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Title: Speculative Informal Housing Provision and its Socio- spatial Impacts on Greater Cairo Areas, A case study on 'El-Matareya'

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Speculative Informal housing provision and its socio-spatial impacts on Greater Cairo Areas

A case study on El-Matareya

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Summary

Speculative informal housing described by Sims (2012) as “one-off towers” has been a growing urbanization mode in Greater Cairo particularly after the January 2011 revolution. Built by profit-oriented developers they emerge, in spite of the government’s attempts to ban illegal construction, with striking heights, fulfil a large array of housing needs, and significantly impact informal areas where they develop.

This research aims to understand how this self-organized housing provision takes place, what shelter outcomes it achieves and what socio-spatial impacts it triggers in the area it develops. The study is conducted on the case of “El Matareya”, which is a typical example for the 83% of informal settlements in Greater Cairo that have developed on private agricultural land (Sims, 2012). In addition, “El Matareya” has witnessed recent activity of speculative housing construction, thus socio-spatial impacts are well manifested. The main research question is: *What are the socio-spatial impacts of the informal, speculative housing provision process on areas such as “El Matareya” since the January 2011 revolution?*

The sub-questions are: Which interactions take place in the informal, speculative housing provision process? What are their drivers? What governance characteristics affect the provision process? How does the recent development of the area, triggered by speculative housing provision, impact the space? What are the social manifestations of the provision process?

A literature review is conducted on informal urbanization, particularly informal speculative housing worldwide and in Greater Cairo, and on various self-organization concepts, from which a conceptual framework for the study is derived. The study investigates how trust and power relations, actors’ motivations and rule of law affect the interactions between the main actors during the housing provision process, thus leading to certain socio-spatial configurations.

The research uses a case study design and qualitative data collection method to ensure a deep understanding of the complex relations between the beneficiaries of the provision process and to capture the contextual impacts and manifestations. During the fieldwork from June 14th till July 11th 2015,

16 semi-structured interviews and moreover discussions are conducted with developers, residents, regulator representatives and experts to cover the subject from the diverse perspectives. A diverse housing sample is studied, with a focus on speculative towers. Through site visits and structured observation the quality of speculative housing, and its relation and impact on the neighbourhood are investigated. Further on, secondary data is collected including reports on “El Matareya”, housing studies, relevant books and researches, law documents, papers and articles. Different data sources are used to ensure the validity of the research.

The findings of the research show that informal speculative housing provision interactions, between developers, residents and the local district, lead to heterogeneous socio-spatial patterns in El-Matareya, that have positive but also a large extent of negative impacts on the area’s development. Patterns differ from one tower to another and from one provision process to another; however, there are general trends observable. The provision process is significantly impacted by the factors: decreased level of trust of residents to developers; prevailing economic motivation of the developers; power tensions but also collaborations

between the local district and developers; and marginal surveillance and bureaucracy of the legal and institutional system. A commercialized housing product is realized, that satisfies many housing needs, but overloads and sometimes dominates the neighborhood's services and resources. While it adds to the modernity and residents' diversity of El-Matareya it decreases its social connectivity and identity.

To conclude, the self-organized provision of speculative informal housing is responsive and adaptable to a large array of needs, yet taking place with minimal control, it often becomes distorted. The provision process and its manifestations indicate a seemingly intended deregulation and negligence of the state. Further on, they represent a complex continuum of legality and illegality; combining informal practices, part of which are tolerated by the state, or eventually become formalized and also formal and quasi-formal practices.

Keywords

Informal speculative housing – self-organized provision – socio-spatial patterns – trust - power – motivations - developer – rule of law – deregulation – bureaucracy – informality - El-Matareya – Cairo informal areas

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Foreword

Like many other Egyptians, I have always had the idea that informal settlements in Cairo are extremely poor areas that lack basic human needs and services, that they predominantly include weak and vulnerable housing and that their residents are completely isolated from the rest of the city. I was taught from the media and state's attitudes towards informal areas, that they are highly problematic, and eradicating them would be the adequate solution for many of Cairo's problems. It was only until I knew that they are home to almost two thirds of the whole Greater Cairo population and to many people I meet everyday in my life that I started to rethink it all.

Decided to learn more about Cairo's dominating urbanization mode, I discovered that informal areas despite being sub-optimal living spaces, they have numerous advantages particularly compared to formal Cairo; they are among others "self-financed, demand-driven, compact, walk-able, self-sufficient" areas (Shehayeb, 2013:126). Further on, I realized that they fulfil a wide array of housing needs including even higher-income Cairenes.

Aiming to understand more about their true nature and learn how they have been more responsive to people's needs than planned formal housing projects, I chose to conduct this research on one informal area in Cairo, namely El-Matareya. With this research I aim to contribute in changing the misconceptions that people have on informal areas and uncover how and why they emerge with their current characteristics.

Abbreviations and Conversions

EGP	Egyptian Pounds – equivalent to 0.11462 Euros (Exchange Rate Sept. 2015)
Feddan	Equivalent to 4200 square metres
CAPMAS	Central Agency for Public Mobilizations and Statistics
GIZ	Gesellschaft für Internationale Zusammenarbeit
GCR	Greater Cairo Region
GOPP	General Organization for Physical Planning
IHS	Institute for Housing and Urban Development
MDIC	El-Matareya District Information Center
MT	El Matareya District (in Cairo Governorate)
NGO	Non-governmental Organization
PDP	Participatory Development Program
Sqm	Square meters

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Chapter 1: Introduction

This chapter introduces the research topic by presenting the general background of Greater Cairo urbanization throughout the last decades leading to the research problem statement. Further on, it addresses the research objective, the research question, the significance of the study and its scope and limitations.

1.1 Background

As in many developing countries the population of Greater Cairo Region has been expanding rapidly since the 1940s, due to the natural population growth and in-migration from different areas in Egypt (Sims, 2012). It has grown from 13.2 million inhabitants in 1996 to 16.4 million in 2006, representing 22.6% of Egypt's population (Adel, 2011). Using the same growth rate of 2.45, the estimated population of Greater Cairo in 2014 is 19.4 million.

These urban pressures led to the decreasing capacity of formal Cairo housing, infrastructure, transport and economy to accommodate the population growth, and the appearance and expansion of informal Cairo since the 1960s. Since then informal housing has been making up for the inefficiencies of the formal market and filling the supply-demand housing gap for the last decades. While "formal" Cairo was witnessing a population yearly increase of 0.4% in the 1996-2006 period (with some old core areas -2% yearly decrease), informal areas were growing with a rate of 2.57% yearly, absorbing around 79% of the increasing population (Piffero, 2009). This resulted in informal areas housing 63.6% of Greater Cairo total population in 2009, as shown in the following charts (Sims, 2012).

Year	Existing Agglomeration		Pre-urban Cairo Mostly Informal	Desert	Total GCR	GCR Annual Increase	Per cent Informal In Cairo Proper	Per cent Informal In GCR
	Formal Areas	Informal Areas		Cairo		%		
1947	2,400,242	0	586,038	0	2,986,280		0.0 %	10.2 %
1960	3,905,670	100,00	955,166	0	4,960,836	3.98	2.5 %	15.6 %
1976	4,610,326	1,969,000	1,374,317	0	7,953,643	2.99	29.9 %	38.1 %
1986	4,650,000	4,248,866	2,063,376	32,615	10,994,857	3.29	47.1 %	54.5 %
1996	4,807,632	5,436,477	2,857,468	149,992	13,251,569	1.88	53.1 %	59.7 %
2006	5,005,824	6,742,416	3,942,262	601,767	16,292,269	2.09	57.4 %	62.8 %
2009	5,038,763	7,155,106	4,345,567	**800,952**	17,340,388	**2.10**	58.7 %	63.6 %

Figure 1 Historic growth of component parts in GC (Sims, 2012)

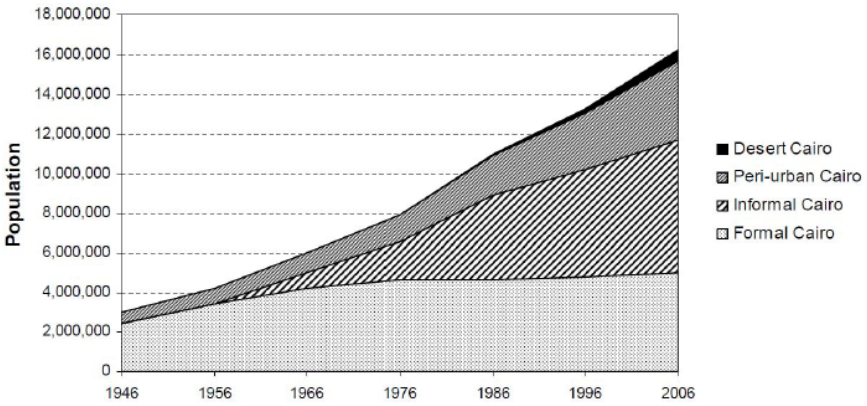

Figure 2 Growth of component parts (Sims 2012)

In Greater Cairo 83% of informal settlements is built on privately owned agricultural land, only 10% on desert state-owned land and the remaining 7% "developed on agricultural reclamation land nominally controlled by the state" (Sims, 2012:97). Despite housing such a large portion of the population, informal settlements represent only 39% of Greater Cairo area, over 205 square kilo-meters, which indicates their high densities compared to the rest of Cairo (Sims, 2012).

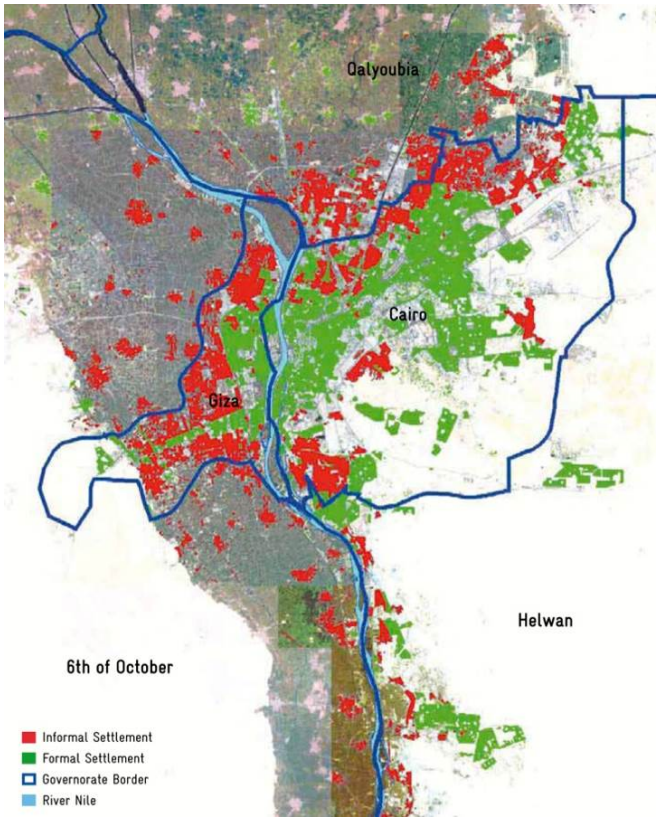

Figure 3 Informal areas in GCR governorates (GTZ, 2009)

According to Sims (2013) after January 2011 informal urban development, which was already dominant has accelerated considerably. He states (2013) that in one small informal part of Giza, which is part of Greater Cairo, new buildings footprint area has jumped from 700 sqm per year during the last 8 years before the revolution to 3150 sqm per year after the revolution, which is an increase by 4.5 times. He concludes that the future of Cairo in terms of people and employment is in informal areas.

Despite informal areas housing almost two-thirds of Greater Cairo population, the state's attitude towards them has been generally neglecting since their emergence in the 1950s. Sims (2012:91) explains, that until now there is very minimum "serious and factual analysis" on this dominant mode of urbanization and that this mirrors the careless attitude of academics and government representatives towards it. Moreover, Sabry (2009) describes how inaccurate and inconsistent basic data, such as, the number of informal settlements in Greater Cairo or the populations living in it are, in the different government authorities and ministries. Not only studies are lacking, but also real actions towards informal areas development started only taking place in the 1990s, and have been since then characterized by being very slow and minimal (Sims, 2012). The negligent attitude is more clearly expressed by Sims statement (2012:132), "the budget allocations to informal areas for infrastructure and services on a per capita base […] are truly pathetic". In fact, they "do not capture even a tiny fraction of the city's investments in basic services" (Sims, 2012:133).

The government attitude towards informal housing can also be characterized as oppositional; until the 1990s the main reactions were declaring laws prohibiting any informal encroachments and construction without providing alternative solutions for the people (Sims, 2012). Moreover there are a few cases of forced eviction, such as the case of "Ramlet Bulaq", an informal settlement located close to the recently built, mixed-use "Nile Towers" at the waterfront (Cairobserver, 2015).

In other cases, state's approaches have been deterministic. Public housing is constructed as an alternative to the informal market, but without responding to the inhabitants' needs or participating them in the plan. As Sims (2012:162) mentions, the National Housing Program (NHP) in Egypt "does not attempt to operate on the demand side, nor does it try to influence the wider urban housing market in Greater Cairo". In fact, most of the projects are isolated from services, job markets and connection networks of the main agglomeration and do not provide the social demands and flexibility offered by the informal housing market. Moreover, they are not accessible to many informal dwellers, as they require a too bureaucratic and "based-on-favoritism" application process and are not affordable by the very poor and vulnerable (Sims, 2012).

In the 1990s approaches towards informal housing have slightly become more cooperative and transformative, but mainly under the pressure of international organizations and bilateral donors. The German Technical Corporation (GIZ) has been supporting the Cairo and Giza governorates in upgrading "Manshiet Nasser" and "Bulaq al Dakrur" informal settlements since 1998 (Sims, 2012). Moreover, the Participatory Development Program (PDP) supported by GIZ since 2004 is implementing participatory needs assessments for different informal settlements in order to guide future upgrading projects of these settlements. In addition, a household representative study was conducted in 2008, financed by the USAID, after considerably lacking reliable material on both the formal and informal housing markets, as mentioned by Sims (2012:141).

1.2 Problem statement

Despite being a sub-optimal solution, informal housing have been more effective in responding to the market needs compared with alternative state solutions, such as public housing. Tarboush (2012: 172) describes informal housing in Greater Cairo, "far from being an indication of underdevelopment, has been a rational response by Cairenes to population growth and housing shortages." It was only through these self-organized informal processes, including: dividing of land, housing and infrastructure construction, and trading of properties, that almost two thirds of the population was able to find shelter over the last 50 years (Tarboush, 2012). Moreover, informal urbanization has been very dense and efficient, compared to the newly developed communities in Greater Cairo desert and housed almost 11 million inhabitants from 1960 to 2006, whereas desert towns attracted only 600,000 in the same period (Sims, 2012).

Since the late 1990s, a new trend of informal housing has emerged, which is described by Sims (2012) as and is obvious on the Greater Cairo scape due to its higher structure compared to other informal housing. As Sims (2012) describes, this housing is different from the traditional informal types, which are generally built in increments and serve primarily as the builder's own and his family's residence. Speculative housing, in contrast, is built for investment, i.e. profit generation through selling or renting the units. Moreover, its structure can reach up to 15 floors, built usually in one single stage, compared to a maximum of five to six floors in traditional informal housing. Being a bottom-up yet profit-oriented initiative, speculative housing develops with different characteristics, fulfilling diverse housing needs and successfully competing with formal housing projects (Sims, 2012). Furthermore, its distinctive features result in significant impacts on informal areas where it develops.

Despite the government's attempts to ban illegal construction in the last two decades, informal speculative housing has been expanding in many informal areas in Egypt. In fact, newer modes of construction are used and additional actors to overcome the government's control play an important role in the provision process (Sims, 2012). According to a study conducted by Madbouli and Lashin in 2003 on two informal areas, 37-41% of the housing cases construction was facilitated by contractors or real estate agents. From 2003-2008, 34% of all housing in Egypt was provided by informal developers (HSUE, 2008). Since the January 2011 revolution accompanied with decreased surveillance on construction activities, speculative informal housing growth as other informal housing types has escalated, as can be obviously detected on the urban scape of Greater Cairo (Sims, 2012, 2014; Shawkat, 2015).

El Matareya is a typical informal area in Greater Cairo that witnessed high construction activity of "one-off towers", particularly after the 2011 revolution. It is one of the largest and densest informal areas in Cairo that have developed on agricultural land since the beginning of the 20th century (GOPP, 2012). Due to its high connectivity and accessibility El-Matareya has become highly saturated with buildings, thus, current expansion takes place mainly vertically through converting old buildings into high towers. As a result of this development in El-Matareya, the area has been significantly impacted spatially and socially, as many other informal areas in Cairo that have been subject to similar developments; however, the least is known about the development process and impacts of speculative informal housing.

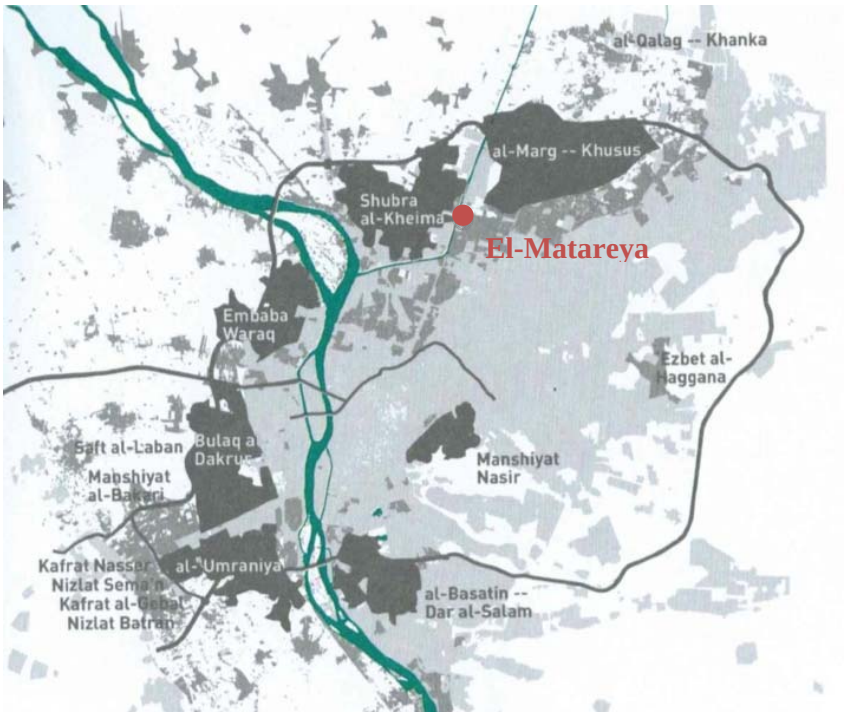

Figure 4 Large informal areas of Greater Cairo in 2008 (Sims, 2012)

1.3 Research Objective

This research aims to understand how the speculative informal housing provision process takes place, and which main outcomes it generates; final housing quality and triggered impacts on the neighborhood. The study focuses on El-Matareya informal settlement, as an instrumental case, to deeply understand the interactions between the beneficiaries of speculative informal housing within their context in El-Matareya. It investigates how the recent development, triggered by the speculative informal housing, impacts the space and society of El-Matareya.

1.4 Provisional Research Question

As a starting point the following main research question was developed:

How does the speculative informal housing provision process impact on the urban fabric of informal settlements in Greater Cairo since the January 2011 revolution?

1.5 Significance of the Study

Informal housing, particularly the new speculative trend, has been minimally studied, despite becoming a dominating urbanization mode in Greater Cairo (Sims, 2012). Planning research worldwide generally focuses on the state or community, neglecting

the important role of profit-driven land developers and markets on informal areas (Watson, 2012). This research contributes to the knowledge gap on the speculative informal housing in Cairo and the overlooked role of the informal private sector in housing provision. Understanding how the provision process takes place and how it impacts on the areas' development, helps generate knowledge on the characteristics that make it adequate for a large array of needs and successfully compete with formal housing projects in order to learn from them to develop more effective social housing programs and policies. Moreover, it helps identify the speculative informal housing provision weaknesses and problems, which will enable development interventions to be more targeted and successful in guiding the provision into a more optimal housing solution, thus realizing an improved quality of life for informal areas inhabitants. The housing provision process uses existing local efforts and resources, and generates huge employment and enterprise opportunities (Sims, 2014); it would be highly advantageous for the state to harness its potential and guide it to fulfil the huge housing needs in Greater Cairo, which can't be satisfied by the state alone.

El-Matareya is studied in this research as an example for informal areas in Greater Cairo that are experiencing substantial speculative towers construction. Characteristics of speculative housing in El-Matareya are comparable with different matured informal areas (Sims, 2012, 2014). Thus, the research presents an initiating step towards uncovering trends and patterns of speculative towers in Greater Cairo.

1.6 Scope and Limitations

The scope of the research covers the informal speculative housing provision process and the associated socio-spatial impacts on the neighborhood. While many informal housing can include or on the long-term develop some speculative characteristics, for example by adding floors for selling or renting, the research focuses on those housing that are primarily built for speculation and have the previously mentioned characteristics as described by Sims (2012); up to 15 floors high and built in one stage. However, other informal housing types are used throughout the research for comparison purposes. Moreover, the research covers developments in El-Matareya during the period from the January 2011 revolution till the present time; older developments are not considered.

The main limitation of this research is the short time period of only four weeks, to conduct the fieldwork, which is quite limited for collecting all the requires data and covering such a large and dense area such as El-Matareya. In order to acquire a realistic scope, the area of El-Matareya studied has been narrowed down to cover only four sub-districts of El-Matareya, namely: "El Ezab", "Shagaret Mariam", "Matareya Gharbeya" and the southern part of "Arab el Hesn", in which high activity of speculative housing construction has take place. In addition, the whole fieldwork period was during the month of Ramadan, in which working hours are reduced and respondents are not available as in ordinary days. Data collection had to be mainly conducted after iftar[1] late in the evening, since respondents were not available during the day.

[1] The time when people break their fast during the month of Ramadan

Finally, the political instability and lacking security added to the limitations of the data collection process. In fact, frequent Muslim Brotherhood riots including violent acts have been taking place in El-Matareya during the last months before the fieldwork is conducted; military troops and tanks are placed in front of the local district and police station. Moreover, frequent changes of the district president were implemented during 2015, due to several reasons, including the collapse of two unsafe buildings. All these aspects made accessing data and respondents more challenging and restricted.

Chapter 2: Literature Review

In this chapter relevant literature is reviewed to point out what is known about the topic and what concepts are established, and develop the research framework. The main concepts discussed include informal urbanization with a focus on informal speculative housing; self-organization; place-making and spatial quality. In the final part of this chapter relevant concepts are linked formulating the theoretical framework of the research.

2.1 Informal Urbanization

Over the last decades cities of the developing world are growing predominantly in informal modes. This phenomenon indicates the incapacity of the formal housing and land markets to fulfil the growing demands of the urban population. Informal urbanization has been the only solution found by large portions of the population to satisfy their needs for shelter and services and claim their right to the city.

However, informality is viewed by several authors as completely isolated from global markets. As mentioned by O'Donnell (2010), Hall and Pfeifer (2000) perceive informal areas as being built without any reference to the formal apparatus of planning and control in the city. Other academics describe a strong relationship between the informal and formal sectors and consider informality as "a series of transactions that connect different economies and spaces to one another" (Roy, 2005:148).

In the urban context the boundary between informal and formal is particularly blurred due to the interrelating and complementary coexistence of both (Guevara, 2006). It is a dynamic and complex continuum of legality and illegality, in terms of land ownership, land-use regulation, and building codes, which makes it hard to separate between formal and informal, but rather differentiate between types and degrees of informality (Roy, 2005, p.149). Informality provides the flexibility to respond to a large array of needs, not only the poors', but also the wealthier classes' (Roy, 2005; Berner, 2000).

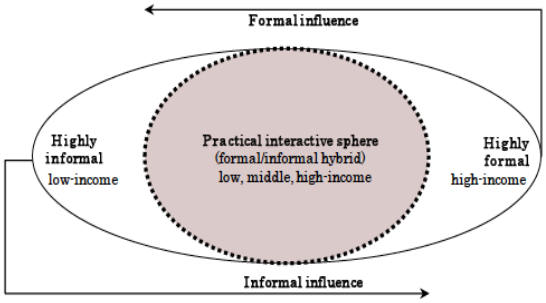

Figure 5 Formal-informal hybridization (Guevara, 2006)

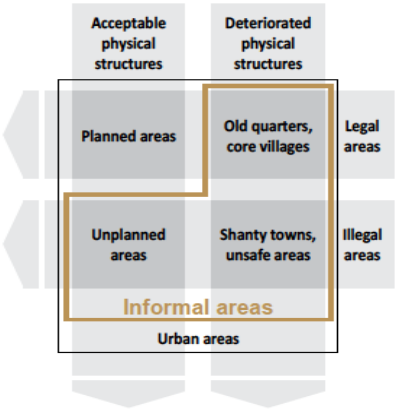

Figure 6 Informal Areas Types (GIZ, 2009)

Soliman (2004) depicts informality in the housing and land sectors as “fluid” for it can be: ex-formal, hybrid or semi-informal. In practice, this means that informality can take the form of informal land occupation, informal occupation of formal areas, construction of additional buildings on formal areas or extending existing buildings with additional floors or shacks (Mitlin and Satterthwaite, 2013:253).

2.1.1 Understanding its Emergence

Several aspects are considered to have caused the emergence and growth of informal urbanization, these include:

- Dysfunctional local governmental institutions that do not have the capacity of providing adequate services and infrastructure to their areas;
- Inefficient and bureaucratic governance system, which complicates legalizing and registering of properties and is too rigid compared to informal modes;
- Urban transformations through rural urban migrations;
- Globalization and liberalization economy, in which the state’s role of ensuring the welfare of the low-incomes has diminished;
  (Sims, 2012; Guevara, 2006; Mitlin and Satterthwaite, 2013)

Due to all these reasons large portions of the population in developing countries have to find their own solutions to satisfy their basic shelter needs. Bayat (2010: 56) describes the poors’ informal urbanization as “quiet encroachment of the ordinary” on “the propertied, powerful, or the public”. According to him people try to redistribute power and social goods through pervasive, collective action, without clear leadership, or ideology. They don’t have political motives but are rather determined by the necessity to survive and improve their lives. They conduct activities such as building extra floors, using space illegally for increased living areas, tapping urban services and using them out of charge. Watson (2012: 87) depicts informal urbanization as “insurgent planning”, which is carried out by urban agents to express resistance to socio-political forces and its inequality manifestations.

2.1.2 Informal urbanization and the state

Huchzermeyer and Karam (2006: 21) have described the relation between the state and informal settlements as differing from one regime to another and within one country, and fluctuating throughout the time. Many government interventions for informal areas upgrading focus only on physical upgrading, that might improve access to services and infrastructure, and physical accessibility (Huchzermeyer, 2008: 26). However, they neglect other dilemmas of neighborhoods, such as social exclusion within the areas, marginalization from the urban society as a whole, and security.

Huchzermeyer and Karam (2006: 25) indicate the negligence of many governments towards informal areas; they describe that governments tend to under-represent informal settlements’ populations in official statistics so that decreased attention is given to them in policies and in the views of others. Their negligence is more obvious in their minimal budget allocations for infrastructural coverage and other upgrading

processes of informal areas, compared to other state expenditures such as pensions for formal workers (Mitlin and Satterthwaite, 2013).

Roy (2009: 83) views informality as not an indication of regulation absence but rather as "calculated deregulation" by the state that facilitates a "logic of resource allocation, accumulation and authority". In fact, the state has the power to determine what is legal and what is not, and in many cases uses this power to legitimate informal services for the upper classes. Moreover, the state sets the laws and codes, such as minimum plot sizes and infrastructural standards, which affect the cost thus the affordability of formal residency (Mitlin and Satterthwaite, 2013).

On the other hand, Watson (2012: 91) defends local governments and argues that local governments are under-capacitated and are pressured by the poors' demands for services and shelter. He states that they are tempted to use corruption and vote-banking, as they are incapable of fulfilling the poor's needs. Moreover, in some cases informal processes in local governments are motivated by positive creativity to adapt plans and policies (Watson, 2009: 92).

In general, informal settlements are perceived as "Third World problems", as Roy (2005) states, however, she disapproves this perception and proposes a shift to learning from Third World cities and their informality. Huchzermeyer and Karam (2006) also support the potential of informal bottom-up initiatives and emphasize the importance of governments' facilitating "benign forms of informality" to contribute in "balanced socio-economic and shelter roles" as a more realistic and effective long-term solution.

2.1.3 Informal urbanization in Greater Cairo

2.1.3.1 Informal growth

Informal settlements in Greater Cairo, as mentioned by Sims (2012: 95), are "the result of extra-legal urban development processes that first appeared around 1950". According to Sims (2012:62) the expansion process took place as follows:

During the 1960s and 70s informal areas multiplied dramatically mainly on agricultural land, but also on few desert peripheries. As there were no regulations for buildings on rural areas, i.e. no permits required for construction, farmers received minimal official reaction when subdividing, selling and building on their land. Further on, during the war period from 1967 till 1975, formal Cairo development was paused, while the amount of migrants kept increasing especially from the evacuated Suez Canal area, which led to the expansion of informal areas. It was in the late 1970s and 1980s that the informal construction accelerated. During this period, many Egyptians travelled to work in the Gulf countries particularly in the Oil and Gas field and soon started sending their remittances for real estate investments, mainly housing in informal areas in Egypt. Since then informal settlements have been horizontally and vertically expanding, providing shelter for the majority of Greater Cairo population, which exceeded 63% in 2009, as mentioned before.

2.1.3.2 Main features of settlements and housing

Informal areas in Cairo generally develop starting from an existing formal neighborhood, as they are totally dependent on its infrastructure and expand incrementally following and taking advantage from its networks and roads (Piffero, 2009). Their growth occurs in a non-linear pattern, generally following three stages (Fekade, 2000: 142):

1) The starting stage, in which low-income households develop scattered houses incrementally, then initiate informal commercial and retail activities that attract more dwellers to the area leading to "scattered then collective expansion"
2) The boom stage, in which entrepreneurial developers are tempted by the area's potential for real estate market and build formal-like apartments in an accelerated manner until all available land is consumed.
3) The saturation stage, in which further vertical densification takes place through additional floors to buildings. In this stage some residents choose to sell their small houses to developers as land prices have increased.

Before describing the main features of informal areas it must be noted that data on informal urban developments in Greater Cairo is very minimal and mostly inconstant and inaccurate (Sims, 2012, Sabry, 2009). According to Sims (2012) informal settlements suffer from poor physical conditions due to the lack of urban planning or building control, for instance they have very narrow streets that can be inaccessible by vehicles and disorganized patterns leaving no reserves for public spaces. Main infrastructural networks are generally connected to informal areas, however, these are significantly under-capacitated and of low quality (Sims, 2012). Sewerage connections are almost absent in newer informal settlements and where they "exist" in older settlements, blockages and resulting overflows may be common (World Bank, 2008 in Piffero, 2009). Moreover, garbage collection is very limited in all informal areas, so a sea of garbage typically surrounds inhabitants (Piffero, 2009). As a result, dwellers often depend on services of the agglomeration and create a belt around it, hindering its normal development directions (Fekade, 2000: 143).

Schools and other social facilities are typically limited in informal areas in Cairo, as they depend on proximity to serviced areas, availability of state land parcels on which they can built and on community's ability to exert pressures on local politicians (Sims, 2012). Since informal settlements house more than 63% of the Greater Cairo population, one can conclude that inhabitants of these areas are not very different from those of Greater Cairo as a whole, covering a wide range of incomes (Sims, 2012). Moreover, informal areas house many micro-, small- and medium-size enterprises generating job opportunities for a large portion of Cairenes (Sims, 2012).

As in many developing countries informal housing in Cairo has a "free-style" construction, often with 100% plot coverage (Sims, 2013). Because of the absence of construction licensing and control, building can be quite high and population densities can exceed one thousand persons per hectare. Housing units are built on small land parcels and lack sufficient light and ventilation due to their density. However, housing structural quality is generally acceptable, as usually builders are the owners (Sims, 2013). There are four types of informal housing buildings in Greater Cairo:

Table 1 Types of Informal Housing Buildings based on Sims, 2012 (Authors Elaboration)

Type of informal housing buildings	Time frame	Nr. of floors	Structure	Construction process
Older, village style	1950s-1960 s	2 - 4	Load-bearing masonry walls & concrete/ wood slabs	Incremental
Classic Informal Housing	1970s-now	< 6 (or more)	• Reinforced concrete frame • Red bricks infill	Incremental
Speculative One-off towers	Since late 1990s	Up to 15	• Reinforced concrete frame • Red bricks infill • Better finishes	In one stage
Humble Structures	No specific time	1	• Rubble/ brick • Wooden roofs	-

2.1.4 Speculative Informal Housing

The provision process of informal housing is similar to the formal process, however its sequence is reversed. The formal development entails the sequence: “land to works to people”, in which houses are built according to building and planning codes without necessarily referring to the end-user (Turner, 1986). Whereas, the informal process follows generally: “land to people to works”, it starts with the people occupying the land, followed by the construction process, subsequently and often after years services and infrastructure are provided and the housing can be possibly legalized, as shown in the chart below:

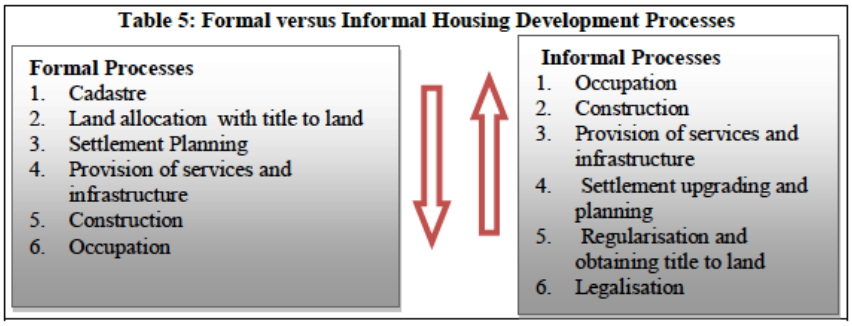

Figure 8 Housing Development Process (Zulu, 2012)

Recently, developers, landlords and entrepreneurs play a significant role in informal housing provision in many developing countries (Watson, 2012; Lombard, 2014; Sims, 2012). Housing generated through them differ from the traditional informal housing in that, it is built mainly for profit generation through renting or selling rather than for the builder’s own residence as in traditional informal housing (Huchzermeyer, 2008).

According to Berner (2000), developers subdivide land, which is often zoned for other uses, such as agricultural or natural reserve, extra-legally. These land plots are usually located at the urban periphery and have at least two basic needs, namely, accessibility to employment locations and a source of water. Other infrastructure, e.g. electricity can be tapped illegally when the situation permits, whereas, sanitary and garbage removal are not given a large priority (Berner, 2000).

2.1.4.1 Understanding housing speculation

Speculation can be generally considered as a synonym for investment, meaning a person invests in a rising real estate market to secure the financial wellbeing of himself and his family especially after his retirement (Malpezzi and Wachter, 2005). It can refer to short-term investments, as well longer investments, in which a person buys and holds the property "in anticipation of a profitable development opportunity in the future" (Malpezzi and Wachter, 2005:148). Thus, the optimal timing of the development process is the critical decision to make. Speculators base their expectations of profits on observations of the market prices and its trends, which can sometimes be inaccurate (Malpezzi and Wachter, 2005).

The rise of housing units' prices can be attributed to different reasons, such as excessive number of real estate speculators and insufficient supply of housing and increased demands (Malpezzi and Wachter, 2002:1). Housing demands are influenced by several factors, including demographic growth and changes; availability and adequacy of the housing stock, payment capacity of the people and channels for accessing the market by them (Baltrusis, 2004).

As Berner (2000:10) describes, "extra-legal housing is one of the most voluminous and profitable segment of the informal sector". Berner (2000:11) points out that developers take the rational decision to act outside the formal framework due to its complexity and lack of flexibility. The benefits of this "tolerated invasion" affects different parties; settlers find shelter with a relatively modest rate and owners generate profit and increase their land value Berner (2000).

The housing development process is not purely unplanned, but rather involves a high degree of institutionalization and is being increasingly dominated by "professional, tightly organized syndicates that combine the roles of entrepreneurs and regulators, and make huge profits out of the housing needs of low-income groups" (Berner, 2000). He defines "slum-landlorism" as the process, in which a developer tries to acquire one or more land plots and rent or sell them with or without houses. Housing and land plot prices vary according to proximity to the agglomeration, coverage and quality of infrastructure and tenure security (Berner, 2000:11-12).

2.1.4.2 Deficiencies of speculative informal housing

Informal housing especially that provided by developers and landlords is associated with several limitations and deficiencies, not only for its residents, but also for the larger public and the developers themselves (Berner, 2000).

In fact, acting outside the legal framework, developers are not able to scale-up their business and are forced to act in secrecy and pay bribes to avoid punishments (Berner, 2000). Moreover, they are not provided many services and opportunities of the formal

sector, such as access to credit, business partners and legal protection against crime or precarious locations and conditions (Berner, 2000).

As for the residents, these are vulnerable to various risks due to the informal agreement for acquiring housing that lacks any contractual obligation or enforcement, for instance, they don't get any compensation for deficiencies in the housing and are continuously under the threat of eviction by the landlord or the government (Berner, 2000). Huchzermeyer (2008:28) explains how dwellers of Nairobi's informal areas suffer from the negligent or exploitative attitude of landlords; due to their profit-orientation, landlords are less concerned on the adequacy of housing provision, which often leads to reduced minimum housing standards and the exclusion of poorer groups. They often neglect decaying housing conditions of their tenants and commercialize infrastructural services to increase their profits (Huchzermeyer, 2008; Mitlin and Satterthwaite, 2013). Due to the fact that landlords generally don't depend on mortgages to finance the housing construction, they seek to make return on their investment in the least possible duration (Huchzermeyer, 2008: 29). Therefore they charge high renting fees, are less willing to invest in the maintenance of the buildings and try to compensate their large investment through poor housing quality (Huchzermeyer, 2008: 29). Landlords are often politically well-connected or are themselves politicians or government officials (Mitlin and Satterthwaite, 2013). They use their political assets and pay illegal fees in order to access land, enable the building process and ensure the continuing lack of infrastructure investment by the government (Mitlin and Satterthwaite, 2013). Arif (2001: 13) describes in the case of Karachi, how the relationship between informal developers and government officials and institutions has been institutionalized, as they have a collaboration history since decades ago. He mentions that the amount and timing of "under-the table payments" to the various government agencies has been formalized.

Besides being inadequate for its residents only speculative housing also affects the larger public, for example, tapping off infrastructure and distributing it on the affects its capacity and quality for the larger community, and can cause environmental and health damages through sewerage leaks or overflows (Berner, 2000). In addition, existing outside the legal context, no taxations are paid for the housing, which leads to a decreased tax base and increased pressure on the formal sector (Berner, 2000).

Despite having such significant impacts on informal areas, profit-driven land developers' and markets' role is usually undermined in literature and the focus is on the community or the state (Watson, 2012: 95) Effective slum upgrading approaches should seek to improve the lives of dwellers and diminish slums formations; this cannot be achieved without understanding the private sector's roles, and protecting dwellers from any exploitations by them (Huchzermeyer, 2008: 25).

2.1.4.3 Characteristics of speculative informal housing in Greater Cairo

Sims (2012) describes speculative informal housing in Greater Cairo as mainly represented in one-off towers that are built in one stage contrary to traditional informal housing, which are usually incrementally built. He mentions that speculative housing is built rapidly with the purpose to put units on the market for rent or sale realizing quick profits. Sims (2012) mentions that recently these one-off towers have become more visible in informal areas and that they have much higher structures and possibly better finishes. According to him (2012) there are not enough studies

conducted on this type of housing and the details of its development process. Classic informal housing, can sometimes have speculative characteristics. In fact, many owners add floors to their residences and rent or sell these for income-generation. Moreover, some are tempted to develop their agricultural lands into housing units, to increase their income (Sims, 2012).

Sims (2012:122) states that the provision of informal housing through developers and contractors in Cairo is based on "personal relations and negotiated norms in the shadows of bureaucracy"; the process relies on networks and trust, and involves minimal formal written arrangements. During construction builders have developed many tricks for circumventing government surveillance and increasingly use the help of middlemen whose role is to avoid government control (Sims, 2012:126). The overall informal housing development process has become more complex and expensive, involving more actors and higher transaction costs (Sims, 2012:126). However, the process overall is much shorter and less costly than that of official housing provision and is influenced by several actors including: producer (usually private developer), regulator (the government), intermediaries (controlling the process of goods and services exchange among the parties), consumers (buyers or tenants) and market forces (Soliman, 2012:8). The following table is a summary of the differences and similarities between speculative one-off towers and traditional incremental housing as mentioned in literature (Sims, 2012, 2013; Soliman, 2004).

Table 2 Comparisons between One-off Towers and Incremental Housing

	One-off Towers	Incremental housing
Physical characteristics	• Built in one stage • Larger footprint areas/ units • Better finishes	• Built incrementally • Relatively smaller units areas
Developer	• Groups of relatives or neighbors • Powerful figures, e.g. former parliament members In partnership with contractor or not	• Owner himself • Owner and contractor partnership
Initiation motives	• Mainly for investment • Own residence + investment	• Own residence + investment
Possibly present resources/ constraints	• Large financial resources • Political support (i.e. connections) • Social assets: connections and networks	• Limited financial resources • Limited political support • Social assets: connections and networks
Target group and affordability	• Segments of lower- and middle-income classes • Compete with formal new-town projects	• Lower-income classes

2.2 Self-organization

Self-organization is a relatively new concept that has emerged from the natural sciences referring to the development of ordered structures from spontaneous and chaotic physical processes (Nederhand et al., 2014:3). In social sciences it describes a similar process, namely, the spontaneous emergence of ordered structures out of the interactions and networks of citizens without being imposed by one single actor (Van Meerkerk et al., 2012).

According to Meerkerk et al. (2012) and Nederhand et al. (2014) case studies of self-organized initiatives emerging from the local community, have shown that several conditions enable self-organization to occur, including: an incentive that triggers interactions and collaboration between actors; trust relationships between actors; vital actor relations which are based on common understanding of problems and aim at finding joint strategies for solving them; the need to exchange ideas and experiences and a physical or virtual location for interaction, which facilitates the collaboration of the different actors and organizations. Moreover, boundary spanning roles by key actors are essential to facilitate and protect "the free flow of ideas, people and resources" (Nederhand et al., 2014:5).

2.2.1 Self-organization and the state

Self-organizing initiatives do not necessarily evolve in a context where government's involvement is absent (Nederhand et al., 2014: 6-7). Governments' attitudes can have a significant impact on how self-organization develops. In fact, they can have a direct influence by guiding, monitoring and "disciplining" the process, which they refer to as "hands-on meta-governance". Or they can also indirectly affect the process, "hands-off meta-governance", through the political, financial and institutional context (Nederhand et al., 2014).

The relationship between government and self-organization is also depicted by Nederhand et al. (2014:7) as "networked governance in the shadow of hierarchy". This depiction shows the threat of hierarchical capacity and intervention of governments, for instance by imposing rules, as an incentive to self-organize. In their article, Nederhand et al. (2014) refer to a case, in which the government was supporting the self-organized initiative, but was influenced by a top-down decision-making mentality in dealing with the initiative.

In addition, Meerkerk et al. (2012:20-21) point out the role of the legal and institutional framework in facilitating the self-organizing process. In their case study, a legal agreement between all the actors including the local government "obliged" the private developer to act in favor of the group and the community. The flexibility of the legal framework enabled an adaptation to local conditions and to support what the local initiative considered as important (Meerkerk et al.,2012:20-21). The flexible institutional framework made possible the change in the local government's role from determining into facilitating (Meerkerk et al.,2012:20).

2.2.2 Self-organization in Service Provision

In developing cities the continuously evolving demands and problems cannot be met by the local governments alone anymore; the required funding is not available, and even if it is the investment in physical services only is not sufficient (Nour, 2011). Local self-organized initiatives emerge to fill in the gap between the inadequacy of services provided by the government and market, and the needs of the community (Healey, 2014). They develop from autonomous citizens' networks, which are driven by the citizens' motives and purposes without the guidance of one director and independent of government policies and procedures (Boonstra and Boelens, 2011: 109,113). In informal areas of developing cities, citizens are often the consumers as well as the producers of many services, such as housing, infrastructure and other social services (Nour, 2011). Participants in service provision may be individuals, groups of residents or private sector enterprises (Nour, 2011).

Local initiatives have several advantages; they are understanding and responsive to the people's needs, are flexible enough to adapt to local changes and are often innovative and efficient, tailored to suits local conditions (Healey, 2012, Nour, 2011). Public sector services, on the other hand, are provided on a broader scale, disconnected from local realities and thus, are not always addressing local problems (Healey, 2012). Another important benefit of local initiatives is that they attract the people's commitment and support as they are rooted in the community and steered by its leaders (Healey, 2014: 9). While these factors result in more in a higher sustainability and ownership of local initiatives, they strongly need the government's support, for instance, for technical and financial assistances, smooth connections with the public sector to facilitate the provision process and an adaptive legal and policy framework (Healey, 2014: 7). Moreover, local initiatives need responsive support strategies based on the group's needs, such as capacity building to manage services development and technical support and advice (Nour, 2011:80).

Despite encouraging self-organized initiatives for local services provision, Healey (2014) raises the concern that they might cause an uneven distribution of benefits and services. Local initiatives can exclude some groups from their services provision based on the initiative's interest and will only cover areas in which they are active, which will make areas without an active civil society under-served. This exclusion risk is especially high with a lacking overseeing role of the government (Healey, 2014).

2.2.3 Self-organization in a complex adaptive system

Complex system is a concept that is originally developed from the physics science, indicating the emergence of "order" out of "structure" (Meerkerk et al. 2012). A complex system consists of endless interactions and processes between its agents, which are open, relational, unpredictable and self-organizing (Boonstra and Boelens, 2011:108). Such interactions and processes are dynamic and always subject to change, thus are unpredictable. Moreover, they interact and influence each other, possibly opposing or in harmony with each other (Boonstra and Boelens, 2011:109). In such a system self-organization refers to the emergence and maintenance of structured patterns out of the initially chaotic interactions between people, places and institutions (Boonstra and Boelens, 2011, Meerkerk et al., 2012).

Cities are “dual complex, self-organizing systems”; the city as a whole is a complex system, and also each of its “urban agents”: each individual, household etc. is complex too (Portugali, 2012:125-126), which adds to the complexity of the system. In fact, cities are shaped by the interactions between the urban agents and their plans; thus, each citizen has the capability of acting as a planner at a certain scale (Portugali, 2012). Since “spaces are open and relational in a profound way”, they are always interacting with each other due the networked society we live in and one cannot predict how they will evolve (Boonstra and Boelens, 2011).

Urban complex systems have the capacity to continuously evolve and adapt to new conditions and changes in the city. All dimensions of the system are interrelated and affect each other. Emerging urban structures influence spatial, socio-political and economic settings, which in their turn affect the interactions between all different elements in the urban context. This complex loop continuously taking place in cities is expressed as follows:

“The city is a reciprocal product of the initiatives of actors, influenced by personal/ individual motives (caused by their environment), interacting with spatial developments that are in their turn product of collective actions.”

(Boonstra and Boelens, 2011:110)

In this complex loop the context within which actors interact affects their motivations and ambitions. These determine how they interact and develop in self-organizing forms, which again shape the context resulting in an endless evolving cycle.

2.2.4 Self-organization in the shaping of places

In many cities worldwide citizen involvement in the planning domain has become more significant, due to the “unprecedented shift in the relative power of actors” (Boonstra and Boelens, 2011:101). On the on hand, increased empowerment and accessibility of information and networking facilitations have encouraged social organization; on the other, continuous globalization and reduced public funds, have weakened the government’s role in planning (Boonstra and Boelens, 2011:101).

According to Portugali (2012) bottom-up planning occurs continuously in cities and co-exists with global planning; in many cases, it is the dominant mode of planning. In this context, Lombard (2014) depicts how people are engaged in their daily life in the construction of places, which she describes as the “place-making” concept. She elaborates that place-making in informal areas consists of “discursive and political, but also small-scale, spatial, social and cultural” contextualized, dynamic processes. They are interrelated and interacting with the local context with all its different dimensions. Citizens act in their “area-based, political and analytical” community setting, in which diverse stakeholders and multi-governance dynamics exist (Moulaert, 2010:7). In deprived areas, local “initiatives operate at a certain distance from the state” trying to fight for citizenship rights and against social exclusion (Moulaert, 2010:6).

Lombard (2014) portrays informal settlements as the “ordinary” or “everyday”, underlining the idea that settlements are consolidated by the daily intercourses of their dwellers, whose collective actions aim at improving their livelihoods. These actions

can be perceived as an approach to solve daily problems, but also a more innovative development approach, that considers existing potentials and strengths of the community (Moulaert, 2010).

Lombard (2014) uses the "place-making lens" to understand citizens' engagement in the shaping of their areas. She depicts places in three different ways (Lombard, 2014:12-13), namely:

- Places and lived experience, which is a human-centered view of places showing them as "sites of complex socio-spatial interaction"
- As a process, which mirrors the dynamic nature of places, they are always evolving and never finished. In this depiction, residents are considered as agents acting "within the constraints of existing structures" and settlements as "creative places" resulting from those social practices
- Places and power, which portrays places, particularly informal settlements, as being significantly affected by power relations between different actors. Lombard gives examples of these relations, such as, the tensions between community and the state, between resistance and domination. Moreover, the unregulated private market permitted by the state creates other power relations. All these relations are directly involved in the consolidation of socio-spatial hierarchies and forms.

Lombard (2014) underlines that the place-making lens helps to thoroughly understand the construction of informal settlements, as it uncovers the perspective of the poor. She emphasizes the importance of an equal, non-judgmental view of all types of activities constructing the place, which ensures all scales and types of activities are included and considered (Lombard, 2014).

2.2.5 Spatial quality in the context of self-organization

People's involvement in the construction of places has significant impacts on the spatial and social dimensions of the place affecting the quality of life of people, especially in socially and economically deteriorated areas (Karacor, 2014). Thus, it is important to understand how to address the concept of spatial quality to be able to assess the impacts of self-organized bottom-up initiatives.

According to Moulaert et al. (2011), different authors associate spatial quality with various concepts, such as, inclusiveness, liveability, fulfilment of citizens' needs, etc. Sokido and Bhaduri (2013) define spatial quality as "the effectiveness and capacity of urban spaces to function communities properly with higher performance efficiency of space usage". Moreover, they define it as the extent to which a place satisfies the expectations of the community, which are influenced by the values of the actors.

Moulaert et al. (2011) emphasize the importance of both spatial and social aspects in assessing spatial quality. Moreover, they describe how multi-dimensional and diverse approaches are needed to study spatial quality, as places are very complex systems that cannot be understood using only one explanatory model.

Several dimensions of space can be identified to cover most aspects and interdependencies of space and used for empirical research and assessments on spatial quality, according to Moulaert et al. (2011). These include:

1. Space and its uses are interactive and relational
2. Social space involves an ethical dimension, which is referred to as "spatial justice"
3. Power structures play an important role in space affecting equity, diversity, democracy, sustainability etc.
4. Space uses are read according to different types of interaction with space, such as social, cultural and physical
5. Space has multi-level relations
6. Space can be improved or assessed through collective learning, cooperation and actions
7. Sustainable development, which tries to balance environmental, social and economic development is another important entry point to analyse space

From these dimensions one can derive many aspects and functions to assess spatial quality, for instance, power structures in a space can indicate the exclusion or domination of certain groups, interests or uses and an impact on the sense of belonging of citizens. Another dimension is spatial justice, which addresses the guiding principles of a space, whether they are economic, political, social or environmental and how these affect the form and function (Moulaert et al., 2011).

According to Carmona and Sieh (2008:431) stakeholders in an area have different aspirations and plans, and therefore perceive and assess the performance of a space differently. They recommend that measuring a space's performance should be based on the variety of demands and values of the stakeholders and not just one. The higher the number of stakeholders and their roles in a place, the more complex it is to define a shared public value. Balancing indicators, which effectively reflect the different views, gives a holistic, impartial picture rather than distorted assessment of reductionist methods (Carmona and Sieh 2008).

2.3 Relationships between Concepts

After discussing the main concepts in the previous sections they are linked together to form the conceptual framework of the research.

The self-organization concept is used in this research to describe local initiatives, that emerge to satisfy the housing needs of people, but at the same time have profit-orientation. As explained in previous sections, the speculative informal housing phenomenon emerges without central leadership, through collective, frequent interactions between the different agents, including developers, residents and regulator representatives, mainly local district or governorate officials.

Based on the literature review one can derive a simplified description of the roles and relations in the self-organized process of housing provision: Developers, act as middlemen, linking different actors and facilitating the exchange of information and goods. There are different power relations and hierarchies between the actors, particularly between the state and the developers. Residents and developers generally share a trust relationship, as the latter have to maintain such a relationship to build up a good reputation in the community for future investments (Sims, 2012). However, this relationship can have an exploitative nature towards the dwellers particularly that they are not legally protected. The relations and interactions between the three main actors are not constant; they can be summarized as shown in the figure below:

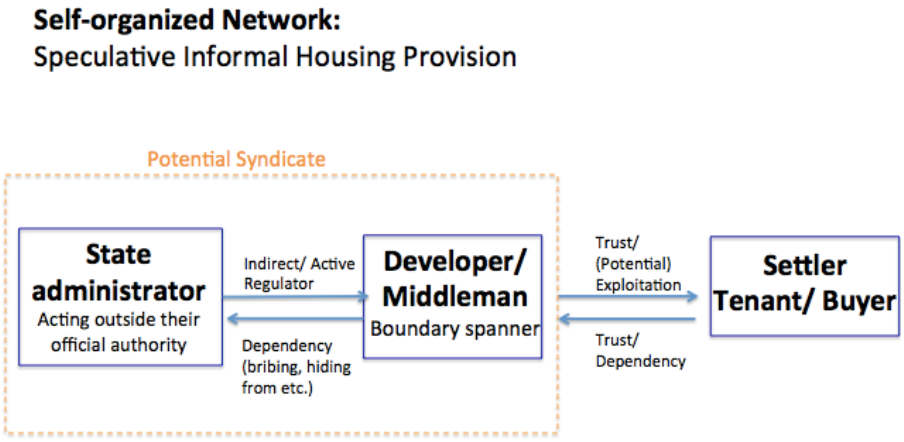

Figure 7 Actor Relations in Speculative Housing Provision (The Author)

The Conceptual Framework

The first main concept in the conceptual framework is: the interactions between the beneficiaries of the informal speculative housing. They are influenced by the existing context, which includes various factors. Two very important factors are trust and power structure that exist in society, and influences how and what type of interactions take place. The different needs and interests of the actors are the drivers of the interactions. Moreover, all interactions are confined by a certain legal environment within the informality context. All these are intervening factors that influence the independent variable: Interactions between developers, residents and regulator.

In the complex system of neighborhoods interactions between actors are non-linear, interrelated, and coevolve in different subsystems influencing and possibly opposing each other. The housing provision process in the complex urban setting of informal areas involves interactions between all urban agents, humans, institutions and spaces. These interactions result in changes in the built environment of the emergence of certain social patterns and spatial manifestations, which are the second main concept and independent variable of the conceptual framework. These patterns are manifested in the speculative housing itself as well as the neighborhood in which they evolve. In fact, they emerge with certain characteristics, that are different in many ways from the traditional owner-built housing. These characteristics are translated in the housing quality, as well as the spatial quality of the neighborhood. Moreover, these emerging forms influence the social setting of the place and have the capacity to continuously evolve and adapt to new conditions and changes. The developed social patterns can be addressed in many different ways, such as the social inclusion of the housing. Moreover, these social patterns can be tackled through the emerged formal interventions by the state that impact the community's life. Emerging with obvious and high vertical structures speculative buildings are more noticeable to the government and can stimulate certain reactions and interventions from it.

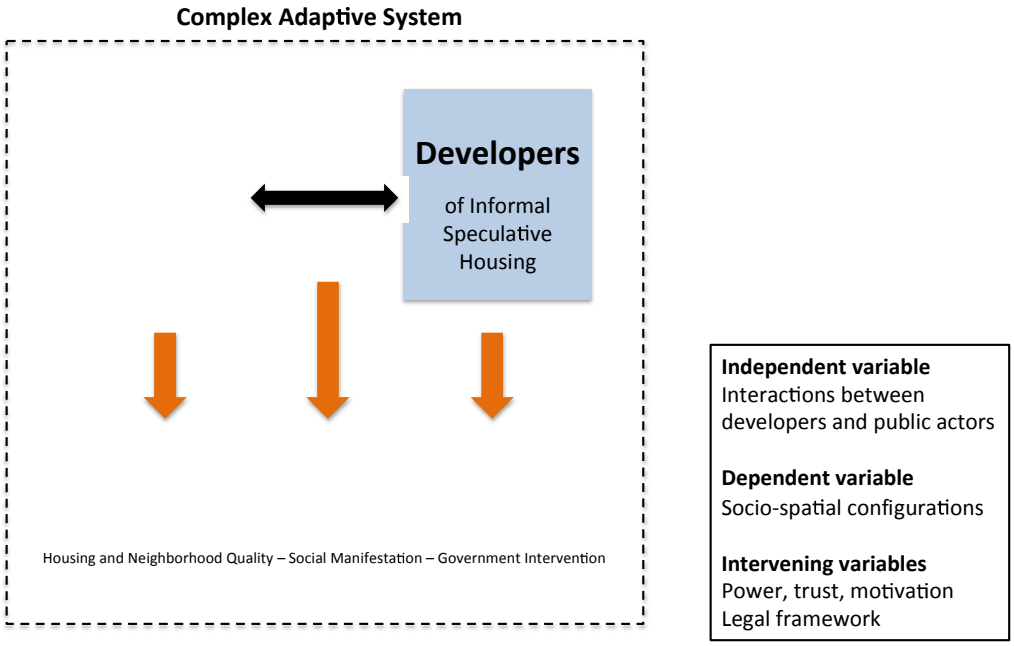

Figure 8 The Conceptual Framework

2.4 Conclusion

Informal urbanization has been addressed in literature from diverse perspectives and its emergence and tackling measures have been subject to different interpretations and opinions. Topics covered included urban exclusion, inequality and lacking rights of its dwellers and others related to poverty and inhuman living conditions. However, informality beyond the poor and the community has been minimally covered. Limited literature covers the higher income residents of informal areas or the informal private housing sector, despite playing a very significant role in housing provision and shaping their settlements (Watson, 2012). According to Shehayeb (2013) informal settlement development efforts should aim at understanding the local knowledge and initiatives, which the communities are already implementing in the production of their urban form and adding value to it, instead of the top-down interventions that are disconnected from reality. This research aims to contribute to this knowledge gap on informal areas in Cairo, on which research is particularly lacking (Sims, 2012).

The self-organization concept in the urban context has been analysed by academics in relation to various concepts such as the complexity theory of cities, shaping of spaces and emerging community initiatives. This research uses self-organization to describe the bottom-up, yet profit-oriented housing provision by the private sector. Through this unusual linkage, the research aims to add new dimensions to the theories studied.

Chapter 3: Research Design and Methods

3.1 Introduction

After the research concepts have been thoroughly studied and the conceptual framework has been constructed in the previous chapter, the research question and sub-questions had to be revised. In this chapter the research design, strategy and data collection and analysis methods used to answer to the revised questions are explained.

3.2 Revised Research Question

Informal speculative housing is a growing phenomenon throughout Greater Cairo satisfying many housing needs and competing successfully with formal projects. The housing provision process is shaped by the interactions between the main actors: developers, residents and local district, within their contexts. These complex interactions result in a housing solution that is more or less adequate and effective, impacting the neighborhood's development and integration in the urban society as a whole. This research studies the provision process of speculative informal housing and assesses its socio-spatial impacts on "El Matareya" informal area. It aims to take a step towards evaluating the housing potentials and inadequacies, and exploring intervention possibilities to guide the phenomenon to a more effective housing solution. The revised research question and sub-questions are:

What are the socio-spatial impacts of the informal, speculative housing provision process on areas such as "El Matareya" since the January 2011 revolution?

- Which interactions take place in the informal, speculative housing provision process?
- What are their drivers?
- What governance characteristics affect the provision process?
- How does the recent development of the area, triggered by speculative housing provision, impact the space?
- What are the social manifestations of the provision process?

3.3 Research strategy: Single Embedded case study

The strategy used in this research is a single embedded case study, of "El-Matareya" informal area in Greater Cairo with different speculative buildings as sub-units for analysis. The case study design facilitates an in depth study of a current phenomenon within its context and investigates real-life situations from different perspectives (Yin, 2003). The informal speculative housing provision process consists of complex interactions between the beneficiaries and their contexts. The context is inseparable from the process as it has a crucial role in shaping it and thus its socio-spatial configurations. Further on, the configurations of the process are multi-dimensional and interrelated. In a case study the combination of qualitative data types, as well as, the direct observation of the phenomenon is possible, which makes it well suited to understand the complex and interrelated phenomenon and its real-life configurations (Yin, 2003). In addition, it enables exploring areas that are not covered in literature

before; in fact, the informal speculative "one-off towers" is a phenomenon in Cairo that has not been thoroughly studied before (Sims, 2013). The embedded design provides an understanding of trends of provision processes and impacts of speculative towers within El-Matareya settlement.

"El Matareya" is chosen, as it is a typical example of informal settlements that have developed on private agricultural land, which are 83% of informal areas in Greater Cairo (Sims, 2012). In addition it has witnessed recent activity of speculative housing construction and is relatively saturated with buildings. These characteristics of "El Matareya" make it suitable as an instrumental case to study the provision process and its well-consolidated outcomes. Focusing on one instrumental case facilitates a detailed understanding of the interactions between the beneficiaries within the complex context of informal areas and how these result in certain socio-spatial patterns.

3.4 Operationalization of Concepts

In this section the conceptual framework is transformed into variables and indicators to allow for empirical research. The main concepts of the theoretical framework are: Interactions for speculative informal housing provision and Socio-spatial configurations**.** Based on the literature review presented in chapter two these concepts are defined and variables explaining them are identified, as follows:

Interactions for speculative informal housing provision are *"complex contacts and relations between the key beneficiaries of speculative informal housing, without supervision or central control, driven by the different motivations and affected by the power structure, trust relationships and legal framework"*

(Lombard, 2014; Boonstra and Boelens, 2011; Sims, 2012; Meerkerk et al., 2012, Ismael, 2010; Nederhand et al., 2014)

The variables affecting the interactions for speculative informal housing provision are trust, power relations, motivation and legal framework.

Socio-spatial configurations is the *"emergence of self-organized patterns out of the complex interactions and networks of the actors, shaping the area socially and spatially, and affecting its development and integration in the urban society as a whole."*

(Boonstra and Boelens, 2011; Meerkerk et al., 2012; Lombard, 2014; Sims 2012)

The variables identified for this concept are spatial impacts, social configurations and government intervention.

In order to be able to measure the variables concrete indicators are identified. The following table shows how each variable is converted into one or two indicators and how these will be measured. Moreover, it illustrates how each sub-question is addressed by the different indicators.

Table 3 List of variables, indicators and measurements

Research Sub-question	Variable	Indicator	Measurement
Which interactions take place in the informal, speculative housing provision process?	Trust	Type of interaction	• Which actors • Degree of informality • Flow of what? • Frequency of interaction • Perception of trust
	Power relations	Incidents showing imposition or "fear"	• Eviction • Construction halting/ demolition • Use of tricks (Hiding construction, tapping off infrastructure) • Illegal fees payment
What are their drivers?	Motivation	Advantages and disadvantages of speculative housing	• Residents side: Reasons for choosing unit
			• Developers side: 1. Method and price of acquiring land 2. Perception on complexity of provision process 3. Cost and financing 4. Selling time and price 5. Other benefits
			• Regulator side: Economic benefits
What governance characteristics affect the provision process?	Rule of Law	Laws affecting the provision	• Laws for housing provision
		Institutional practices	• Lack of surveillance • Bureaucracy
How did the recent development of the area, triggered by the speculative housing provision, impact the space?	Spatial configurations	Housing quality	• Finishing status • Density [units/building] • Infrastructure coverage • Falling down incidents
		Neighborhood quality	• Location and distance to surrounding buildings • Overflow/ interruptions of infrastructure
What are the social impacts?	Social configurations	Social inclusiveness	• Housing affordability
		Social identity	• Residents relations
		Government intervention	• Adding or improving services • Building permits

3.5 Data Collection Methods

3.5.1 Primary Data

A qualitative methodology is suited to capture the complex, multi-faceted nature of place as a socio-spatial concept, especially that research on informal areas is usually quantitative; statistics and data (Lombard, 2014). The data collection methods used in the study include 16 semi-structured interviews, diverse discussions, site visits and structured observation, and secondary data. Semi-structured interviews and discussions are adequate data collection methods for a deep understanding of the complex relations between the beneficiaries of the provision process. Moreover, they facilitate understanding the contextual impacts, which are captured in a case study research strategy. The interviews aim at capturing the insights and perceptions of the different beneficiaries' perspectives: developers, residents and representatives from the regulator side, which are officials at the local district. Moreover, experts and activists, who are keen on the subject, are interviewed, which helps open up new areas for exploration.

Structured observation and site visits are important qualitative data collection methods to understand the context of the area and the spatial setting and development as triggered by the speculative housing provision. The main aspects covered by the observation are location and quality of the speculative housing, and relation and impact on the neighborhood.

3.5.2 Secondary Data

Secondary data is collected during the fieldwork in order to complement the primary data acquired and includes the GOPP development plan of El-Matareya (2012), GIZ needs assessment report of El-Matareya, two studies on housing in Egypt, David Sims book "Understanding Cairo: the logic of a city out of control", a PhD dissertation, law documents, and relevant papers, presentations and articles[2].

3.6 Sample Size and Selection

Purposive samples are drawn for the four groups: developers, residents and regulator representatives from El-Matareya and experts knowledgeable on the subject. Moreover, the researcher has to strongly rely on snowball sampling, as several relevant actors are only introduced to the researcher while conducting the fieldwork and meeting with key informants.

[2] See bibliography for detailed references

Table 4 List of Interviewees

Name	Organization and/or Role
1. David Sims	Urban planner, consultant and writer
2. Abou Ahmed	Developer and owner of a speculative tower in MT
3. Anonymous	Local District employee and resident
4. Yahia Shawkat	Housing expert, activist and consultant
5. Anonymous	Resident of collapsed building "'Omaret el-Ta'awon"[3]
6. Hagg Sabri	Real estate agent
7. Mohamed Abdelaziz	Urban planning and development expert, and resident of MT
8. Heba Abulfadl	Ex-director of detailed development plan of MT conducted by GOPP and Associate professor, Department of Architecture, Faculty of Fine arts, Alexandria University
9. Abul Mahasen	"Al Madina al Haditha" NGO director and resident of MT
10. Suzan Sabry	Resident
11. Anonymous	Real estate agent
12. Ahmed Sabry	Resident
13. Roh El Wogud	Resident and owner of an older informal building
14. Naeema Mahmoud	Resident
15. Anonymous	Director of Information Center in MT Local District
16. Anonymous	Engineer in Housing Unit in MT Local District

Moreover, several discussions are conducted with further residents during site visits; other experts in the field while attending Egypt Urban Forum in June 2015; and the current district director of El-Matareya and officials in the Cairo governorate.

3.7 Validity and Reliability

The used research design enables a deep understanding and analysis of the phenomenon through the use of qualitative data. In order to ensure the internal validity of the research, the study design has to be accurate and leading to answering the posed questions. This is achieved by acquiring different data sources and checking findings with key informants, which is referred to as triangulation of data. The single case study design facilitates a deep understanding of the speculative housing provision process within the context of a typical informal neighborhood, but has

[3] "'Omaret el-Ta'awon" collapse incident took place in November 2014 and is mentioned in more detail in following sections

limited external validity on other cases, which can be extended through further researches on other areas and larger samples.

In addition, the case study research design is more complex than other strategies and is associated with large amounts of qualitative data. The researcher describes clearly how the data is collected and analysed to ensure the reliability of the research and that conducting a similar research leading to similar results would be possible.

3.8 Limitations and Challenges in data collection

Many challenges can be identified during the data collection process. Firstly, the fieldwork short time duration presents a main limitation, particularly that it was during the month of Ramadan, in which working hours are reduced and respondents are not available as in ordinary days. Several interviews had to be conducted after iftar[4] late in the evening, particularly with developers and real estate agents, who were not available during the day. In addition, being a female researcher who is unfamiliar to people from the area posed another challenge to the site visits; in most cases the researcher had to be accompanied by a male supporter, who is preferably from the area.

Further on, the sensitivity and confidentiality of the topic posed further challenges for accessing data, along with the skeptical environment in El-Matareya due to the recent collapse of two buildings, the district's demolishing of several buildings' violations and the local district president replacement in June 2015. In fact, district officials, as well as developers were hesitant to provide information. The researcher used different strategies to access and increase the trust of respondents, such as reaching to them through a person they know already, or who is in a higher position or is trustworthy. Moreover, more accessible respondents i.e. residents and experts were focused on during the fieldwork to overcome data accessibility limitations, when relevant.

Finally, depending on snow-ball sampling is risky, since accessing a diverse, non-bias sample is not guaranteed, particularly in large dense areas such as "El-Matareya". Different data sources and sampling paths were followed to maximize the diversity of the respondents, but at the same time maintain the focus on a limited area and comparable housing sample.

3.9 Data Analysis Methods

Primary and secondary data collected from the fieldwork are coded using the software Atlas.ti version 1.0.27. Codes are assigned to the different segments of collected data based on a coding system that follows two procedures:

1) Pre-set codes that are based on the indicators proposed in section 3.4
2) Emerged codes that were induced during the data collection process, and are relevant to the research topic

Furthermore, sub-codes under each code are allocated, and the process is refined until a final logical coding list is acquired.

[4] The time when people break their fast during the month of Ramadan

Chapter 4: Research Findings

This chapter portrays the findings acquired from the fieldwork through primary and secondary data collection methods[5]. First, it describes the studied case: El-Matareya informal area and the housing sample investigated there. Further on, it describes the speculative housing provision process in El-Matareya, and presents the data analysis on a variable level[6]: starting with the variables affecting the provision process: trust relations, motivations, the legal framework and power structure, and afterwards the variables used to investigate the spatial and social manifestations of the provision process. Each variable is analysed using different indicators, based on a coding scheme developed by the author with the software Atlas ti[7]. Finally, the chapter highlights the main findings of the fieldwork in relation to the research questions. In each subchapter, used data sources and measured indicators are presented.

4.1 Case Study Description: El-Matareya

4.1.1 Introduction

Since the January 2011 revolution informal urbanization in Greater Cairo and other areas in Egypt has significantly expanded. Data on informal areas in Egypt are rarely up-to-date and accurate, however, diverse information point to a truly huge phenomenon during the last four years (Sims, 2012 and 2014, Shawkat Interview, 2015). Sims (2014) describes how satellite images of different areas show accelerated informal expansion; e.g. "Geziret Mohammed" a fringe area in Greater Cairo had a post-revolution informal building rate 4.5 times higher than during the last decade before the revolution. The Ministry of Agriculture in August 2013 estimated illegal construction on agricultural land since the January 2011 revolution had significantly increased to become 35,000 feddans (147 square kilometers) during the preceding 30 months[8] (almasryalyoum, 2015). Moreover, estimates of building violation rates by the Technical Inspection Office of the Ministry of Housing show increased rates in many areas around Greater Cairo (Sims, 2014).

According to Sims (2014) informal expansion has been predominantly on privately owned agricultural land, such as the case in El-Matareya, and in mature and dense areas was typically in the form of vertical growth through the conversion of older buildings into towers. Throughout many areas one can observe towers appearing significantly on the urban scape in Greater Cairo; these are have around 150-450 sqm footprint areas and reinforced concrete frame and slabs (Sims, 2014).

El-Matareya in this research represents an instrumental case for studying the informal speculative towers phenomenon, which has expanded in many other informal areas in

[5] See section 3.5 for details on data collection methods

[6] Presented in conceptual framework (section 2.3) and its operation (section 3.4)

[7] See section 3.9 for details on data analysis methods

[8] No earlier period rates are available for comparison

Greater Cairo. The study facilitates an understanding of the phenomenon and its impacts in the context of El-Matareya, however, it uncovers patterns that can be common in other informal areas with similar characteristics.

This section describes the main features of El-Matareya based on the following data sources: GOPP study on El-Mareya (2012), GIZ Report on El-Matareya (2015), El-Mouelhi PhD (2014), a CAPMAS study (2013), David Sims book (2012), data acquired from the MDIC and interviews conducted with Heba Abul Fadl and three

Box 1 Sources used for El-Matareya Profile

As all informal areas in Egypt data on El-Matareya was difficult to access, often inconsistent and not up-to-date (Sabry, 2009). El-Matareya is considered the second largest informal area in Greater Cairo and has developed without official planning on former agricultural land (El-Mouelhi, 2014). Compared to other informal areas that have developed on state-owned land e.g. Ezbet el-Haggana, its lands are mostly privately owned, which makes most land plots "legal" from an ownership, but not from a land-use point of view.

Location and Area

El Matareya is located in the eastern part of Cairo Governorate. It is surrounded by El Tawfiqeya Channel (El-Marg district) from the north, El Kablat Street (El Zaitoun district) from the south, El Gabal Channel from the east (Ain Shams and El Marg districts) and El Ismaeliya Channel (El Qalyubeya governorate) from the west. The total area of El-Matareya is 13.4 square kilometers, of which only 4.14 square kilometers are inhibited (MDIC, the). An empty plot of 54 feddans[9] is owned by army and Antiquities Council as it includes historic monuments and is restricted from other land uses.

There are nine "sheyakhas" (sub-districts) in El-Matareya, these are: El Matareya Qebleya, El Matareya Bahareya, Shagaret Mariam, Ain Shams Gharbeya, Ezbet el Nakhl, Arab el Tawayla, Arab el Hesn, El Matareya Gharbeya and El Ezab.

[9] Equivalent metric area is approximately 0.23 square kilometers (see factor in conversion list)

Historical Significance

El Matareya is known for its historic monuments dating back to various eras. According to a study conducted by the GOPP (2012) and based on the fieldwork observations and interviews, it was a part of Heliopolis City "Madinet O'on", which was a knowledge and religion center in the modern Pharaonic era. And it is the site for the only remaining monument from Heliopolis city: "The Obelisk of King Senusert I". Moreover, there are other Pharaonic monuments, such as "Banehs Tomb" and area, which are three meters below ground and informal settlements have developed above large parts of their area. The Higher Council of Antiquities has started a regeneration project to save the tomb, and the following projects need to deal with the illegal occupation above the historic area. As stated by several interviewees, it is very common that residents in Matareya find monuments when digging just few meters under their houses.

In addition, Virgin Mary's Tree "Shagaret Mariam", is located in El-Matareya; the tree by which the holy family passed during their trip to Sinai and drank from the well next to it. This landmark used to be visited by tourists until before the 2011 revolution.

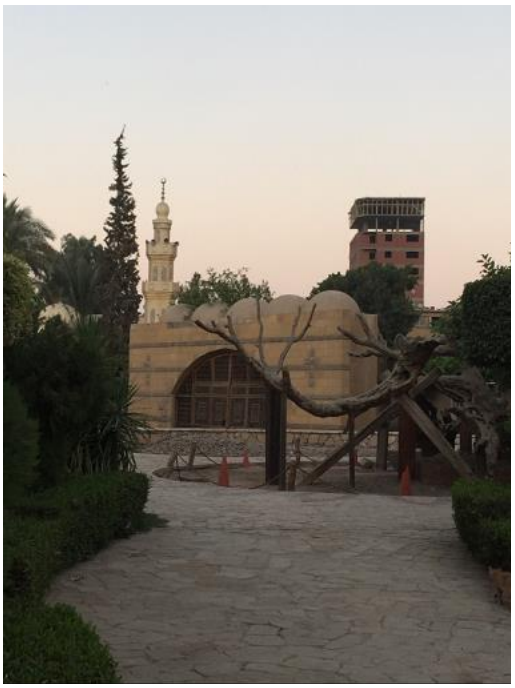

Figure 9 Mary's Tree (Author, 2015)

Figure 10 Senusert I Obelisk (Author, 2015)

Demographics

El Matareya has one of the highest densities among informal areas in Greater Cairo, excluding its protected, empty plots. According to MDIC its current total population is 709,514 persons[10], and the population density is 171380 person/sqkm, which is extremely high. The number of migrants to El-Matareya in 2006 was around 54000 persons mainly for reasons of marriage (42% of the cases) or work (26% of the cases) (GOPP, 2012).

Concerning the age distribution, ages 15 to 60 years, which includes the workforce, has grown from 52% of the population in 1986 to more than 66% in 2006, while younger ages below 15 years have decreased from 39% to 27% throughout the same time span. The smallest percentage is for ages above 60 years old, namely 7% in 2006, which has increased by 3% since 1986 (GOPP, 2012). Compared to an illiteracy ratio of 29.64% for whole Egypt in 2006 (Sims, 2012), El-Matareya had surprisingly a lower ratio of 19.3% (25% of women and 14% of men) for the same year, whereas university graduates were 13.9% (GOPP, 2012). Family size averages in El-Matareya were 4.2 person/family in 2006, which is higher than Cairo's average of 3.78 and whole Egypt's of 3.93 person/family (GOPP, 2012).

Economics

The major employing sectors in El-Matareya in 2006 were services (34%), trading (19.1%), followed by manufacturing and transport (16.5% and 10.4% respectively) (GOPP, 2012). El-Matareya is known for its car reparation enterprises, particularly in "Ezbet Shalaby" area; customers come from all around Egypt to get car spare parts or reparation services. The construction sector was only 8.8% in 2006 (GOPP, 2012); however, it is expected to have increased after the revolution when construction activity accelerated. The unemployment rate was 13.7% in 2006 compared to 10.27% for whole Egypt, which contributed to the spread of drug use and gangsters in the area. Official statistics of four sub-districts in El-Matareya show that population classified as poor ranges between 14% to 31% (CAPMAS, 2013).

Connectivity

As previously mentioned El-Matareya is close to formal areas in Cairo Governorate from the south, such as Heliopolis, to which it is connected through main roads and a tramline. Moreover, it is easily accessible through the Ring Road from the north and through the underground from the east; four underground stops pass through the eastern boundaries of El-Matareya. There are several wide paved streets, however, most streets are unpaved and too narrow for cars to pass through. As a result private-owned tuk-tuks have become the most dominating transportation mode, reaching every part in El-Matareya, but causing high levels of noise, congestion and danger to pedestrians due to their extremely chaotic driving and the lacking surveillance on them. Vehicles, taxis and microbuses are also common on wider streets, and higher income areas in Matareya, such as "El Kharga" in Shagaret Mariam sub-district.

[10] Abul Fadl (Interview, 2015) mentions that the actual population is significantly higher based on a study she conducted in 2012, possibly reaching 2 million in the present time.

Figure 11 Bridge and tramline connecting MT to Heliopolis (Author, 2015)

Services and Facilities

The continuous population growth in El-Matareya in the last decades overloaded the already limited and deteriorated services and facilities, particularly after the dramatic increase of illegal construction (GIZ, 2015). All interviewed residents mentioned that public services are limited and that they highly depend on private initiatives, which will be discussed in following sections. El-Matareya is almost universally covered with water, electricity and sewerage connections, as is the case for over 97% of all informal households in Cairo (Sims, 2012:106), however, the quality of the services is not always good. According (GIZ, 2015) waste and sewerage are amongst the main problems of the area. Gas is provided to almost all areas except some parts of "Shagaret Mariam" sub-district, which have too narrow streets, thus pipelines cannot be installed.

As in most informal areas in Cairo, there is a shortage in educational and social services (Sims, 2012); there are 68 public and private primary schools of, 38 secondary and only 4 high schools, with student densities reaching 57 students per class in some cases (GOPP, 2012)[11]. As for health facilities, there is only one emergency point, and one public general hospital (GOPP, 2012). There are three youth clubs for the whole district, but no real public spaces, such as parks, so streets are used for all kinds of activities; children playing, cafes' seating area, temporary amusement park etc. While 270 NGOs are registered, only 24 are active according to interviewed district official, and mainly in cemeteries provision. According to several interviewees, the Muslim Brotherhood operate one of the oldest and most active NGOs, called "El Gam'eya el Shar'eya", which provides diverse services to residents.

[11] No sufficient data is available on El-Matareya to be able to measure the exact shortage of services, but 57 students per class indicates the extreme overloading of schools.

Figure 12 Rare, fenced public space; Street used instead (Author, 2015)

Figure 13 Garbage and sewerage overflow traces (Author, 2015)

Figure 14 Waste in the street (Author, 2015)

Daily Life and Culture

El-Matareya is a very vibrant area with many commercial activities, a variety of services and shops. When walking through the streets one can see all different kinds of ground floor shops and cafes. Moreover, it is known for its weekly market "Souq el Khamis", conducted every Thursday, in which food and various products are sold; many people come from surrounding districts to buy from it. Walking on the streets one can see several mosques, as well as churches, as shown in the figures below.

Spending many hours inside the community, one can observe the strong social bonds that are not common in formal parts of Greater Cairo. People know their neighbors in the area very well and often have close relations with each other. While conducting a discussion with several residents of one street, it was noticeable how cohesive they are; sympathizing with and supporting each other. Moreover, family businesses and houses are very common, which indicates the social ties in the community.

Figure 15 Thursday Market (Author, 2015)

Figure 16 Mosque close to El-Matareya Sqaure (Author, 2015)

Political and Security Situation

There is one police station, however, not covering many inner parts of El-Matareya. Since the revolution in January 2011, the relationship between the police and the people has deteriorated like other areas in Egypt. The police station witnessed several attacks and had to be relocated after it was burnt in 2011. Moreover, El-Matareya Main Square has been the center of many Muslim Brotherhood revolts, many of which have lead to burns and violence. Several interviewees mentioned that the police are overwhelmingly concerned with protecting main streets and the surrounding area of their office, rather than focusing on the safety of ordinary people in El-Matareya.

4.1.3 Informal Growth of El-Matareya

Like most other informal areas in Greater Cairo there are no records of the early development and expansion process of El-Matareya (Sims, 2012:59). It is mentioned in a GOPP study (2012) that from 1906 till 1930 migrants from different locations in Upper Egypt, started coming to this area, which was a peripheral rural land, as workers for the construction of neighboring 'Ain Shams' district. Small rural agglomerations, called "Ezab" began to appear during the 1930s and expand in the 1950s (Soliman, 2012).

It was mainly during the 1960s and 70s that El-Matareya, as many other old informal areas, such as "Bulaq al Dakrur" and "Dar el Salam" witnessed large land subdivision and selling activity (Sims, 2012: 62). As mentioned by Sims (2015), it was during this period, after the change of the old British Subdivision Law, that land subdivision and informal growth expanded. In fact, the old British Law required difficult conditions from owners to subdivide and sell their land, which formerly discouraged the whole process. The strictly rectangular field patterns in agricultural areas led to the organized subdivisions and seemingly planned urban growth in some parts of El-Matareya.

Figure 17 Part of El-Matareya in 1956 and 1977 in El-Kadi 2009 (El-Mouelhi, 2014)

Informal expansion moreover accelerated starting the liberation era of Sadat, due to the growing remittances sent from Egyptian expatriates working in the Gulf and used for investments in informal construction (Sims, 2012). The privately owned plots gave owners a high sense of security of tenure, which encouraged subdivision, selling and informal building on it regardless of land-use restrictions. El-Matareya had the highest number of subdivision projects, namely, 47 projects out of 78 in whole Greater Cairo, which indicates the high activity of informal building there (El Kadi, 1987).

According to several interviewees, the government only started providing basic utilities in El-Matareya after it was of substantial size in the 1990s. Moreover, the underground line was connected to the area through four stops, and the Ring Road was completed in 2001, which led to further urban growth. This development throughout the last decaded made El-Matareya currently a matured area, where services are in a better state compared to other informal areas increasingly attracting migrants to come.

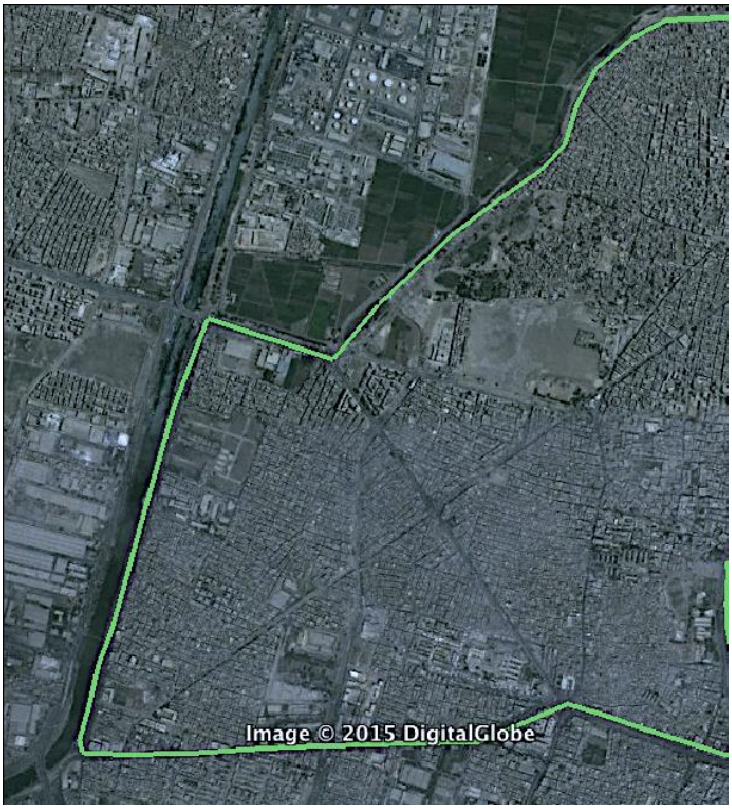

Figure 18 Satellite Image of Part of El-Matareya in 2004, compare with fig.22 (Google Earth)

Immediately after the revolution in January 2011, informal construction activity peaked, taking advantage of the lacking surveillance at that time. Expansion took place mainly vertically since the area was already saturated and dense, through adding floors to existing buildings or converting old housing into new high towers; which will be discussed in the following section.

4.2 Housing Typologies in El-Matareya

This section describes the housing typologies of El-Matareya based on the following data sources: GOPP study on El-Mareya (2012), El-Moelhy PhD (2012), David Sims book (2012), data acquired from the MDIC, interviews conducted with Yahia Shawkat, eight residents, three district officials, two real estate agents and one contractor in El-Matareya, and the author's observations and pictures during fieldwork.

Box 2 Data Sources used for Housing Typologies in El-Matareya

El Matareya neighborhoods are heterogeneous; they vary from good quality middle-income housing, to quite humble, vulnerable housing constructed of rubble and wood. According to district officials, the poorest areas are "Ezbet el Laymoun" in the subdistrict of "Shagaret Mariam", and parts of "Arab el Hesn", in which residents are occupied in garbage collection and recycling and which is one of the priority projects of the Informal Settlements Development Fund. These areas have very narrow and irregular street patterns. On the other hand, there are areas considered by residents as high standard, such as "El Kharga", located also in "Shagaret Mariam". This has wider streets, higher, more modern buildings and is close to the underground station.

Another obvious phenomenon is the presence of numerous old villas; according to four interviewed residents, these were owned by wealthy residents, who often possessed agricultural plots in El-Matareya. Currently many of these villas are abandoned by their owners, and have been taken by adverse possession, "wad' yad" for residence, other activities, or demolished and replaced by new high buildings.

Figure 20 Villa sign (Author, 2015)

Figure 19 Old Villa (Author, 2015)

As many interviewees stated, almost all buildings in El-Matareya don't have a building permit. In fact, it was originally agricultural land, in which no permits were required for construction, and due to its informal growth land-use regulations were

not applied. There is only one small area that had formal planning, which is called "A'ard el Sherka" in sub-district "Matareya Gharbeya" (MDIC, 2015). Besides not having a permit, many buildings have violations to codes and design, for example, through building extra floors or not following the approved design.

The number of violating buildings has increased dramatically after the revolution, "people have become more courageous" as the resident and NGO president Aboul Mahasen stated. According to the MDIC official, the number of violations has increased from around less than 50 before the revolution to a total of 7000 violation and 5000 court cases since 2011. The violations are divided into these rough figures: 3000 whole building violations (usually design violations), 1500 violations on state land, 2500 partial violations (e.g. extra floors). As mentioned by a district official, "the situation is currently became more controlled, there might be violations of adding floors, but not demolishing old houses and building whole violating buildings."

After observing and walking through El-Matareya's neighborhoods, informal housing can be classified into the four types mentioned in chapter two (Sims, 2012):

1. Older village-style structures, usually of two to four floors high, with load-bearing masonry walls and concrete or wooden slabs
2. The more modern classic informal housing, typically five to six floors, with reinforced concrete frames and masonry infill walls
3. The new speculative towers, which usually reach 15 floors and have better external finishes
4. The vulnerable rubble or wooden structures, which is only in limited areas, as mentioned before

Figure 21 Different Housing Types (Author, 2015)

However, one can see how the first two types are increasingly replaced by higher structures. In 2006 more than 47% of all buildings have six or more floors, and a very insignificant number had more than 10 floors, as shown in figure 25 below; which is expected to have significantly increased till the present moment (GOPP, 2012). The same study shows that, 72.5% of buildings had reinforced structure, which is also expected to have increased in the past years.

4.2.1 Sample studied

Due to the large scope of El-Matareya the research focuses on four of the nine sub-districts, including its largest and most populated Shayakha "El Ezab", as well as

"Shagaret Mariam", "Matareya Gharbeya" and the southern part of "Arab el Hesn". Interviewees from the different groups: residents, developers and local district officials, as well as housing examples studied are from this area. The scope of the area covered was decided during the fieldwork according to the accessibility of respondents and their scope of knowledge; the respondents' sample is presented in detail in section 3.6. Speculative towers, as well as older housing types, studied are located in different areas within the four sub-districts covered, thus, give a wide picture of the diverse housing stock in El-Matareya.

4.2.2.1 Traditional owner-built housing

Since the research aims to investigate speculative housing, which are built primarily for investment reasons, owner-built housing were briefly studied for comparison. Based on interviews and observations, owner-built housing were mainly constructed for the residence of families, but can include some units that are rented to other residents. Renting is mainly using the Old Rent Contract, which commits tenants to very low, almost negligible monthly fees of around 10 to 30 EGP.

Construction does not follow a design by an engineer, but only the experience of the contractor and standard building norms along with minor modifications according to personal needs of owner (Shawkat and Abdelaziz Interview, 2015). Since owners live in the buildings, they ensured the sound structure during construction, but with the years the structure can deteriorate due to the lacking maintenance of the building. Several characteristics of three explored examples is shown in the following table:

Table 5 Traditional informal housing types

Building	Age	Height	Area	Structure
1	50 years	5 floors	2 bedrooms and reception (55-70 sqm)	Reinforced columns until third floor
2	20 years	6 + ground floor		Load-bearing masonry walls
3	45 years	4 + ground floor		

Recently, many owners are tempted to use their decades old buildings, for investment purposes; they add extra floors without checking if the structure can bear, which resulted in the collapse of buildings on them (Shawkat Interview, 2015).

4.2.2 Speculative Housing

Since housing in El-Matareya is mainly privately owned, contractors are increasingly encouraged to buy them from their owners or enter in partnership with them in order

to convert it to modern towers for investment. This section gives a general picture on the characteristics and heterogeneous nature of speculative towers in the area studied.

As shown previously most towers were built after the 2011 revolution, particularly those with significant heights, i.e. more than eight floors. Unlike older informal housing, towers' units at least in the first ten floors are for selling and not renting.

Figure 23 Tower's construction (El-Mouelhi, 2014)

Figure 22 Other towers in El-Matareya (Author, 2015)

Speculative towers have often brighter finished facades, and have obvious heights compared to their surrounding older buildings. Since towers' developers are not necessarily residents of the same building, the structural quality may not be a priority of the developers particularly in the recent lacking surveillance situation.

After studying several towers in depth, one can see the heterogeneous nature of them. While having several characteristics in common as mentioned before, they can vary in different aspects, such as permits acquisition, extent of violation, attractiveness of location, street density, and façade finishes, which affects their value and image.

- Building permits: Almost all buildings don't have a permit, but very few have and thus are higher valued.
- Building violations: Almost all towers have a violation of at least one aspect of the code, e.g. the building height, unit density, structural standards. The higher the abidance to the code the more a building is valued and is closer to the formal buildings prices.
- Attractiveness of location: An area that is close to services and transportation means to the city, such as the underground, tram or wide roads is considered highly attractive, as residents can easily access jobs, services and other areas in Greater Cairo. On the other hand a building that is inside poorer areas,

which can only be accessed with tuk-tuks, such as “Ezbet el Laymoun” are less attractive for residents.

- Low street density: Buildings on wider streets and surrounded by lower buildings, are more preferred by residents, as they can have more privacy, better ventilation and light penetration; whereas, buildings in high dense areas don’t have these qualities.
- Facade finishes: While towers generally have brighter and more modern external finishes than traditional buildings, quality ranges according to the income group it targets and market competition; some buildings can have ornamented facades, balcony fences and entrance doors; others can have more basic finishes.

Based on the above-mentioned criteria, the tower examples explored in El-Matareya, can be categorized in three types[12], as shown in the figure below. The towers range from high-end, which are highest valued to low-end, which are lowest valued. Prices shown are the upper ranges for selling unfinished units in floors one to ten of different towers.

Table 6 Typologies of Towers in El-Matareya

	High End Towers		Low End Towers
	Type 1	Type 2	Type 3
Prices in EGP/sqm	Up to 2400	Up to 1500	Up to 600
With permit	Yes	No	No
Building according to code	Medium	Low	Low
Attractive location	High	High-Medium	Low
Lower street density	High-Medium	Medium	Low
External Finishes	High	High-Medium	Medium

[12] Based only on towers sample explored and interviews conducted, exploring further towers could reveal further or different characteristics and types

Table 7 Other Tendencies of Towers

As can be seen from the figure above, the prices vary significantly from 2400 EGP/sqm to 600 EGP/sqm, which is almost a ratio of five to one. The highest price range is for buildings with a permit, which are quite rare in the area and thus are valuable and comparable with formal units prices. Without a permit, units prices decrease the less the location attractiveness, the higher the street density and the lower the external finishes. Moreover, there is a tendency of higher-end towers to have larger number of floors, reaching 15 floors, while lower-end can have nine to ten floors. Higher end towers tend to offer units with larger areas that can reach more than 225 sqm, whereas lower end units are typically of smaller areas such as 75 sqm.

Tower Examples for the Three Different Types:

Type - 1

Tower A:

This building is located in “El-Ezab” sub-district on a main, vibrant street, very close to the El-Matareya hospital, the police station and other services. Moreover, it is connected to the El-Matareya Main Square through a main street. The tower has a permit, has good external finishes standards, but is violating with several floors. Each of the 15 floors includes two units, of areas varying from 120 to 140 sqm. In non-violating floors the price for unfinished units ranges between 2000 to 2400 EGP per sqm. These prices do not include infrastructure connections, as residents have to extend water connections and apply for electricity meter.

The building was constructed in 2013 and units were mainly sold through a sign put on the site showing the building permit acquired. Many units were sold at the beginning of construction with lower prices to finance the construction process.

Figure 24a,b Housing with building permit (Author, 2015)

Type - 2

Tower B:

It is located in Kharga area, which is close to the underground station and considered a higher standard area. The building is surrounded by a 6-meter wide street “Menyet Matar”, a 3-meter wide side street, a mosque and a school from the other sides.

It is built by a well-known family in Matareya, which has been working since decades in the real estate business. It is built on 100% of its a large plot area and is built on even more than it, as it is around 3 meters shifted outside towards the street than the other buildings on the same street, leaving almost no pavement for pedestrians. The building has well-finished, bright external finishes with ornaments.

When entering the building one can get amazed by the width of the entrance and the marble cladding and the decorations. Moreover, there are Quran verses hang over the walls and an elevator with an arrival tune and interior Quran recitation for users to hear during the vertical travel. A building guard lives with his family in a small unit on the ground floor, which is common for formal housing in Egypt.

The tower is 14-floors high, with 7 units in each floor, adding up to a total of around 100 units. Unit areas vary between 160-220 sqm, some are one-floor apartments, and others are duplexes. According to interviewed residents and house guard, all units are for selling and prices for a unit of 200-215 sqm range from 450,000 EGP (finished) and 300,000 EGP (unfinished, on red bricks), depending which floor, and if paid in instalments or at once. This gives a price range of 1500 to 1400 EGP/sqm for unfinished units. However, if bought early enough, before or during beginning of construction, a unit of 300,000 EGP can be bought with only 250,000 EGP.

The building is covered with all basic services: electricity, sanitation, sewerage and gas connections, but mainly illegally. Despite its numerous and expensive units, it doesn't include a car parking.

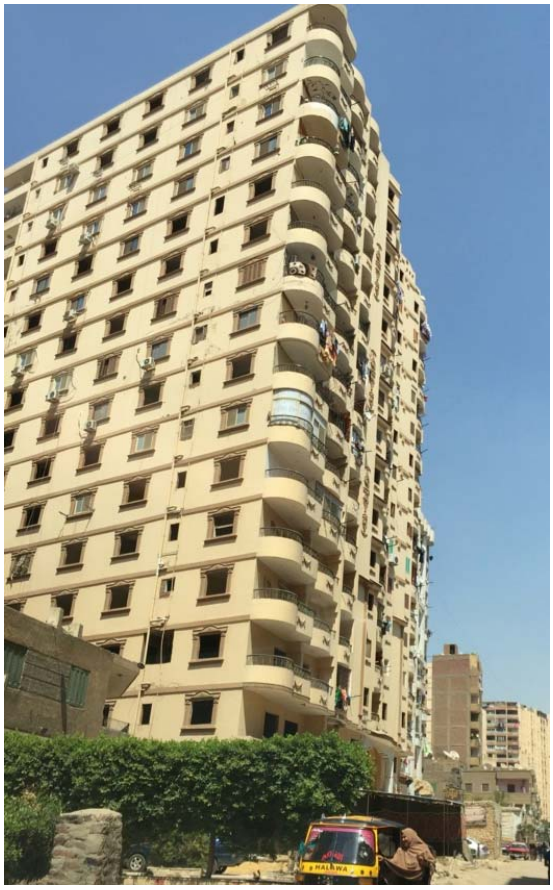

Figure 25 Tower B (Author, 2015)

Figure 26 Tower shifted by 3 meters to the street side (Author, 2015)

Figure 27 Wide marble entrance (Author, 2015)

Tower C – Next to "El Massala":

This building is situated at the southern borders of "Arab el Hesn" sub-district in a very special location: on a wide main street, and next to and overlooking the "Senusert obelisk" and an empty historic site. As interviewees mentioned the tower has replaced a smoke factory that was located previously on this site.

The tower is also 14-floors high. As an interviewed district official mentioned, the tower was built using more than its plot area; few meters from the neighboring state owned land. Besides this violation it has extra floors violation and is not follow historic sites restrictions, which prohibit balconies or windows directly overlooking the monuments. The official mentions that he doesn't expect a demolition of the building for these violations. Most probably the tension will be deflated, when a fee is paid by the builder to the district, who is the same well-known family of the tower B.

Figure 28a Very close distance to Senusert Obelisk (Author, 2015)

Figure 35b Tower C (Author, 2015)

Tower D:

This building has similar finishes and density characteristics and prices as tower B, but is constructed and owned by different developers, namely several partners, who are living in it. Contrary to tower B it was originally 8 floors high, with a permit, as interviewed residents stated, but after other towers were built in the area, the owners decided to imitate the development process and build six extra violating floors.

It is 14-floor also but unlike tower B, it has an underground parking. Moreover, there is another parking on street level, which residents of the area can use with a low monthly fee of 80 EGP.

Figure 29 Tower D (Author, 2015)

Tower E:

This tower is situated in “El Kharga”, the well-regarded area in “Shagaret Mariam”, as mentioned before, but located on a narrow side street. One can see the relatively lower quality external finishes compared to the “higher-end” towers; no ornaments on facades and unfinished side external walls, i.e. in red bricks, which is the case in most towers explored.

The tower has also 14 floors, with four units per floor, and units are smaller ranging from 75-90 sqm; three bedrooms and a reception area. Prices for unfinished units range between 90,000 EGP and 120,000 EGP, depending on, which floor, and on payment method. If we calculate the price per square meter from the given ranges, it will be from around 1200 to 1300 EGP/sqm. The building is also covered with all basic services, electricity, water and gas connections, but mainly illegally, which will be explained in the following sections. There is an elevator, which was constructed after more than one year the building was inhibited.

Figure 30 Tower E (Author, 2015)

Figure 31 Another tower with unfinished side walls (Author, 2015)

Type – 3

Tower F - Of “Ahmed Abdel A’al”:

This tower is located in “Shagaret Mariam” sub-district, in the older deteriorated area, called “Ezbet el Laymoun”. This area is one of the poorest areas in El Matareya that has narrower, irregular streets and includes some vulnerable one-story structures.

Within this old area, one can find in every few streets modern, high towers that have bright painted facades contrary to all surrounding unfinished redbrick structures.

This tower was built after the revolution by Abou Ahmed, who bought the land, and later entered in partnership with a contractor. It was built primarily for investment and as a residence for his kids in the future. It is surrounded by two very narrow streets of 3-4m width and two wall-to-wall much lower buildings from the other sides. Opposite to it, on the other side of the street, is a one-story partially destroyed structure, inhibited by some dwellers and used as a corral sheep and chicken too.

Figure 32 Tower in "Ezbet el Laymoun" deteriorated area (Author, 2015)

Figure 34 Narrow street in front of tower (Author, 2015)

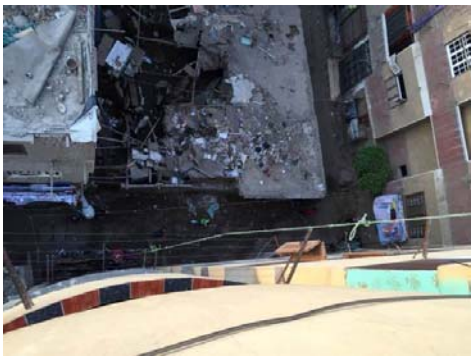

Figure 33 View of corral from tower balcony (Author, 2015)

The building has painted external façade, but unfinished side external walls and a well-finished entrance with stairs and an elevator that is not yet working. It is eleven floors high, with two units per floor of approximately 85 sqm, as described by the owner, the unit includes two bedrooms, big reception and an “American kitchen”, i.e. open kitchen. An unfinished unit on the ninth floor is sold for 42,000 EGP and if finished for 85,000 EGP, which is approximately 500 EGP/sqm for unfinished and

1000 EGP/sqm for finished units. Other towers in this area have similar quality and price ranges.

As all neighboring buildings the tower has water and electricity connections, but no gas network yet. According to the tower owner and residents, the area suffers from sewerage overflows four to five times every month.

4.3 Speculative Housing Provision

This section describes the details of the speculative housing provision process housing based on the following data sources: El-Moelhy PhD (2012), David Sims book (2012), data acquired from the MDIC, interviews conducted with experts Yahia Shawkat, Mohamed Abdelaziz and David Sims, eight residents, three district officials, two real estate agents and one contractor in El-Matareya, discussions with three experts and the author's observations and photos taken during fieldwork. Codes used to analyse the different subjects of each sub-section are:

Sub-section/ Variable	Codes
4.3.1 Provision Process	Interactions
4.3.2 Trust	Used norms, Informality degree of interactions, perception of trust
4.3.3 Motivations	Motivations of residents, developers and district officials
4.3.4 Rule of Law	Laws, Practices
4.3.5 Power relation	Domination incidents, Resistance acts

Box 3 Sources and Coding used for Speculative Housing Provision

4.3.1 Provision Process

This section describes the provision process according as all interviewed experts, developers and residents have explained it. The process can be divided into several phases: Land acquisition, design, construction and its financing, units' disposal and infrastructure provision.

1. Land acquisition

At the beginning of the informal growth in El-Matareya, when land was mainly agricultural, plots were acquired through subdivision, *"ta'sim el aradi"*, based on norms agreed between owner and buyer. As Sims (2012:112) describes irrigated agricultural land had organized, mostly rectangular patters, which made subdivisions and later the conversion to a buildings area easy to implement.

Currently, El-Matareya is quite saturated with buildings and empty land suitable for construction is scarce. Thus, the only way developers can acquire land is to demolish existing buildings and start their real estate projects in its place. Some developers buy old buildings from owners, demolish them and build a modern tower instead. Others enter in partnership with the landowner, and give him or her units in the new building

in return. An interviewed building owner explained how several contractors proposed to her the demolition of her 50-years old 4-floor building and its conversion into a high tower where she can have her share as units, but she refused the idea. Moreover, old abandoned villas, which are often taken by people through adverse possession *"wad'a yad"*, are demolished and converted into high buildings.

Figure 35 Old villa to be demolished (El-Mouelhi, 2014)

During the land acquisition process developers face one major obstacle, namely to acquire a "replacement and renewal permit", *"'ehlal wa tagdid"*, to be able to demolish an existing building and replace it with a new structure. It is particularly difficult to get the permit when the existing building is safe, is resided with the Old Rent Contract[13] or when it is a protected historic building, which is often the case in El-Matareya.

2. Design

As owner-built housing, many speculative towers rely on the contractor's experience and some standard design norms followed in the area to acquire a design for the building, which is often produced without detailed drawings. However, some developers of new towers involve an engineer, a civil engineer at highest, if they plan to acquire a permit for the building. A design approved by an engineer is a requirement to get the replacement and renewal permit. Since developers care only for the signature of the engineer on the design, they have developed easier ways to achieve this; they hire any engineer and get his design approval signature and buy the required stamp from the engineers syndicate, with a very low cost of around 30-50 EGP. In this case the engineer approves only the design, that has to be abiding to the code and standards required to get the permit, but is not responsible for any design violations during construction.

3. Construction Process and Financing

[13] The Old Rent Contract includes two types: 1) Infinite – infinite residence in a unit); 2) 59 years contract – 59 years long residence with a higher monthly fee than type 1, but lower than new short-term rents, and a large advance payment of more than 10,000 EGP

If the building design is abiding the code and got approved, in the actual construction it is often violated, either by adding extra floors, increasing the number of units, using more than their plot area etc.

To avoid the risk of halting or demolition, contractors usually use the maximum possible speed in construction, reaching four to six months for building ten floors. "Instead of waiting 10-15 days for concrete slabs to dry they can just wait four to five days regardless if it is summer or winter", as Abdelaziz (Interview, 2015) describes. This often affects the quality of the building and can even lead to higher costs for the contractor; but all for the sake of not falling under the eyes of the officials. Contractors can also build at night or during holidays and weekends, when no surveillance is present. Moreover, they try to reside the highest floors first and as quickly as possible, "or just hang some laundry on the balconies", as one of the respondents states. In inner areas of El-Matareya, where violations are difficult to be noticed by the district, construction is can be conducted on a slower pace, but faces other challenges, such the very narrow and unpaved streets that make transporting materials and equipment very difficult.

No formal ways of financing construction, such as bank loans or mortgages, were mentioned by the interviewees. Financing didn't seem to be a problem for larger-scale developers, who use previous investments' profits for financing their new buildings. Developers, who need liquidity to cover construction costs use a certain financing strategy: they start selling units before the building process starts or is still in the very beginning for lower prices, these units are then called "Burnt units", *"Sho'a' mahru'a"*. Through this strategy they manage to get funding for the building sometimes before even construction has started.

4. Units disposal

Unlike traditional informal housing, which often involves rental contracts, old and new rent contracts[14], units in new towers until the 10th floor are mainly for selling. Higher units can be rented or sold with often lower prices, as they are more likely to be demolished and developers aim to sell them as early as possible, to encourage others to buy in the building. The selling duration varies depending on demand, location of building and many other factors, but lower floors are usually sold quicker, as they have higher security of tenure.

Buyers generally know about units through the following:

1) Their networks e.g. family, friends, neighbors and work colleagues
2) Noticing a new building while passing through the street
3) Large banners hung on the site or the building, possibly with a picture of the acquired permit for the non-violating floors
4) Through a real estate agent *"Semsar"* who often puts his number on a sign in cafes and on buildings; however, many buyers don't prefer to buy through agents as they don't want to pay for commissions

[14] New rent contract is currently the universally used contract for new formal units in Egypt and other countries, in which one- or two-month fees are paid in advance as insurance, and a monthly fee (higher than old contract) with a % yearly increase is paid.

Simple, two partly sales contracts, are signed between buyer and seller: during the instalments period, it is a temporary contract called "Primary Contract", *"'a'd 'ebteda'y"*, and the buyer gets a receipt with each payment he does. After the whole amount is paid, the temporary contract is transferred into a final contract *"'a'd neha'i"*, that indicates the official ownership of the house.

Figure 37 Construction Process (Author, 2015)

Figure 36 Sign "Door is Open for Units Reserving, Permit Aquired" (Author, 2015)

5. Infrastructure Provision Process

As mentioned before housing in El-Matareya is almost universally covered with water, electricity and sewerage connections. Only main pipelines are supplied by the government, and people have to extend them to their households. Developers usually provide buyers unfinished units without infrastructure, but the building itself includes a water, sewerage and electricity main connections, so each residents is responsible for extending the network to his unit. Units without any violations and in non-violating floors can get infrastructure connections relatively easier, as they often already have a legal electric meter.

Having running water in the tower units is usually not a problem, as high buildings install pumps that are able to push enough water from the existing network in the area. The costs of the meter are divided upon the residents. Water monthly payments are often estimated at a fixed rate, called *"badal estekhdam"*, instead of reading from the meter, to make the collection process easier (Abdelaziz and Shawkat Inteviews, 2015).

Electricity connections require a more complicated procedure. A cable from any available source, such as existing legal meters in the building or street lighting, is extended to the units. Afterwards residents go to the police and record that they have acquired illegal electricity connections, and pay a fee of 3000 EGP to start an application for *"momarsa"*, a process, which allows having illegal electricity and paying a fixed usually bi-monthly fee, with the intention of later acquiring a meter.

Shawkat (Interview, 2015) explains, that the amount of the fixed fee should be estimated based on the unit's electricity usage, i.e. consider if there are air conditions, or other machines that have high consumption. But what happens in practice is that a unified fee is decided for a large number of units, which can be too low or too high for the single units. He further explains, that *"momarsa"* is beneficial for electricity companies, as it generates a lot of money for them. And elaborates that around 70% of meter applications are approved once every year "when the door for application is opened", often before elections time.

If the request for meter gets approved applicants still have to wait till they are included in the yearly quotation. The whole process can take a few years, and at the end the applicants acquires a numeric meter *"'adad cody"*, which is only with a code and not with their name. A meter with a name gives the owner higher security of tenure; it reduces risks of eviction and it usually requires a bribe or good connection in the authorities. Many people live in a unit knowing that they would always rely on *"momarsa"*; interviewed residents claim that it is considered formal by many people.

Other facilities for the building, such as an elevator, are also not provided by the contractor. Either the original owner if he lives in the building or the residents' union can arrange its provision, with the costs covered by the residents.

4.3.2 Role of Trust and Norms in the Provision

According to Sims (2012) the informal housing provision process in Cairo is based on trust, networks and norms. Throughout the different phases of speculative housing provision in El-Matareya, trust plays a role in guiding interactions. For example, when contractor and landowner enter in partnership; they divide their shares in the tower based on used norms and with no need of writing formal contracts; units can be split equally or the contractor can get more units if the building is too high and its value is larger than the land. Land values and prices are based on agreed norms in the area. Another example is the early booking of units by residents, often before construction starts, with minimal and no drawings, but based on trust to the developer. In infrastructure and services provision for the housing, trust and networks have an even higher role, which was noticeable in all speculative housing typologies explored. Self-organized residents unions take the responsibility of the building after the contractor sells his last unit or even before; they arrange installing lacking services for the whole tower, such as electric meter applications, elevator installation and façade finishing. In addition, other needs of the area are addressed by collective initiatives such as tackling sewerage overflows, providing parking spaces and garbage collection. All these initiatives rely on trust relations between the residents.

While trust is important in speculative housing provision, compared to older informal housing its role has decreased. In many interactions of the provision process, more formal agreements take place mainly to protect actors from each other's violations. Abdelaziz (Interview, 2015) states that recently buyers add conditions in the contract to protect them from certain violations conducted by the developer. Besides the contract signed between buyer and developer, often a *"Sihhat tawqi'"*(contract signature confirmation) is acquired from the *"shahr el 'aqari"*[15], which eliminates

[15] "Shahr el aqari" is managed by the Ministry of Justice, with offices throughout Egypt to register properties (Sims, 2012)

some risks of fraud and provides further security for the buyer. However, it does not diminish the risk of selling the same units to different people, as there are no history records for the units kept in *"shahr el 'aqari"*. In addition, units' disposal is increasingly conducted through signs on the site and real estate agents, rather than mainly through networks as done in older informal housing. And buyers often have to observe the construction process of the building and second check the building permit, to make a more confident decision of buying a unit.

4.3.3 Different actors, different motivations

4.3.3.1 Developers

Since the 2011 revolution, surveillance on informal areas has diminished and informal construction has peaked. Many developers used the situation to generate tremendous profits particularly that market demands and paying capacity has been high; which is obvious from the increased amount of remittances after the revolution that had no channels other than informal construction (Sims and Shawkat Interviews, 2015). Recently the speculative cycle has started to decline due to the increased state's attack against building violations, recent towers collapsing incidents and the noticeable oversupply in areas such as El-Matareya (Shawkat Interview, 2015). Thus, the informal real estate business in El-Matareya is not as attractive and profitable for developers as it has been in the last few years after the revolution; in fact, many units are vacant and prices have slightly started to decrease (Sabri Interview, 2015).

The development process of towers in El-Matareya is conducted by the contractor of the building, who can also be the landowner, or who is in partnership with the landowner, or it can be lead by the landowner himself. Economic gains are the main driver of the "one-off tower" investments, and developers try to maximize the profits by:

- Constructing low-quality less costly housing, through speeding up the construction process, reducing reinforcement etc., or by building with accepted structural standards, but increasing the number of floors, the density of units etc. in violation of the code.
- Providing buyers the units with minimum finishing and infrastructure quality, mostly "on red brick", and leaving water and electricity extensions in the responsibility of the residents and resident unions
- Going for selling rather than renting to make quick profits rather than collecting relatively low monthly fees

While their main aim is investment, developers vary in their degree of profit orientation, and their business ethics and social responsibility. After studying several developers' profiles through interviews and observations, one can see that developers range between:

1. Prioritizing profits over any social considerations:

These developers can conduct fraud actions, such as selling one unit to several buyers at the same time, and possibly disappearing afterwards. Or providing low standard buildings, which could be unsafe for residents; in fact, due to one tower's low structural quality in El-Matareya, its balcony fell down killing at least four people.

2. Profits generation but with social considerations:

These developers care for the residents and neighborhood; they give flexibility in payment methods and duration, and can reduce unit prices to buyers, who booked a unit early, or who are from their networks, friends, or seem trustworthy buyers.

Many developers aim to get funding for the construction and increase their liquidity, which makes them sell more “burnt units” as early as possible and diminish the speculation in their project.

Several developers’ examples are described as follows:

1. Developer - Large family business

This family business has grew to become one of the most well-known and largest real estate developers in El-Matareya. They were described by interviewed residents, as “almost the owners of whole Matareya”, and as working in other illegal businesses, such as weapons, drugs and even historic valuables trading. Informal real estate is the safest business for them and they can easily excel in it using their connections and thugs.

It was mentioned by two interviewees that they often register the buildings with the names of their children and take any land they want even if by force. Further on, they don’t need to sell their units early with lower prices, as other contractors do to increase their liquidity, as they have large financial resources. They only lower prices for important people from whom they could benefit. Most towers built by them are in good locations and are considered high-end towers in El-Matareya.

Several residents of their buildings as well as in the neighborhood have expressed objections on them; several residents stated that after selling the units, they don’t care about anything in the building and that they financially abuse the residents if they provide them with any service, such as electricity meters applications etc. A neighbor living just at the opposite side of their largest tower, describes how the inauguration of the tower three years ago was; they celebrated with fire shooting on neighboring buildings, to confirm their power and superior position in the area. Finally, they sign each tower they build and have a real estate office in the ground floor one of their buildings.

Figure 38 Developer Office (Author, 2015)

Figure 39 Signature on buildings (Author, 2015)

2. Developer:

This developer is relatively new in the real estate business, having constructed three towers only. He is completely different from the large-scale family (example 1), as he cares for the satisfaction of his residents and is largely trusted by them. As resident Ahmed describes, “He is self-conscious, I have observed the building since the start; it has strong foundations and reinforcement.” The developer has sold Ahmed with a significantly lower price as he booked his unit at the beginning of construction, which increased the developer’s liquidity at the most critical time. However, the developer had to go to jail just before the building was finished, as he had other financial problems. Since residents trust him, they continued the façade of the building and other services on their own expense and sympathized with him (Ahmed Interview, 2015).

3. Developer (Abou Ahmed)

Abou Ahmed can be described as an investor rather than developer, as he owns only this building in partnership with a contractor. Though he lives in this tower, his primary goal for building it was economic profits. Since he lives in the building, Abu Ahmed cares for the structure and quality of the building, and has good relations with residents of neighboring buildings. It took him four years to construct the building as it was very difficult to transport materials in the unpaved 3-meter wide streets and cost him almost double to build compared to those who build on main streets (Abou Ahmed Interview, 2015). Despite not covering construction costs yet, he offers flexible payment methods for buying units and puts only two apartments for renting with new contracts for duration of two years.

4. Developer

This developer is a contractor of three towers and has a reputation for building with good structural quality and following legal procedures to acquire permits. However, he generates higher profits through violating with additional floors. Having a permit and being located on main streets, his buildings are sold with high rates reaching 2400EGP/sqm for unfinished units. Despite making large profits from selling his units, he refuses to pay a bribe with an insignificant amount (compared to his gains), to connect electricity to all units, in order to maximize his profits. Thus, his profit orientation overweighs his concern for residents' satisfaction and the housing quality he provides.

5. Developer (Hagg Ahmed)

Hagg Ahmed and his three partners are the developers of a tower in a highly regarded area that is close to the underground station. They are known to be friends since a long time and have built their 8-floor building with a building permit in the early 2000s. It was only in 2013 that they added extra violating floors after several towers have emerged next to them. Their profit orientation was encouraged by the large profits neighboring towers brought to their developers; however, they are trusted and well regarded by the residents.

Table 8 Different Developer Types

Criteria		**Dev. 1**	**Dev. 2**	**Dev. 3**	**Dev. 4**	**Dev. 5**
Buildings developed		**> 10**	**3-4**	**1**	**3**	**1**
Political connections		high	low	low	low	low
Reputation for good quality structure		medium	high	high	high	medium
Good relation with residents		Low	high	high	medium	High
Tower Features	Price /sqm	High	medium	low	high	High
	Good Location	High	medium	low	high	high

As shown in the table, there is no fixed correlation between developers' characteristics and the towers provided; their price and location. Towers with higher prices and good locations can be provided by politically connected developers, as well as developers who don't have any political networks, but pay bribes for instance. Moreover, in such towers, the relationship between developer and residents can be good or lacking trust. However, a potential relation is highlighted in the table, namely, that of developer's reputation for good quality structure and prices of towers. In fact, the two developers, who have a questionable reputation for their towers' structural quality, sell their units with highest prices. This could indicate the use of marketing

measures, such as high-quality, ornamented external finishes and entrances, which attract higher income residents.

4.3.2.2 Residents

The heterogeneous nature of speculative housing is reflected in its residents; towers are resided by diverse types of people, differing in income level, background, origin and other characteristics. Based on the discussions and interviews, residents have diverse motivations for buying in towers in El-Matareya, which are as follows:

- Proximity to work or family
- Centrality and connectivity of El-Matareya
- New, modern-looking housing
- Preference for buying rather than renting, as it is more stable and secure, and they can arrange their children schools, services accordingly
- For investment or for their children in the future, expecting that prices will increase, particularly when the area develops, and infrastructure and services are improved

It is noticeable that residents are satisfied with their housing units and invest extensively in finishing their unit and in improving infrastructure in their building, such as adding an elevator, installing electric meters etc.

However, since the recent attack on building violations by the state and two building collapsing incidents in El-Matareya, the demand on tower units decreased; buyers fear eviction, demolition or unsafe structures. As residents mentioned, experienced and mindful buyers research first on the status of the building and which parts are violating and they track the construction process to see the quality of the structure. In various cases they put conditions in the contract to guarantee their rights against violations conducted by the contractor, or make the contractor responsible for providing infrastructure. Examples for tower residents are shown as follows:

Table 9 Towers Residents Examples

Resident	Occupation	Family living in unit	Nr. of units owned	Unit(s) area	Reason for choosing unit(s)
1	Driver in a real estate company	4 persons	1	80 sqm	Proximity to family
2	Lawyer in internal revenue service	5 persons, children are Medicine students in Cairo Univ.	1	220 sqm	Residence, but aiming to move to live closer to children university
3	Hair dresser	4 persons	4	160-200 sqm	One for residence, others for speculation
4	Military official	3 persons	1	90 sqm	Residence

5	Employee in Cairo Metro	4 persons	1	75 sqm	Proximity to work
6	Employee in Telecom Egypt	5 persons	1	80 sqm	Residence

4.3.2.3 Regulator

The regulator of the speculative housing provision process is not a single entity, thus, there are different roles for each entity. Actors directly involved in regulating the process in El-Matareya include local district, police, and water and electricity companies.

Local district directors in Egypt are appointed and not elected by the people. In addition, El-Matareya's current district director is not even from El-Matareya and thus, may not be highly knowledgeable and keen on its local problems and people. Interviewing higher position officials, one can observe the limited awareness they have about what is the real situation on site. One official, who is responsible for tracking violations, mentioned that he can't go to the field in person, as he is too high in position and is not paid well enough to do this. According to officials, it is impossible to track all violations, and they only take action when they receive a claim for damage, "*shakwet darar*". Moreover, it was indicated that officials have the mentality that they better not work hard, as there will be a higher possibility they could do mistakes and be held guilty; so it is better not work to avoid mistakes.

The El-Matareya district, as an entity, like other local districts in Egypt is characterized by a high extent of corruption within its employees. Interviewees mentioned that El-Matareya district is referred to as "The administration of the Gulf", "*'edaret el khaleeg*", indicating the extent to which employees make large amounts of money in a very short time from the bribes they take. As an entity the local district collects fees from violations only once, but if other notifications are made by residents they can collect more fees (Shawkat Inteview, 2015). Interviewed official explains that monitoring construction activity and field checks in El-Matareya are not conducted by engineers, who are only two in the district, but by technicians, who are not skilled enough to take over such a responsibility. She further explains "these technicians have very low salaries and thus can get tempted to take bribes", especially when corruption is very common; in fact, those who have approved buildings and afterwards collapse, just escape after having made good money". Certainly there are employees in the district, who truly care for the welfare of El-Matareya and the public good, however, these often suffer from the routed corruption in the district and could be driven into deadlock, as mentioned by interviewees.

The police's main involvement in the building regulation process is for planning and securing violations demolition procedures; they decide on the timing and methodology of demolition and implement it with the district. Interviewed official mentioned that police uses the lacking security situation as an excuse for not being able to conduct demolition activities. However, the official claims it is a fake excuse; the lacking security is not a problem for the police. In fact, they were very skilled in demolishing and evicting residents of four 15-floor towers, which were constructed on state land in two to three months only.

While the district collects fees mainly once after violation, electricity and water companies keep collecting charges for electricity through "*momarsa*" and for water

through *"badal 'estekhdam"*, as mentioned in the provision process section. Thus, they are the most benefiting from the violations (Shawkat Interview, 2015). Sometimes, they work without coordination with the district and accept connections to illegal buildings and claim to remove them if building is not legalized.

4.3.3 Rule of Law and the Provision Process

Informal speculative housing provision found its way to evolve within the existing legal framework and realize quick shelter solutions for many people. The legal process that should be followed to conduct a formal housing project in Egypt is bureaucratic, lengthy and complex (Sims, 2012, Shawkat Interview, 2015, Soliman, 2012). For instance, the property registration system is too complex for applicants that it is not even followed for most formal properties and impossible to be followed in informal areas (Sims, 2012:152). Some design requirements in the code moreover are unrealistic and inadequate for informal areas' needs and capacities; thus, they can't be followed by developers and dwellers (Shawkat Interview, 2015).

In addition, the weak surveillance and laws enforcement are among the main reasons for the emergence of different practices sidestepping the existing legislative framework and going for informal solutions. In fact, the local district does not strictly and consistently monitor and implement measures against construction and infrastructure violations in order to truly acquire effective outcomes. Instead, officials' role has become almost limited to fulfil bureaucratic procedures lacking a true responsibility towards the community's welfare and protection. The following table shows the deviating practices by the local district:

Table 10 Rule of Law and Diverging Practices of the Local District

District Role	Rule of Law	Parallel Practice
Monitoring construction activity	- District engineer conducts frequent site checks to monitors violations, possibly before they are in an advanced stage	- Technicians, not engineers check buildings, mainly after people make a claim for damage - Reactions take place too late, often after building is resided
Demolition Decision	- Make "record and order for demolition" - Get approval of municipality - Police is involved: to conduct a security study and plan the demolition execution	- Make "record and order for demolition" - Getting approval and security study from police takes much time and is often too delayed or doesn't get executed at all
Demolition Execution	- Demolition on private land is on owner's expense - District demolishes violation and claims expenses from owner or his family if he is not present	- Demolish only a small part of slab or fence of a violating building, collect a fee and leave the building - Only on state land demolition is highly implemented

All these aspects have lead to housing provision practices that occur outside the legal framework, circumventing its complexity and evolving parallel to it leading finally to satisfactory housing solutions for many people. Despite being conducted through illegal or quasi-legal practices, many provision interactions aim to acquire more formalization of the housing on the long-term. Several examples of the parallel practices throughout the different provision phases by are shown as follows:

Table 11 Rule of Law and Parallel Provision Practices

Provision phase	Rule of Law	Parallel Practice
Land acquisition	- Buy land from owner; register it under new owner name at the responsible legal entity and apply for permit - Apply for "replacement and renewal permit" if building is deteriorated and unsafe, and is not resided or is a historic, protected building	- Transfer land property through simple two-party sales contracts and use it without acquiring permits - Apply for permit for buildings that don't satisfy the mentioned conditions; pay bribes to reduce the registered age of a historic building; evacuate residents from building and provide them with temporary accommodation etc.
Design	Hire engineer to design building and supervise construction, to be able to apply for a permit	- Rely on contractor experience and used design norms and not apply for permit - Hire engineer just to get signature, if planning to apply for a permit
Construction	Construction according to code and approved design	Construction different from code and approved design, e.g. adding violating floors, higher number of units, less reinforcement
Units Disposal	Register unit under new owner's name in order to transfer ownership	Transfer ownership though simple two-party sales contracts, Often endorsed under "contract signature confirmation" for more security (Sims, 2012)
Infrastructure	Apply for legal electric connections and meter	Get extension from any electric source illegally and apply for "Momarsa" after which they might be able to apply for and get a meter

4.3.4 Power Structure in the Process

Interactions for the provision process are strongly influenced by the power structure between the different actors. Typical for El-Matareya as other informal areas, are power relations, such as tensions between community and the state, between resistance and domination (Lombard, 2014). The power structure between developers, local district and residents is studied through indicators such eviction, demolition, hiding and bribing acts during the housing provision process.

Developer–Resident Relation

As mentioned by Sims (2012), security of tenure is high in Egyptian informal areas, as developers care for their reputation. Moreover, in the predominantly owned rather than rented speculative housing units, residents can't be evicted by the developer after they have bought the house. There are contractual agreements between both actors, and if needed they can ask the police for protection of their rights. When it comes to acquiring land for development, contractors usually propose land or old building owners to enter into a tower investment with them, and owners have the right to accept or refuse. However, there are powerful contractors who use thugs to oblige residents into providing the adversely possessed land to develop a new tower on it, and later give the residents units in the newly built tower, as mentioned by few interviewed residents.

Residents of neighboring buildings mentioned that they don't like to make claims against new towers even if they are negatively affected by them, except if a tower is obviously unsafe and subject to collapse. The reluctant attitude of the neighbors is driven by their understanding that contractors of towers are often powerful and politically supported, so they prefer to remain silent, especially that the district would rarely take action.

Developer-Local District Relation

The typical measures of the local district to deal with violations are, as mentioned before, to make an insignificant demolition of the building slab or fence[16], and collect a fee from the developer. This is also the case for unsafe buildings that are left to be demolished on the expense of the owner, which rarely happens. These measures are taken only when damage claims are made by residents, and they are often delayed and inconsistent from one building or area to another, which makes developers not fearful enough to refrain from violations. If an officer sees a violation happening, he can confiscate the contractor's equipment and materials and a fee has to be paid. This is why developers use the maximum possible speed in construction and try to hide their violation by using different tricks, such as painting the building's external walls, to imply that they have a permit and follow the code.

Since 2011 revolution developers don't need to hide from the district like before. As interviewees stated, they rather feared the thugs, who prevented them from construction during the early post revolution months. To be able to construct,

[16] Referred to by interviewees as "yena'waru el sa'f"

developers don't have to have political connections, in fact, many come from other villages directly for investment; they mainly rely on bribes to officials.

The increased courage of developers and decreased control by the district lead to 7000 violations since the revolution. Several examples show the extent to which investors became fearless since the revolution, such as, the fact that historic valuables were transported publicly on trucks, as several interviewees mentioned, and the eye-catching signature of a large developer in El-Matareya on the illegal tower he builds. However, the district is slowly regaining its power in the recent months through several demolitions executed, which is making developers more hesitant to build whole violating buildings, but rather buildings with partial violations.

Local District–Resident Relation

Residents' in El-Matareya as in other informal areas are generally protected from eviction by the government, as "the state maintains a policy of providing compensation for affected families" (Sims, 2012:110). Evictions only occur from state-owned land or from unsafe buildings, whereas the latter occurs much less. In El-Matareya four towers were evicted as they were on state land, after giving residents one and a half month notice period; the government is not responsible to provide them compensation as it is their mistake that they bought on state land. In the case of unsafe buildings, an eviction order is declared from the district, but residents often choose to stay and take the risk, as they know they might be homeless if they leave their housing. Sometimes the district makes them sign an approval that they stay in the building under their own responsibility.

However, violating buildings, if safe and already inhibited are rarely evicted, even if they are in the highest, clearly illegal floors. Ahmed (Interview, 2015), who lives in an illegal unit in the thirteenth floor expresses his sense of security from being evicted: "I am not afraid that the district evicts or demolishes my floor, I asked a lot before I bought it and people told me if it is not on state land and it is inhibited I shouldn't worry. From where will the district start?" Residents actually have learned the weak role of the local district and are minimally fearful of being evicted.

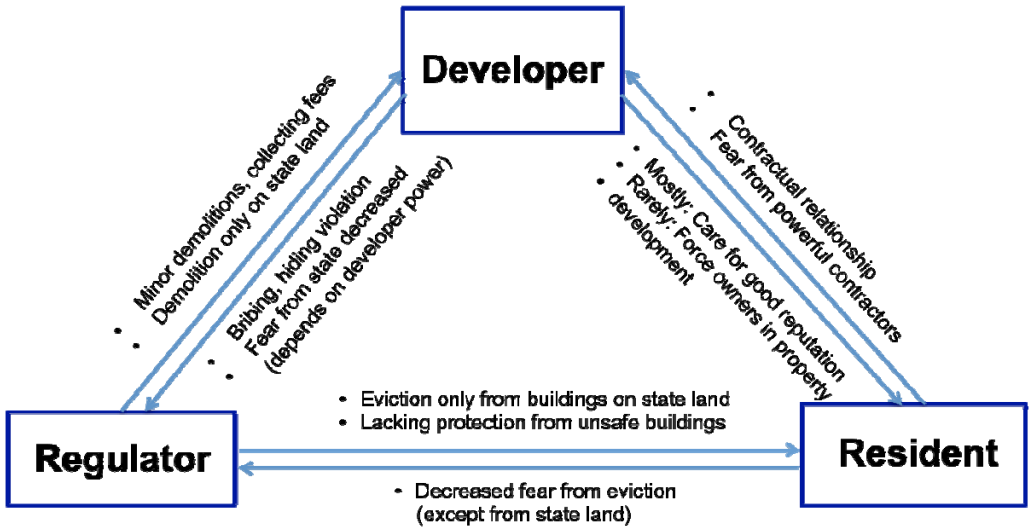

Figure 40 Power Relations between the three main actors (Author)

4.4 Spatial Configurations of the Provision Process

After analyzing the provision process and how it is affected by the different variables, this sub-chapter presents the spatial configurations of the provision process based on the following data sources: David Sims book (2012), data acquired from the MDIC, interviews conducted with experts Mohamed Abdelaziz and David Sims, eight residents, two real estate agents and one contractor in El-Matareya, and the author's observations and photos during the fieldwork. Codes used to analyse the different subjects of each sub-section are:

Sub-section/ Variable	Codes
4.4.1 Housing Quality	Housing density, finishes, infrastructure coverage, collapsing incidents
4.4.2 Neighborhood Quality	Area density, infrastructure quality, Scape

Box 4 Sources used for Spatial Manifestations

4.4.1 Speculative housing quality

As traditional informal housing, speculative housing does not follow required standards for buildings and housing units, in order to minimize costs, which often reduces the housing quality.

4.4.1.1 Units' density in towers

To maximize profits developers aim to increase the number of units as much as possible. They build several units per floor, and add an internal shaft to provide ventilation and light penetration for internal rooms, which are many in such buildings. According to the towers sample studied, unit areas range from 75 sqm to 225 sqm, and often include rooms that have very small windows on shafts or no windows at all and have no access to fresh air. These characteristics are comparable in all typologies of speculative towers; however, other factors such as the location of the tower next to open spaces provides improved conditions. Unexpectedly, one of the high-end towers explored has particularly high density of units; it includes more than 100 units, 15 floors with seven units each. One could see in the units, which are sold with relatively expensive prices[17], how this has significantly affected the ventilation and light penetration of many rooms.

4.4.1.2 Finishing status of towers

Generally, external finishes of towers are better and brighter than older traditional buildings, which were often unfinished. The external finishing quality can have bright colored, ornamented facades, or only have the main façade painted, while the other

[17] See speculative housing price ranges in section 4.2.2

three sides not facing the street are unfinished, which is the most commonly observed in El-Matareya; or have all external walls unfinished, on red brick. Moreover, it is noticeable that towers' side-walls, not facing the street, are mostly without any windows. This is done intentionally by developers after using 100% of the plot area, knowing that windows will be covered by emerging neighboring building walls.

Entrances are often marble cladded and can include decorations; one high-end tower included even frames and mirrors, and a melody inside the elevator. Unit finishes, on the other hand, are mostly kept to the minimum during selling, or sometimes they can be finished by request of the buyer.

Figure 41 Unit Finishing (Author, 2015)

Figure 42 Brick External Walls (Author, 2015)

Figure 44 Ornamented bright facade (Author, 2015)

Figure 43 Un-finished side walls with minimal windows (Author, 2015)

4.4.1.3 Structural quality and collapsing incidents

The structural quality of speculative towers depends on the developer's social responsibility and ethics, since it does not lie under strong supervision by the district, as previously mentioned. Common practices such as the use of minimal reinforcement, low quality concrete, speeding up the construction process etc., lead to poor quality structures. The poor construction and thus weak structural quality have been significantly manifested in El-Matareya: many tilted towers and two collapsing incidents since the 2011 revolution. One example is the collapse incident of a 12-floor tower, called "Borg el Matahen", of which the balcony fell on two men standing on the street leading to their death. Another building, called ""Omaret el Ta'awon" collapsed completely after one resident has demolished one column in a lower floor, leading to the death of at least 20 persons (almasryalyoum, 2015).

Figure 45 Tilted tower in El-Matareya (Author, 2015)

4.4.1.4 Infrastructure coverage

Infrastructure coverage in towers like most informal housing in Cairo is quite high (Sims, 2012). Since towers mostly include pumps their coverage by water is often better than lower older buildings, which don't have a pump. Sewerage connections are also present, but overloaded, which causes frequent overflows in the area. Electricity is often more problematic, as residents have to connect it illegally for violating units, as explained previously. But after residing for a while, residents manage to get all services connected to the units, but with varying quality.

4.4.2 Impacts on settlement's space and functionality

The emergence of towers changed the scape of the settlements significantly; high, modern looking buildings, with bright finishes and marble cladded entrances. One can observe imitations in the towers, particularly within same areas; e.g. same height of 15 floors and beige paint colors. Several interviewees mentioned their personal approval of the tower looks, which makes the neighborhood look more modern and of a higher living standard. However, others expressed their preference to older low buildings and villas, which give El-Matareya its character and remind them of the area's history, when it was a pleasant place to live in.

4.4.2.1 Buildings' density

Since the emergence of towers, streets of El-Matareya that were already narrow became more overloaded limiting circulation even more. Towers are built wherever land is available for developers, and regardless of the width of the street. They are often built on more than their plot area, adding few meters to their width from the street, which has led to the increase of irregular of the growth and the decrease of empty spaces in the area (see previous figure 27). As a result, streets became narrower, darker and more congested particularly with the increased number of cars of tower residents that have insufficient parking spaces. Moreover, in highly dense areas privacy inside apartments has become limited.

Another dramatic impact is the enormous damage that a high tower's collapse in such high densities would cause. In fact, out of all collapsed housing in Egypt from July 2012 till June 2013 only 5% were violating buildings and the rest was either old buildings or buildings subject to external factors; however, the fallout of the violating buildings was much higher, namely, 30%. (egyptbuildingcollapses.org, 2015). According to Shawkat (Interview, 2015) in one case an 11-storey building that was empty, resulted in over 21 deaths as it fell on other building, while in another accident most deaths were residents in the building.

Figure 46a,b,c Towers' Density (Author, 2015)

4.4.2.2 Infrastructure quality

All interviewees emphasized the recently deteriorated infrastructure quality in El-Matareya due to excessive overloading triggered by the dramatic increase in housing. As mentioned earlier, towers have strong pumps than lower buildings, thus can pump more water leaving surrounding lower buildings with less water coverage. Suzan (Interview, 2015) mentioned that since two towers emerged in her street, she experiences more water interruptions in her low building that doesn't have a pump, especially in peak hours. Further on, sewerage pipes became much more overloaded than they already were, leading to four to five overflows per month in some areas of El-Matareya. The same applies to electricity; more frequent interruptions occur as consumption increased without power sources being upgraded. Waste production has also increased without having adequate infrastructure to manage it; private garbage collectors or residents themselves tackle this aspect by transporting waste and throwing it in empty plots or certain streets in the area; public trucks come often to main collection areas and empty them.

Figure 48 Sewerage Overflow (Author, 2014)

Figure 47 Waste collection in the street (Author, 2015)

4.5 Social Manifestation of the Provision Process

This sub-chapter presents the social manifestations of the speculative housing provision based on the following data sources: David Sims book (2012), data acquired from the MDIC, interviews conducted with experts Yahia Shawkat, and Mohamed Abdelaziz, two district officials, eight residents, two real estate agents and one contractor in El-Matareya, and the author's observations and photos during the fieldwork. Codes used to analyse the different subjects of each sub-section are:

Sub-section/ Variable	Codes
4.5.1 Social Inclusiveness	Social identity and affordability
4.5.2 Government Interventions	Government interventions, negligence

Box 5 Sources and Codes used for Social Manifestations

4.5.1 Social Inclusiveness

Social inclusiveness of speculative towers is measured through the indicator housing affordability. The diversity of towers indicates the diverse groups it targets. Sabri (Interview, 2015) explains that the type of residents attracted to a tower unit depends on which area and street the tower is located, which floor it is and if the unit is violating or not. However, it is noticeable that tower units tend to be resided by higher income classes of informal areas. This is due to two main reasons: Firstly, towers are mainly for selling rather than renting, which is not affordable to many dwellers, as they don't have a large sum of cash for an advancement payment and a stable income that covers higher monthly instalments. Secondly, the minority of rented units follows either the New Rent Contract, with relatively high monthly rents, e.g. 500-600 EGP per month or the 59-years long Old Rent Contract, requiring a larger advance payment to help contractors cover their construction costs. This is especially high when comparing it with older lower buildings, which have been prevalently using rental contracts with lower monthly rents.

However, there are other factors that lead to the inclusion of lower-income groups in towers, namely:

- Payment procedures are often flexible, in terms of amount of advance payment and duration for instalments.
- Units are more affordable if booked and partly paid in advance; a unit of 120000 EGP can be sold with 80,000 EGP in a good scenario. Resident Ahmed explains that it is always cheaper to buy early as the contractor usually needs liquidity
- The higher the floor the less expensive units; residents can buy or rent units in the highest floors for cheaper prices, but bear a higher risk of demolition by the district
- Units in unsafe buildings have very low rents or can be even for free, and some people choose to live there and take the risk rather than pay higher rents in a safe building

In addition to all these aspects, prices of tower units have started to decrease due to oversupply and the state's attack on violations. Sabri (Interview, 2015) mentions, "what was sold for 200000 EGP in the last years is now sold for 150000 EGP."

However, El-Matareya is very central and vibrant, thus it is expected that there is still high demand on its units, thus, prices could reach some sort of equilibrium (Shawkat Interview, 2015). To sum up, speculative housing target a large array of needs, however, it excludes certain low-income groups, particularly when compared with traditional informal housing.

Figure 50 High-end unit interior (Author, 2015)

Figure 49 High-end Duplex (Author, 2015)

4.5.2 Social Identity

The social identity of El-Matareya is affected by the emergence of speculative towers; this is studied in the research through the indicator residents' relations within areas where towers are present. Informal speculative towers compete very successfully with formal housing projects (Sims, 2012) and in El-Matareya they attract residents from other areas more than traditional owner-built housing does, as can be observed and understood from different interviews. Moreover, units are often marketed through signs on the site or real estate agents, rather than through networks. These aspects result a higher diversity of residents in towers and neighborhoods, who are not familiar to each other and who probably don't share similar backgrounds or origins, as it has been common in older housing in El-Matareya. Interviewed resident Suzan states "I don't like towers, in the past it was small buildings, and people knew each other", which indicates the decreasing connectivity between neighborhood residents. One can observe in areas with predominantly older traditional housing, how neighbors' relationships are still close and how they support each other; Interviewed resident Naeema, who lives in an old 5-floor building describes how she and her neighbors are very close to each other, and daily share food and spend time together. In areas, where towers emerged, and many new neighbors entered the area, people are not as connected even after few years of residence. Several interviewed residents indicated that they don't know most of their building neighbors and that they rarely meet them. In fact, the large number of floors and units makes residents feel strange within their own building and reluctant to reach for their neighbors.

In addition, tensions sometimes emerge between residents due to decreased privacy and higher density and congestion. As one neighbor of a new tower describes, "We often fight with the new neighbors over car space, they think they bought the street with their money". The extreme height of towers compared to neighboring older buildings, sometimes accompanied with a distant attitude of its residents, creates a sense of fragmentation within neighborhoods. Neighbors often feel towers are superior to their houses, although several mentioned they like the modern look they add to their neighborhood.

4.5.3 Government intervention

This section focuses on the strategies used by the government to tackle the increase of speculative towers and its accompanying problems. This is studied using three indicators, namely: Infrastructure and services provision, Measures used against violations and measures used with unsafe buildings.

4.5.3.1 Infrastructure and services provision

The shortage and low quality of infrastructure and services in El-Matareya has been addressed by the government few times, however, mostly on a minimal scale, delayed and not addressing priorities of the residents. Main infrastructure networks were supplied in the past when El-Matareya had a much smaller population and density, since then extensions for water, sewerage, and electricity among others were mainly provided through people's efforts. Recent upgrading works by the government tackled minor issues, such as the planting of El-Matareya square and the pavement of several main streets around it. Another development project was the construction of two new schools and a youth club on a state owned land in El-Matareya, which covers a minor portion of needed schools, clinics and social services in the area.

4.5.3.2 Measures used against violations

Some measures taken by the government show opposition to violations, these include conducting, since 2011, 113 partial demolitions of buildings and eight whole demolitions of violating towers, seven of which are on state land. Moreover, the process to construct whole new buildings has been made more difficult for developers, as an approval from the Cairo governor is required. In addition, the state abandoned the reconciliation draft law, which tolerates some violation types of buildings, and was planned to be issued soon. While the previously mentioned actions taken by the state oppose violations, other measures indicate a tolerance towards them. For instance, while only a total of 121 out of 7000 violations in El-Matareya have been demolished, all the remaining are left with maximum a small hole in the slab or fence of the building, and a fee paid by the developer, insignificant to the amount of profits he makes. Further on, illegal infrastructure connections are tolerated through certain processes, such as *"momarsa"* for electricity, through which residents can acquire an electric meter afterwards, which gives residents high security of tenure. This indirectly encourages infrastructure violations without giving other alternatives. Recently, the government started an indirect surveying of electricity

violations, by giving illegal connection owners a different kind of electricity meters, namely an electronic one, and marking electric bills with the title: “Illegal meter” on the top.

4.5.3.3 Dealing with unsafe buildings

As previously mentioned, the local district only takes measures against violations and unsafe buildings after residents make a claim for damage. Even then the reaction is often not responsible enough for protecting the people. The example of collapsed “’Omaret al Ta’awon” building in El-Matareya in November 2014, which lead to at least 20 deaths, depicts the negligent attitude of the government: Based on discussions held with neighbors and still alive residents of the building, the originally five-floor building had few years ago four more floors added to its already weak structure. This caused an obvious tilt in the building and people made several claims for damage, after which the district issued a demolition order. It was already two years after this order was announced that the building collapsed. Risking people’s life for two whole years without implementing the demolition indicates the lacking social and safety responsibility of the district and other accountable institutions, such as the police. Since demolition is on the expense of the building owner, the district doesn’t implement it fearing that the owner will not pay the costs afterwards; instead officials make a small demolition in the slab or fence to prove that the order has been implemented, collect fees and leave the building. Moreover, if people are evicted they have to be given alternative housing, which requires effort and resources from the district and other institutions. The role of the district has become limited to fulfilling bureaucratic procedures and missions, instead of actually protecting and serving the people in El-Matareya. Only very few of the still alive victims have been compensated by alternative shelter, but others claim to be ignored when asking for compensation from the district or governorate.

Figure 52 Building with obvious tilt in the last three floors (Author, 2015)

Figure 51 'Omaret el-Ta'awon ruins on site 8 months after the collapse incident (Author, 2015)

4.6 Key Findings

This section aims to present the key findings of the research in relation to each research sub-question.

4.6.1 Self-organized Housing Provision: Role of Trust and Power

The speculative housing provision process consists of diverse interactions between the main actors: developers, residents and the local district, in which trust and power relations play a significant role. Throughout the different provision phases trust relations between the residents are obvious, for instance, in infrastructure provision and the self-organized residents' unions that conduct many initiatives to improve the housing and neighborhood. Between the residents and developers trust relations are also present in different interactions e.g. buying units before construction starts based on trust to the developer. However, trust levels between residents and developers have generally decreased compared to older informal housing, which can be noticed from the more formal procedures undertaken by the residents to ensure higher protection for their rights and from contract violating acts practiced by the developer.

Not only trust, but also power structures affect the housing provision process. Between developers and residents power hierarchies are not highly emphasized since most developers aim to maintain a good reputation, with few exceptions of powerful developers. The main power tensions are between the local district and the developers, which fluctuate between control attempts of the local district, through demolition, eviction and construction halting acts, and circumvention of developers through bribing officials and hiding illegal construction. As mentioned previously, local district control efforts are minimal and inconsistent; only eight whole demolitions since 2011 mainly on state land, and partial demolitions with negligent scope and impact (121 cases) compared to the scale of construction violations (7000 cases) (MDIC official Interview, 2015). On the other hand, bribing and construction hiding acts have been successful and encouraged developers for more violations. However, it is important to mention that the local district's attack on building violations have been more intense since 2014 compared to the period immediately after the 2011 revolution, which to some extent has decreased the rate of illegal construction.

4.6.2 Housing Provision Driven by Diverse Motivations

The speculative housing provision process is driven by the diverse motivations of the actors. Developers, who are the leaders of the process, are mainly economically driven, and use different strategies to maximize profits. Besides their profit orientation, developers vary in the degree of social responsibility. On the other hand, residents who complement the provision process through participating in the infrastructure provision, financing etc. and who receive the housing product, aim mainly at acquiring an affordable housing, where they can feel secure and safe. Many residents have other additional motivations, such as proximity to job or making a

good investment. Obviously, the motivations of developers and residents are not in high agreement with each other, which mostly results in a compromise of one party or of both. Mostly residents make the compromise and accept a lower housing quality or violating unit, which costs them significantly more than it did for the developers. The role of the local district, which should be to regulate the provision process, and ensure it serves primarily residents' needs and rights, has become just a bureaucratic role facilitating economic gains from violation fees and bribes. As a result, the housing product has become highly distorted serving primarily the developers and corrupt officials motivations.

4.6.3 Housing Provision and the Rule of Law

Formal housing provision in Egypt has to abide by a complex and bureaucratic legal context. Registration and permits acquisition require lengthy and tedious procedures, not corresponding to the rapidly increasing housing needs of the urban population. In addition, the design requirements are often inadequate for informal areas' local characteristics and needs, which makes following them practically hard if not often impossible. All this, along with the minimal and inconsistent surveillance by the local district in El-Matareya, has led to a housing provision process that evolves outside the legal framework, including practices, such as demolition and building without a "replacement and renewal permit", or getting an unrighteous permit using corrupt measures; violations during construction; acquiring illegal infrastructure connections etc. These practices try to circumvent the complexity of the regulations seeking more flexible and simpler procedures to acquire quicker and more affordable housing solutions. Within these practices some are conducted with the aim of finally acquiring legalization, such as the previously mentioned *"momarsa"* procedure[18], while the remaining practices do not aim for formalization.

4.6.4 Spatial Manifestations of the Provision Process

The speculative housing quality achieved is mostly satisfactory for its residents, particularly compared to older informal housing; modern looking towers, relatively large unit areas, often better water coverage than lower buildings and other housing improvements achieved through private or residents unions efforts. Nevertheless, the housing quality is strongly affected by the developers' economic motivation; often reduced buildings standards, obvious in the dense units lacking sufficient ventilation and light penetration, minimal internal finishing of units and above all in towers' weak structures; leading the collapse and tilting of several towers[19]. At the same time external finishes are given much emphasis to be eye-catching for buyers and successfully compete in the market.

On the neighborhood level, spatial configurations are more disadvantageous; increased buildings density and uncontrolled use of land plots and locations, result in more congested and darker streets, and damages for surrounding buildings. In addition, they overload existing infrastructure networks tremendously that were

[18] Described in section 4.3.1

[19] See section 4.4.1 for further details on collapsed and tilted towers

already of poor quality. Moreover, speculative housing dominate streets and neighborhoods services and resources, for instance, towers acquire better water coverage on the disadvantage of older lower housing, which don't have pumps.

4.6.5 Social Impacts of the Provision Process

While speculative towers exclude certain lower income groups, they still promote mixed-income residences. Due to its predominantly selling rather than rental market it is more affordable by higher income dwellers. However, it can be also accessed by certain lower-income dwellers, for example through less costly units in higher floors or when bought early. In addition, speculative towers emergence in El-Matareya has added to the diversity of the neighborhood through attracting more residents from outside and bringing residents from heterogeneous backgrounds to live in the same building or area. This is in contrast to older informal housing in which residents often share similar backgrounds, coming in large families from villages since decades ago. The increased heterogeneity has led to often diverging interests of residents, which along with the continuously decreasing space and services capacity of El-Matareya, has helped decrease the social connectivity of the neighborhood.

Despite speculative towers obviously expanding on El-Matareya's urban scape the state reactions do not correspond to the scale of the phenomenon. Government interventions are minimally adding to the development of the area. Illegal construction are have not been strongly monitored or effectively dealt with, but rather left to emerge and develop; however, as mentioned previously, . Moreover, the state's negligence is obvious when it comes to protecting people's lives; demolition orders of unsafe buildings are not implemented, which has led to the loss of many dwellers' lives. Further on, the government conducts minimal development projects, satisfying a tiny fraction of the area's needs and not focusing on the people's priorities[20].

4.6.6 Summary: Heterogeneous Socio-spatial Manifestations

Informal speculative housing provision interactions lead to heterogeneous socio-spatial patterns in El-Matareya, with positive but also a large extent of negative impacts on the area's development. While there are general trends observable, patterns differ from one tower to another and from one provision process to another, due to the heterogeneity of actor interactions within their contexts. Figure 14 presents the diverse socio-spatial manifestations developed throughout the provision process, impacted by the variables: trust, power relations, motivations and the legal framework; the figure shows the main findings while linking them back to the conceptual framework developed in section 2.3.

[20] See section 4.5.3 for further details on government interventions

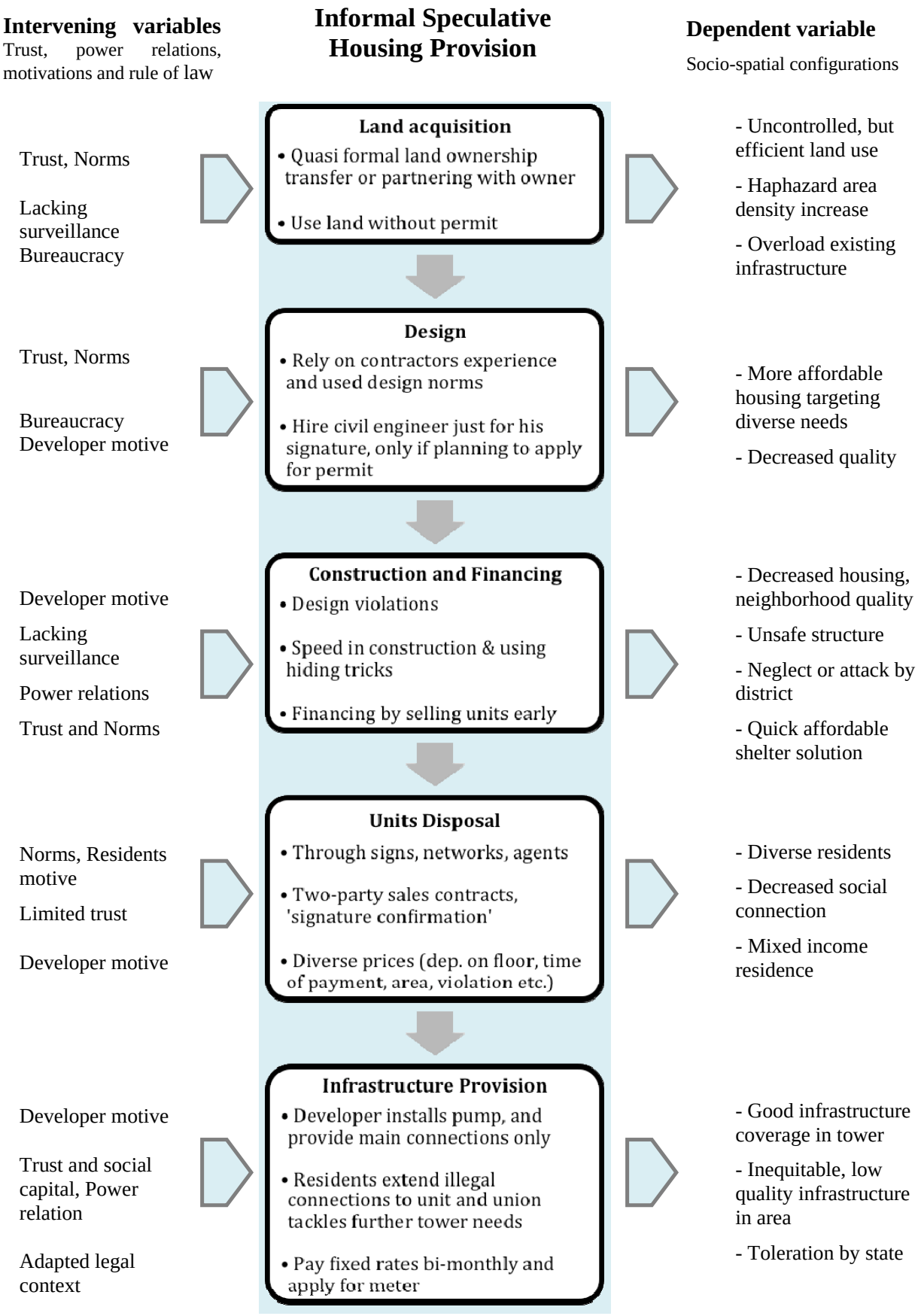

Figure 53 Main Findings and the Inter-relation of Variables (Author)

Chapter 5: Conclusions and Recommendations

The final chapter presents the major research findings developed from linking the research questions to the purpose of the study and conceptual framework; moreover, it shows linkages to the literature studied in chapter two. Finally it highlights the author's recommendations and suggestions for further research.

5.1 Major Findings and Conclusions

The purpose of the study was to understand the informal speculative housing provision process and its socio-spatial manifestations in areas such as El-Matareya. By studying the provision process and the different variables assumed to be influencing the actors interactions: trust, power relations, motivations and the legal framework, the research uncovered the significant impact these factors have on the provision process, and furthermore, on the generated speculative housing quality and triggered socio-spatial impacts on the neighborhood. In this section main conclusions responding to the research objective are presented and linked back to the theories studied.

5.1.1 Provision Process: From Trust to Commercial Relation

Trust relations in speculative informal housing provision have decreased in significance, compared to traditional informal housing, which have been based on "personal relations and negotiated norms" (Sims, 2012). This is obvious from the increased formal arrangements initiated by residents to further protect their rights. The declined level of trust has been triggered by the unregulated economic orientation of the provision process, which has resulted in the extreme cases to the tower tilting or collapsing in El-Matareya and other informal areas in Cairo. However, compared to dwellers of informal settlements in Nairobi as described by Huchzermeyer (2008), residents in El-Matareya are more protected from developers' exploitation as in the predominantly ownership market of the speculative towers the resident-developer relationship is different from the rental market dominating Kenyan informal areas. The higher degree of formality in the selling arrangements along with the presence of a police station and local district in El-Matareya provide residents some sort of protection, however, the risk of fraud or exploitation is still higher than in formal areas, due to the lacking legal enforcement (Berner, 2000).

The commercialized provision described by Mitlin and Satterthwaite (2013) and Huchzermeyer (2008) referring to informal areas in the Global South, where landlords provide lower standard housing, exclude poorer groups and commercialize infrastructural services in order to maximize and speed up the profit generation, highly corresponds with El-Matareya. However, with some adaptations to the ownership market, i.e. instead of commercializing infrastructural services for tenants, developers exclude it from the provision process or can ask for exaggerated prices for its installation. Acting outside the legal framework, El-Matareya district officials and

developers form “syndicates that combine the roles of entrepreneurs and regulators, and make huge profits out of the housing needs of low-income groups” (Berner, 2000:11). Collaborations between developers and district officials are based on bribes and shared economic interests, however, this does not mean that power tensions are absent, particularly during the last few months with the increased state’s attack against illegal construction.

The following chart depicts the changes in the relations between the main actors, through the variables: power, trust and dominating motivation, which affect the informal housing provision before the 2011 revolution and the speculative towers provision after the revolution. As shown, trust levels to developers have decreased compared to traditional informal housing, power has shifted more towards the developers side; who were able to conduct more than 7000 construction violations in the last four years. This power shift has slightly started to reverse back with the increased state attack as mentioned previously[21]. With the growing power of the developers, their economic motivation, along with some district officials corrupt interests prevailed.

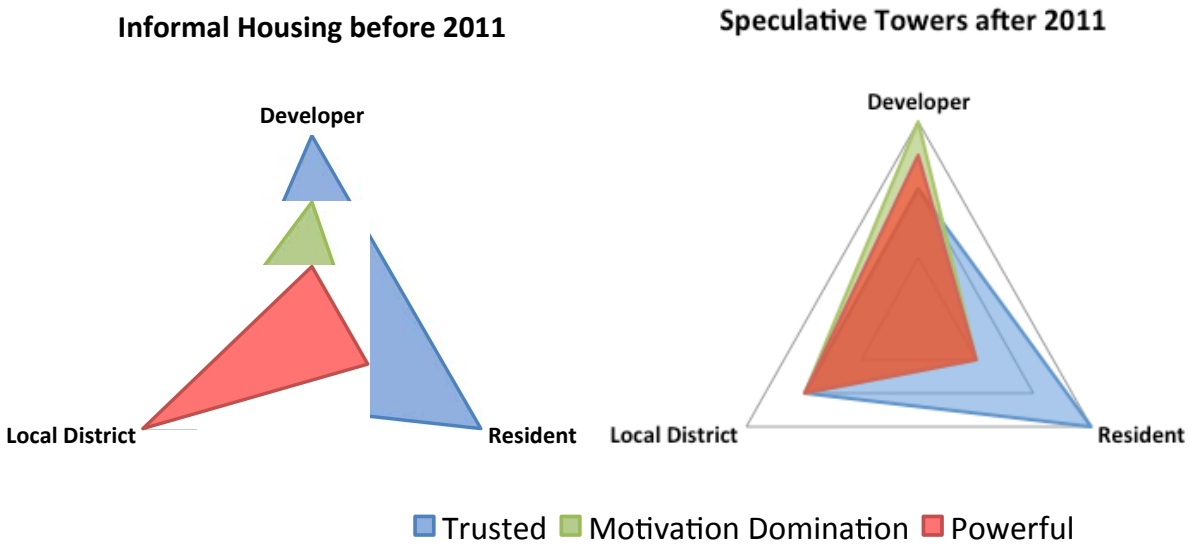

Figure 54 Changes in Actors’ Power, Trust and Motivation domination before and after 2011 Revolution (Author)

[21] Following up on the situation in September 2015, the researcher was informed by experts working on a development project of El-Matareya, that increased demolitions are conducted and planned to be conducted by the district, but mainly on violating construction on state land; indicating a hopefully growing control on construction activities.

5.1.2 The State Role: Between Negligence and "Calculated" Deregulation

The state's strategy towards illegal construction is unclear, fluctuating between tolerance and opposition; no strong measures are used for stopping illegal construction, but also no reconciliation or development plans are approached; illegal infrastructure connections are tolerated, but are surveyed and marked as illegal. Roy (2009: 83) views informality not as an indication of the state's incapability of regulation, but rather as a "calculated deregulation". The state implements a complex unrealistic legal framework and does not change it while knowing it is highly ineffective and mostly sidestepped even in formal areas. As Roy (2009) mentions the state decides what is legal and what is not, by setting laws and building codes that are unrealistic. Moreover, the state inconsistently implements demolitions encouraging corruption and bribes; the state allows housing and infrastructure needs to be satisfied outside its responsibility so that state resources can be differently allocated.

Huchzermeyer and Karam (2006) emphasize the general negligence and minimal budget allocations of governments in the Global South towards informal areas. In fact, their description reflects the state's interventions in El-Matareya and other informal areas in Greater Cairo (Sims, 2012), which minimally deal with people's problems, such as infrastructure deterioration and services shortages. The negligent attitude is reflected also in the underrepresentation of population data of El-Matareya like other informal areas in Cairo (Sabry, 2009), which is a typical attitude of governments in order to decrease the attention given to informal areas problems described by Huchzermeyer and Karam (2006).

5.1.3 Exclusion and External Perceptions

Despite being considered as superior residences within El-Matareya and being predominantly resided by the higher income dwellers, speculative towers residents as the rest of the settlement suffer from political and social exclusion. They have limited political representation, as well as inadequate access to government services, such as infrastructure and education facilities and formal market services, such as access to credit (Berner, 2000). Even though El-Matareya is proximate and well-connected to formal Cairo, and its residents daily commute to formal areas for work and services, El-Matareya is almost unknown to the external city's residents, who would rarely visit such an area. Misconceptions and negative generalizations are typical external attitudes towards El-Matareya and other informal areas in Cairo (Sims, 2012).

5.1.4 Self-organization and the Spatial Quality

Healey (2012) and Nour (2011) state that bottom-up initiatives understand local needs and conditions. Being locally initiated, speculative informal housing responds to a large array of housing needs and competes successfully with formal housing projects (Sims, 2012). Similar to other informal housing types the provision process is conducted by diverse local efforts, namely landowners, contractors and residents. Thus, it is more sustainable and tailored to the local market particularly when compared to public housing projects, which are provided on a broad scale and are

disconnected from local realities (Healey, 2012). According to Boonstra and Boelens (2011) self-organized interactions and processes in a complex system are dynamic and adaptive, which is reflected in the provision process; being guided by the local actors' interactions, it is continuously dynamic and evolving to adapt to local and contextual changes, which can be seen for example in the adapted practices to sidestep regulations and flexible financing and payment measures.

However, being guided by the different motivations and plans of actors in a complex system, self-organized processes interact, influence and possibly oppose each other (Boonstra and Boelens, 2011, Portugali, 2012). Diverse speculative housing provision interactions, without any form of central guidance, led to haphazard, inequitable developments and resource uses. According to Berner (2000), the negative impacts of these processes are not only on the residents, but extend to the larger public; tapping off infrastructure and distributing it in El-Matareya has signifcantly affected its capacity and quality for the larger community causing health and environmental problems through sewerage overflows and leakages.

The spatial quality has been notably affected by the increased the number and diversity of residents in El-Matareya caused by the speculative housing. According to Sokido and Bhaduri (2013) spatial quality is defined as the "effectiveness and capacity" of spaces to function properly, along with "higher performance efficiency of space usage". While the increased density caused by the speculative towers promotes a more efficient urban growth, which is highly needed in Cairo's urban setting, it overloads the neighborhood and decreases its functionality; a balance between functionality and the highly needed efficiency is needed.

Carmona and Sieh (2008) state that stakeholders in an area have different aspirations and plans, and the higher their number is the more complex it is to find shared values and interests. More diverse residents in El-Matareya with heterogeneous motivations have lead to diverging values and perceptions of spatial quality, and increased fragmentation of the society. According to Lombard (2014) power relations between the different stakeholders in informal areas are consolidated in different spatial forms. In El-Matareya one can observe that avoiding the state's opposition has lead to certain housing quality characteristics e.g. formal-like painted facades as a hiding trick. Moreover, one can observe the domination of the more powerful; speculative housing and their residents get advantage in the street for parking as older housing residents don't have as many cars, which is referred to by Moulaert et al. (2011) as "spatial injustice". Due to the lacking surveillance, opposing interests lead to uneven distribution of services e.g. better water coverage in towers compared to older housing (Healey, 2014). Moreover, absent state interventions result in a deterioration of existing services, which are inefficiently tackled by private initiatives with limited resources.

5.1.5 A Distorted Housing Market

Being provided by the private sector, speculative informal housing has a business-oriented character focusing on profit generation rather than housing quality and public good. Moreover, it provides housing often on a larger-scale, where contractors often develop several buildings, compared to single owner-built housing. With quasi-absent surveillance or control by the state, housing which should be a basic right, has become dependent on the developers' interests. Shawkat (Interview, 2015) explains,

that the state's policies and lacking regulation of the housing market, have lead to the commodification of housing and a distorted housing market, in which current price to income ratios[22] are: 16 or above for formal private sector housing, 6 for subsidized social housing and only in informal areas of 4 or below, whereas lower income households bear much higher ratios (Sims and Abdelfattah, 2015). Moreover, hundreds of thousands of housing units are built yearly, while millions of the current housing stock in urban areas in Egypt are vacant (Sims and Abdelfattah, 2015).

According to Shawkat (Interview, 2015) in this uncontrolled, distorted market housing prices rarely decrease and developers make exaggerated profits margins. In informal areas, market distortions are even more aggravated, since surveillance is minimal and developers profits can easily cover violations and corruption; resulting in lower housing standards on the disadvantage of households. Since power relations are more accentuated in informal areas, the distorted market can exaggerate the discrepancies between housing of the higher and the lower income households, the powerful and the weaker actors in the area. This is becoming obvious in El-Matareya, through the towers that are predominantly taking over better locations, and getting priority in infrastructure compared to lower older buildings, resulting in larger inequities in the settlement.

5.1.6 A Complex Continuum of Legality and Illegality

In the urban context the boundary between informal and formal is particularly blurred due to the interrelating and complementary coexistence of both (Guevara, 2006). In fact, El-Matareya settlement is a good example to show the unclear boundaries between being formal and informal. Despite being considered informal from planning and land-use perspective, it includes many formal areas' characteristics, such as a local district, police station, and the Faculty of Engineering of Helwan University. The speculative housing provision process is also a hybrid of informal-formal interactions. While it results in an informal housing product, it increasingly includes formal arrangements and imitations of the formal sector, for instance the units' disposal via signs and agents, and the formal-like external finishes of the towers. Furthermore, informal towers house officials from governmental institutions, such as the police and the district, which was uncovered by interviews and observations during the fieldwork. Many informal provision practices are tolerated by the state and get formalized on the long-term. All this results in a particularly higher degree of "formality" in the speculative informal housing provision compared to other informal housing. As Shawkat (Interview, 2015) states, the reconciliation law project aimed at tolerating certain types of construction violations, which would have increased the formality of many informal housing, however, the law was reversed in April 2015 (shorouknews, 2015).

[22] The ratio of housing unit prices to the annual median household income

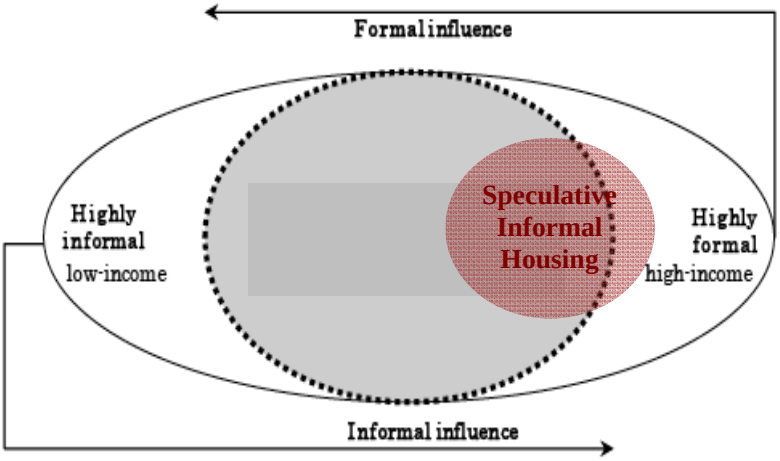

Figure 55 Higher degree of "formality" in informal speculative housing (Guevara, 2006, Author's elaboration)

5.2 Suggestions for Further Research

Despite being a dominating urbanization mode in Greater Cairo, the informal speculative housing phenomenon has been minimally studied (Sims, 2012, 2014). This research uncovered characteristics and development trends of speculative housing and its impacts on El-Matareya; however, more studies are needed to further understand the phenomenon: First, more research is needed on other housing samples in matured areas, with substantial new towers construction, such as El-Matareya, to test and further validate the findings of this research. Second, research is needed on peri-urban villages, which are undergoing rapid expansion including towers construction, in order to understand the provision process and its impacts on less denser areas. Research on more housing samples and areas, will enable comparing the findings and understanding the different typologies and provision processes of speculative towers; and the weaknesses and potentials they have. This will not only help fill the knowledge gap on this expanding phenomenon in Greater Cairo for intellectual purposes, but will show policy-makers how the informal market generates more adequate and affordable housing than social housing programs implemented, so they can learn from them and deal with them in a more effective way using their already existing potential to fill the housing shortage in Greater Cairo.

5.3 Recommendations

After studying the situation in El-Matareya and learning from interviews and discussions several recommendations are proposed:

While the local district has slowly and inconsistently started to attack illegal construction, the researcher recommends that this step should be more strictly implemented, as a first, quick measure to stop violations expansion. This means that regular site checks and construction monitoring are conducted by district officials, who stop violations at their start not after the process has already matured. Concerning already built towers, different measures are required for the diverse types: dangerous towers, weak structures that still can be restored, and towers with violations but of sound structural quality. Assessing the status of towers and their diverse impacts on the neighborhood, they can be prioritized according to the criticality of the case and other important criteria, thus, enabling more effective and efficient decisions. As a result, demolition costs focusing only on critical cases will be reduced and potentials of good quality housing can be used.

However, to achieve this district officials need to regain their social responsibility and end corrupt activities, how can this be realized? Based on interviewed experts opinions, democratic elections for the local popular council, who elect the district director, should guarantee that district high board members represent the neighborhood, care for its development and are responsible regulating actors, who will ensure laws are enforced. To be able to implement this, the local district needs higher budget allocations from the government and less centralized decision-making, which gives it more authority.

Whereas the mentioned recommendations are reactive, there are other strategies that can diminish the emergence of inadequate speculative housing. Firstly, the too complex and bureaucratic legal system for housing provision needs to be reviewed and updated, so that it simplifies the process and encourages housing providers to legalize their properties, so the state can have more control over their legal housing. Moreover, code design requirements for low-income housing, such as building heights requirements, can be reevaluated and reduced to match local needs and capacity (Shawkat Interview, 2015).

In addition, more effective housing and land market control policies are needed to prevent extreme speculation and prices increase and thus discourage speculative violating construction; applying land value capture might be a successful measure to be used. Moreover, new housing investment efforts should be channelled in planned, gradually serviced land plots that are proximate and accessible to job areas and social services. Instead of building hundreds of thousands of new housing units, the state could move towards facilitating the provision of housing by the local private sector and community, who understand the local needs and market characteristics. The state's role should be monitoring and regulating the provision process, and offering technical and financial assistance. As a result, the state could use its financial resources on improving social and infrastructural services and subsidizing housing for the poorest population who can't afford to acquire housing without assistance.

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Annex 1: Fieldwork Schedule

Task	7-13 Jne							14-20 June							21-27 June							28 June- 4 July							5-11 July							12-18 July						
	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
Secondary data																																										
Scheduling Interviews																																										
Visiting site and mapping study area																																										
Semistructured Interviews/ discussions																																										
Site observation																																										
Coding of interviews																																										
Organizing collected data																																										

Annex 2: Data collections Instruments

Interview Guide for Residents

About the interviewee

1. Where do you live? Since when? Where did you live before this?

Housing provision and quality

2. Please describe how you acquired your housing unit!
    a. How did you know about unit? (who/ how)
    b. Agreement process (degree of informality, duration, complexity)
    c. Affordability and Financing

3. Can you describe the main features of your housing unit?
    a. Unit area and units per floor
    b. Infrastructural status (Coverage and quality)
       For: Sanitation, sewerage, electricity, waste management
    c. Building formalized?

4. If you had 50,000 EGP, what would you use it for? Why?
   OR: If you can choose (again), would you choose the same housing?

5. Do you know who is the owner/ developer? If yes how is your relation?
    a. Do you talk/ meet?
    b. Type of relation: Conflicts/ Family/ friendship/ other

Legal framework and district interventions

6. What is the role of local government/ district in the provision process?
    a. Services provision or permits
    b. Eviction incidents since the revolution
    c. Construction halting/ demolition incidents since the revolution

Neighborhood quality

7. How did the neighborhood change with the emergence of the towers?

8. Do you know of any falling down incidents since 2011?
   If yes, can you tell me what happened? What were the impacts and reactions?

Social manifestations

9. Do you know your neighbors in the same building? If yes how is your relation?

10. Do you know your neighbors in other buildings? If yes how is your relation?

Interview Guide for Developers

About the interviewee

1. Where do you live? Since when? Do you own whole building?

Housing provision and quality

2. Please describe the whole housing provision process!
    a. Funding, raising money
    b. Method/ price of acquiring land
    c. Design
    d. Construction duration and cost
    e. Contract type (rent or buy/ degree of informality)
    f. Marketing method (random or selective? Communication method)
    g. Selling duration and price
    h. Expectations of market prices

3. Please describe the infrastructure provision!
    a. What services are connected
    b. When? How? Any tricks? Can you show me where?
    c. Any help from local district?

4. Please explain any difficulties you face during the provision process? And how you overcome them?
    a. Construction halting/ demolition
    b. Hiding
    c. Extra-legal payments

Legal framework and district interventions

5. What is the role of the local district in the provision?
    What is your opinion on this? Can you explain more/ give examples?
    a. Legal framework (laws, policies)
    b. Institutional practices (bureaucracy, surveillance etc.)
    c. Government integration (permits, agreements)

Neighborhood quality

6. Do you know of any falling down incidents in the last 10 years?
    If yes, can you tell me what happened? What were the impacts and reactions?

Additional points

7. What could help you and other developers in the housing provision?
    What could help you provide better housing?
    a. Laws/ policies
    b. Financial
    c. Services

Interview Guide for District Officials

About the interviewee

1. Do you live in “El Matareya”? If yes, since when?

El-Matareya Profile

2. Please describe the housing situation in “El-Matareya”!
    a. Types of housing
    b. Amount/ extent of informal housing
    c. Before/ after revolution

Housing provision process and quality

3. How does the housing provision process take place? What is your opinion about this?
    a. Which developers operate in the area? How many?
    b. What is their relation to the local government?
    c. Amount and type of violations

4. What do you think about the quality of the housing?

Legal framework

5. How are illegal housing practices dealt with?
    a. Laws/ policies
    b. Demolitions, halting, eviction
    c. Formalization (facilitations/ permits)
    d. Interventions (services, infrastructure)

6. From your experience what is the most effective way of dealing with them? Why?

7. What do you think of integration approaches of this housing? Can you give examples?
    a. Permits
    b. Services
    c. Other ways of collaboration

Interview Guide for Experts

About interviewee

1. Do you live in "El Matareya"? If yes, since when?

Area Profile

2. Please describe the informal housing situation in Cairo/ El-Matareya since 2011
    a. Types of housing
    b. Amount/ extent/ locations

Housing provision process

3. Please describe the speculative housing provision process take place?
    a. Acquisition of land (Method, price of acquiring land)
    b. Design
    c. Construction (Financing, process)
    d. Disposal procedure (Marketing method, selling duration and price)
    e. Infrastructure provision
        i. What services are connected? When? How?
        ii. Any local government help?
    f. Difficulties? (halting/ demolishion/ hiding)

Housing and neighborhood quality

4. What do you think about the quality of the housing? How does it affect the quality of the neighborhood?
    a. Spatial deficiencies/ advantages of housing (compared to other types)
    b. Impacts on functionality of neighborhood

Social impacts on neighborhood

5. What are the social impacts on the neighborhood?
    a. Affordability of housing
    b. Social relations and connevity

Legal framework and district intervention

6. What do you think about the relationship between the developers and local officials?
    a. Tensions/ Collaborations (bribes, sharing benefits)

7. Please explain how the local government deals with this phenomenon?
    a. Laws/ policies
    b. Demolitions, halting, eviction
    c. Formalization (facilitations/ permits)
    d. Interventions (services, infrastructure)

8. What do you think of integration approaches of this housing?

9. From your experience what is the most effective way of dealing with speculative tower? Why?