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The Predicament of Defining Informal Areas and Its Effect on Upgrading Strategy, Case Study: Informal Areas of Fayoum City, Egypt

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ABSTRACT: Problem of informal areas received a great attention of the scientific research over years. Yet, regrettably the problem is still developing quantitatively and qualitatively. It is considered as a pressing and urgent issue which needs to be handled in an effective and sustainable way. This paper will propose a new approach for upgrading informal areas depending on complementing and prioritizing four sustainable dimensions. First, this paper will argue the predicament of defining informal areas on international and local scope, and its effect on upgrading strategies. Second, it will define the proposed approach with its four axes with brief review on its vision and a main focus on the proposed definition and classification for informal areas to overcome problems resulted from existed definitions. Third, the paper will validate the inclusion of the four dimensions of the proposed approach within local and international classification of informal areas; moreover, it will validate the inclusion of them in adopted strategies for upgrading informal areas. Then, this paper will apply this validation to a local case study within Fayoum city, Egypt. Finally, conclusions and recommendations will be listed.

KEYWORDS: Informal areas, classifying, upgrading, leading project, prioritizing, Fayoum city.

I. INTRODUCTION

The problem of informal areas is an international issue. It is not only an urban or a planning problem; it is quite related to issues of poverty, social problems and security. Yet, informal areas are not a place of despair; they are full of potentials and resources. They are part of national economy, demographic composition, and social status, neither of them could be ignored. Thus, dealing with informal areas should not be limited to the physical environment represented in housing condition, infrastructure shortage, and surrounding urban areas. Measuring and improving non-physical human aspects such as education, health, and behavior is a must especially to those dwellers relocated from deteriorated informal areas to new locations with perfect physical environment. Many official agencies thought that the problem is solved in such way, while the truth is that they transfer dwellers of deteriorated informal areas to new places with their social, behavioral and security problems, which would end up to changing the new area to another informal one with all the characteristics of informal areas, worse still it will be a way from official attention because of its good physical environment.

Methodology of the paper

Methodology of the paper depends on detecting the problems of informal areas, from the starting point represented in defining informal areas and classifying them because these first stages affect the upgrading strategies and the final

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results. Thus, this paper will argue the predicament of defining informal areas on international and local scope to define the most common problems that affect upgrading strategies. Second, this paper will propose a new approach to deal with informal areas. This approach will propose a definition and a classification for informal areas depending on its vision. Third, this paper will apply a critical analysis between local official classification and their effect on the adopted upgrading strategy on a local case study which is an informal area located in Fayoum city, Egypt. Finally, conclusion and recommendations will be listed.

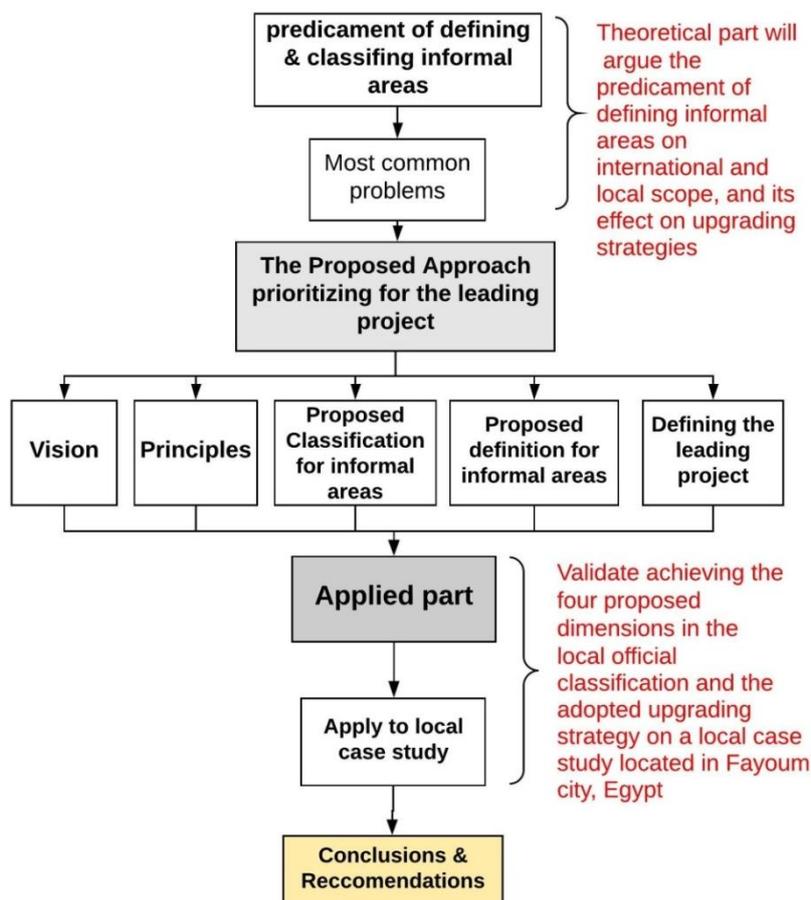


Figure 1: Methodology of the paper
Source: By Authors

II. THE PREDICAMENT OF DEFINING INFORMAL AREAS ON INTERNATIONAL SCOPE

According to the United Nations, informal areas are defined as "areas where groups of housing units have been constructed on land that the occupants have no legal claim, or occupy illegally" or "unplanned settlements and areas where housing is not in compliance with current planning and building regulations (unauthorized housing)"¹.

Informal settlements are usually seen as synonymous of slums, with a particular focus on the formal status of land, structure and services. The term "slum" mainly refers to poor and crowded areas². While informal areas have more

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detailed criteria to be defined. According to Habitat³, informal areas are defined by three main criteria which are already covered in the definition of slums. These are:

1. Inhabitants have no security of tenure vis-à-vis the land or dwellings they inhabit, with modalities ranging from squatting to informal rental housing,
2. The neighborhoods usually lack, or are cut off from, formal basic services and city infrastructure,
3. The housing may not comply with current planning and building regulations, is often situated in geographically and environmentally hazardous areas, and may lack a municipal permit.

Informal settlements can be occupied by all income levels of urban residents, affluent and poor.

Thus, informal mainly describes a legal status, and refers to unauthorized areas announced by the government, while slum describes the characteristics of an area.

There is a common sector between slums and informal areas, while for effective inclusion; slums should be a sub set of informal areas (totally included in it).

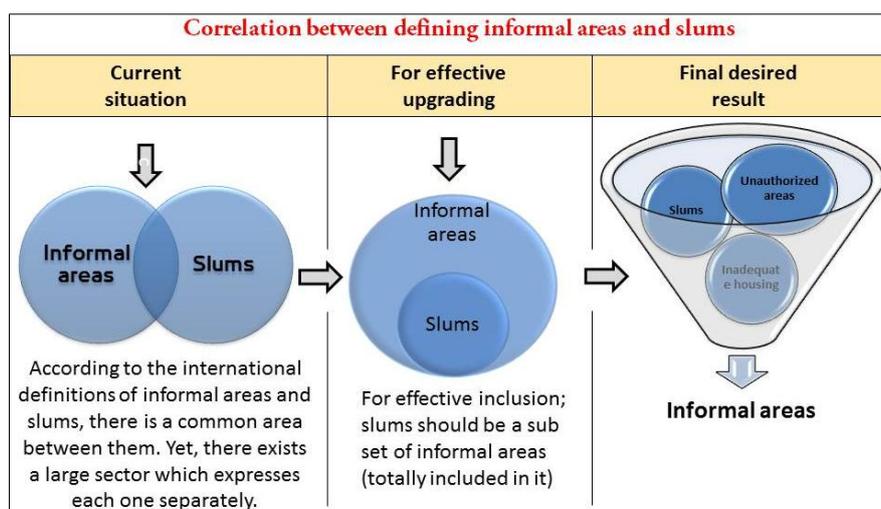


Figure 2: Correlation between defining informal areas and slums
Source: By Authors

III. THE PREDICAMENT OF DEFINING INFORMAL AREAS IN EGYPT

The term “aashwa’i” is the only one used officially to indicate deteriorated or under-served urban areas, implying that these areas are unplanned and illegally constructed. Thus, they are not necessarily slums, although being informal/

illegal. They almost tend to be the least well served in terms of infrastructure and public services, and they suffer from poor accessibility and high levels of overcrowding. In Greater Cairo a total of 81 aashwa’i areas were identified, of which 63 were deemed upgradable while 18 smaller pockets were slated for demolition and the resettlement of the inhabitants. Government officials and national press frequently see these areas as “black stains” and ascribe to them a whole set of social ills – crime, drugs, and ‘backwards’ behavior. Yet, informal settlements have much potential beside their negative aspects⁴. Locally, the predicament in defining informal areas appeared evident in the following points;

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1. The official fund for developing informal areas is limited only to those areas defined by the ISDF⁵.
2. Many slum areas and inadequate housing are not included within informal areas. Thus, such areas would be deprived of official funding.
3. ISDF classifies informal areas to four categories depending on risk degree. These four categories are; life threatening, unsuitable shelter, health risk, and unsafe tenure with total ignorance to social and human aspects.
4. Classifying informal areas define specific type of intervention and upgrading strategies for each category which depend on the available solutions rather than effective and comprehensive strategies.

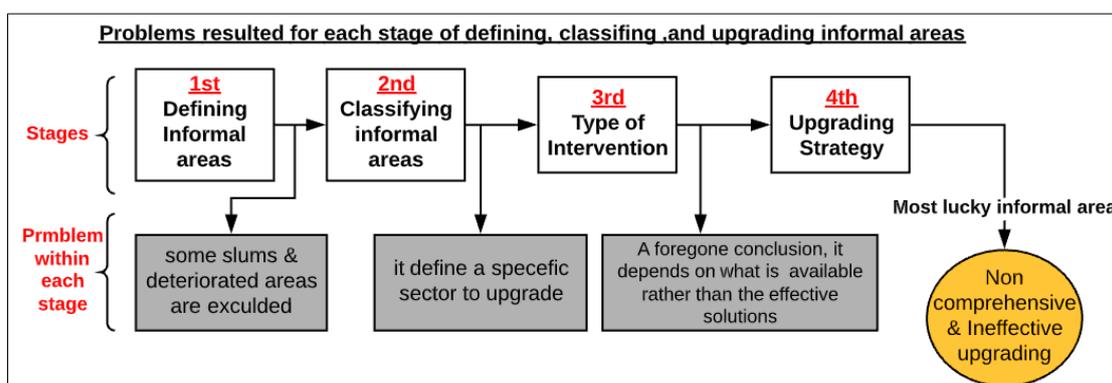


Figure 3: Problems resulted for each stage of defining, classifying, and upgrading informal areas
Source: By Authors

Thus, effective handling for the problem of informal areas starts from comprehensive inclusion for all areas which need to be upgraded through a meaningful inclusive definition. Moreover, there is inescapable need to adopt comprehensive solutions which consider numerous aspects that deals with both human and physical environment, yet with flexible and multi-optional scenarios.

IV. THE PROPOSED APPROACH (LEADING PROJECT APPROACH)

The proposed approach tends to deal with informal areas in a comprehensive way represented in complementing four dimensions; urban, socio-human, economic, and environmental. This proposed approach depends on prioritizing the four dimensions and define the leading one which can achieve the comprehensive upgrading by adopting it.

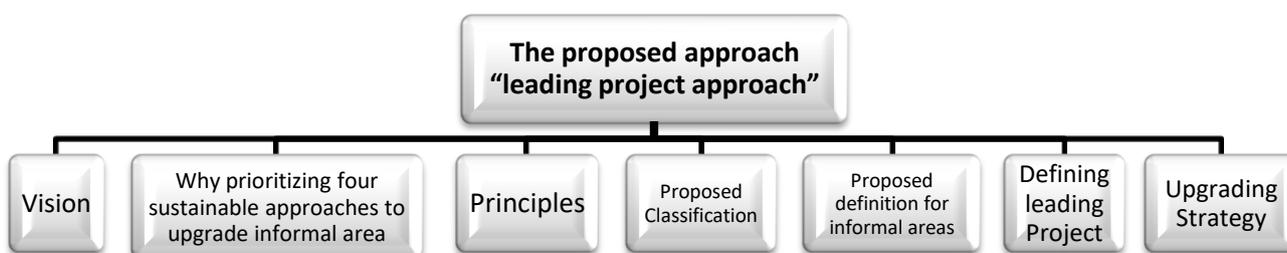


Figure 4: Components of the proposed approach
Source: By Authors

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(a) Vision of the proposed approach (leading project approach)

To avoid problems resulted from imperfect definitions and classifications for informal areas, the proposed approach targets comprehensive inclusion for areas with deteriorated, illegal, unplanned, non-human conditions within the concept of informal areas. Thus, it depends on complementing four axes to define, classify, and upgrade informal areas. The corner stone of the proposed approach to comprehensive upgrading with lower cost and in less time is creating a strong links between four upgrading dimensions (urban, socio-human, economical, and environmental) and prioritize them to define the leading one.

The pivotal difference in this proposed approach rather than other comprehensive approaches lies in the links between the four dimensions of upgrading additional to prioritizing and defining the leading one. This approach adopts strategies to keep links between the four dimensions which acted as a train once the engine works (the leading project) the whole train moves.

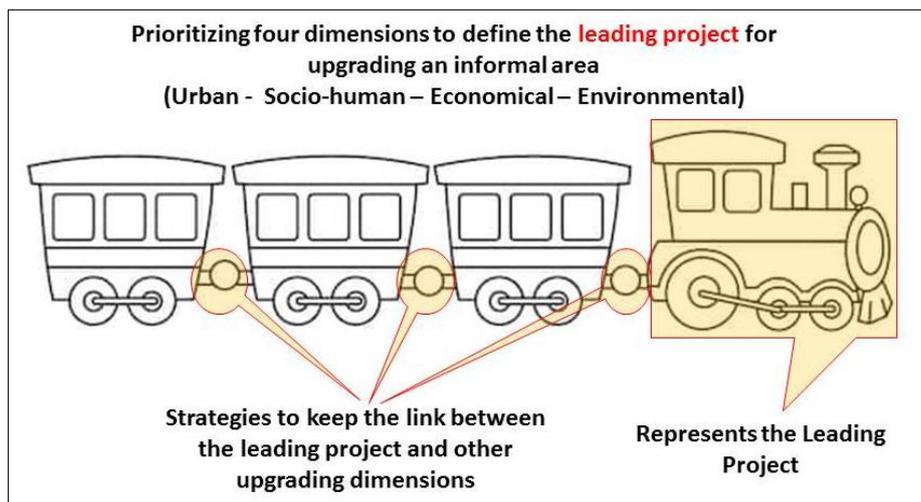


Figure 5: Sketch illustrating the concept of the proposed approach
Source: By Authors, Train pic: /www.shutterstock.com

(b) Why prioritizing four sustainable approaches to upgrade informal area?

Problem of informal areas is a forked issue which entails various dimensions related to urban, social, economic and environmental aspect. All these dimensions need to be considered when upgrading informal areas in order to reach to a sustainable solution. Recently many international approaches tend to comprehensive upgrading which includes all mentioned aspect. Yet, such comprehensive upgrading would face common problem which may affect its efficiency such as; long-run implementation and need for huge funding. Thus, adopting a comprehensive approach, yet, with prioritizing its dimensions would overcome these obstacles and end up with better results.

(c) Principles of the proposed approach

The proposed approach relies on three main principles which are applied on all of its stages; definition stage, classification, and upgrading stage.

The three principles area:

1. Inclusion: itis achieved by including all physical, non-physical components, and human being in upgrading process through complementing four sustainable dimensions.
2. Effectiveness: is achieved throughthe adopted strategy which keeps the links between the four upgrading dimensions.

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3. Sustainability: is achieved through prioritizing the four upgrading dimensions to save time, efforts, and budget.

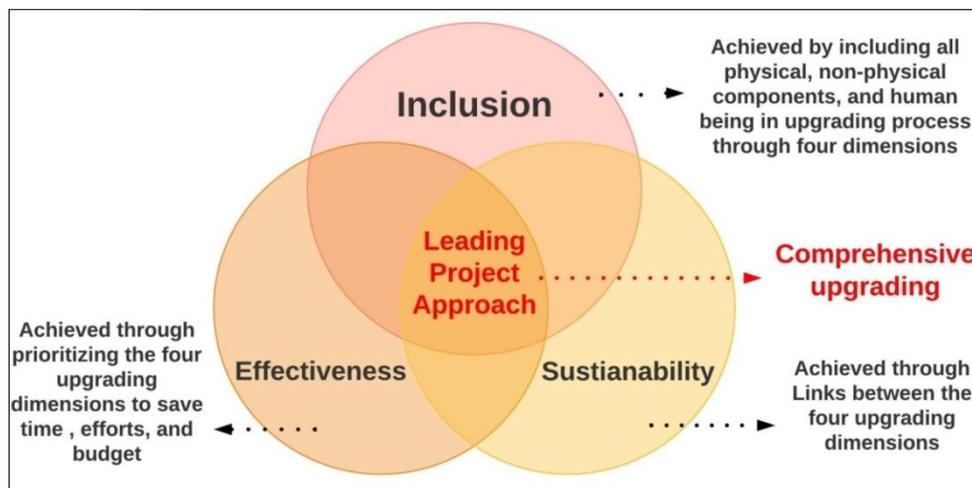


Figure 6: Principles of the "leading project" approach to upgrade informal areas.
Source: By Authors

(d) Proposed Classification for informal areas

The proposed classification for informal areas depends first on giving relative values for each axis of the proposed four axes; urban, socio-human, economic, and environmental. These values are different and successive with total value equal to one. The highest value which is equal to 0.4 represents urban problems, while socio-human problems are represented by 0.3 value, economic problems are represented by 0.2, and finally environmental problems are represented by the lowest value which is equal to 0.1.

Relative values for each axis				
Urban	Socio-Human	Economic	Environmental	Total
0.4	0.3	0.2	0.1	1

Table 1: Relative values of the four axes of the "leading project" approach
Source: By Authors

The highest value represents urban problem as the physical environment mostly acts as the main focus in defining and upgrading informal areas. While the least value represents environmental problems because they will be included to great extent in the urban axis, otherwise, in case of the existence of environmental problems without any effect on urban, socio-human, or economic aspect it would be a little bit away from the concept of informal areas, thus it should take the least value to be excluded. Socio-human and economic axes took average values, yet socio-human value is slightly higher as this axis included vital indicators such as literacy, health, and security.

The proposed classification for informal areas depends on the types of existed challenges within an area. It consists of four categories; mono-dimensional areas which contains one type only of challenges (realistically they may not exist), dual-dimensional areas which suffer from two different types of challenges, tri-dimensional areas with problems related to three different aspects, and finally quadratic-dimensional areas which represents the worst and most critical cases of informal areas.

Areas with problems that have total points less than 0.4 are excluded from being informal according to the proposed approach.

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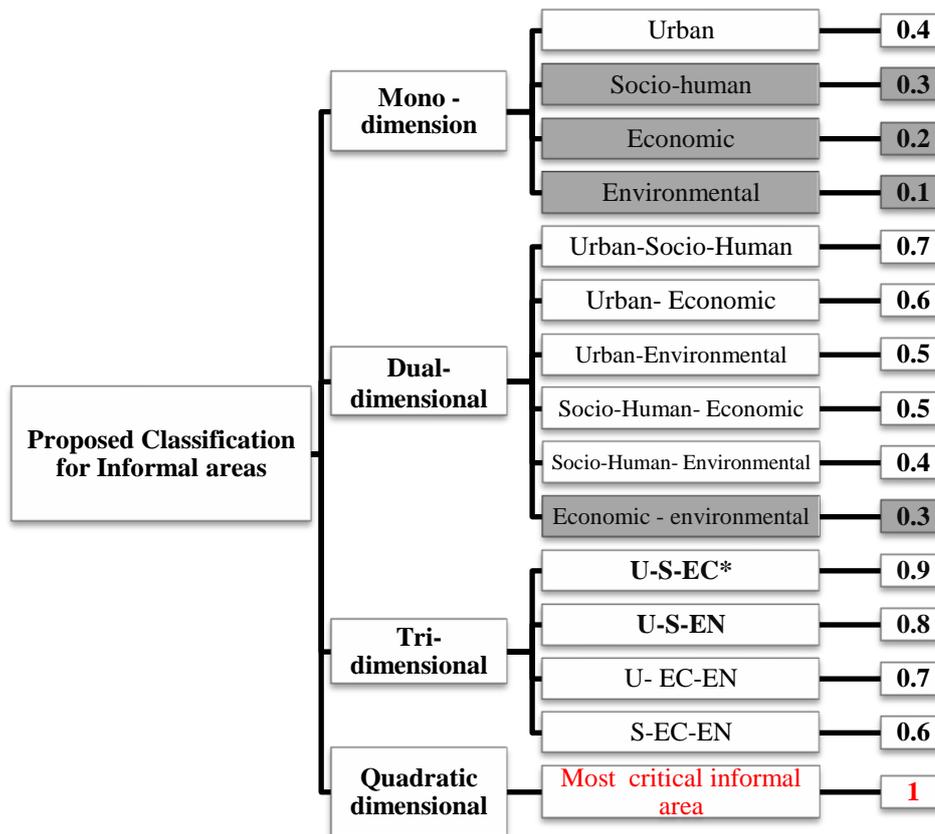


Figure 7: Proposed Classification for Informal areas
Source: By Authors

*U: Urban Axis
S: Socio-Human axis
EC: Economic axis
EN: Environmental axis

(e) The Proposed definition for informal areas

The proposed definition of informal areas is derived from the classification in order to ensure including all areas which suffer from different problems not just urban deterioration and need to be upgraded. The leading project approach define informal area as " any area that suffer from any type of problem; urban, socio-economic, or environmental, yet with a problem value equal to or more than 0.4 according to the classification scale". Moreover, the proposed approach classified informal areas to four categories according to their values to define their rank and severity. The first category represents informal areas with problems valued 0.4 and 0.5 and it is ranked as inadequate areas. The second category represents areas with values 0.6 and 0.7 and it is ranked as deteriorated areas. The third category represents areas with values 0.8 and 0.9 and it is ranked as serious informal areas. Finally, the fourth category represents areas with value (1) and it is ranked as the most critical (pressing) informal areas.

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Categories	1 st Category		2 nd Category		3 rd Category		4 th Category
Value	0.4	0.5	0.6	0.7	0.8	0.9	I
Characterization	Inadequate		Deteriorated		Serious		Most Critical (pressing)

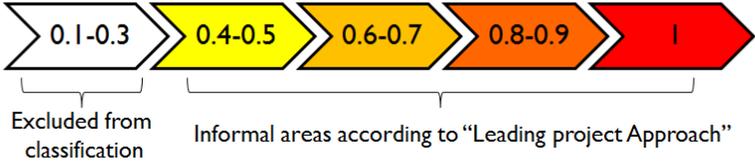


Figure 8: Ranks & values of informal areas according to the proposed classification
Source: By Authors

(f) Defining the leading projects among four sustainable dimensions

The leading project represents project with the highest priority. It could represent one or more of the four proposed sustainable axes. Yet, whatever the axis of the leading project, the adopted strategies will strengthen the links between it and the remaining axes in order to achieve comprehensive sustainable upgrading. The leading project could be defined according to numerous options; first it could be defined according to the utmost potential of the informal area, second it could be defined according to the most pressing or critical problems, finally, it could be defined according to dwellers' consensus.

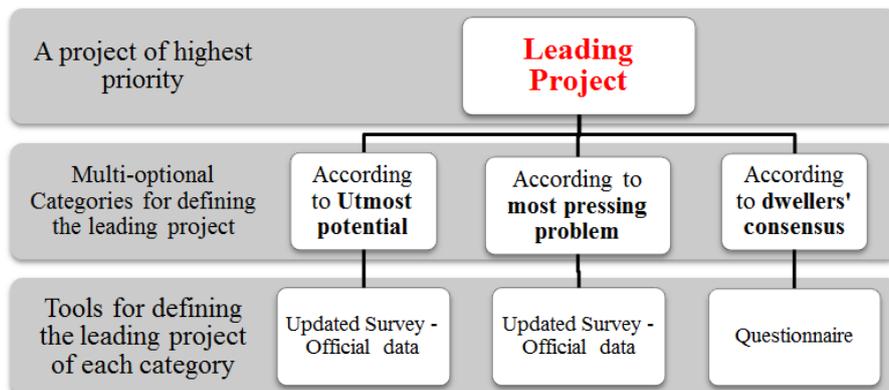


Figure 9: Multi-optimal categories for defining the leading project
Source: By Authors

V. CASE STUDY: INFORMAL AREAS OF FAYOUM CITY, EGYPT

This part will discuss informal areas within Fayoum city announced by the informal settlements development fund (ISDF). Accordingly, it will select the most critical one in this official classification. Then, it will discuss the adopted official strategy to upgrade the area and its effect on real situation. Moreover, it will validate the inclusion of the four sustainable axes (urban, socio-human, economic, and environmental) among the implemented developments.

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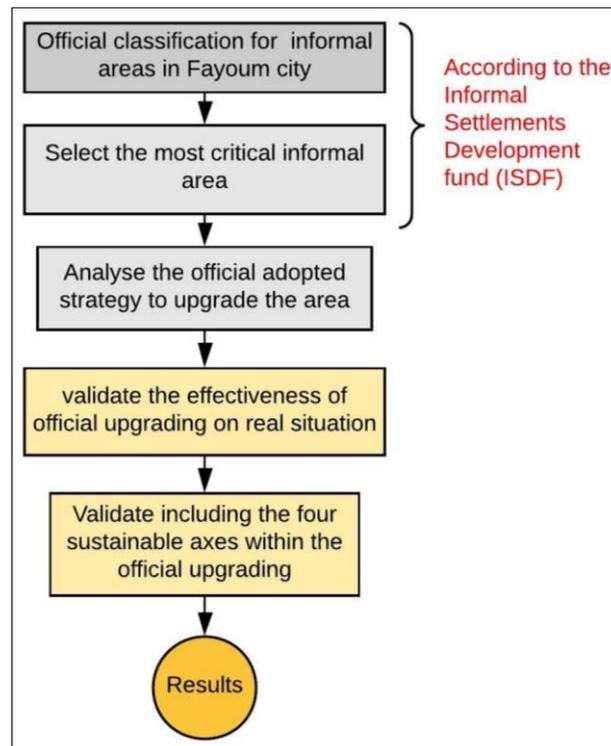


Figure 10: Methodology of case study
Source: By Authors

a) *Informal areas of Fayoum city*

Fayoum city is a part of Fayoum governorate which is located 100 kilometers (62 miles) southwest of Cairo, Egypt⁶. Fayoum city is one of the ancient Egyptian cities, it has ten informal areas listed by the ISDF⁷. According to the strategic plan of Fayoum city for 2009 all informal areas of the city were classified as unplanned informal areas except for one area which is "Allawy" was classified as unsafe informal area of the third degree which represents health risk resulted from sanitation lack.

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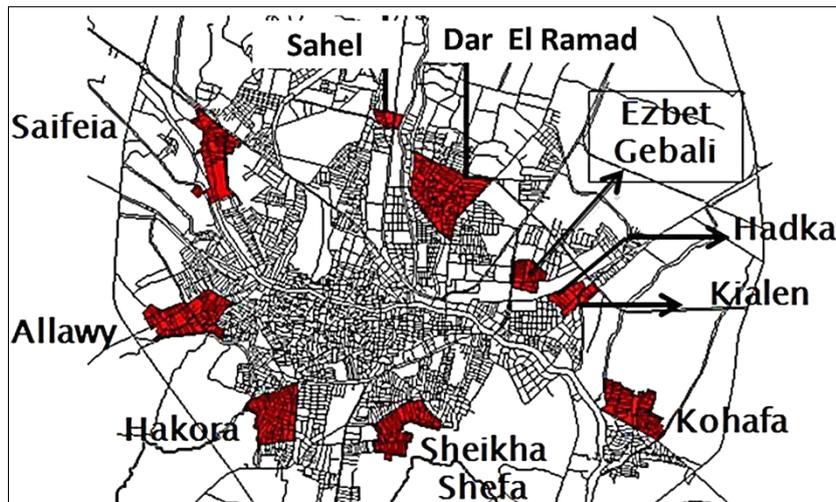


Figure 11: Informal areas of Fayoum city

Source: "Coexistent Urbanism, an Environmental Planning Approach to the Development Of Informal Areas", 2014

b) The most critical informal area within Fayoum city

This paper will focus on Allawy informal area as it is classified as the most critical one in Fayoum city according to the strategic plan of Fayoum city 2009. The most deteriorated part of Allawy is Elwayet Sawy & Ezbet Maamon which is located in the west and directly connected to the ring-road of Fayoum. The streets in these two areas are narrow and irregular with width ranges between 3 to 4 meters. The area of Elwayet Sawy is 6.1 acres with population nearly 2500 capita, while the area of Ezbet Maamon is 5.9 acres with population 3000 capita⁸. Most of the buildings established in the two areas are residential buildings of reinforced concrete their number is nearly 630 housing units in Elwayet Sawy and 609 housing units in Ezbet Maamon⁹.



Figure 12: "Elwayet Sawy & Ezbet Maamon" west part of Allawy informal area

Source: Strategic plan of Fayoum city, edited by authors

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c) The official adopted strategy to Upgrade "Elwayet Sawy & Ezbet Maamon"

The adopted strategy mainly focused on low costs and speed of implementation. It could be summarized in the following point:

1. Large part of Elwayet Sawy & Ezbet Maamon areas shall be serviced through the implementation of a network of upvc pipes with diameters ranging from 7 "(175 mm) to 12" (300 mm) to assemble the sub-lines in a main conveyor line with a diameter of 300 mm passing through the main road connecting the district.
2. Supplying and installing two submersible pumps with a capacity of 75 liters / s to develop and raise the efficiency of the station Allawy

Taking into account the following:

- Shallow system is followed in the design of networks in the region.
- Design of the slope of network taking into account the increase in the level of streets in the parties by a distance of (1 m)
- The network stands before the end of the streets (25 m) and serves the remaining distances with home connections
- Implementation in the network starts from the deepest to the parties, respectively, until reaching the end of the network.

d) Validating the effectiveness of the adopted strategy

The real situation showed that:

- All houses in Elwayet Sawy & Ezbet Maamon districts have a public water connection and are provided with sufficient water to meet their current daily needs.
- A large part of the two areas is served by the existing sewage networks of Fayoum city, but the ends of the lines are exposed to some problems because of the small diameters of pipes compared to the size of unplanned housing units that uses them. However, some inhabitants of the region still use open-bottom trenches to collect and dispose of sewage water inside the soil and are displaced by scavenging vehicles of the Water and Wastewater Company in Fayoum in the case of rising levels inside the trenches and reach nearly the surface of the earth and some people get rid of the sewage by making dirt to receive sewage directly On the nearby waterways.
- There is a water leaking effect on flooring and walls of most of the buildings in the underserved part of the two areas due to the rise in the level of subsurface water as a result of leaking sewage from trenches.

Although the official Upgrading of "Elwayet Sawy & Ezbet Maamon" is done, it did not achieve any of the four sustainable axes not even the urban axis.

e) Official Upgrading of "Elwayet Sawy & Ezbet Maamon"					
Adopted strategy	Implemented projects	Achieved dimensions			Results
Partial development	Water supply	The four proposed dimensions	Urban	✗	Urban condition stills deteriorated and other sustainable dimensions are not achieved.
	Sanitation supply		Socio-human	✗	
	Paving some streets		Economic	✗	
			Environmental	✗	

Table 2: Official Upgrading of "Elwayet Sawy & Ezbet Maamon"
Source: By Authors

VI. RESULTS

- The official upgrading strategy which mainly depends on upgrading infrastructure of Allawy such as supplying water, supplying sanitation and paving some streets is done, thus the new version of Fayoum city

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strategic plan for 2015 announced all informal areas within Fayoum city as unplanned areas (including Allaway area).

- The adopted official strategy did not achieve any of the four sustainable axes even the urban axis.
- The real situation of Elwayet Sawy & Ezbet Maamon through recent photos showed that the urban environment is still deteriorated especially for housing units and the socio-human condition is miserable.



Figure 13: "Elwayet Sawy & Ezbet Maamon", Fayoum city, Egypt
Source: Strategic plan of Fayoum city , 2015

Moreover, the problems in defining and classifying informal areas appear clearly in the following:

- The strategic plan map for 2015 showed that informal areas with in Fayoum city (colored blue) are the same since establishing the ISDF, which reflects the poor performance of upgrading.
- The official classification has not been updated since years, and therefore, there are many deteriorated areas are excluded from ISDF classification, and by default deprived from official fund.

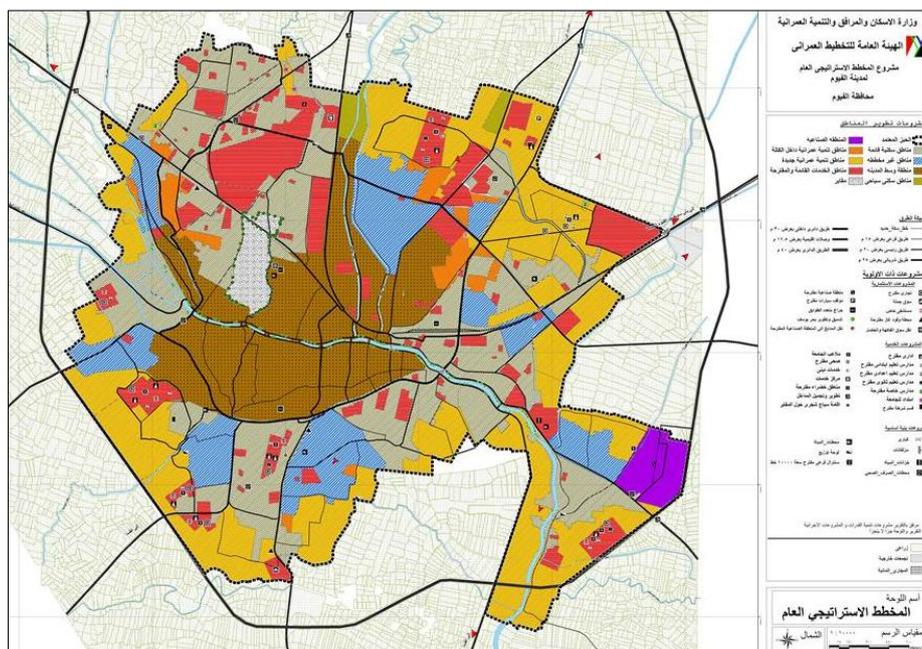


Figure14: Strategic plan of Fayoum city , 2015
Source: planning and urban development department, Fayoum governorate

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VII. CONCLUSIONS AND RECOMMENRATIONS

The integrated approach that encompasses all aspects surrounding the problem is the most accurate and closest to achieve the desired goal, and as informal areas are an integral part of cities, their neglect is reflected in the rest of the city. The research proposes a comprehensive integrated approach to upgrade these areas within a new, broader and comprehensive concept for all physical, human and natural dimensions. that Leading to achieve sustainability within the informal areas within the framework of the possibilities available to solve all the problems of the region, starting from the most urgent and impact on the region, which is the key to upgrading the region.

The research found:

- Developing a new framework for the concept of informal areas, which includes consideration of these areas through four main dimensions: the urban, economic, social and environmental dimensions.
- Provide a classification to assess the problems and possibilities in the region and thus prioritize the most urgent problems through its four dimensions.
- Identify a proposed approach to deal with the region through the concept of the leading project, where this approach depends on giving priority to the most influential dimension in the region within the four dimensions of the region to move towards the direction of sustainability.

In the end, this approach takes into account the upgrading of the region not only from the urban side and infrastructure services, but also in terms of social and economic, and to provide a healthy and safe environment for him to carry out his activities within a sound urban framework.

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