

ROLE OF INTERMEDIATE URBAN AREAS IN IMPROVING EGYPT INFORMAL AREAS CASE STUDY OF ARD EL-LEWA

H. M. ASHRAF¹, R. R. KAMEL² AND R. I. NASRELDIN³

ABSTRACT

Informal areas in developing countries are increasingly expanding, especially in juxtaposed urban centers. This contiguity can affect city's urban aspects by creating intermediate zones between formal and informal settlements with urban characteristics. These areas help to qualify socio-economic factors of their surroundings, reduce urban poverty, establish informal-formal linkages, and absorb internal migration movement. The research aims to study the intermediate urban areas in Egypt and their role in improving informal area inhabitants' life to attempt to take small urban centers as a starting point for development shaped. The paper methodology is based on a set of research methods, using an extrapolative theoretical approach to identify the intermediate area definition as a focal point of its surrounding areas within specific participatory cooperation guidelines for the informal area developing processes. Furthermore, the research works on an analytical approach through analyzing a case study, to extract maximum benefits from juxtaposition areas, with the conclusion of significant points for intermediate urban areas development. The paper suggests guidelines for using sustainable intermediate urban area as an effective tool, which can also help minimize informal growth by focusing on multi-dimensional aspects such as socio-economic, administrative, and urban aspects.

KEYWORDS: Intermediate urban areas, Inter-regions, Informal areas, Surrounding areas, Juxtaposition, Ard El-Lewa.

1. INTRODUCTION

Interpretations of urban, rural, and informal areas are divided into sub-categories that help to understand how community centers evolve considering the social and economic conditions of inhabitants for each area.

The juxtaposition of urban and informal areas has been reflected on creating benefits from important linkages at urban and non-urban levels, that trying to

¹ Ph. D. Candidate, Department of Architecture, Faculty of Engineering, Cairo University, Giza, Egypt, hzm.ashraf@yahoo.com

² Professor, Department of Architecture, Faculty of Engineering, Cairo University, Giza, Egypt.

³ Associate Professor, Department of Architecture, Faculty of Engineering, Cairo University, Giza, Egypt.

widespread the positive interaction concept by working on urbanization sustainability, treating urban poverty, and also upgrading the existing urban infrastructure network.

The disparate urban communities' convergence has resulted in the emergence of a shared common space, adjacent to the urban and informal neighborhood called "inter-regions", which are intermediate areas that combine between formal and informal characteristics, on all tangible and intangible levels through services and networks provision, where these areas can be affected by the adjacent informal sector deterioration or by the urban area development movement.

2. BACKGROUND

The problem is the absence of activating the impact of inter-regions role in developing urban surroundings. This may be a dilemma that the researchers want to solve, although many researchers study the interaction between rural and urban areas, and the role of intermediate urban centers in development processes [1, 2].

Many researchers concentrated on how to respond to the low-income groups' needs to increase their opportunities and reduce pressure on urban basic services taking into account the local conditions affecting socioeconomic status and administrative boundaries diversity of these intermediate centers [3-5]. The focus was on the potential role of small and intermediate urban centers in the development process after examining the social, economic, and political forces that affect urban growth systems at five regional case studies [6]. Previous researchers have attempted to highlight aspects of rural-urban interaction between the services district and surrounding villages [7, 8], and concentrated to assess the degree of interdependence between the urban center and its surrounding areas which seems that an urban-based development strategy focusing on a small urban settlement whereby poor inhabitants would have some economic opportunities in long term [9], they also focused on sectoral interactions that affect urban function assessment from surrounding rural areas by using small urban centers as a starting point for rural-urban interactions' development process within a specific regional context [10].

The preceding researches attempted to define the urban centers' role in rural development as “intermediate” linkages for poverty reduction, and understand interactions at different levels and interplay between these various aspects and their relative importance [11, 12].

These references explained the distinguishing of the research, as it highlights the role of Egyptian intermediate centers in adjacent areas development process while extracting implementation guidelines as a paradigm that can be replicated with different methods of study and analysis, and change in dealing and interventions methods for each case. The paper focuses on unplanned settlements on former agricultural land build informally “Ard El-Lewa”, one of the informal and demonstrative districts surrounded by the most livable areas in Giza., starting with a literature review on the role of intermediate zone and how it can interact to improve informal areas, then case study analysis to explore a set of guidelines.

The results of the guidelines show how intermediate urban areas can improve informal areas by using multi-dimensional aspects; administrative, socio-economic, environmental, and urban aspects to guide the informal areas upgrading and decision making needed.

3. DEFINITION OF INTER-REGIONS

Intermediate regions may consider as an effective area for integrating formal and informal economies and achieving a balance population distribution in urban centers to reduce pressure on infrastructure, services, and resources in cities, providing support functions to improve and commercialize the informal local economy, enhancing income and purchase power to improve daily life quality [2].

The "Inter-regions" can be defined as communities separated from urban, rural, and informal areas, and maybe divided into intermediate urban areas which are separable between urban and peri-urban areas, and rural intermediate zones separating rural and peri-rural areas [13].

Inter-regions emerge as a result of inter-linkage between existing urban centers institutions and informal area users that greatly depend on these areas' role as an economic growth catalyst through local markets and services for dwellers [3, 5, 14].

These areas can be defined as heterogeneous multi-core zones [15], that help to develop their surrounding informal areas from economic, social, and urban aspects, and integrate with urban and rural centers as shown in Fig. 1.

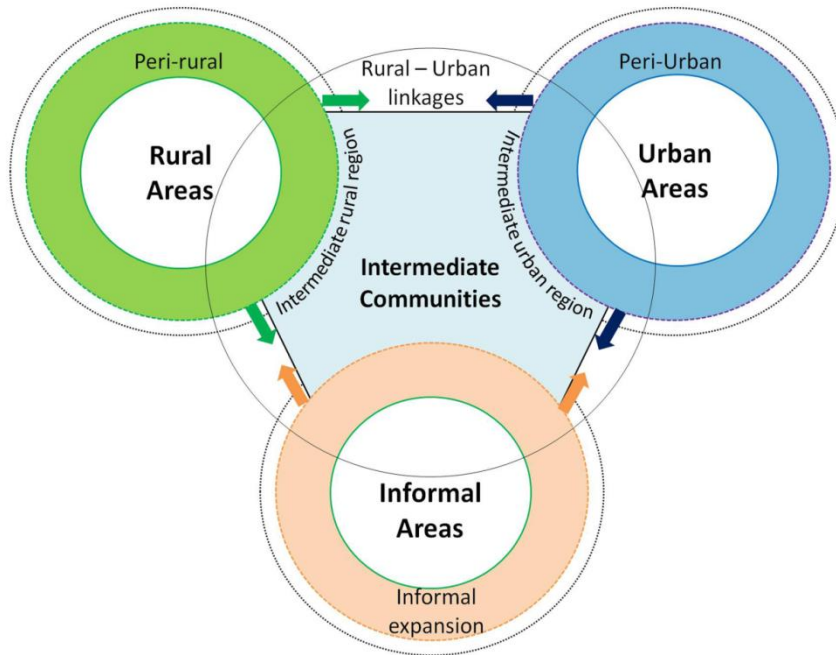


Fig. 1. Interlinking between urban, rural, and informal areas.

4. BASIS OF CLASSIFICATION OF INTER-REGIONS

To explain this classification, it has been shown that it is important to know how cities consider the main aspects' direction of "mediation and intermediation"; eight basic dimensions were identified [16]:

- Demographic: Based on urban growth and the impact of migration movements.
- Economic: Based on productive and commercial sectors for local markets.
- Political and institutional: based on the analysis of public institutions serving the local population, in line with their nature, function, and regional scope.
- Specialized services providing services to residents within or outside the area.
- Environmental: through the identification of resources that facilitate life while reducing pollution extent resulting from urban activities.

- Land management: The primary focus is on planning, regulating the environment and its consequences on human settlements.
- Social: Reflecting behavioral changes and mixing within the social networks.
- Cultural: through the emergence of new forms of local cultures and external influences resulting from the exchange between urban and external areas.

5. INTERMEDIATE URBAN AREAS ROLE FOR DEVELOPING INFORMAL AREAS

Intermediate urban areas' location helps to understand informal area needs and exploit the urban center potential to achieve the most benefit possible [3, 5]. The spatial objectives of urban policies assume that intermediate zones play an important role in informal area development through four main points:

- Providing marketing centers for products in informal areas.
- Providing essential services required to inhabitants.
- Promoting local industrial activities.
- Attracting internal migration and reducing overcrowding in major urban centers.

These roles lead to maximizing intermediate zone use of these surrounding urban centers [17], whether upgrading informal area to maintain the identity and level of urban areas through two factors: a tangible factor of services, as well as an intangible factor of social and cultural development. Thus helping to reduce poverty both in urban and non-urban areas [13, 18].

Hence, the local government's role in intermediate areas development should take measures to ensure the presence of urban center services in its neighboring areas.

Intermediate urban areas can be exploited as important development points in terms of urban and architectural aspects. The proximity of the inter-regions with urban centers may help to transfer and renovate the architectural and urban character of the informal sector affected from its juxtaposed urban areas to be a turning stimulation point in the entire surrounding informal urban planning of the city [19].

6. CASE STUDY: INTER-REGION OF ARD EL-LEWA

The target study area is located in Giza governorate on the Western side of the Cairo Aswan railway with a population of about 10,489 inhabitants in 2014, in an area of about 470 acres. It is bordered by several districts; El-Mohandessin and El-Agouza in the East which are the adjacent urban areas of Ard El-Lewa. Boulaq Ad-Dakrour at South, Imbaba at North as well as the residential communities of El-Moatamadeyah at the West which represent the surrounding informal side of the study area.

Ard El-Lewa has witnessed the urban change that transformed from agricultural activities to a residential area close to its neighbors caused by the high demand for housing, besides the socio-economic changes as an attraction center for internal migration because of its proximity to main urban centers in Giza [20].

The area is connected to its surrounding areas by several points, as shown in Fig. 2; two main entrances from the North at Saftawi St. and the East at Ard El-Lewa bridges for pedestrians and cars, there are also three entrances from the West and South which give importance to the area as an urban mediator.

6.1 Characteristics of Ard El-Lewa “Selection Reasons”

The inter-regions work on preserving the existing urban areas and upgrading its adjacent informal areas through developing the intermediate spaces. The case study of Ard El-Lewa was chosen to include an urban area (El-Mohandessin) that affected and influenced its surrounding informal areas. And also it has been chosen for its importance as a link between the areas at all tangible and intangible levels, as well as the nearness of inter-regions and geographical locations for informal areas border. This part explains and analyzes Ard El-Lewa district characteristics as shown in Fig. 2.

A- Administrative Characteristics:

Ard El-Lewa is administratively following the Agouza neighborhood after suffering from continuous administrative division changes on different municipalities, which led to distancing from governmental center attention and neglecting its development process. This requires an independent administrative vision for a district with organizational capabilities that serve inhabitants and upgrade regulations.

B- Socio-economic Characteristics:

1. The area is characterized by social level contrast due to its location between urban communities and informal areas as shown in separating areas at Sudan street.
2. There are several community groups and NGOs in the district that assist youth, and also work to solve some social problems such as drugs spreading.
3. Lack of development plan for clear economic infrastructure and markets service.
4. Internal trade volume is increasing in addition to the remarkable spread of wooden furniture manufacturing workshops in the area.

C- Environmental Characteristics:

Absence of clear garbage collection system and non-compliance with the special environmental standards for workshops and their negative impact on the district.

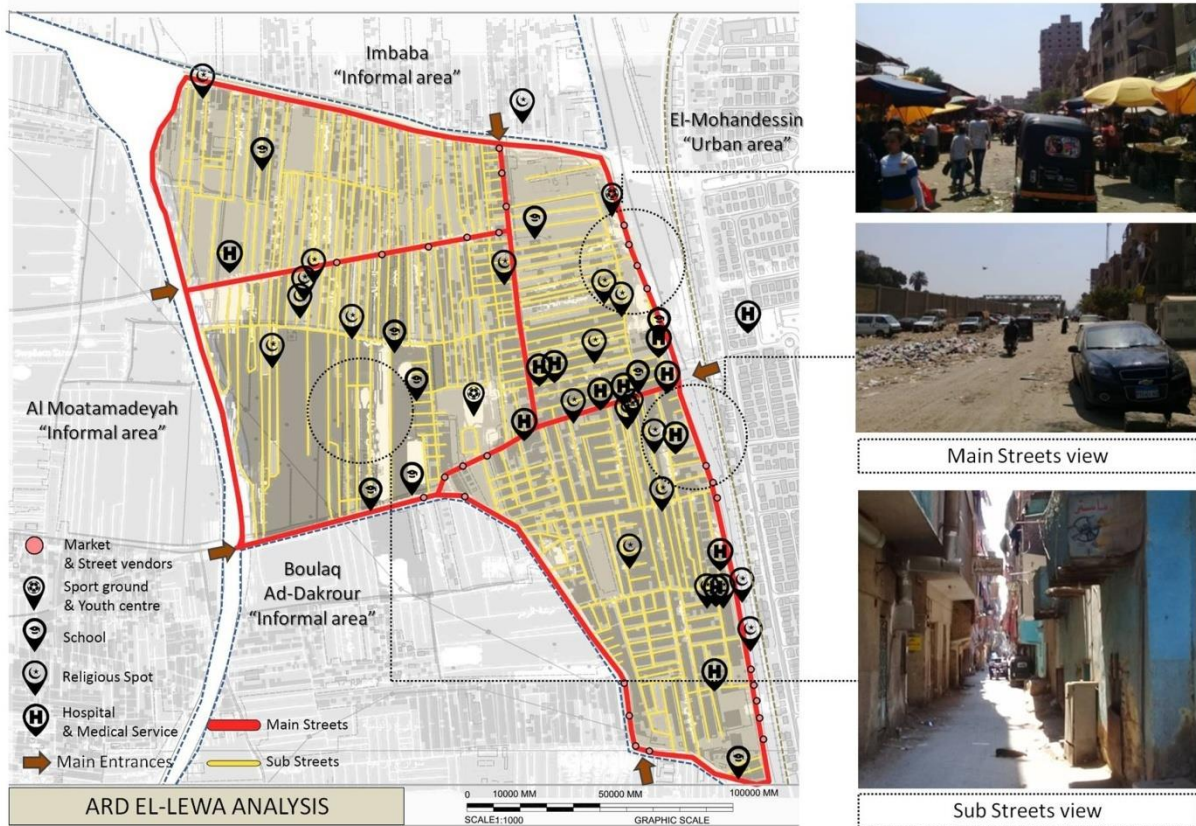


Fig. 2. Ard El-Lewa analysis.

D- Urban Characteristics:

1. Non-compliance with area urban planning standards, whether in buildings height that allowed to an average of 3 or 4 storeys to reach more than 10 storeys, or in the urban network that followed by the linear planning as the former agricultural areas.
2. Weak efficiency of the basic urban services provided at Ard El-Lewa, especially in the Northern of July 26th axis, which is causing the inhabitants dependence on the neighboring areas of El-Mohandessin and Imbaba to provide the public and private services, especially in education and health care services.
3. The problem of changing land uses in addition to the problem of land ownership whether the area belonging to the Ministry of Awqaf units or to public utility authority next to July 26th axis.
4. Neglect in infrastructure network maintenance led to the deterioration of water and sanitation networks, in addition to the lack of natural gas networks.
5. Deterioration of the majority of public spaces and road network and transport [21].
6. Lack of appropriate educational services in Ard El-Lewa depends on the schools located in the juxtaposed areas at El-Mohandessin where some public and private schools are available.
7. For Health services, there are several private health centers with a variety of levels and services, while there is no public hospital.
8. For recreational services, Ard El-Lewa has a youth center and a football complex with 6 playgrounds, as well as a cultural center called “Art El-Lewa” to present fine arts South of the axis with an open space for practicing art activities [22].
9. Despite being agricultural areas in the past, but there are no green areas which make the area dependent on the gardens and parks located in Gamaet Al-Dowal Street in Al-Mohandessin.
10. Lack of the public spaces within the residential blocs and complexes in addition to using sidewalks by street vendors due to rapid informal urban growth and absence of planning vision for the area.

Table 1 presents a SWOT analysis of Ard El-Lewa paradigm project.

Table 1. Ard El-Lewa SWOT analysis.

	Strengths	Weaknesses	Opportunities	Threats
Administrative Aspects	-	<ul style="list-style-type: none"> - Lack of governmental services. - Weak distribution of roles between authorities. 	<ul style="list-style-type: none"> - Provide NGOs and governmental departments. - Determine roles and responsibilities at all development processes. 	<ul style="list-style-type: none"> - Interference with the responsibilities of government institutions may adversely affect the development process.
Socio-economic Aspects	<ul style="list-style-type: none"> -Strong relations between the inhabitants. - Presence NGOs development role. -Diversifying Economic sectors with agricultural, industrial, commercial, and marketing activities. 	<ul style="list-style-type: none"> - Absence of a comprehensive economic development plan. - Lack of funding for small projects. - Spatial isolation and large social disparities. - High rates of unemployment and social diseases. 	<ul style="list-style-type: none"> - Providing outlets for street vendors. - Developing commercial markets. - Providing investment programs for small and micro-enterprises. - Increasing civil society initiatives and organizations in the area. - Developing the youth center. - Establishing cultural centers. - Establishing training centers and developing youth skills. 	<ul style="list-style-type: none"> -Upgrading of the area lead to attracting a higher social class. - After the informal economy regulation, the market movement may be controlled by the large traders leading to an increase in local product prices to the inhabitants.
Environmental Aspects	-	<ul style="list-style-type: none"> - Absence of the solid waste recycling system and failure of workshops to comply with environmental standards. 	<ul style="list-style-type: none"> - Working on environmental programs that deal with solid waste. - Establishment of a public park as an outlet for the inhabitants. - Raising the awareness of workshop owners about environmental hazards and how to get rid of pollution. 	-

Table 1. Ard El-Lewa SWOT analysis, (Cont.).

Urban Aspects	<ul style="list-style-type: none"> - Central area due to its geographical location beside urban areas services - Contact with urban center El-Mohandessin - Relative prices of real estate and rents. 	<ul style="list-style-type: none"> - Absence of development vision. - Weak level of infrastructure, especially in sanitation. - Deterioration of buildings. - Weak internal road network. - Lack of educational and health services led to search for them outside the district. 	<ul style="list-style-type: none"> - Improving educational and health services in the area. - Raise the efficiency of public spaces and roads network linking Ard El-Lewa and El-Mohandessin. - Work on paving and lighting of the internal streets. - Redesign the market to accommodate street vendors. 	<ul style="list-style-type: none"> - Increasing land value and housing demand by upgrading levels lead to indigenous inhabitants' migration internally.
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6.2 Development Proposal of Ard El-Lewa

After studying the current status of the area, the researchers can suggest a development action plan that can help to achieve an operative upgrading system for the surrounding informal areas and preserving the urban area resources. The area can be divided into two main parts; Northern and Southern of Ard El-Lewa according to the highest priority of the urban upgrading interventions. Accordingly, the Saftawi zone is a priority. The area is suffering from infrastructure problems but it has potential that motivates future development projects to its surrounding areas. The district contains spaces that can be exploited to provide urban services for the inhabitants of informal surrounding areas.

The proposed interventions are based on specific problem priorities according to their impact on surrounding informal areas taking into account the strategic plan for Ard El-Lewa upgrading which are prepared by various levels.

A- Administrative Interventions:

The area should be administratively separated from government service centers away from other neighborhoods such as a local council and police department, for its

large area that makes Ard El-Lewa a main effective urban center for the general development process.

B- Socio-economic Interventions:

A series of interventions can be divided into several points based on:

1. Assessing the needs of NGOs to increase their presence with local administration in improving inhabitants' living standards and reduce social diseases.
2. Supporting the integration of the informal economy into the formal system to benefit from solving the unemployment problem that can be achieved through the provision of street vendors' outlets either on train separation wall or below pedestrian bridges, and micro and small enterprises investment programs provision.
3. Developing the existing commercial markets in the district and raising their efficiency such as Al-Aqsa and Saftawi markets.
4. Exploiting of the tangent points to deliver the trade to and from the surrounding informal areas by providing access to services at each point.
5. Establishing training centers by NGOs and local administration for youth to create sustainable employment programs and proficiency system.

C- Environmental Interventions:

Working to solve the environmental problems through solid waste management improvement projects away from residential areas, while increasing awareness of the environmental guidelines for existing workshops.

D- Urban Interventions:

The urban development process is divided into several important aspects that can increase the efficiency of existing services for inhabitants of Ard El-Lewa and its informal neighboring areas; whether by developing the infrastructure, housing upgrading, or road network expanding. These interventions can be identified by:

1. Renovate the educational buildings and improve their school playground, while paying attention to the presence of basic education schools in the area.
2. Improve health services by upgrading existing facilities in cooperation with NGOs.
3. Work on paving the internal streets while upgrading the infrastructure on the main road networks and raising the efficiency of the tangent points between Ard El-

Lewa and El-Mohandessin from the pedestrians and cars crossings axes where a Western road and entrance can be opened on the ring road to ensure safety and ease the traffic while in the Eastern sector of the district can work on street developing to contribute to promoting the commercial investments potential.

4. Develop a water and sanitation infrastructure network in the Western sector of Saftawi area which is working to connect informal areas with water services.
5. Preserve the existing green areas and try to increase them for the agricultural background of Ard El-Lewa.
6. Work on developing markets for local products by redesigning the separation fence of the railway and used in the provision of activities and services.
7. Provide public spaces and cultural centers to entertain and educate the population while preserving the area's identity.

6.3 Development Proposal Paradigm for Ard El-Lewa El-Mohandessin Linking Space Area

After analyzing the area, the researchers give a proposal for development the linking space between the urban area of El-Mohandessin and Ard El-Lewa as an upgrading paradigm where several projects were proposed to raise the quality of inhabitants' life which are presented in the following section:

The researchers have chosen the part of Ard El-Lewa cross rail bridge because it has several advantages; the presence of linking elements between the two areas whether cars or pedestrians bridge. But the presence of unregulated cars and some street vendors can illustrate part of the problem described in the previous section. Therefore, researchers work to solve the problem through the appropriate proposal for this space, and through this solution, upgrading method can be repeated in several other points, which helps to rehabilitate the area, as shown in Fig. 3, that explains how can redesign public urban space to meet people's need at inter-region between two different communities by providing urban services to informal areas.

- Through the study shows a lack of public spaces in Ard El-Lewa which makes the inhabitants use El-Mohandessin services, therefore several public spaces can be created, either as kids public park or as a small cultural center, as shown in Fig. 3.

- On the economic level, it is possible to build organized outlets for street vendors on the separation wall and below Ard El-Lewa Bridge.
- A multi-storey car park can be set up and regulating the transport station to accommodate congestion and traffic density.
- Healthcare center, police department, and public services must be located in this area to serve the informal area inhabitants and also as existing urban services extension.

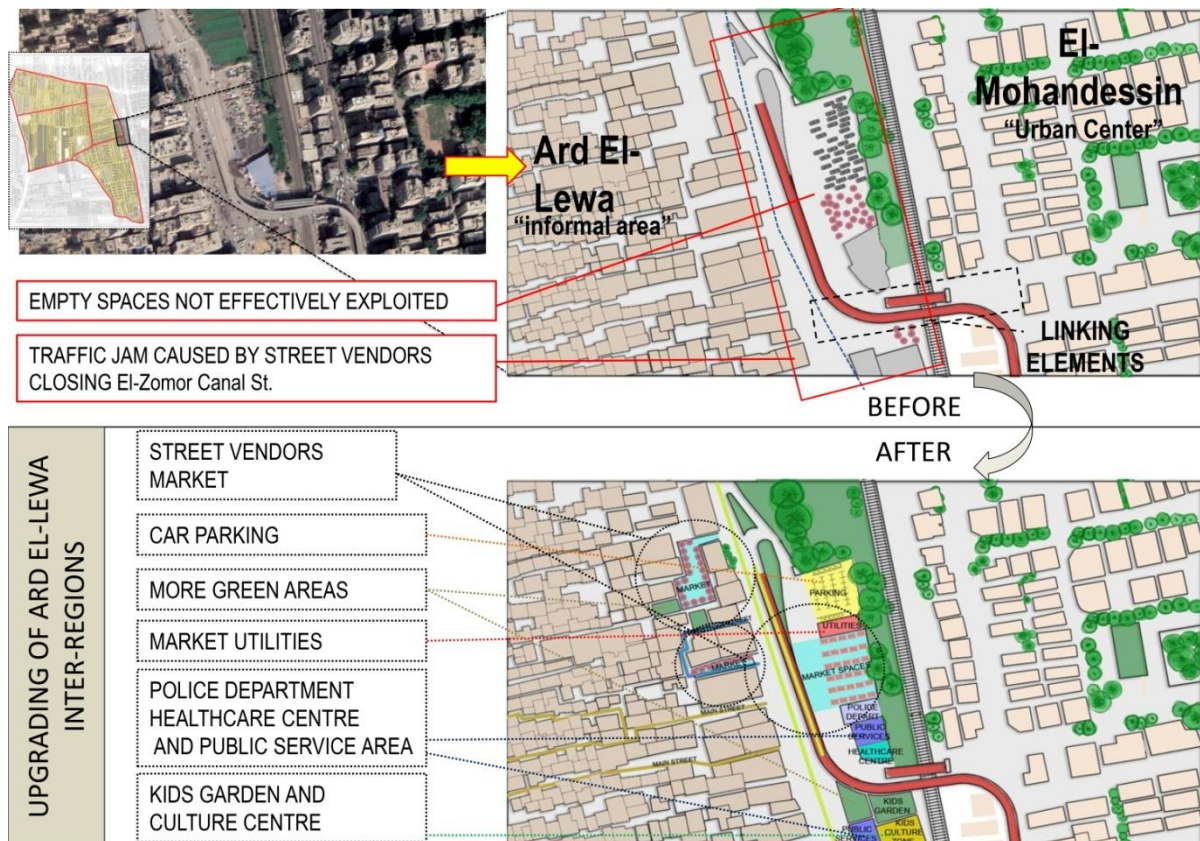


Fig. 3. Upgrading Ard El-Lewa inter-region part with El-Mohandessin district.

7. GUIDELINES FOR UPGRADING PROCESS

This research aims to make guidelines to upgrade the informal areas and make decision for development processes, these points go through many steps starting with the literature review that display the main definitions for intermediate urban areas, their role and importance .then a case study was presented by classifications and analysis based on multidimensional aspects (administrative, socio-economic,

environmental and urban aspects) and ending by SWOT analysis for the area, then the research focused on small zone from the case study to present how to upgrade a space to serve and link between two areas, the study forms highlighted guidelines for the four important aspects of this intermediate areas in urban development and upgrading process:

A- Administrative Aspects:

- Organizing roles between local administrations to make decisions.
- Setting up government services, police stations, and multiple departments.

B- Socio-economic Aspect:

- Availability of rehabilitation institutions and NGOs in the intermediate areas to provide services to inhabitants.
- Participating inhabitants in the planning and implementation stages of development.
- Convergence between the inhabitants' social strata.
- Supporting economic activities to reduce the unemployment rate in degraded areas.
- Supporting local crafts while working on a variety of activities to achieve economic integration.
- Developing the existing markets in inter-region.
- Integrating the informal economy into the formal system.

C- Environmental Aspects

- Availability of the garbage collecting system and solid waste recycling programs.
- Raising awareness among the inhabitants about pollution control.

D- Urban Aspects:

- Availability of Infrastructure services and facilities whether educational, healthcare, or environmental services.
- Organizing public spaces used by inhabitants to improve their efficiency.
- Land use regulate according to needs.
- Road networks quality for cars and pedestrians to serve communication between the urban center and informal areas.

8. CONCLUSIONS

The research highlights the important role of the intermediate urban area in improving the surrounding informal areas. Unlike most related research on Intermediate urban areas, this study analyses a special case in Egypt, Ard El-Lewa.

From an academic point of view, this research has attempted to give a better understanding of the nature of Intermediate urban centers by studying the impact of Egypt's intermediate area on the neighboring areas, with delivering of urban services to the surrounding informal areas while preserving the urban sustainability of mutual benefit between the parties. It may need some of the existing centers for development by creating special programs to transform the area efficiency of the services and the urban network to benefit and satisfy the inhabitants' needs, while reducing the pressure of demand on the urban by strengthening the links between the characteristics of juxtaposition areas without negative impact on the inhabitants. Whether on the urban level in the road network and infrastructure, or on the socio-economic level to give the required investments and upgrade the existing inhabitants' living standards, or at the cultural, recreational, and environmental levels in the area.

Inter-regions can be defined as intermediate points that connect two communities with many interlinks that help create contribution centers for the development of urban's surrounding areas for facilitating services and providing their needs by delivering urban concessions to adjacent informal areas. These areas may vary in size or importance from the street between two districts to a large area separated different sectors according to urban classification among countries by population or socio-economic and administrative level.

These zones can help to provide the required investments for informal areas development while providing job opportunities that affect the extent of their effectiveness on the general economic sector. These areas can be used as a link merging the informal sector with the formal providing main markets for producing businesses in informal areas. They can also help to connect urban communities and preserve the social fabric with openness to the external urban areas without intensifying pressure on urban centers, and providing services to their surrounding

informal areas as part of policies and strategies to develop informal areas to support regional development and reduce urban poverty by serving as a service and markets center or as an attraction point for internal migration and employment opportunities.

Through this study, the researchers can see the importance of integration between urban, economic, social, and administrative aspects of inter-regions development as fundamental pillars for upgrading informal areas. Some of points of intermediate areas development concept can be inferred at all levels:

At the administrative level, the study clarified the necessity of distributing roles between the government, local administration, NGOs, and private sector, organizing the tasks and determining the administrative status of the inter-region as an urban center and giving it the ability to make decisions. It is also possible to develop programs dealing with the development of each area separately after studying its characteristics, factors, and differences between the urban center and its surrounding.

At the socio-economic level, it can find the importance of inhabitants' participation in development processes at all planning and implementation stages, which emphasize the users' ability in intermediate areas to manage urbanization and sustainable development. The study pointed to the necessity of economic activities in work development through improving markets, creating workspaces, annexing the informal sector, as well as using area resources while trying to diversify investment fields to support the living needs.

At the environmental level, the research shows the importance of finding an integrated system for the disposal of solid waste, while raising the inhabitants' awareness and manage their participation in planning and implementation processes.

At the urban level where it works to relieve pressure on major urban centers with the development of urban service and infrastructure as a first upgrading solution. Inter-regions represent an important turning point in the urban fabric linking between urban and informal communities with diversity in land use and provided basic services.

9. SOLUTIONS AND RECOMMENDATIONS

A set of recommendations could be drawn up that could contribute to supporting intermediate area development:

- Supporting emerging linkages between urban, rural, and informal communities as key pillars of community development.
- Setting determinants of differences between inter-region sizes to help realize their impact on surroundings and manage the informal areas development projects
- Re-classifying of intermediate areas as a priority for development intervention in the informal settlements, with establishing a participatory working mechanism among the inhabitants and the authorities responsible.

10. FUTURE RESEARCH DIRECTIONS

Future research should be carried out to study more Intermediate urban areas in the Egyptian context and how we can upgrade the surrounding areas by analyzing the four affective aspects; it also can study the role of the intermediate urban centers in regional and rural sustainable development and poverty reduction.

DECLARATION OF CONFLICT OF INTERESTS

The authors have declared no conflict of interests.

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دور المناطق البينية الحضرية في تحسين المناطق غير الرسمية في مصر دراسة حالة ارض اللواء

يهدف البحث إلى دراسة المناطق البينية الحضرية في مصر ودورها في تحسين حياة سكان المناطق العشوائية مع الحفاظ على المراكز الحضرية حيث يعمل على إيجاد إطار نظري جديد ومبادئ توجيهية لتفعيل دور المناطق البينية الحضرية كوسيط عمراني في تطوير المناطق غير الرسمية بطريقة مستدامة مع تقليل النمو غير الرسمية والتركيز على الجوانب متعددة الأبعاد مثل الجوانب الاجتماعية، الاقتصادية، الادارية والعمرانية.