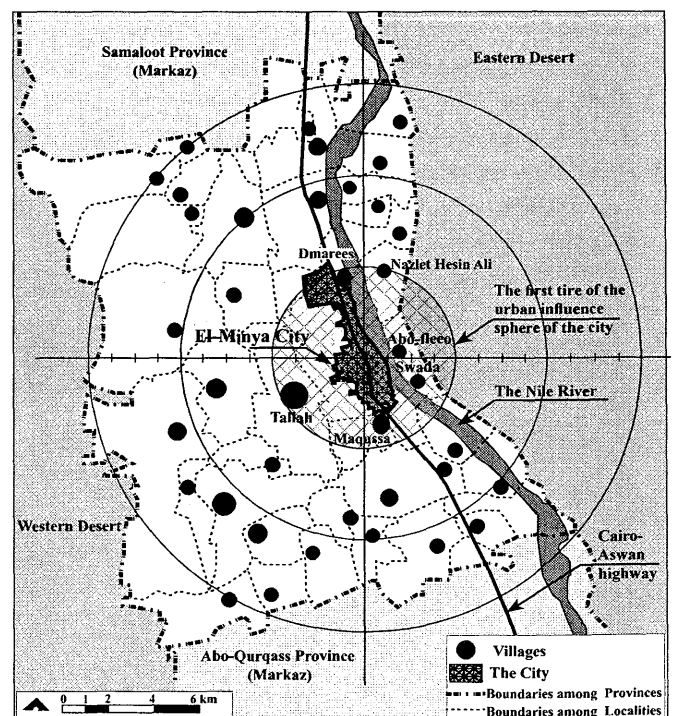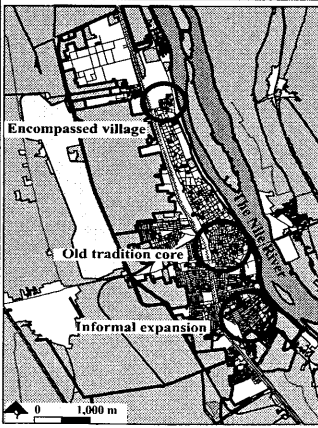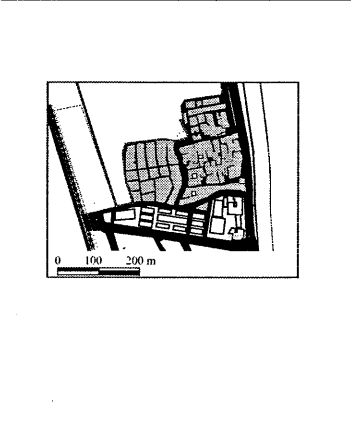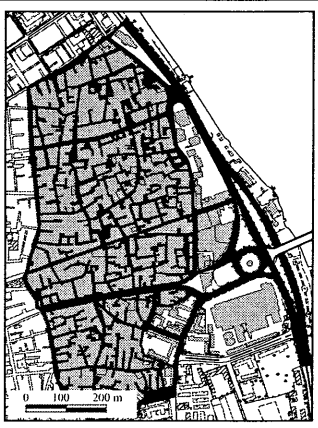

Fig. 6 Map of El-Minya Province showing the Distribution of the Main Villages though the Urban Influence Sphere of the City

outer sphere, and slow down wherever go towards its core. Nevertheless, these transformations differ from each "encompassed village", case by case, depending on: i) its proximity degree to the city or to one of its important land uses, ii) its surrounding geographic boundaries which even hinder or allow its expansion and transformation, iii) its capability degree of settling economic activities.

However, these "encompassed villages", together with old parts of the city's traditional districts, and informal city expansions are all recognized, by central

Table 2 Comparison of Main Chracteristics among Encompassed Villages, City's Traditional Districts, and Informal Expansions

		Encompassed rural villages	City's traditional districts	Informal settlements on city's peripheries
History		Original villages swallowed-up by city's fabric	Oldest parts of city's original districts	New urban expansions
Location		Almost through city peripheral parts	City core	on city's peripheries
Physical Aspects	Properties' ownership	High percentage of freehold status	High percentage of rental status	High percentage of freehold in case of establishment on agricultural lands, and almost squatting in case of desert lands
	Formality	Formal/ informal	Formal	Informal
	Land use	Almost residential except in the ring-way and main streets	Mix use except in the cul-de sacs	Mix use
	Street network	-Islamic organic pattern, but with rural reflections, as narrower streets (1.5-3 m), except the ring-way and one or two main streets are sometimes wider (3-4 m). - The ring-way and main streets are paved, through upgrading projects, just after a village become encompassed and approved as a city's neighborhood	-Islamic organic pattern, with bent narrow streets (2-6 m) with cul-de- sacs regarding city scale in old ages -Almost paved by sequential maintenance works along their life spans	-Almost linear and parallel narrow streets (3-5m) in case of established settlements on agricultural lands, and organic random narrow streets (3-5m) in case of desert lands. -Are not paved until approving upgrading projects
	Plot Area	- Plot areas are very small sometimes reach less than 20 m 2	- Plot areas almost bigger than those of villages	-Plot areas are changeable
	Original Buildings	-From 1- 2 stories -Originally from mud walls, wooden ceilings, and wooden poor windows.	-From 2-4 stories -Almost from bearing walls and reinforced concrete ceilings and sometimes balconies with wooden slabs, and wooden windows with Islamic decorative style "mashrabeya"	-High rise constructions ranging between 5-12 stories -Almost reinforced concrete, and sometimes bearing walls or temporary structures.
	Buildings' changes	-With urbanization (by imitating urban lifestyles), sometimes buildings increased 4 stories and more but with no compliance to certain construction laws. -New material as bearing walls and reinforced concrete structures are used	-With modernization, replacements with high structures (heights of 1.5 of connected street width) following construction, and planning laws - With reinforced concrete materials, replacing the traditional windows with double layered ones of glass and wood.	-No changes -Bearing walls and reinforced concrete structures
	Services/ infrastructure	Provided with low levels	Provided with high levels, and any related problems would be from deterioration	-Not provided, but with public pressure they are provided through upgrading projects.
Economic activities		Rural activities, laborers, and administrative activities related with the city	Almost commerce, and handicrafts	- Handicraft and industrial laborers, and administrative activities related with the city
Social characteristic		-Original villagers (keeping sometimes their rural lifestyles as animal breeding inside their living environment), with percentages of middle-class urban migrants who can't afford formal housing though state or private sectors inside the city	-Original citizens with urban lifestyle and percentages of poor rural migrants searching for work opportunities and urban life.	-Mix of poor rural migrants, and poor or middle-income citizens who can't afford formal housing though state or private sectors
Governance/ Control system		- Still controlled by tribal and community traditions	-Controlled by city governance	-No control

El-Minya City- Egypt

El-Ekhsas Village has Encompassed into El-Minya City from late 1960s

The Old Tradition District of El-Minya City

Mecca District, an Informal Expansion of the City on its Southern Rural Lands

authority, as deteriorated places that should be dealt with upgrading projects. Despite having some similarities with other categories in terms of physical deterioration, the "encompassed villages" retain certain differences (Table2) mainly in terms of: i) their original history as rural cores; ii) high percentages of properties are freehold; iii) major percentage of land-use is residential; iv) street network is narrower than that used in city's old cores, distinguished by a simpler structure of local streets or cul-de-sacs originating from a ring-way (Daier El-Nahia); v) original buildings are from mud and wood with 1-2 stories; vi) new transformations have been practiced within them with no compliance to any construction or planning laws; vii) organizing system is still controlled by tribal and community traditions, sometimes preventing the official authority from performing their duties.

4. THE URBAN ENCOMPASSING PROCESS FOR PERIPHERAL VILLAGES

4.1 Demographic and Geographic Growth Factors of Egyptian Developing Cities

Egypt, in the trend of rapid urbanization, has mostly transformed from a rural country, where the rural population counted for more than 90% of the total pop. at the beginning of the 20th century, to a more urbanized country, where the rural population levelled off to just 56.2% at the end of the century (1976 census) [13]. In parallel, the urban population increased drastically till the year 1976, when a tiny decline occurred in the urban population during the period from 1976 to 2006 (from 43.8 % to 42.64% of the total population) [13], which is emphasized by an analysis on the growth rates of Egyptian developin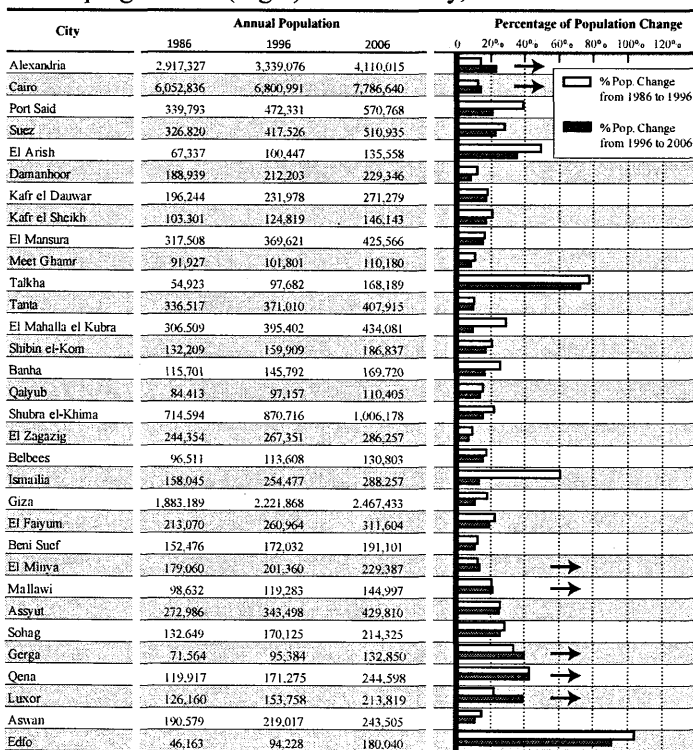g cities (Fig.7) [14]. Actually, this trend was mainly due to a degree of stabilization of rural migration to large cities that consequently affected the rapid growth of medium-sized cities and large villages [15].

However, a number of developing cities have continued the increase in their population growth rates such as Alexandria, Cairo, El-Minya, Mallawi, Gerga, Qena, and Luxor for the following factors:

a) Demographic factors that are represented in the natural urban population growth and the continuous migration from rural to urban, and from small urban settlements to bigger urban centers. Indeed, this migration plays the principle role in rising the urbanization levels of such developing cities, because rates of natural growth are generally slightly lower in urban areas than in rural ones [16];

b) Geographic factors through annexations, transformation and reclassification of peripheral rural villages and encompassing them into city borders, increasing both of city's built-up area and population.

Generally, these geographic factors affecting city growth have been practiced, in Egypt, in different patterns: formally (by state and private formal sector through demarcated lands inside city formal borders), and informally (mostly by individuals through encroachment on agricultural lands, swallowing adjacent villages, or squatting on state desert lands and other ex-formal areas) (Fig.8) [14].

4.2 Role of the Encompassing Process in Cities' Growth

From above, it can be considered that the encompassing process of cities for their surrounding areas is one of the most effective forces leading to their increase in both terms of population and built-up areas.

In Egypt, this process is actually not a new phenomenon, but it has recently increased with the excessive urbanization and adaptation processes of city administrative borders. By analyzing the strategic plans of Egyptian developing cities held by GOPP in 2009, it has been found that many cities have experienced this process by merging their adjacent peripheral villages into their borders. And so, these villages have been occupying great areas of neighbouring city's urban fabrics. For instances, El-Minia City, in Upper Egypt, has increased by 12.8 % in built-up areas and 12.1 % in population due to merging 4 more peripheral villages
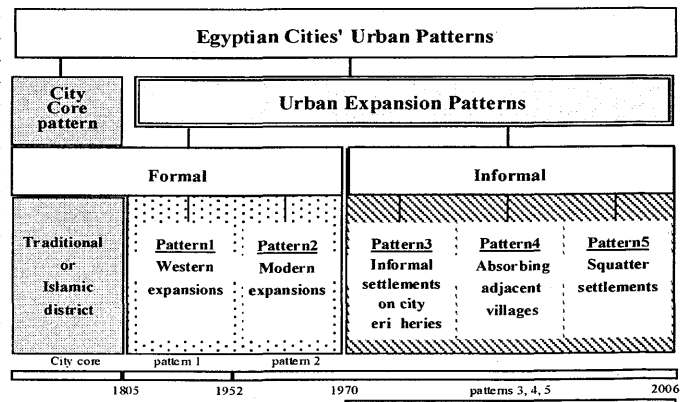
City	Annual Population			Percentage of Population Change
	1986	1996	2006	
Alexandria	2,917,327	3,339,076	4,110,015	
Cairo	6,052,836	6,800,991	7,786,640	
Port Said	339,793	472,331	570,768	
Suez	326,820	417,526	510,935	
El Arish	67,337	100,447	135,558	
Damanhoor	188,939	212,203	229,346	
Kafr el Dauwar	196,244	231,978	271,279	
Kafr el Sheikh	103,301	124,819	146,143	
El Mansura	317,508	369,621	425,566	
Meet Ghamr	91,927	101,801	110,180	
Talkha	54,923	97,682	168,189	
Tanta	336,517	371,010	407,915	
El Mahalla el Kubra	306,509	395,402	434,081	
Shibin el-Kom	132,209	159,909	186,837	
Banha	115,701	145,792	169,720	
Qalyub	84,413	97,157	110,405	
Shubra el-Khima	714,594	870,716	1,006,178	
El Zagazig	244,354	267,351	286,257	
Belbees	96,511	113,608	130,803	
Ismailia	158,045	254,477	288,257	
Giza	1,883,189	2,221,868	2,467,433	
El Faiyum	213,070	260,964	311,604	
Beni Suef	152,476	172,032	191,101	
El Minya	179,060	201,360	229,387	
Mallawi	98,632	119,283	144,997	
Assyut	272,986	343,498	429,810	
Sohag	132,649	170,125	214,325	
Gerga	71,564	95,384	132,850	
Qena	119,917	171,275	244,598	
Luxor	126,160	153,758	213,819	
Aswan	190,579	219,017	243,505	
Edfo	46,163	94,228	180,040	

Fig. 7 Urban Growth Trends of Egtptian Developing Cities [14]

Fig. 8 Urban Expansion Patterns of Egyptian Cities [14]

of Damarees, Maqussa, Abo-Fleeo, and Kedwan (Fig.9) [17]. El-Zaqaziq City, in Lower Egypt, has increased by 17.75 % in built-up areas and 24.37 % in population due to merging 5 peripheral villages of El-Nkareiah, Sheibat-El-Nkareiah, Kafr-el-Hussr, Banayoos, Kafr- Mohamed Hussein (Fig.10) [18].

4.3 Stimulating Factors of the Encompassing Process

In light of the planning system's shortcomings, and imbalanced distribution of Egyptian settlements, the process of the urban encompassing of a peripheral village is stimulated by certain driving forces including:

a) Location attributes: the village proximity degree to the city or to one of its important land uses urges its quick transformations and expansions. For instance, the proximity of a village to a university campus located on a city's periphery urges the densification of students' services, such as dormitories, inside or surrounding the village's built-up areas. Additionally, its proximity to the city, with its cheap land and housing, encourages urban citizens to reversely migrate to it for the purpose of renting or owning houses or land;

b) Place physical attributes: the availability of intermediate agricultural lands, and moreover the village's infill areas all urge the city to expand towards such village, swallowing these intermediate lands, and leaving no choice for villagers except to convert into non-agricultural occupations;

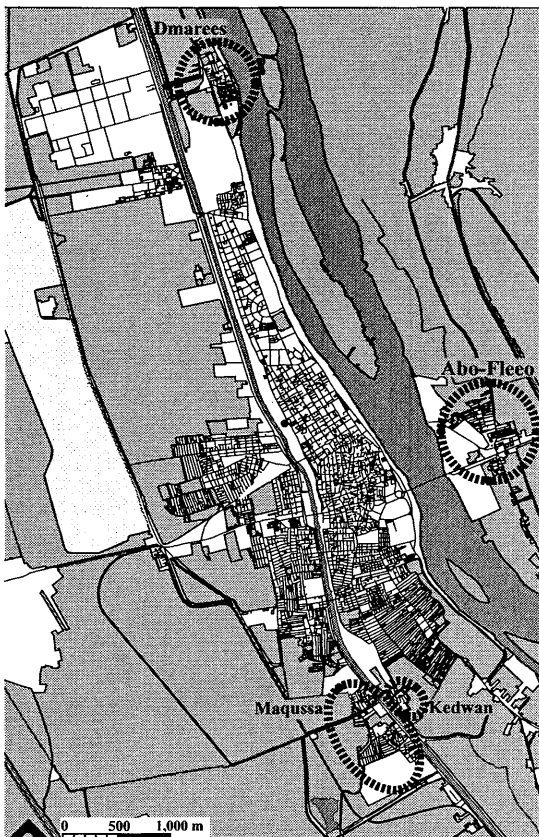c) Accessibility: the improvement of connecting transportation ways between the village and its neighbouring city urges its villagers to commute daily to the city, converting villagers to mostly non-agricultural occupations.

4.4 Patterns of the Urban Encompassing Process

The urban encompassing of rural villages into the neighbouring city's fabric is either due to urban expansion of cities or the original existence of a rural settlement representing the original nucleus of the city. Based on that, these urban encompassing processes were classified, according to a previous analytical study applied to Greater Cairo [5], as follows:

a) Simple Encompassing

It is the simplest pattern through which the city expands along its expansion axes, encroaching on the peripheral rural lands, and further encompassing their peripheral adjacent villages. Actually this pattern represents a one-way expansion process from the city side with neither expansions nor transformations in the encompassed village. Actually, this pattern of process happened in past times, before the 1960s, when villages had no needs or resources for expansions or transformations (e.g. El-Dokki, El-Hoteia, and Been El-Saraiaat villages in Giza, and El-Manial Elkadeem village in Cairo). Nevertheless, most of the villages which were encompassed according to this pattern, has lately experienced some kind of transformations, physically (by replacing old houses, improving infrastructure, and developing infill areas) and socio-economically (by occupational changes from agricultural to non-agricultural works) (Fig.11-a).

b) Simple dual encompassing

This pattern emerged, during a subsequent period from the previous pattern, due to the expansion of both the city and its peripheral village until their built-up areas became tangent. Then the city encompassed the village, and further expanded around it following the village's original expansion directions. In fact, that pattern occurs due to quick and unplanned expansions of both city and village, practicing a dual expansion process along their connecting roads, forming unplanned disordered fabrics encircling the village. For instances: Terssa, and El-Moneeb villages in
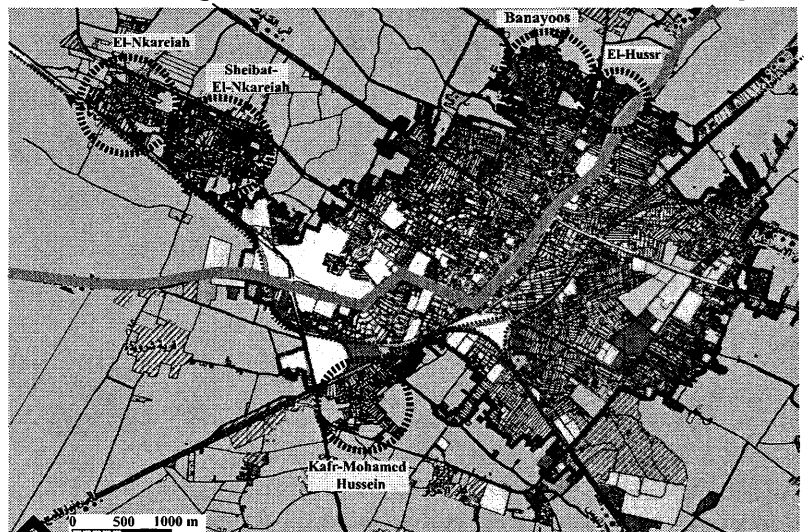

Fig. 9 El-Minya City and the New Four Encompassed Villages [17]

Fig. 10 El-Zaqaziq City and the New Five Encompassed Villages [18]

Giza, Dar-Essalam in Cairo, Mostorud in Shubra-Elkhima (Fig.11-b).

c) Complex encompassing

This pattern passes through two stages, firstly, incorporating a group of adjacent villages together; secondly, dually expanding both the city and the incorporated villages' areas until the latter becomes wholly encompassed by the expanded city. This pattern can be detected, for example, in the encompassing process of the rural incorporation of "Bander El-Giza Elkadeem, Saqiet Mekki, and Gezeiret El-Dahab" into Giza City (Fig.11-c).

d) Cities nuclei

This pattern has not emerged due to city expansions, but the village has been considered the origin of the city. Indeed, many small and medium-sized Egyptian cities started originally from big villages that were converted administratively over time, and due to natural growth or settling some economic activities, into towns and cities. Subsequently, these converted-into-cities expanded formally, following the city planning laws, around their rural origins, and over time, they witnessed different levels of transformations (e.g. Shebin El-Koom, Zefta, and El-Hawamdeiah cities).

5. NEGATIVES AND POSITIVES OF ENCOMPASSED VILLAGES

To check out the negative and positive aspects of these areas, analysis on archival documents, previous experiences, and moreover a pilot survey together with a questionnaire for a sample of 100 heads of households were conducted in El-Ekhsas area (an ex-village that was encompassed in El-Minya City by the late 1960s) (Fig.12).

5.1 Negative Aspects

These aspects would be classified into three categories:

a) Negative Economic Aspects

These encompassed villages are usually formed with no definite planning prospective for keeping their identities and economic bases. Accordingly, their residents have gradually changed their economic activities, and faded their rural life styles. The villages have diverted from productive entities to more consuming ones, integrating with their mother cities, creating overloads on their capacities for services and resources. This is supported by the analysis of the pilot questionnaire in El-Ekhsas area (Fig.13), showing the decrease in cultivation workers (Farmers) to just 4%, increasing the percentage of labourers to 30 %, employees in city's institutions to 50%, and the remaining percentage representing merchants and the non-employed.

b) Negative Physical Aspects

The encompassed villages have witnessed negative physical aspects which can be sub-classified into (Fig.14):

i. Negative physical aspects relating to street network: about 44% of the questionnaire response mentioned the issue of narrow street network as an emerging problem. Except its ring-way (*Daier-Elnahia*) besides one or two main roads penetrating the village mass, the organic street network (1.5-3 m with bent streets and sometimes dead ends) has become incompatible with the village's
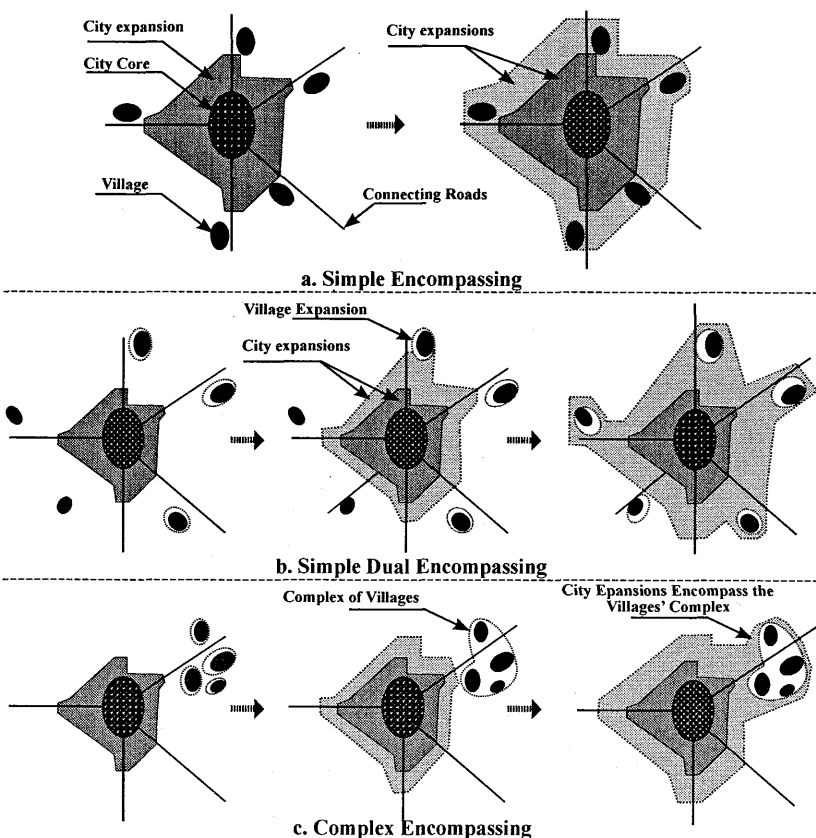
City expansion
City Core
Village
City expansions
Connecting Roads

a. Simple Encompassing

Village Expansion
City expansions

b. Simple Dual Encompassing

Complex of Villages
City Epansions Encompass the Villages' Complex

c. Complex Encompassing

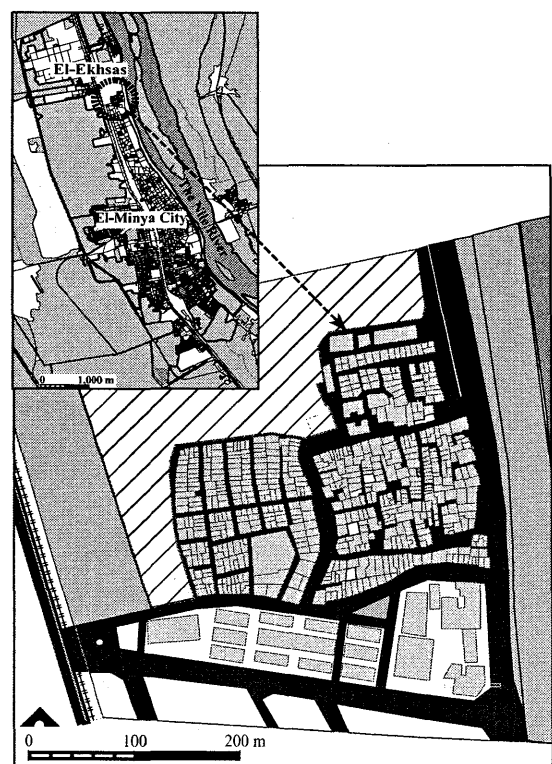**Fig.11 Patterns of Urban Encompassing Process**

0   100   200 m

Fig. 12 Study Area of El-Ekhsasa neighbourhood, El-Minya City

— 56 —

altered status to an urban neighbourhood. Actually, its structure has become neither suitable for motor transportation means, nor for emergency and fire cars' access (Fig.15-a). Moreover, 51% of the questioned people complained of a lack of street maintenance (Fig.15-b), and 16% complained of a lack of a garbage disposal system. Additionally, the street net-works of many of these villages suffer from bad lighting (24% of the questionnaire response), bad ventilation (13%), and sometimes from small or non-exist open areas (33%).

ii. Negative physical aspects relating to plots/buildings: about 64% of the questioned people mentioned the problem of the small areas of properties, which sometimes reaches 20 m². This is due to the splitting up of original plots by expanded families regarding an inheritance factor. Consequently, the unsuitability of applying construction and deconstruction laws to these small plot areas urges residents to more random development and informal replacements (Fig.15-c). And despite significant improvements in their conditions and amenities, the buildings of such areas still lag behind those of the city's other middle-class neighbourhoods. This is observed from building deterioration, their lack of maintenance and facade painting (29% of the questionnaire response) (Fig.15-d), bad natural ventilation (9%), and bad distribution of house elements (11%). All these problems are considered a direct result of chaotic replacements with no compliance to any development guidelines. Hence, these areas almost lose all of their original rural identities, and rarely gain fully new urban ones, producing a blurred disordered physical character within the degraded fabric (Fig.15-e).

iii. Negative physical aspects relating to infrastructure and services: Although provided with infrastructure and services, more than any of the other isolated villages, these encompassed villages still retain a gap in quality level, in terms of infrastructure and services, compared with those provided to the city's middle-class neighbourhoods. This is supported by the response of 33% of the questioned people complaining from bad maintenance of sanitation, water cuts, and sometimes power interruption. Moreover, these villages increase the pressure on the service capacities of their mother

cities (98% of the sample depends totally on city services).

c) Negative Social Aspects

These areas, which are almost all described by planning authorities as degraded areas, are characterized by mixtures at different rates of rural and urban people, and almost all suffer from generating social diseases and conflicts. This is obviously shown in areas where original residents still retain their original traditions such as breeding animals and keeping them inside their houses and connected streets (Fig.15-f). This situation conflicts with the basics of public health care, and so annoys the new sector of urban residents (4% of the questionnaire response).

Hence, with the urban encompassing processes, these areas lose their indigenous administrative governance that people used to follow. Instead, they fall under the city's governance system. And while still keeping a lot of rural social traditions, people don't obey the new governance system and even prohibit the intervention of authorities to resolve their disputes, resulting in the increase of their social problems (27% of the questioned people emphasized this problem), and diverting in some cases to causes of crimes.

5.2 Positive Aspects

Behind this chaos lie hidden potentials and positive aspects that can be directed for further redevelopment as:

a) Positive Economic Aspects

The high percentages of property ownership, together with the people's tradition of a strong association with their places, increases their conviction in redevelopment projects as an investment. Nearly 100% of the questioned people refuse to move from the area, preferring upgrading projects. Moreover, the residents of such areas are considered good resources for providing the city with a low-waged labour force (30% of the sample are labourers).

b) Positive Physical Aspects

The continuous replacement processes by vertical densification in such areas, if properly used, can provide the city with good opportunities of certain units for middle-class housing and other needed services.

And despite the former mentioned physical problems, the residents still have some level of satisfaction towards their urban environment. This is due to improvement practices of infrastructure and housing conditions, together
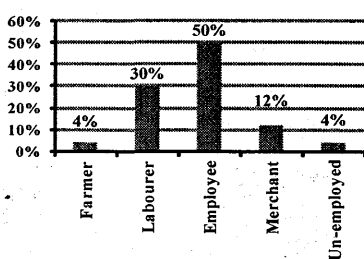

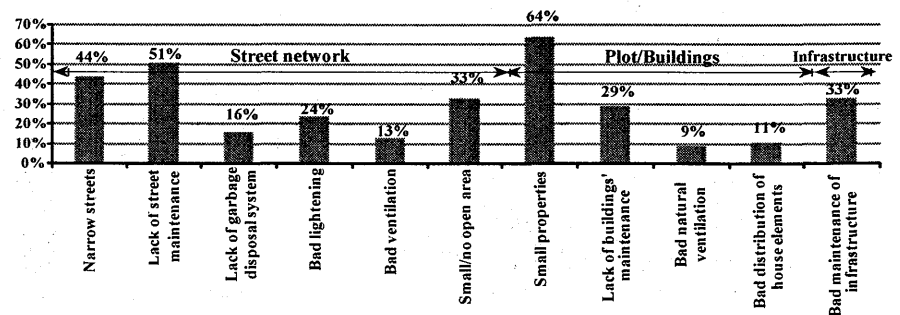Fig. 13 Distribution of Labourforce in El-Ekhsasa neighbourhood

Fig. 14 Responses' Percentages of a Pilot Questionnaire, Conducted in El-Ekhsas Neighbourhood, About its Negative Physical Aspects

with the residents' enjoyment of city services in higher levels than those of isolated villages.

c) Positive Social Aspects

The social traditions of residents, representing a relative cohesion and adherence to the idea of residing next to each other, can be properly used for encouraging residents' participation in generating and reviewing the required redevelopment guidelines.

Additionally, the occupational and social mobility in these encompassed villages causes the increase in the educational and cultural awareness of their residents. And this can be directed to spread the awareness of the importance of the redevelopment projects, and also the importance of residents' participation in the execution of these projects.

6. CONCLUSION

This research examined the prevailing phenomenon of "encompassed villages" into urbanized areas of Egyptian developing cities, and analyzed, through its first part, the main dysfunction features of the urban planning system as a main factor for creating such disordered areas inside cities' borders. These features were concluded to be caused by: a) the contradiction of responsibilities and lack of coordination among decision making entities; b) dysfunction in law implementation; and c) the distortion in regulatory frame work.

By analysing the new reforms that have been recently set up by the central government GOPP in cooperation with the World Bank in June 2008, it has been found that the new "unified law /2008" still lacks the general basic guidelines for development and redevelopment practices in such "encompassed villages" concerning their distinct characteristics. These guidelines are supposed to be important procedures for guiding the weak localities in monitoring replacement practices, and promoting the needed redevelopment projects in these areas.

The research also portrayed the rural-urban relationship, its imbalanced features, and the urban growth trends and patterns of cities through the Egyptian context, in light of the absence of master and detailed plans.

Based on an analysis of previous studies on similar issues, supported by the results of the conducted pilot survey and questionnaire for a random sample of residents in El-Ekhsas neighbourhood in El-Minya City, it has been revealed that these encompassed villages retain a number of negative and positive aspects which can be well studied for generating their developmental guidelines.

Pointing to residents' responses in fig. 13, 14, and the field observation in fig. 15, the main negative aspects of these areas have been concluded in: a) economic negatives represented in the changing role of these areas from productive to more consuming entities; b) physical negatives such as the small areas of properties which have been incompatible with applying the construction laws and urged their disordered chaotic replacements, in addition to the lack of maintenance for streets, infrastructure and buildings; and c) social negatives which have been emerged due to conflicts between urban and rural lifestyles
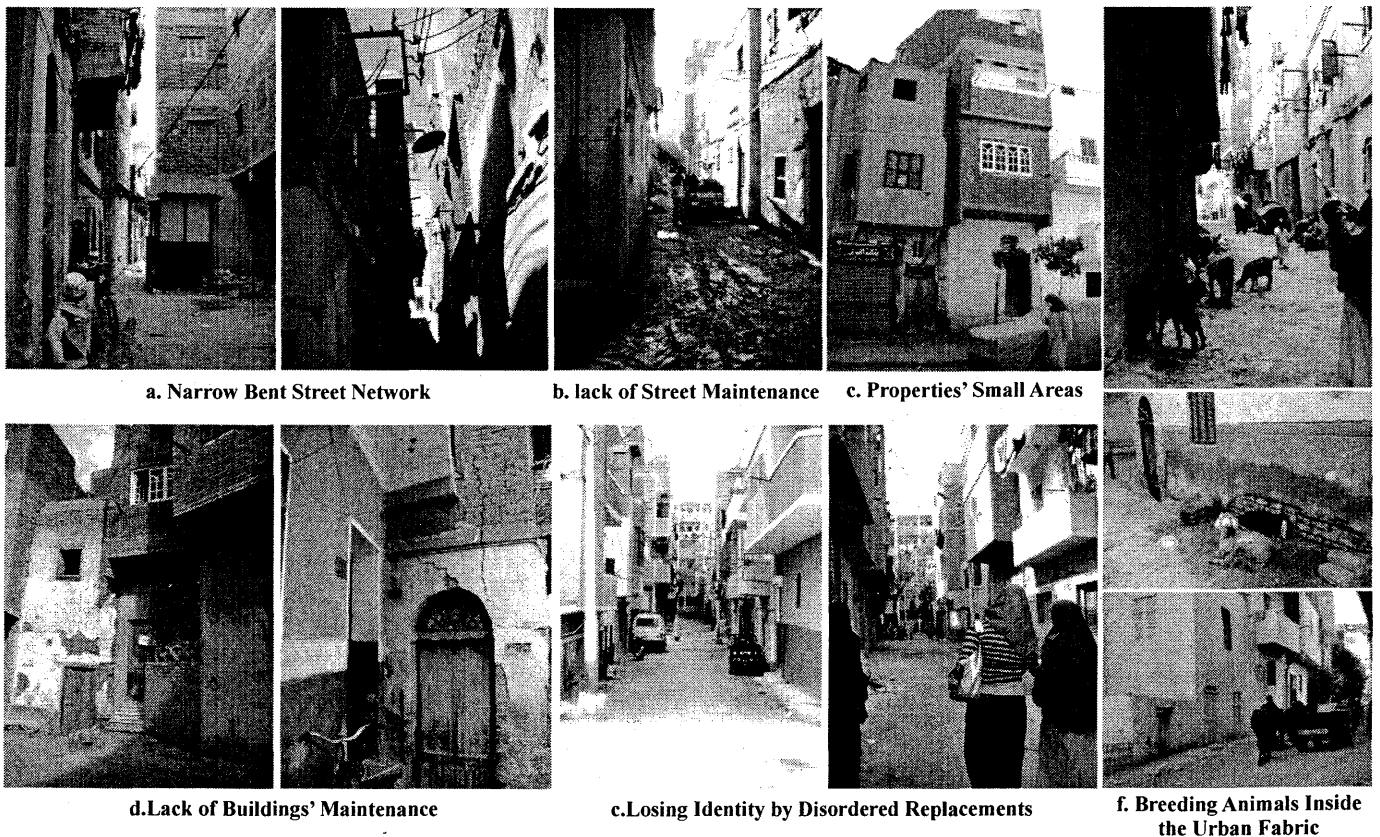

a. Narrow Bent Street Network   b. lack of Street Maintenance   c. Properties' Small Areas

d.Lack of Buildings' Maintenance   c.Losing Identity by Disordered Replacements   f. Breeding Animals Inside
                                                                                                                                              the Urban Fabric

Fig. 15 Negative Aspects of "Encompassed Villages" as Showen in El-Ekhsasa Area, El-Minya City, Egypt

and traditions.

Finally, the main positive aspects of these areas have been also examined and classified into: a) economic positives represented in their provision of low-waged labourers to their mother cities, in addition to the possibility of acquiring economic benifits from redevelopment projects due to the high percentages of properties' freehold; b) physical positives represented in the possibility of providing the city with good chances of housing and services units; and c) social positives by using the advantage of the coherent relations of residents in successfully promoting the redevelopment projects concerning their living areas.

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