

Received 7 November 2022: accepted 29 May 2023.

Available online 31 May 2023

Intervention Strategy in Unsafe Areas in Qalyubia Governorate

Ahmed Sayed Abdel-Rasoul Ali

Lecturer at the Department of Architectural Engineering, Faculty of Engineering at Shoubra, Benha University, Cairo, Egypt

ahmed.rasol@feng.bu.edu.eg, ahmed.a.rasol@gmail.com

ABSTRACT

The research focuses on developing an intervention strategy for unsafe urban areas in Qalyubia Governorate and examines how the evaluation policy of ISDF affects the type of interventions required to improve physical conditions and the lives of inhabitants, while also highlighting shortcomings of the policy. In 2015, ISDF launched a project called "Egypt without Shanties," and our institution, the Faculty of Engineering at Shoubra, was tasked with creating a report on the status quo of unsafe areas in Qalyubia governorate and determining the appropriate intervention method for each area. This led to the categorization of unsafe areas according to their degree of risk, which prioritized the urgency of interventions. Four areas were selected for research: Al Zaraqeb, El-Bakry, Hayd Ganab Alra'y, and Al-Jami' Street. Results showed significant differences between the information provided by ISDF on the predefined unsafe areas and the status quo observed by field visits and surveys in terms of area size. The research also discusses the government's implementation of proposed intervention methods and criticizes ISDF's policy for giving more consideration to factors of media interest and small size, downgrading the harmful impact of the area on the surrounding environment, and neglecting critical factors such as health and education, which are essential to the study area.

KEYWORD: Egypt without shanties, ISDF, Unsafe areas, Unplanned areas, Qalyubia Governorate

استراتيجية التدخل في المناطق غير الآمنة بمحافظة القليوبية

أحمد سيد عبد الرسول علي

مدرس بقسم الهندسة المعمارية، كلية الهندسة بشبرا، جامعة بنها، القاهرة، مصر

البريد الإلكتروني: ahmed.a.rasol@gmail.com ، ahmed.rasol@feng.bu.edu.eg

ملخص البحث

يركز البحث على وضع استراتيجية تدخل للمناطق الحضرية غير الآمنة في محافظة القليوبية، ويدرس كيفية تأثير سياسة تقييم صندوق دعم وتنمية المشروعات الصغيرة والمتوسطة ISDF على نوع التدخلات المطلوبة لتحسين الظروف المادية وحياة السكان، مع تسليط الضوء أيضاً على نقد سياسة التقييم المتبعة. في عام ٢٠١٥، أطلق صندوق دعم وتنمية المشروعات الصغيرة والمتوسطة مشروعاً بعنوان "مصر بلا عشش"، وتم تكليف مؤسستنا، كلية الهندسة بشبرا، بإعداد تقرير عن الوضع الراهن عن المناطق غير الآمنة في محافظة القليوبية وتحديد طريقة التدخل المناسبة لكل منطقة. وقد أدى ذلك إلى تصنيف المناطق غير الآمنة وفقاً لدرجة مخاطرها، مع تحديد أولوية التدخلات. وتم اختيار أربع مناطق للبحث: مناطق الزرائب بالخصوص، البكري بشبرا الخيمة، حابد جانب الراعي بقلوب، وشارع الجامع بالقناطر الخيرية. وقد أظهرت النتائج اختلافات بين المعلومات التي قدمها صندوق تطوير المناطق العشوائية حول المناطق غير الآمنة المحددة مسبقاً والوضع الراهن الملاحظ من خلال الزيارات الميدانية والمسوح من حيث حجم المناطق. كما يناقش البحث تنفيذ الحكومة لطرق التدخل المقترحة وتنتقد سياسة صندوق تطوير المناطق العشوائية لإيلاء عوامل الاهتمام الإعلامي وصغر الحجم أولوية في التقييم، وتقليل أهمية الأثر الضار للمناطق على البيئة المحيطة، وإهمال العوامل الحرجة مثل الصحة والتعليم، والتي تعتبر ذات أولوية للمناطق الدراسية.

الكلمات الدالة: مصر بلا عشش، صندوق تطوير المناطق العشوائية، المناطق غير الآمنة، المناطق غير مخططة، محافظة القليوبية

INTRODUCTION

The UN-Habitat (2020) defines slums as areas with poor living conditions, including inadequate access to basic infrastructure and services, overcrowding, and insecure land tenure. Around one billion people worldwide live in slums, and this number is increasing (The PSUP Team, 2016). A research study focuses on deteriorated areas in Egypt, particularly in Qalyubia Governorate, which suffer from problems of accessibility, narrow streets, lack of public outdoor spaces, highly-dense residential areas, and poor infrastructure and services (World Bank, 2008). The study reflects the 2009 ISDF initiative of replacing the term 'slums' with 'informal settlements', which consist of two distinctive areas: unplanned and unsafe areas (Figure 1), while prioritizing policies and strategies for improving the conditions of these settlements. However, the Uniform Building Law no. 119/2008 does not include regulations for informal areas, instead defining them as areas developed in contradiction to planning and building laws (MHUUD, 2009).

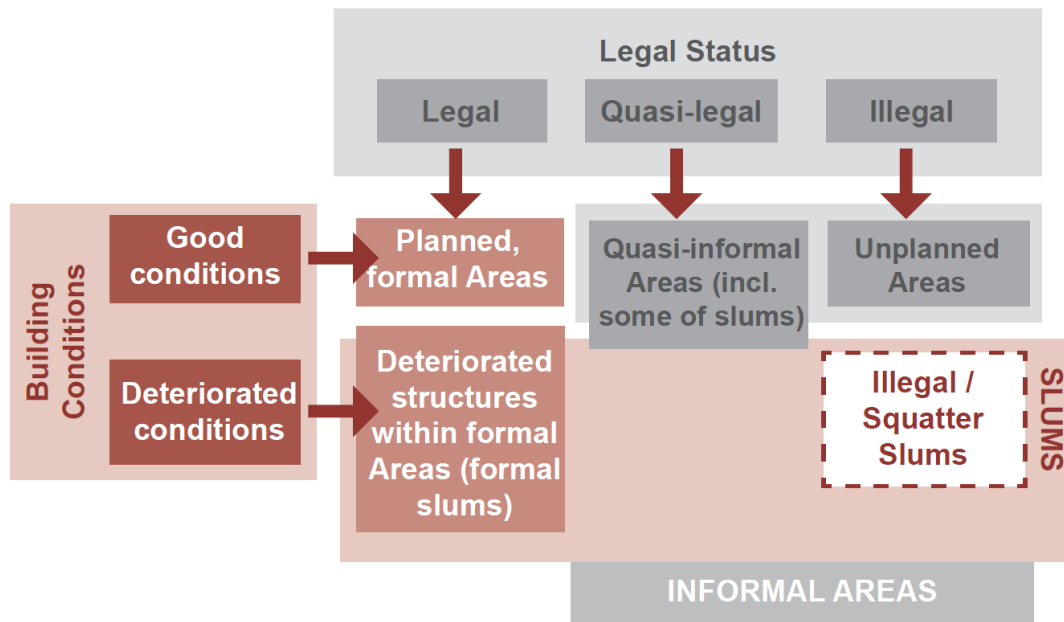


Figure 1. Types of informal settlements

Source: Centre for Sustainable Development; AUC, 2014

1. RESEARCH METHODOLOGY

The research methodology comprises three main steps to analyze the unsafe urban areas in Qalyubia Governorate and criticize the existing evaluation strategy. Firstly, the study reviews the approaches utilized to redefine unsafe areas throughout Egypt. Secondly, it examines the ISDF evaluation policy for unsafe areas based on their risk level. Thirdly, the survey methodology employed by a team of researchers (including the author) on behalf of ISDF to identify unsafe areas in Qalyubia Governorate is explained. Finally, the research provides key findings for various intervention scenarios appropriate for each unsafe area in Qalyubia Governorate while criticizing the evaluation policy provided by ISDF.

2. UNSAFE AREAS

Urban informality is largely defined by the presence of deteriorated areas, which have been studied by various scholars using different methodologies. Gomaa (2015) examined informal housing areas outside planned urban cities in Libya, emphasizing the importance of local participation in developing sustainability and urban image. Similarly, Hanafy & Shawky. (2022) studied sustainability indicators for state intervention strategies in deteriorated urban areas in Egypt, while Osman et al. (2022) proposed a model to classify urban deteriorated areas using geographic information systems (GIS) at the city level. On the other hand, Shawky et al. (2018) analysed state intervention strategies in deteriorated urban areas in Egypt, specifically focusing on the implementation of full or partial replacement projects in unsafe informal areas that failed to meet residents' preferences and needs, leading to further deterioration of the urban fabric. They also identified urban form indicators that meet low-income communities' preferences, including proximity to amenities, urban density, building heights, and green open spaces. Finally, Hassan (2018) classified neglected and non-compliant areas into four categories based on their characteristics, relative advantage, and the surrounding area. Overall, these studies highlight the need for effective state intervention and local participation in addressing deteriorated urban areas and developing sustainable and inclusive urban environments.

Differently, ISDF took the initiative to categorize the informal areas- 'Ashwa'yaat'- into two categories: unplanned areas and unsafe areas while classifying the latter according to the degree of risk to life they impose on their inhabitants. Unsafe areas are characterized by the existence of life threats, inappropriate housing, or being exposed to health threats or tenure risks; while unplanned areas are principally characterized by their non-compliance to planning, building laws, and regulations (MHUUD, 2009).

This research highlights the importance of the ISDF approach in refining the definition of the so-formerly called "unsafe areas," and how this approach dramatically affects the types of interventions to improve their physical conditions and the lives of their inhabitants. Moreover, it reflects on the findings from the first survey carried out by the ISDF to identify unsafe areas spatially throughout Egypt, along with other relevant information covering the urban, economic, social, environmental, and legal status of each area using formal building and demographic statistics of Egypt. Generally, census information according to the Central Agency for Public Mobilization and Statistics (CAPMAS, 2017) is only available for areas that are independent on an administrative level. However, data is not available for unsafe areas spanning across more than one administrative unit- a common situation, as unsafe areas expansion does not consider administrative borders. Therefore, in most cases, there is a variance between the available data and the real situation, and usually, there is an underestimation of the actual size, status quo, and populations of unsafe areas.

Therefore, the ISDF survey results might have an added value that may contribute to efforts made to improve intervention methodologies for unsafe areas belonging to the territories of informal settlements.

3. ISDF STRATEGY

In late 2008, the collapse of Duwaiqa Rock caused 45 inhabitants to be killed and around 57 to be injured. As a result, the ISDF was established subject to the Presidential Decree no. 305/2008 to undertake financing the development of slums in Egypt (Japan International Cooperation Agency, 2011), formerly called informal areas or Ashwa'iyat. ISDF sets the necessary plan for urban planning and supply of basic

facilities, including clean water and electric supply, and sanitation. The Fund carries out its functions in coordination with the ministries, concerned authorities, and local administration units. ISDF has an executive director with nine members representing the civil society and the Ministries of Finance, Electricity and Renewable Energy, International Cooperation and Economic Development, Social Solidarity, Housing, Utilities, and Urban Development. The ISDF's main sources of funding include a share in the national budget, donations, grants, and loans.

The ISDF develops a strategy for the development of informal areas in Egypt by defining and evaluating those areas into two categories: unplanned areas, and unsafe areas. It identifies a strategy for each category to determine methods of intervention and to solve problems.

Unplanned Areas are the safe areas that were not established using urban planning tools (i.e., using detailed plans, land allocation schemes, or subject to the construction and planning requirements). For the ISDF, the criteria of unsafe areas are the same as those of the UN-Habitat; however, according to ISDF, unsafe areas are classified in terms of priority of intervention regarding their degree of risk, into four grades (Japan International Cooperation Agency, 2011):

1st Grade Priority: areas exposed to life-threatening conditions, including landslides, floods, or railroad accidents.

2nd Grade Priority: areas consisting of dwellings with structural elements of walls, floors, roofs built using waste building material, on land unsuitable for construction, or with damaged structures and shanties.

3rd Grade Priority: areas that threaten public health due to either the lack of clean water supply or improved sanitation, as well as located in the vicinity of industrial pollution or high-voltage power lines.

4th Grade Priority: areas that threaten stability, where residents lack secure tenure, and owners are unable to claim their properties.

It is worth mentioning that the ISDF failed to consider cemeteries residents or to manage the problem; neither did it mention unsafe areas in the countryside.

4. EVALUATING UNSAFE AREAS IN QALYUBIA GOVERNORATE

In June 2015, the Ministry of the State for Urban Development and Slums, representing ISDF, launched the project "Egypt without Shanties within three years" - Misr Bela Eishash in Arabic- aiming to eliminate Shanties in all Egyptian governorates. All Egyptian universities were assigned to prepare the project preliminary reports, whereas Qalyubia Governorate was assigned to Benha University, represented by the Faculty of Engineering at Shubra, as it is the regional location of the university. The governorate consists of several towns, including Banha, Shubra Al-Kheima, and Qalyub. The population of Qalyubia Governorate is estimated to be around 5 million people, making it one of the most densely populated regions in Egypt. Four predefined areas in Qalyubia governorate had been identified to be studied: Al Zaraieb area in Al Khusus, El-Bakry area in Shubra El Kheima, area of Hayd Ganeb Alra'y in Qalioub, and the area of Al-Jami' Street in El Qanater El Khayreya (**Error! Reference source not found.**).

Simultaneously, three faculty members –one of whom is the researcher - and several students at the Department of Architecture have conducted workshops that provide training to students of various academic years on how to prepare those reports through several theoretical and practical lectures. Periodic meetings were also held to discuss the difficulties and mechanisms facing the team in preparing those reports. In addition to holding online meetings and creating groups on social media, field visits were made by the team to four potential areas to document their social and urban characteristics. Meanwhile, the Ministry of the State invited all participating universities to periodical meetings to discuss the progress of the project and the accomplished tasks. In September 2015, the final audited report on unsafe areas of the Qalyubia Governorate had been submitted.

4.1.Qalyubia Governorate Overview

Qalyubia Governorate is considered the central governorate connecting the northern to the southern and the eastern to the western governorates of Egypt. It is the third biggest part of the Greater Cairo Region (GCR) after Cairo and Giza Governorates. Out of 27 governorates, Qalyubia is considered the sixth in terms of its population, accommodating six million people (CAPMAS, 2017). It consists of 12 districts and cities from which Benha city is the capital and consists of the most important regional services of the governorate such as Benha university and governmental buildings.

4.2.Overview Of the Unsafe Areas in Qalyubia Governorate

As per the minister consultant, the prospected project undertook about 364 unsafe areas throughout Egyptian governorates (Yqeen Network Broadcasting, 2005), four of which are in Qalyubia Governorate, with an approximate population of roughly 1.1 million inhabitants (Khalifa, 2011).

According to the census 2017(CAPMAS, 2017), the unsafe areas (deteriorated buildings indicators) in Qalyubia Governorates are among the lowest ratio among other governorates, representing around 2.53%¹ while the mean all over Egypt is about 4.02% (Figure 3). The determined unsafe areas in Qalyubia Governorate are divided into six sub-categories; kiosk, shanty, tent, cemetery, and used fenced and unfenced land (

Figure 4); whereas fenced and unfenced lands represent around 7.33% of the area, rendering those areas as potentially unsafe (**Error! Reference source not found.**).

¹ Based on the census 2017, the percentage is determined by calculating the ratio of deteriorated areas to the total number of buildings throughout the governorate.

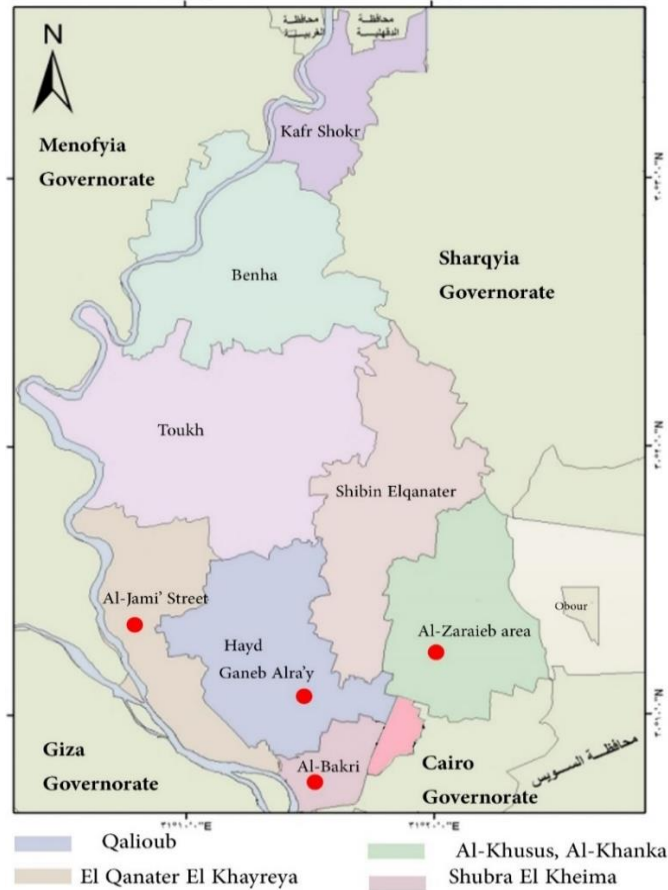


Figure 2. The Four places of Unsafe areas within Qalyubia Governorate.
Source: Wikipedia, 2021 (modified by author)

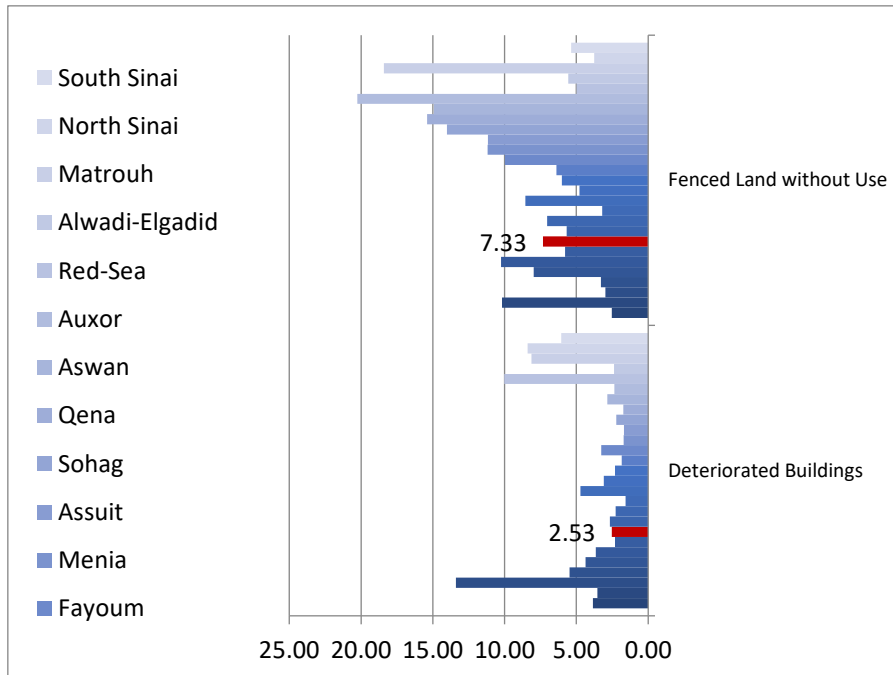


Figure 3. Qalyubia Governorate in relation to the rest governorates in Egypt.
Source: Author based on CAPMASS, 2017

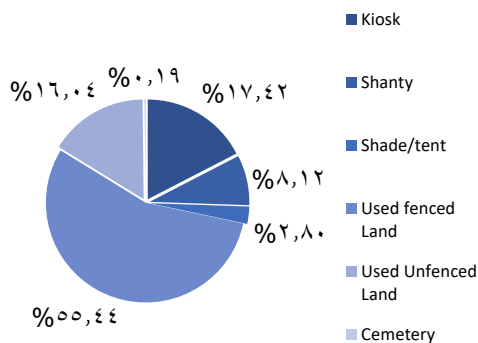


Figure 4. The Six Subcategories of Unsafe areas in Qalyubia Governorate.

Source: Author based on CAPMASS, 2017

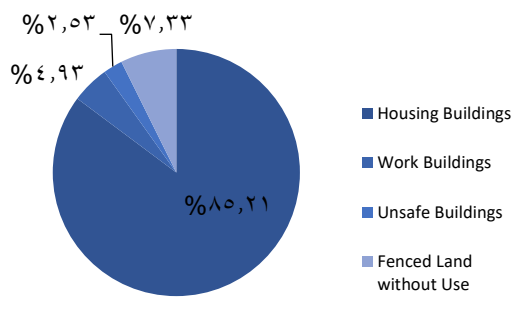


Figure 5. Percentages of Buildings Number in Qalyubia Governorate.

Source: Author based on CAPMASS, 2017

4.3. The Status Quo Of Unsafe Areas in Qalyubia Governorate

According to ISDF, unsafe areas in Qalyubia Governorate are considered grade two areas that have the second priority of intervention. The ISDF put a methodology for the evaluation process for these areas via four categories of evaluation while each category has been subcategorized into criteria which have been evaluated using KPIs weighted by a point ranking system associated with their degree of importance (see Table 1). The four categories are discussed in detail for one selected area (Al Zaraieb area in Al Khusus): firstly-urban characteristics of Al Zaraieb area, secondly- the Ease of the development project, thirdly- the expected impact of the development project on the community, fourthly- Social, economic, and environmental characteristics of Al-Zaraieb area. While the others (El-Bakry area in Shubra El Kheima, area of Hayd Ganeb Alra'y in Qalioub, and the area of Al-Jami' Street in El Qanater El Khayreya) will be provided for the final evaluation in comparison to each other.

4.3.1. Firstly, urban characteristics of Al Zaraieb area

The urban Nature of the intervention area:The main difficulties of dealing with such areas are the unavailability of accurate data about these areas, as well as the inability to have precise mapping data (GIS or even Manuel sketches) that could be reached out from the governmental bodies and authorities. As a result, our methodology to document the urban characteristics of the four areas, defined by ISDF, is by visiting the four sites to document their urban, social, and economic aspects to investigate their degree of risk. Moreover, photographs for each area had been taken as evidence for the description of each area while verifying and mapping the boundaries of each area manually.

The study area located in Al-Khusus District (Figure 6) suffers from environmental pollution as the area is formed of bulky shanties used for the collection of garbage. The area is an irregular place lacking the simplest form of a decent life while classified as the second grade of unsafe areas, according to ISDF, as most of its buildings are made of shanties manifesting the Urban degradation in Al Zaraieb area while surrounded by informal housing of Al Khusus District (Figure 7).

Upon our field survey of the area, the researcher found some differences between the predefined area of intervention provided by ISDF and the real site

conditions in terms of size and the number of shanties, as it reached an area of about 14 acres and contained 450 shanties, while the predefined area from the ISDF is about 12 acres and contains 360 Shanties. Therefore, the boundaries of the study area have been modified and the actual area has been dealt with on the ground (Figure 8).

Table 1. The evaluation Sheet for the unsafe areas adopted from ISDF.

Category	Criterion	KPI	KPI Weight	Criterion Points rank	Category Points Rank
Firstly: Urban Characteristics for the development area	1.1 The urban Nature of the intervention area: The nature of the intervention area initially indicates the deterioration of the living conditions in each area.	• Shanties built with building materials waste / ruined	12	12	20
		• Historic degraded areas	12		
		• Old, degraded areas (rural character / urban core)	9		
	1.2 The expected impact of the development project on its place and surrounding: • Strong impact: such as transforming the community into an integrated urban built environment • Medium impact: such as upgrading old buildings, opening a road, constructing services, etc. • Weak impact: Increased demand for formal/informal housing, high building prices in surrounding urban areas, encroachment on agricultural lands, etc.	• Strong impact	8	8	
• Medium impact		5			
• Weak impact		1			
Secondly, The Ease of the Development Project	2.1 Type of land ownership: Determining the ownership of land in the area, whereas the State property is the easiest for development.	• State property	7	7	58
		• Central authorities (irrigation, railways, etc.)	5		
		• Private property	3		
	2.2 Possession of units: Determining the Possession status of units.	• New law rent/furnished	5	5	
		• Ownership / usufruct	3		
		• Old law rent	2		
	2.3 Intervention Mechanism: • Self-development: the possibility of self-development with the knowledge of Inhabitants (private sector). • Material compensation: the possibility of material compensation for the inhabitants. • Removal and relocation in the same location. • Removal and placement in a nearby location. • Housing in nearby government housing units.	• Self-development	9	9	
		• Material compensation	8		
		• The same location	6		
		• A nearby location	5		
		• Availability of units	3		
	2.4 The presence of other parties involved in the development project: Governorates, ministries, sovereign authorities, civil society institutions, and others. Determining the type of participation (land sharing, financial participation, coordination participation, or other)	• Land Sharing	5	5	
		• Financial Participation	4		
		• Coordination Participation	3		
• Others		2			
2.5 The Number of Units in the Project: The number of existing units and units required for re-housing and the impact of this on the possibility of re-housing in the same location or in another location.	• < 50 units	6	6		
	• 51: 100 units	4			
	• 101: 200 units	3			
	• > 200 units	1			
2.6 Estimated Project Cost: The estimated cost is determined, including the cost of construction and the infrastructure, according to the estimated number of units, determining the area and the method of the intervention.	• < 30M EGP	6	6		
	• 30: 90M EGP	4			
	• 90: 150M EGP	3			
	• > 150M EGP	1			
2.7 The Availability of Housing units: The existence of housing units (permanent/temporary) from other projects that can be used in the development or in the transitional phase, such as; governorate housing, social housing, or housing from other parties.	• The existence of Permanent housing units	5	5		
	• The existence of rental housing units	3			
	• Not exist	0			
2.8 The Possibility of Merging the Project with another Development Project:	• Exist	3	3		

		The existence of development projects for unsafe areas that are currently being implemented and can be combined with the development of the area, with the possibility of mutual benefit between them (land, units ... etc.).	• Not Exist	0		
	2.9	The link between the development of the intervention area and one of the important national projects in the city: The intervention area may be linked to one of the national plans such as; urban projects, construction of bridges/roads, construction of utilities, or metro construction.	• Urban Projects (Housing) • Roads Project • Infrastructure Project • Metro Project	7 5 5 2	7	
	2.10	Inhabitants' acceptance of the development project: Determine the percentage of inhabitants' approval of the project.	• Agree • 50% agree / 50% disagree • refusing to develop	5 3 0	5	
Thirdly, The Expected Impact of the Development Project on the Community	3.1	The presence of political and media interest in the area: • Political interest: official bodies (the presidency of the Republic, the Council of Ministers, Parliament...) • Media interest: newspapers, visual media, community communication...etc.	• Strong interest • Medium interest	4 2	4	10
	3.2	The declaration of Qalyubia governorate free of shanties: The contribution of the development project in the region to the province's completion of dealing with nests and declaring it a shanty-free province.	• Only one area left • Only two areas left • Only three areas left • more than three areas left	3 2 1 0	3	
	3.3	The intervention area is in a visually distinct location: Whether the area is located on important traffic axes or the presence of visually distinctive features in it.	• There is a visual distinction • N.A.	3 0	3	
	4.1	The Area is Distinguished by a Special Economic Activity: The region is distinguished by a special economic activity: • agricultural • Industrial • Handicraft • other	• Exist • Not exist	3 0	3	12
Fourthly, the Social, economic, and environmental characteristics of the area:	4.2	The presence of harmful activities to the region: • Illegal activities • Environmentally polluting activity • other	• Exist • Not exist	3 0	3	
	4.3	The Socio-economic class of the population: Poverty rate of the region's population • high • Average • low	• high • Medium • low	6 4 2	6	
Total points						100

Source: Author based on ISDF, 2015



Figure 6. Accessibility Map to Al Zaraieb Area, Al Khusus.

Source: Author, 2015 (using google earth)



Figure 7. The Urban Degradation of Al-Zaraib Area.

Source: Author, 2015



Figure 8. The actual border of intervention of Al-Zaraieb unsafe Area.

Source: Author, 2015 (using google earth)



Figure 9. Land-use of Al-Zaraieb unsafe Area.

Source: Researchers team, 2015

The expected impact of developing the area on its place and surrounding:

The development of the Al-Zaraieb Area will affect the transformation of its community into a healthy urban environment by removing shanties and creating an area for a more save garbage recycling in accordance with environmental laws and under the supervision of the Ministry of Environment. The prospected development aims to separate the area with a green belt from the surrounding residential area and try to provide housing units in the same area for the affected people, for those who live in the area who are occupying not more than 10% of shanties number of Al-Zaraieb area according to our observation (

Figure 9). In addition, the need to establish health services, good infrastructure, and improve the culture of garbage collection techniques in a safe manner because the development of the area is not only urban wise but also an economic and social one, that must be focused on parallel with urban development.

4.3.2. Secondly, the ease of the development project

The type of land ownership: Throughout the field visit, the percentage of properties was estimated, as it was found that all of them are privately owned properties and mainly used for craftsmanship, and there is only a small percentage of them used for housing purposes, about 10%.

The possession of units: The possession of the units in the area was estimated after a sincere dialog with the people of the region/governorate, the possession of units includes whether the right to benefit directly from the owner that is about 70%, or old law rent with about 30%; see Figure 10.

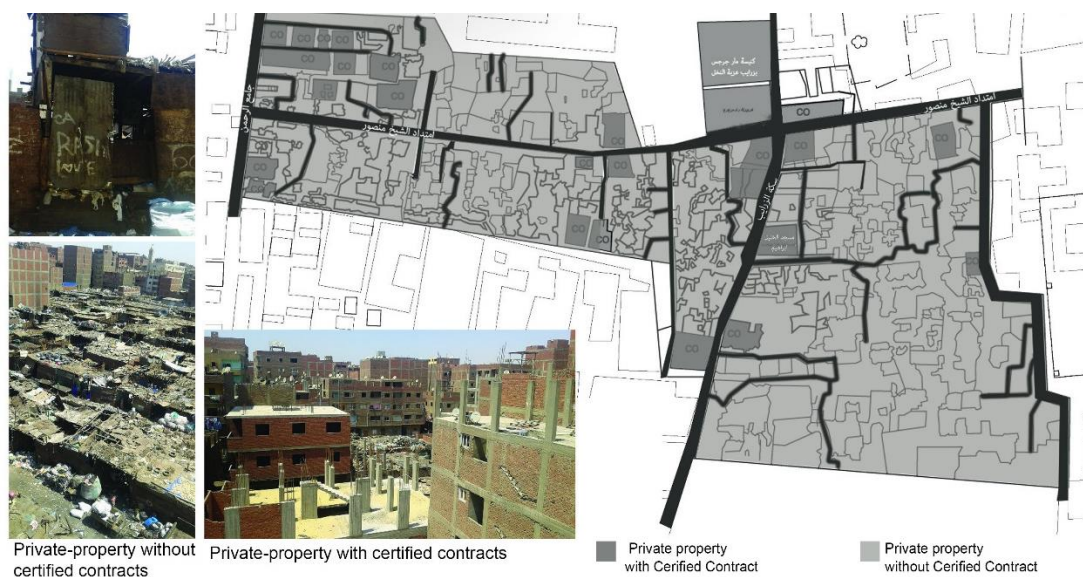


Figure 10. The type of Landownership of Al-Zaraieb unsafe Area.

Source: Researchers team, 2015

The intervention mechanism: During the field visit and the poll of the inhabitants' opinion-about 50 inhabitants, they have been asked to choose from different mechanisms of intervention (Table 2). As a matter of trust between the inhabitants and the state, we have observed that the inhabitants refuse firstly the

development project; however, after severe dialog with them and their awareness that the inevitability of the state abandoning such a development project, as they have observed the multimedia put the focus of the prospected project, and our team was also involved in the national TV shows. As a result, about 40% chose the possibility of self-development with their knowledge, while others see the removal and relocation at the same site, which is the dominant percentage of about 60%. The beneficiaries rejected any other intervention mechanisms, as the site location is an asset for them to earn their daily living (work purposes) while refusing to move to another nearby location to do even the same work. Certainly, their choices don't differ from successful past experiences of upgrading projects that do not work if people are eradicated while losing their source of income and social networks (Chowdhury et al., 2006). They said, "this is the place where we could collect the garbage from the surroundings and get the benefits of living close to our work." In their opinion, we observed that the travel distance to work significantly matters for them.

Table 2. Intervention methodologies poll.

Intervention Mechanism	Percentage
Self-development	40%
Material compensation	0%
Removal and relocation at the same site	60%
Removal and placement near a location	0%
Housing in nearby government housing units that are empty	0%

Source: Researchers team, 2015

The presence of other parties involved in the development project: During the study of the region, it became clear that several entities could participate in the development project, which includes the governorate by providing housing units in intervention area while relocating the garbage collection workshops elsewhere. According to the meeting organized with the Director of the Dept. of the urban development and slums in Qalyubia Governorate, it has been reported that there are manufacturing workshops provided by the governorate in Badr City, a place far from the intervention area for about 25 miles, to relocate the garbage collection industry in that place and far away for Al-Zaraieb Area. The Director of the Dept stated that negotiations are underway with the people to immigrate to it, but we state to him that this solution is unacceptable to most of the inhabitants as per our dialog with them. In turn, he stated that the governorate could use the state power to enforce them to move.

The Number of Units in the Project: The area has about 450 shanties, most of which are used to collect, sort, and recycle garbage, while a few of them are used for residential purposes, which is estimated at 10% of the study area. It is worth mentioning that the building's design and construction mechanisms are characterized by a diligent approach, in most cases by the owner of the plot of land. Most of the buildings in this area have a height of one or two floors and a few of them reach three and four floors, at the same time this area is dominated by a rural character. The layout of this area is dominated by features that are almost uniform in terms of street width, which ranges between 4 m for side streets and 6 m for main streets and their lengths from 300 m – 400 m (

Figure 11). while plots of land range between 60 m²: 120 m², building footprint reaching 100% of each parcel with no setbacks or any open green spaces at all.

Estimated project cost: The Development idea was based on the construction of four residential buildings in the same region and 402 workshops dedicated to garbage manufacturing; see building conditions and heights in Figure 12, Figure 13. The estimated project cost is calculated based on the guidance introduced by ISDF. At that time, the estimated project cost, which differs a lot today (could be multiplied by 5), is about (63,320,000) sixty-three million three hundred and twenty thousand Egyptian pounds broken down as follows:

- Construction of 4.0 buildings, 6.0 floors high x 2.0 units per floor = total number of units 48 x 120,000 pounds per unit at a cost of about 5,760,000 EGP.
- Establishing workshops; 80m² from semi-covered light structures to sort and recycle garbage only and disposing of the rest of the garbage according to the requirements of the Ministry of Environment, with a height of 6 m = 402 workshops x 120,000 pounds per workshop at a cost of about 48,240,000 EGP.
- Adding some service activities such as a cafeteria and a supermarket around 200 m² at a cost of about 400,000 EGP.
- Creating open areas for children's toys 500m² at a cost of about 100,000 EGP.
- The cost of utilities = total site area x cost of construction of utilities for flat meters = (14 x 4200) x 150 = about 8,820,000 EGP.



Figure 11. Street networks of Al-Zaraieb Area.

Source: Researchers team, 2015

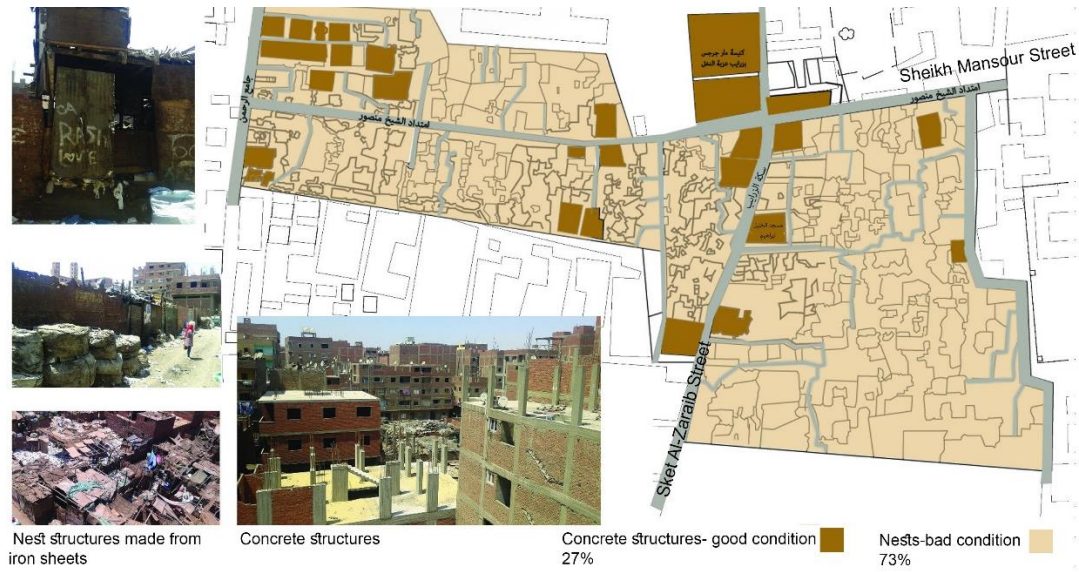


Figure 12. Buildings Conditions of Al-Zaraieb Area.

Source: Researchers team, 2015

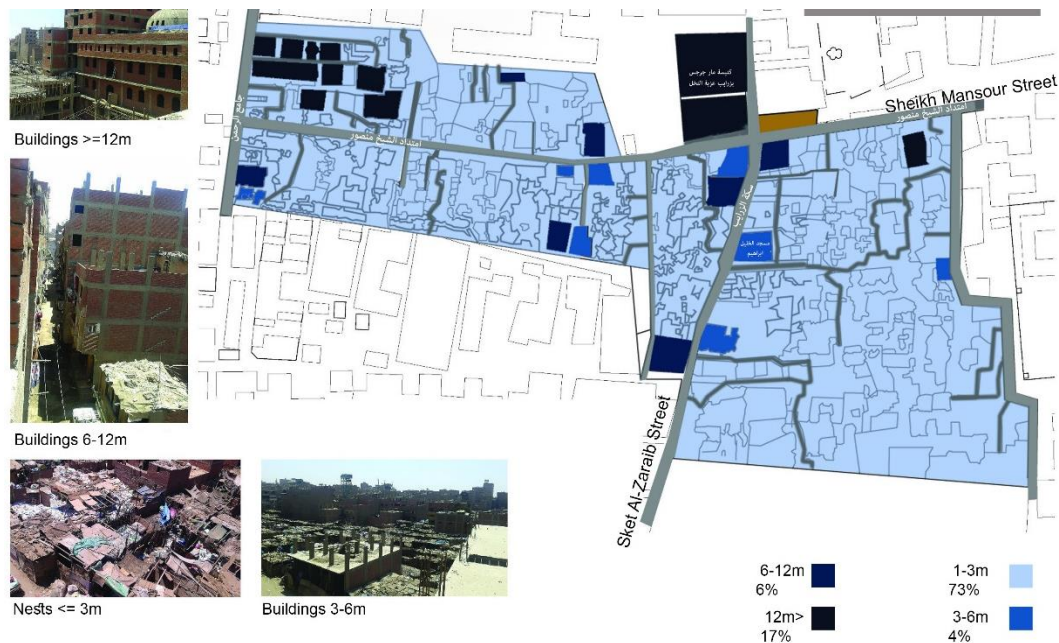


Figure 13. Building heights of Al-Zaraieb Area.

Source: Researchers team, 2015

The Availability of Housing Units: During the field visit, a study was conducted to assess the possibility of providing manufacturing workshop units that contribute to the process of removal and replacement in the study area. Workshops in Badr City Governorate have been provided to transfer some manufacturing workshops in the region that do not exceed 5% of the total number of shanties, but there is a general refusal of the residents to move to it, as it is far from their original work area assisting them to collect the garbage from the surrounding. So, relocating the beneficiaries within the same place is more suitable for them as they are earning their living from nearby.

The Possibility of Merging the Project with another Development Project:

There weren't any development projects for unsafe areas that were concurrently being implemented and could be combined with the development of the area.

The link between the development of the intervention area and one of the important national projects in the city: The intervention area is linked to one of the national plans of Qalyubia Governorate. The governorate is developing around 14 roads all over the governorate territory with a budget of about 64.5M EGP, whereas some of these roads will ease the accessibility to intervention area directly (Qalyubia Governorate, 2018).

Inhabitants' acceptance of the development project: The percentages of inhabitants' acceptance of the development project are estimated based on a conducted survey. The overwhelming percentage of people reject the development project, about 85% as the area is primarily for earning their living and not for housing.

4.3.3. Thirdly, the expected impact of the development project on the community

The presence of political and media interest in the area: Throughout the study of the region, it became clear that the region is receiving political attention (Figure 14) for the project allegedly constructed to transfer the inhabitants to, which is in the city of Badr outside the current area.

The declaration of Qalyubia governorate free of shanties: The project will contribute to the imminent completion of the governorate from dealing with the shanties, as there are three other unsafe areas in the governorate.

The intervention area is in a visually distinct location: The area of Al-Zaraieb is in a visually distinguished location, as it is located near the Church of Mary Gergis. It is also located on two main streets, Siket Al-Zaraieb Street, and Imtidad Sheikh Mansour Street (Figure 15).



Figure 14. Media interest with the area.

Source: (youm7, 2014, August 21)

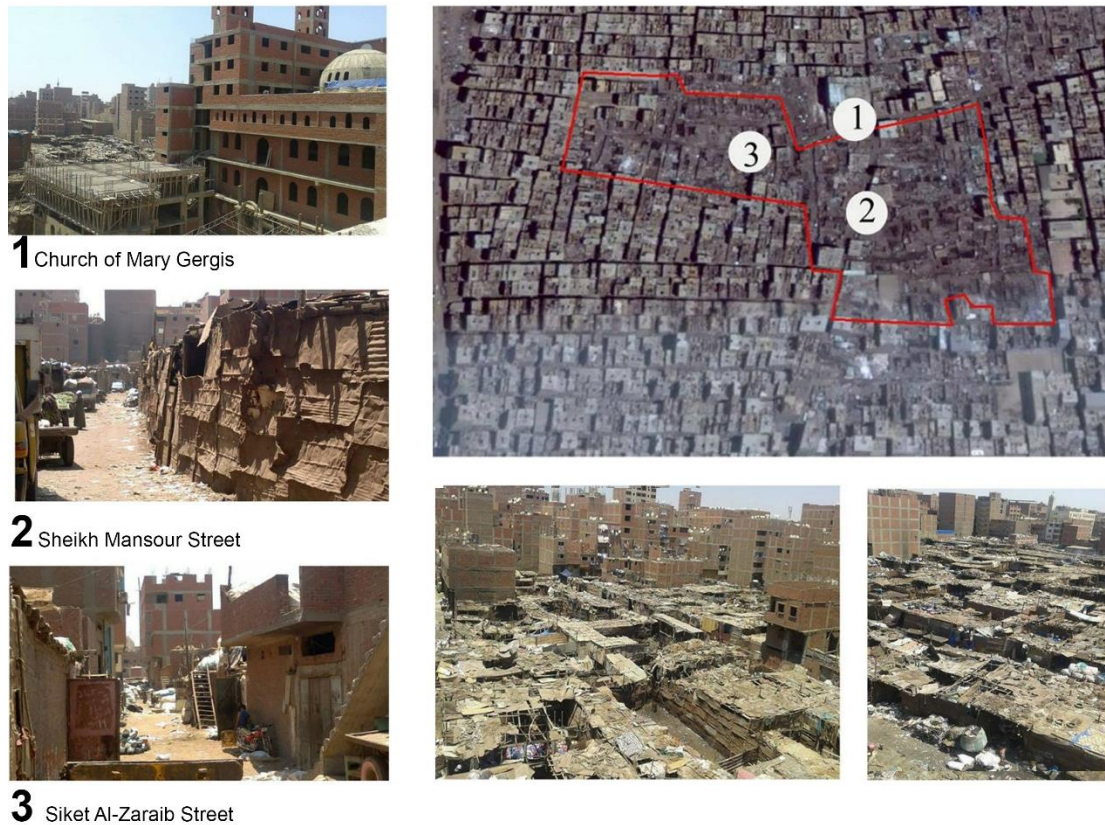


Figure 15. Visual Importance of Al-Zaraieb Area.
Source: Author, 2015 (using google earth)

4.3.4. Fourthly, social, economic, and environmental characteristics of Al-Zaraieb Area

The area is distinguished by a special economic activity: The area of Al-Zaraieb is characterized by the presence of economic artisanal activity -garbage collection and recycling (Figure 16), and the number of units is about 402 shanties dealing with waste.

The presence of harmful activities to the region: The area is two sides of the same coin, as it is the asset for people earning their living by the garbage collection of the area and for the surrounding districts, it is also considered an environmentally harmful activity that affects the health of the inhabitants of the surrounding community and the artisans who work with this job as a daily basis. As a result of this activity, different issues have been observed; the spread of garbage on the streets, the disposal after the process of sorting the garbage in an unsafe way through burning, and the spread of insects in the area, Figure 17 illustrates these problems.



Figure 16. the artisanal activity, which is the most important economic activities in Al-Zaraieb Area.

Source: Author, 2015



Figure 17. The bad environmental impacts of Al-Zaraieb area.
Source: Author, 2015

The Socio-economic class of the population: Poverty rates for the residents of the region were studied and determined based on the observation during the visit, through studying the patterns of buildings and the lifestyle of the residents, whereas most people about 80% are living under the high poverty level, while the rest are living in a moderate condition.

This status appears in their inability to provide themselves with a healthy environment, to provide educational places for their children, the reliance of the population on using pumps to withdraw groundwater for their daily lives, and the sanitation is done through the use of underground trenches, either Electricity is replaced by simple primitive devices.

5. DISCUSSION

Based on the evaluation policy, the four predefined places were evaluated with the same manner as Al-Zaraieb Area (Table 3), each area scored out of 100; 87, 67, 62, 48 for Al-Bakri Area in Shubra El Kheima, Al-Zaraieb Area in Al-Khusus, the Area of Hayd Ganeb Alra'y in Qalioub, and the Area of Al-Jami' Street in El Qanater El Khayreya, respectively. As Al-Bakri area ranked first in the evaluation process, it is the ISDF's first development project taking place in Qalyubia Governorate right now (

Figure 18). It is worth Mentioning that our field survey in Al-Bakri area found some discrepancies too, in terms of project size, between the status quo and available info given from the ISDF.

During our investigation, the priority for place intervention could apparently go to Al-Zaraieb area while the second priority could go to the area of Al-Jami' Street; however, this is a result of the evaluation policy that gives large weights to some key indicators while Marginalizing others. The KPIs of the political and visual importance (third category), for instance, is about 10% of the total weight while marginalizing, in general, the special hazardous activity (such as artisan activity of garbage collection at Al-Zaraieb) that could exist within any deteriorated area all over the country, which instead has only a weight of 3% (refer to Table 1). The KPIs for the financial aspects (second category), as well, have a great concern in the evaluation policy as it weighs 17%, whereas this ratio is affected by the size of the area. The larger size of the area, the smaller weight it gets.

On the other hand, during our visit to general places within the governorate, other unsafe places were discovered and added to the areas of attention while others are founded dispersed in small spots in different places (like Shebin El Qanater and Benha), out of scope, within the same governorate. Consequently, special attention should be exerted to document these dispersed spots through an actual survey done by the assistance of the NGOs who should be interwoven into such important projects for better health and safe environments.

Table 3. The evaluation scores for the Al-Zaraieb Area in Qalyubia Governorate, based on ISDF's Evaluation policy.

Category	Criterion	KPI	KPI Weight	Criterion Points rank	Category Points Rank
Firstly: Urban Characteristics for the development area	1.1 The urban Nature of the intervention area: The nature of the intervention area initially indicates the deterioration of the living conditions in each area.	• Shanties built with building materials waste / ruined	12	12	20
		• Historic degraded areas	12		
		• Old degraded areas (rural character/ urban core)	9		
	1.2 The expected impact of the development project on its place and surrounding: • Strong impact: such as transforming the community into an integrated urban built environment • Medium impact: such as upgrading old buildings, opening a road, constructing services, etc. • Weak impact: Increased demand for formal/informal housing, high building prices in surrounding urban areas, encroachment on agricultural lands, etc.	• Strong impact	8	8	
		• Medium impact	5		
• Weak impact		1			
Secondly, The Ease of the Development Project	2.1 Type of land ownership: Determining the ownership of land in the area, whereas the State property is the easiest for development.	• State property	7	3	27
		• Central authorities (irrigation, railways, etc.)	5		
		• Private property	3		
	2.2 Possession of units: Determining the Possession status of units.	• New law rent/furnished	5	3	
		• Ownership / usufruct	3		
		• Old law rent	2		
	2.3 Intervention Mechanism: • Self-development: the possibility of self-development with the knowledge of Inhabitants (private sector). • Material compensation: the possibility of material compensation for the inhabitants. • Removal and relocation in the same location. • Removal and placement in a nearby location. • Housing in nearby government housing units.	• Self-development	9	6	
		• Material compensation	8		
		• The same location	6		
		• A nearby location	5		
		• Availability of units	3		
	2.4 The presence of other parties involved in the development project: Governorates, ministries, sovereign authorities, civil society institutions, and others. Determining the type of participation (land sharing, financial participation, coordination participation, or other)	• Land Sharing	5	5	
		• Financial Participation	4		
		• Coordination Participation	3		
		• Others	2		
	2.5 The Number of Units in the Project: The number of existing units and units required for re-housing and the impact of this on the possibility of re-housing in the same location or in another location.	• < 50 units	6	1	
		• 51: 100 units	4		
		• 101: 200 units	3		
		• > 200 units	1		
	2.6 Estimated Project Cost: The estimated cost is determined, including the cost of construction and the infrastructure, according to the estimated number of units, determining the area and the method of intervention.	• < 30M EGP	6	4	
• 30: 90M EGP		4			
• 90: 150M EGP		3			
• > 150M EGP		1			
2.7 The Availability of Housing units: The existence of housing units (permanent/temporary) from other projects that can be used in the development or in the transitional phase, such as; governorate housing, social housing, or housing from other parties.	• The existence of Permanent housing units	5	0		
	• The existence of rental housing units	3			
	• Not exist	0			
2.8 The Possibility of Merging the Project with another Development Project: The existence of development projects for unsafe areas that are currently being implemented and can be combined with the development of the area, with the possibility of mutual benefit between them (land, units ... etc.).	• Exist	3	0		
	• Not exist	0			
2.9 The link between the development of the intervention area and one of the important national projects in the city:	• Urban Projects (Housing)	7	5		
	• Roads Project	5			

		The intervention area may be linked to one of the national plans such as; urban projects, construction of bridges/roads, construction of utilities, or metro construction.	• Infrastructure Project	5	0	
			• Metro Project	2		
	2.10	Inhabitants' acceptance of the development project:	• Agree	5		
		Determine the percentage of inhabitants' approval of the project.	• 50% agree / 50% disagree	3		
Thirdly, The Expected Impact of the Development Project on the Community			• refusing to develop	0	4	8
	3.1	The presence of political and media interest in the area: • Political interest: official bodies (the presidency of the Republic, the Council of Ministers, Parliament...) • Media interest: newspapers, visual media, community communication...etc.	• Strong interest	4		
			• Medium interest	2		
	3.2	The declaration of Qalyubia governorate free of shanties: The contribution of the development project in the region to the province's completion of dealing with nests and declaring it a shanty-free province.	• Only one area left	3	1	
			• Only two areas left	2		
			• Only three areas left	1		
			• more than three areas left	0		
3.3	The intervention area is in a visually distinct location: Whether the area is located on important traffic axes or the presence of visually distinctive features in it.	• There is a visual distinction	3	3		
		• N.A.	0			
Fourthly, the Social, economic, and environmental characteristics of the area	4.1	The Area is Distinguished by a Special Economic Activity: The region is distinguished by a special economic activity: • agricultural • Industrial • Handicraft • other	• Exist	3	3	12
			• Not exist	0		
	4.2	The presence of harmful activities in the region: • Illegal activities • Environmentally polluting activity • other	• Exist	3	3	
			• Not exist	0		
	4.3	The Socioeconomic class of the population: The poverty rate of the region's population: • high • Average • low	• high	6	6	
			• Medium	4		
		• low	2			
Total points				67		

Source: Author based on ISDF Evaluation Sheet



منطقة عشش البكري مدينة القناطر الخيرية – محافظة القليوبية

Figure 18. Al-Bakri area in Shubra El Kheima, the ISDF's first project of action out of the four predefined projects

Source: ISDF, 2020

6. CONCLUSION

In General, this research developed an intervention strategy for the unsafe areas in the Egyptian context based on ISDF strategy. The strategy provides the evaluation process that ISDF stands for and the criticism appointed to it through our investigation in the predefined four places in Qalyubia governorate. Through investigating the four places, the research figures out that the evaluation policy is needed to be reconsidered in terms of indicators' weights (KPI) while adding others dedicated to some special activities that could be found within the unsafe areas. The research suggests that more weights should go to the hazardous status of the area as well as to its overall impact in terms of size, proximity to housing and its impact to public health. moreover, the research finds that the field visit is the sever part of the methodology to document the status quo of the specificity of unsafe areas and informal settlements in general, as well as it leads to the discovery of other areas that are not in the point of interest before.

Furthermore, the evaluation policy of ISDF strategy doesn't include any factors concerning the services (health, education, etc.) that serve the study area in the evaluation process of the area.

In specific, conclusion could be drawn for the selected study area (Al-Zaraieb area) which is presented in the order of SWOT analysis as follows:

Strengths: The potentialities of Al-Zaraieb intervention area are the standardization of shanties blocks as well as artisan activities in the area, the area mainly depends on self-sustained efforts; the area represents the assets for its inhabitants; the ability of the inhabitants to live with this indecent and miserable conditions of life; most of the shanties are a one-floor story that eases the intervention mechanism for development.

Weaknesses: The area is considered as a disordered urban tissue reducing the safety for the urban dwellers; the social injustice (low quality of life) of providing social infrastructures such as sanitation, water, and electricity supplies transforming the area to a primitive life to its inhabitants; the crowdedness of urban blocks leaving no spaces for the urban life to breath while leading to life as a machine with a low standard of visual, vocal, and spiritual qualities; the spreading of garbage everywhere in the area leads to an unhealthy environment to its inhabitants; and the unavailability of healthcare, educational, or secure facilities in the area leads to a miserable life.

Opportunities: the area is a potential to be used as a breath lung for the surrounding district that is an informal area lacking urban open spaces as the percent of residential use of the area is very low that could be resettled elsewhere; its proximity to the Nile River and the main roads easing its accessibility to the surrounding; the opportunity of using artisans abilities to work in garbage recycling; and the serious intension of ISDF to develop the area.

Threats: the inability of the governorate to satisfy the beneficiaries from the development project is an obstacle to transfer the beneficiaries elsewhere in an appropriate and nearby place; the rejection of the beneficiaries to the development project as it is planned to transfer some of them elsewhere far from their location, the imbalance between Al-Zaraieb area and its context in terms of garbage collection

activity in front of housing activity; besides, Al-Zaraieb area represents a threat to urban health for the whole context.

In conclusion, the SWOT analysis of the Al-Zaraieb area highlights the strengths, weaknesses, opportunities, and threats of the region. While the area has potential for standardization of shanties blocks and artisan activities, its weaknesses include disordered urban tissue, social injustice, crowdedness, garbage, and unavailability of basic services. However, there are opportunities for the area to be used as a breath lung for the surrounding district, to leverage its proximity to the Nile River, and to use artisans for garbage recycling. Threats include the inability of the governorate to satisfy the beneficiaries of the development project, resistance to relocation, and the imbalance between Al-Zaraieb area and its context in terms of garbage collection. Overall, addressing these factors will be crucial for improving the living conditions and quality of life for the inhabitants of the Al-Zaraieb area and other informal settlements in Qalyubia Governorate.

7. RECOMMENDATION AND FUTURE RESEARCH

Al-Zaraieb area is the most urgent area for intervention priority as it is a potential project to overcome the unhealthy environment in two ways; one way by relocating garbage collection nearby to improving public health for its inhabitant and the surrounding area of Al Khusus district, the other way by sustain the inhabitant job and work assets that wouldn't abandon.

Finally, based on the conducted investigations for the four unsafe areas in Qalyubia Governorate, other research could be conducted to evaluate KPI Weights by conducting the proposed intervention mechanisms for other governorate to make general conclusion and revisiting all variable that need to be investigated elsewhere, as each place has special circumstances and specific locations all over Egypt.

Furthermore, other factors concerning the services (health, education, etc.) that serve the study area should be added in the evaluation process of the area.

8. ACKNOWLEDGEMENTS

It is my pleasure to share my deep and sincere gratitude to Prof. Dr. Osama El-Nahas for his guidance and coordination with ISDF for doing such project, as well as my sincere gratitude to all participating colleagues and students (researchers' team) for their sever efforts in the field survey and data visualization.

REFERENCES

- الجهاز المركزي للتعبئة العامة والإحصاء. (٢٠١٧). نتائج التعداد العام ٢٠١٧. https://www.capmas.gov.eg/Pages/Publications.aspx?page_id=7195&Year=23521
CAPMAS. (2017). Population and Buildings Census. Retrieved from https://www.capmas.gov.eg/Pages/Publications.aspx?page_id=7195&Year=23521
- جمعة، فتحية. (٢٠١٥). منهج مقترح للتعامل مع مناطق الإسكان غير الرسمي خارج المخطط الحضري لمدينة بنغازي. مجلة بحوث العمران، ١٨(١)، ٨٧-١١٠. <https://doi.org/10.21608/JUR.2015.89789>
- Gomaa, F. (2015). Dealing with housing areas outside the urban plan of the city of Benghazi. *Journal of Urban Research*, 18(1), 87–110. <https://doi.org/10.21608/JUR.2015.89789>

- حسن، غادة. (٢٠١٨). التعامل التخطيطي مع الاستعمالات المهمشة وغير المتوافقة في تنمية المجتمعات العمرانية القائمة. مجلة بحوث العمران، ٣٠(١)، ٢٤-٤٣. <https://doi.org/10.21608/JUR.2018.88380>
- Hassan, G. (2018). Planning dealing with Brownfields in the development of existing urban communities. *Journal of Urban Research*, 30(1), 24-43. <https://doi.org/10.21608/JUR.2018.88380>
- حنفي، مها & شوقي، كاريمان. (٢٠٢٢). مؤشرات تقييم استدامة مشروعات إعادة تسكين المناطق غير الامنة (دراسة حالة منطقة روضة السيدة زينب). مجلة بحوث العمران، ٤٣(١)، ٢٣-٤٣. <https://doi.org/10.21608/JUR.2021.79379.1069>
- Hanafy, M., & Shawky, K. (2022). Sustainability Indicators Assessment of unsafe areas Re-housing projects (Case study: Rawdat Elsayda Zaynab area). *Journal of Urban Research*, 43(1), 23-43. <https://doi.org/10.21608/JUR.2021.79379.1069>
- شبكة يقين الإخبارية. (٢٠٠٥، يونيو ١٠). مصر ستكون بلا عشش في خلال ثلاث سنوات [فيديو]. يوتيوب. <https://www.youtube.com/watch?v=XD7AOgO9I9E>
- Yqeen Network Broadcasting. (2005, June 10). *Egypt without Shanties in three years [Video]*. YouTube. <https://www.youtube.com/watch?v=XD7AOgO9I9E>
- شوقي، كاريمان وعبد الله، أحمد. (٢٠٢٢). تحليل عمران مناطق الإسكان غير الرسمي مؤشرات للتشكيل العمراني لمشروعات إحلال المناطق السكنية المتدهورة. مجلة بحوث العمران، ٢٩(١)، ٥١-٧٤. <https://doi.org/10.21608/JUR.2018.88620>
- Shawky, K. A., & Abdullah, A. (2018). Urban analysis for informal housing areas. *Journal of Urban Research*, 29(1), 51-74. <https://doi.org/10.21608/JUR.2018.88620>
- صندوق تطوير المناطق العشوائية. (لا تاريخ). منطقة عشش البكري مدينة القناطر الخيرية - محافظة القليوبية. تم استرجاع ١٠ يونيو، ٢٠٢٠، من <http://www.isdf.gov.eg/ProjectsDetails.aspx?project=19>
- ISDF. (n.d.). Ashish Al-Bakry area, Al-Qanater Al-Khairiya City, Al-Qalyubia Governorate. Retrieved 10 June 2020, from <http://www.isdf.gov.eg/ProjectsDetails.aspx?project=19>
- محافظة القليوبية. (٢٠١٨، ٣١ مايو). أحداث محافظة القليوبية. من http://www.qaliobia.gov.eg/SitePages/Events_Dispatch.aspx?ID=1919
- Qalyubia Governorate. (2018, May 31). *The events of Qalyubia Governorate*. Retrieved from http://www.qaliobia.gov.eg/SitePages/Events_Dispatch.aspx?ID=1919
- وزارة الإسكان والمرافق والمجمعات العمرانية. (٢٠٠٩). اللائحة التنفيذية لقانون البناء الموحد رقم ١١٩ لسنة ٢٠٠٨. القاهرة: الوقائع المصرية، العدد ٨٢.
- Ministry of Housing Utilities and Urban Development (MHUUD). (2009). *Unified building law no. 119/2008 and its executive regulations*. Cairo: Al-Wakaa Elmasrya, Vol. 82. Retrieved from <https://img.mhuc.gov.eg/images/7a808756-717f-49de-9790-e3ca5c47afec.pdf>
- Centre for Sustainable Development; AUC. (201٣). AUC Input for Egypt's Strategy for Dealing with Slums. Cairo: American University in Cairo.
- Chowdhury, F. J., & Amin, A. T. M. N. (2006). Environmental assessment in slum improvement programs: Some evidence from a study on infrastructure projects in two Dhaka slums. *Environmental Impact Assessment Review*, 26(6), 530-552. <https://doi.org/10.1016/j.eiar.2005.11.004>
- ISDF. (2015). *ISDF evaluation sheet*. A report received from the meeting with ISDF. available from <https://fengbuedu->

my.sharepoint.com/:w:/g/personal/ahmed_rasol_feng_bu_edu_eg/ESIR6C9iN95JhEKH
O1RLH3cBrBHW_asHstIu3eQOd7LCaQ?e=bD7Lan

Japan International Cooperation Agency. (2011). Final Report: Data Collection Survey Mission on Slum and Informal Area Development in the Greater Cairo Region.

Khalifa, M. A. (2011). Redefining slums in Egypt: Unplanned versus unsafe areas. *Habitat International*, 35(1), 40–49. <https://doi.org/10.1016/j.habitatint.2010.03.004>

Osman, M. A., Tahoon, K. Q., Shehata, M., & Lamee, M. A. (2022). Spatial Monitoring and Classifying of Urban Deterioration in the Egyptian Cities Using Geographic Information System (GIS) Approach: A Case Study of Mansoura City. *Egypt. Civil Engineering and Architecture*, 10(5A), 176–188. <https://doi.org/10.13189/cea.2022.101409>

The PSUP Team. (2016). *Slum Almanac 2015-2016: Tracking Improvement in the Lives of Slum Dwellers*. UN-Habitat. Retrieved from <https://unhabitat.org/slum-almanac-2015-2016-0>

UN-Habitat. (2020). *Informal Settlements in the Arab Region: Towards Arab Cities without Informal Areas*. Nairobi, Kenya. Retrieved from <https://unhabitat.org/informal-settlement-in-the-arab-region-towards-arab-cities-without-informal-settlements-analysis>

Wikipedia. (2021, Dec. 26). *Qalyubia Governorate*. Retrieved from https://sco.wikipedia.org/wiki/Qalyubia_Govrenorate

World Bank. (2008). *Arab Republic of Egypt Urban Sector Update: Volume 1*. Washington, DC. Retrieved from <http://hdl.handle.net/10986/19487>

youm7. (2014, August 21). *Al Kosous' people of in Qalyubia are calling for the dismissal of the city's president*. Retrieved from <https://www.youm7.com/1830028>