

New Approach for Assessing Urban Regeneration Performance in Egypt

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Abstract—Urban regeneration (UR) is defined as a comprehensive and integrated vision and action to address urban problems through lasting improvements in the economic, physical, social, and environmental condition of an area. The paper has taken this definition as its point of departure in the subsequent formulation of research objectives and approach to the study. It focuses on the evaluation of the Egyptian Experience of urban regeneration projects (URP) in the Greater Cairo Region (GCR) and its limited perspectives that have contributed to its failure in some projects in Egypt. Also, it aims to explore the Egyptian regeneration outcomes using evidence from two local experiences, namely, al-Darb al-Ahmar, Cairo, and Imbaba Airport, Giza. Finally, the paper proposed a scale evaluation model to evaluate and control the process of UR to achieve the urban renaissance in existing urban areas to change the face of the GCR. The paper ends up with a “sustainable framework” for the UR process and lists “valuable suitable locations” that present an opportunity to apply the UR strategy, which must be used and activated to achieve sustainability.

Keywords—Development profiles, al-Darb al-Ahmar, Imbaba Airport, Egyptian Experience, evaluation model, GCR, innovative bodies, sustainable framework, and sustainable urban regeneration

I. INTRODUCTION

PREVIOUS research on the international experience of urban regeneration (UR) projects was conducted under title “The Impact of Urban Regeneration on Land Use in Land with High Urban Value—London vs Beirut” [1] and discussed the key success factors of the UR initiatives in London and Lebanon. Ending up with the “Development Body,” which controls the authority of the regeneration process, is instrumental for success: regeneration through partnerships, single regeneration budget, new deal for communities, city challenge, *enterprise zone*, urban development corporation, and other approaches have marked a transition into a more participatory historical process. Moreover, in recent years, sustainability has gained increased recognition as a fundamental priority in urban community development, has begun receiving political and institutional

endorsements within the sustainable development agenda, and has been discussed in the sustainable UR discourse [2].

As UR moves beyond the aims, aspirations, and achievements of urban renewal, which is seen as a process of essentially physical change, urban development, with its general mission and less well-defined purpose, and urban revitalization, which suggests the need for action, fails to specify a precise method of approach [3]. According to the Department of the Environment, Transport and the Regions (DETR), UR is about jobs—their creation, protection, quality, and skills and accessibility for various groups in society. Finally, it is about wealth—the generation of profit, income, and resources and how these are distributed between rich and poor areas, as well as among groups. It is a highly political discipline; it is about people and power [4]. It is considered “a return to the city” as well as “an interventionist activity in the city.” **Urban regeneration** has been tested and implemented in the most advanced countries and may be the answer to issues of the future for the GCR. Many cities have already launched such operations (Barcelona, Marseille, Genoa, London, Manchester, and Vancouver).

The Cairo metropolitan area is considered one of the main growing cities in the Arab world today that face a lot of urban, economic, social, environmental, and political problems. Everybody supported the Egyptian Revolution in 2011, which had three main mandatory requests: good quality of life, freedom, and social justice. In fact, governmental intervention in an unplanned area in the GCR was not varying. It is limited in providing basic urban services and open roads or relocation in situ if there is available land. However, such dealings do not appear to reflect the shift in government policy. Rather, they appear to be a case-by-case approach. This was missing the adoption of flexible and adapted planning regulations and building standards, the bureaucratic procedures related to land subdivision and building permits, the community participation in finance, the implementation of service delivery, and a more responsive and cooperative role for local authorities in the process [5].

The research suggests that the UR strategy is a magical key for solving Egyptian cities’ problems, mainly in the existing urban areas, in which if it will be applied with a comprehensive vision to upgrade an Egyptian city, sustainability will be achieved.

The paper assumes the following:

1. The concept of UR can be used to solve functional, urban, social, economic, and environmental problems in Egyptian cities.

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2. The Egyptian Experience ignored the most important perspectives of UR and limited its concept to historical and slum areas only.
3. There are more perspectives and aspects of the UR policy that, if applied, could help us recognize and achieve sustainability.

This research paper covers the following points:

1. The general overview of UR strategies and its framework
2. The current UR initiatives in the GCR
3. The proposal of a sustainable process and evaluation model
4. The spotlight on valuable and suitable sites for UR in the GCR

II. URBAN REGENERATION

The term **urban regeneration** covers everything from creating desirable homes in city centers to finding new uses for our formal industrial heartlands. *In biological terms*, it means recreating lost or damaged tissues. *In geographical terms*, it means improving an area that has been experiencing a period of decline [6].

A. Defining Regeneration

Here, the paper presents the opinions of industry figures, who are builders, partners, and designers who have multiple experiences in UR projects, to sum up what *regeneration* means for them. See fig. 2 [7].

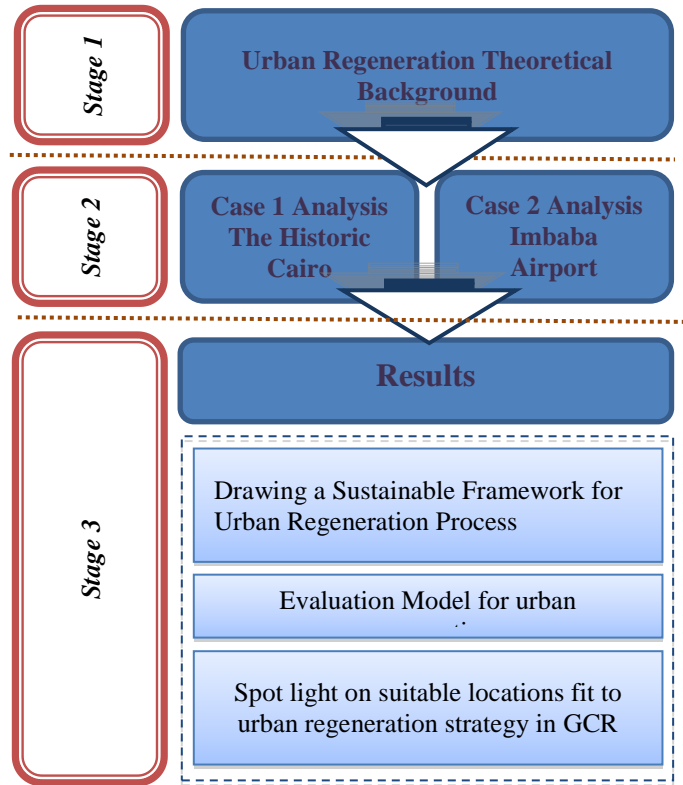


Fig.1 Research Structure
Source: Researchers

<p>1. David Taylor executive chair of DTP "There is no template; over two decades every project has been different. Two givens: first, regeneration is a long-term process; patience is needed - a problem given short-term property perspectives. Second, investing in social capital is as important as the physical side, but is often not understood. Regeneration is now where the action is."</p>	<ul style="list-style-type: none"> - Long-term process - Social capital is more important than physical side
<p>2. Chris Brown, chief executive, Igloo Regeneration Fund "Urban regeneration is concerted social, economic and physical action to help people in neighborhoods experiencing multiple deprivation reverse decline and create sustainable communities. It isn't property development by another name. Property development happens through market forces. Physical urban regeneration requires public sector financial support which is only given to benefit deprived communities."</p>	<ul style="list-style-type: none"> - Social, economic, physical action - Public sector financial support
<p>3. Ray Mills, partner, regional development group Price water house Coopers "Regeneration is about making tomorrow's world better. Delivering sustainable communities in a fast-moving commercial environment demands partnerships of commitment, trust and transparency. Partners must have common purpose, a shared understanding of the pitfalls and opportunities, appropriate governance and a lot of patience. There is no one-size fit all approach. To deliver inspirational regeneration, on time and within budget, you need to be inclusive, responsive to local and market needs, adopt a flexible approach and put in a lot of hard work up-front, particularly in ensuring commercial and financial viability."</p>	<ul style="list-style-type: none"> -Delivering sustainable communities -Partners -Trust and transparency - Common purpose - Appropriate governance
<p>4. Stuart Wright, chief executive, City Lofts "We believe good design should be at the heart of any urban regeneration project. Only by creating visually attractive buildings that people want to live and work in, can an area be transformed for the long term."</p>	<ul style="list-style-type: none"> - Creating visually attractive buildings
<p>5. Alan Cherry, chairman, Countryside Properties "Some of our towns and cities have under used and wasted land assets, as well as areas of social exclusion. Regeneration is the process of redeveloping that land and revitalizing the area by attracting economic investment and new employment and creating a much-improved living environment. Regeneration should be designed to be sustainable - socially, environmentally and economically - to provide a good quality of life for those people who live and work there."</p>	<ul style="list-style-type: none"> - Economic investment - New employment - Creating improved living environment - Sustainability - Good quality of life

Fig. 2 New Visions for Urban Regeneration Definitions.
Source: Adapted by the Researchers.

B. Analytical Framework for Urban Regeneration

Here, the study explains an analytical framework to guide the comparative analysis of UR to capture the dynamics of a significant diversity of regeneration initiatives and approaches. Fig. 2 presents this analytical approach [8].

Megatrends. UR needs to be understood in the context of significant shifts in the economy that are beyond the control of particular localities. These sectoral changes are driven by a rapid decline of manufacturing activities and employment of semiskilled workers, contrasted by the growth in financial services. The result is a “two-speed economy” coupled with a deterioration of the urban fabric in poor communities, which accelerates the spiral of urban decline [9].

Response to challenges. The challenges that confront UR vary from place to place and over time. Different areas have a set of unique opportunities that translate into different priorities and strategies for change. Economic restructuring, unemployment, social deprivation and exclusion, and problems related to obsolete infrastructure, contaminated land, and environmental pollution often define the content of the regeneration process and its operation [10].

Results. The immediate effects of UR strategies can be grouped into four categories: economic, social, physical, and environmental. In looking for ways to define long-term success, the following statement appears to be the key: cities/places become economically competitive, livable, fiscally sound, and socially inclusive [11].

C. Key Success Factors

Although each city/place is unique, five key factors are instrumental for success [8]:

- Partnerships are the modus operandi of UR and have proved to be a powerful vehicle for accelerating the process of change.
- The public sector plays a key role in providing a strong leadership and needs to ensure that positive synergies arise from different strategies and programs.
- Public investment is a catalyst for change. Regeneration should provide a ladder of opportunities for private sector engagement and community participation.
- Regeneration people, rather than places, although difficult to achieve, need to be the primary goal of regeneration initiatives, and sustainability of results is key.

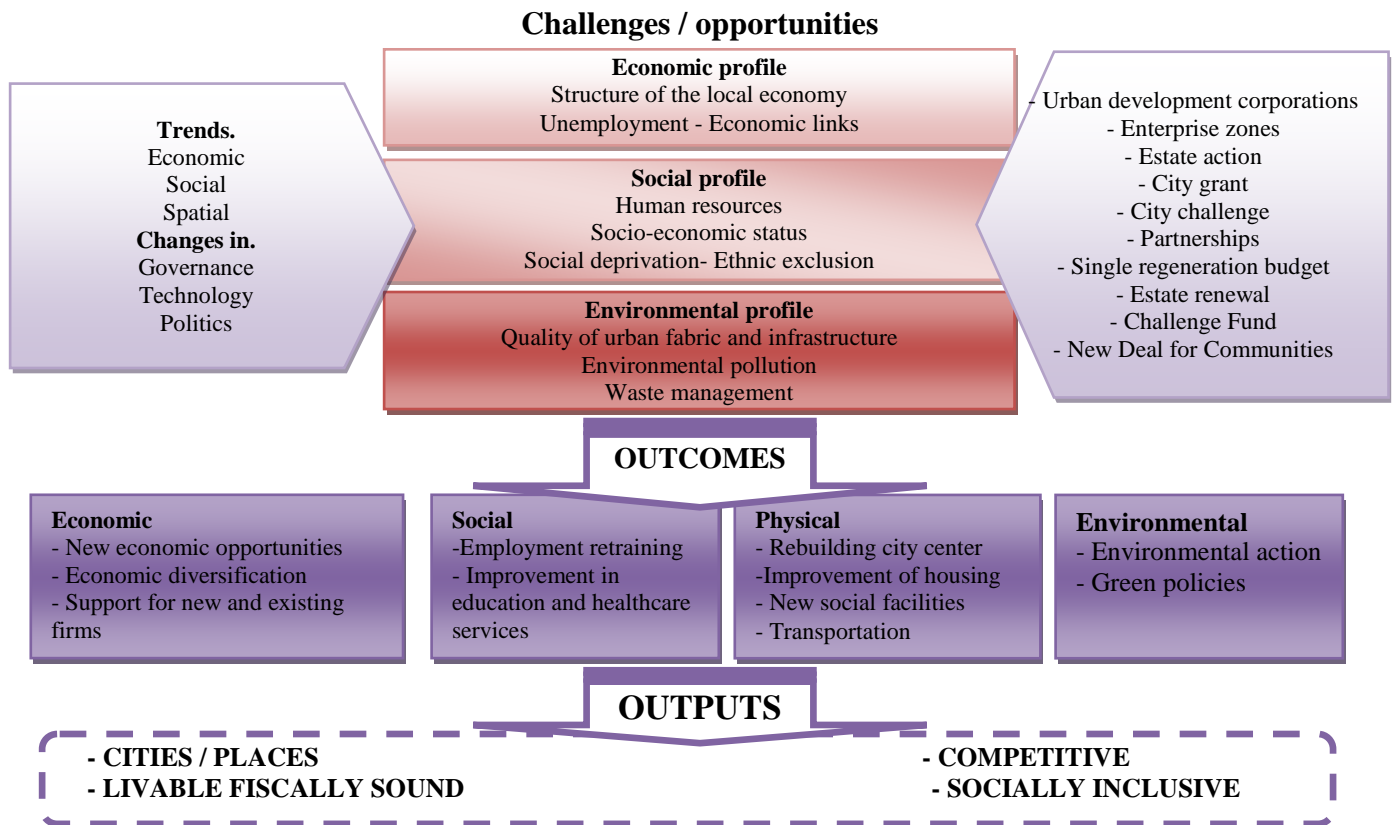


Fig. 3 The Analytical Framework of the Process of Urban Regeneration, Source: Tsenkova, S., 2002

III. GREATER CAIRO REGION

The GCR includes Cairo, Giza, and Qalyubia and had a population of more than 20 million in 2010. It faces a continuous increase in population annually, besides the continuous migration from rural areas.

This growth in population has caused many urban problems in the city, where urban development started out in the past decades and centuries and where uses of urban areas have changed through time.

Fig. 4 shows the map for greater Cairo Region

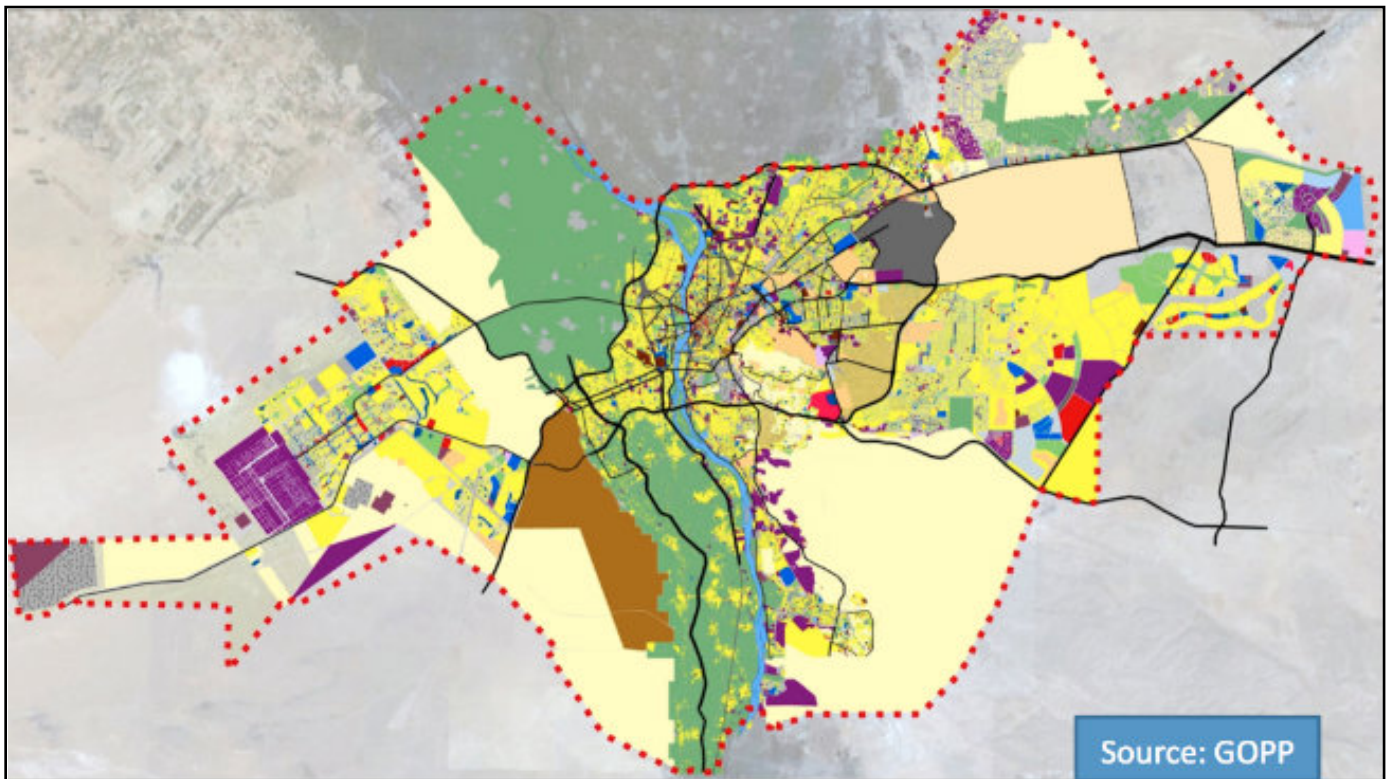


Fig. 4 Greater Cairo Region, Source: GOPP

A. Case 1: Project of “Urban Regeneration and Development in the Heart of the Islamic Cairo” [12,13]

Site, Context

Between the hills on Salah Salem Street, close to the citadel, and the Aubid Cairo wall, on a 71-acre land, the al-Azhar Park was built. The Old Fatimid Cairo is located on the west side of the park, and its extension, the al-Darb al-Ahmar district, with fascinating treasures of Islamic mosques and shrines, decorated with a long line of minarets. On its south, we can find the Sultan Hassan Mosque and the citadel.

Concept

The project for socioeconomic development of the neighborhood was conceived with the idea that the removal of the former rubble dump and its metamorphosis into a park would have a catalytic effect on the general improvement of the district, as shown in fig. 5,6 However, the project’s scope had to encompass the cultural monuments in the neighborhood and the people of this area.

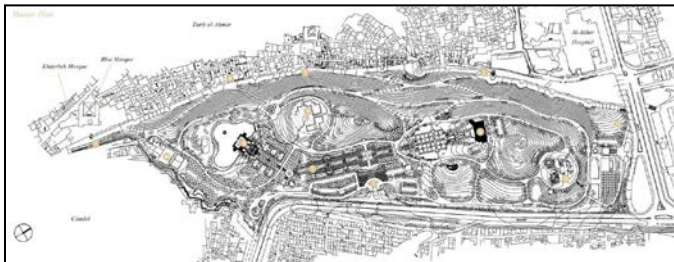


Fig. 5 Al Azhar Park

Source: The Urban Regeneration of Historic Cairo: UNESCO Technical Assistance Project, 2012

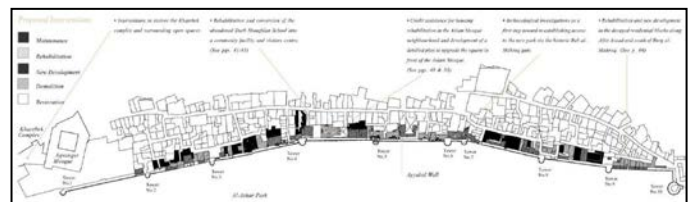


Fig.6 The Medieval Wall Restoration and the Derb rehabilitation
Source: The Urban Regeneration of Historic Cairo: UNESCO Technical Assistance project, 2012

Development Profiles

Without an environmental strategy to treat the area, an integrated project of UR, funded by the Aga Khan Trust, aimed the following:

- The creation of a park on a former large waste disposal mound as an opportunity for heritage preservation, environmental improvement, social enhancement, and local development
 - The restoration of the city walls as a complement to the park and the opportunity to create new connections with al-Darb al-Ahmar
 - The regeneration of al-Darb al-Ahmar as an opportunity to improve housing conditions and develop new activities linked to the conservation and rehabilitation interventions.
- Many socioeconomic initiatives were established to support the local community, such as the following:
- Job creation
 - Loans to support economic development
 - Development of health, social, and educational services
 - Support for civil authorities and local institutions
 - Rise of the income level in the area

Many skills training programs have been implemented in conjunction with restoration and rehabilitation interventions. Apprenticeships offered to local youth in connection with stone masonry and carpentry, among other trades, are also part of the program. The project has offered training positions in activities, such as stone carving, masonry, and materials conservation. Micro credits provided financing in three principal categories: shoemaking, furniture, and tourist goods. Loans are used to buy new materials for traditional workshops or to create new businesses, such as a dry cleaner or an Internet café.

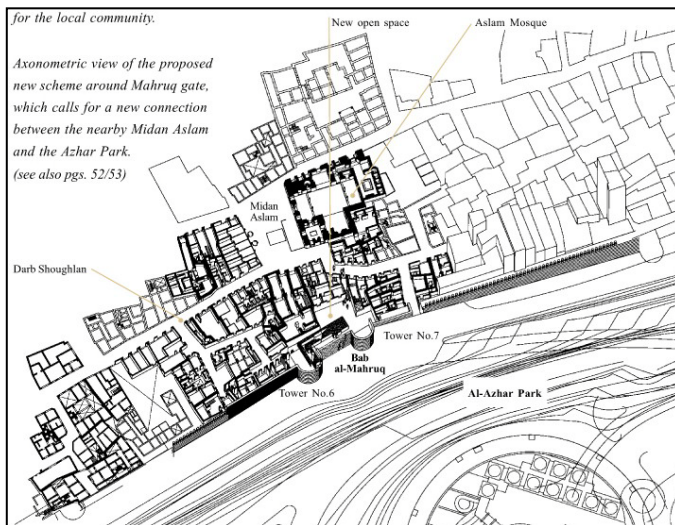


Fig.7 The Derb Al Ahmar Rehabilitation

Source: The Urban Regeneration of Historic Cairo: UNESCO Technical Assistance Project, 2012'

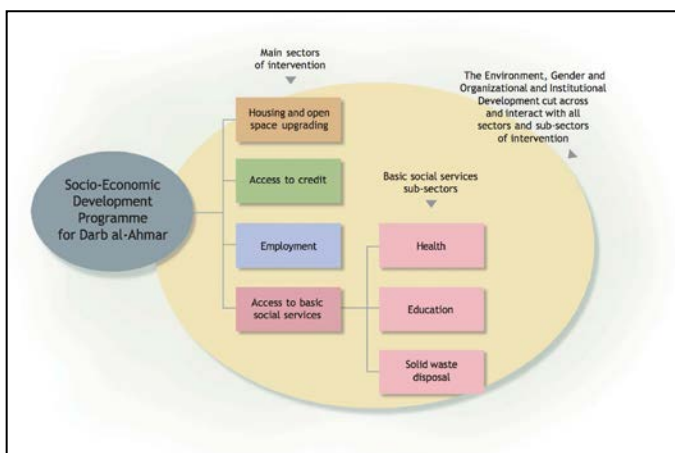


Fig.8 Socio-Economic Development Program for Darb al-Ahmar
Source: CAIRO: Urban Regeneration in the Darb Al-Ahmar District, A Framework for Investment

Development Innovative Bodies

Making a comprehensive approach to integrating the whole area and a long-term strategy aimed at conserving the historical urban form in the Islamic district and its heritage, upgrading the urban structure and the residential mass, providing economic rehabilitation, developing urban context and open spaces, and developing the local community side with the urban development.

With management from the al-Darb al-Ahmar Community Development Company and guidance and support from the Aga Khan Trust for Culture and with funding from international and foreign grants, mainly from the Aga Khan Trust, the UR project used the economic incentives in the development process, utilities, and land reclamation. One of the main successful sides of this project is the participation of institutional partners, local nongovernmental organizations, municipal institutions, neighborhood representatives, local businessmen, people living and working in the area, UNDP, Cairo Governorate, civil voluntary association (Asala-Feda), Cultural Ministry, and Awqaf Ministry and a limited public participation in rubbish collection works and help in rehabilitation buildings.

Evaluation of the Project

This project was a successful case of integrated intervention due to unified efforts (the Aga Khan Program), proper timeline for interference, which enabled the testing of needs and satisfaction, and the adaptation of actions according to the situation. This project reveals the potentials in such area, not only historical culture potential, but also potential of human resources as drivers for realizing the project.

B. Case 2: Project of "Urban Regeneration and Development of the Imbaba Airport" [14,15]

Imbaba is a neighborhood in North Giza, located west of the Nile and northwest of and near Gezira Island and downtown Cairo, within the Giza Governorate.

Concept

The development of the Imbaba project depends on the gradual substitution within the boundaries of the airport surrounding the land as a main approach to development and the reduction of the population density and improvement of movement within the region to help move residents to the new residential zone in the airport land.

The main objective of the Imbaba Urban Upgrading Project is to strengthen the integration of Imbaba, one of the most populated and unplanned urban areas in Egypt, with the entire city of Cairo by providing its 700,000 inhabitants with basic facilities, infrastructures, and services currently needed. This is the first flagship project to be carried out within the scope of the Urban Projects Finance Initiative (UPFI). The UPFI aims to promote and develop sustainable and innovative urban projects that serve as best practice examples and are potentially replicable. The project will provide Imbaba with basic infrastructures and services needed, such as educational institutions, health units, a general hospital, playgrounds, youth centers, a student sports city, public parks, green areas, a district council, a civil registry, Giza Red Crescent Society, a post office, fire brigade and police stations, cultural centers, a children's services complex, an elder people's club, and a women's club.

Development Profiles

The project is so keen to stimulate local economic development, increase employment, and expand services, accredited basically on the use of market mechanisms, in cooperation with the government, not afford the state budget any costs or additional burdens to the development process,

and focus on improving the urban environment, and the expansion of the green open areas, take into account the social dimension and interests balance of all concerned parties.

The number of households to be transferred in the implementation of the development program has to be determined using the social and physical surveys for urgent replacement areas to ensure alternative housing. See Fig. 9

Development Innovative Bodies

As a new deal for the communities in the Imbaba district, a new experience was established in the planning and design of the residential neighborhoods, which depend on the following: division of the region into homogeneous residential groups, creation of two pedestrian mixed-use axes linking the residential area and the park, axes meeting in the heart of the area in a middle vacuum, support for social cohesion and representation of the nucleus of the residential community, separation between the commercial street and the entrance to shops and residential driveways, and provision of educational, health, and administrative services in the center, taking into account that the longest walking distance is 600 meters.

One of the main innovative bodies in the project of upgrading Imbaba is the institutional and legislative framework for implementing the development project, which is composed in two main institutions:

- The initial institution: the steering committee responsible for the project
- The second institution: the establishment of the development company of Giza Gardens

A joint stock company will be established between the Egyptian government, a representative from the Giza Governorate, and a national bank. Since the founding of this certain type of participation, particularly in this convention, the establishment of a joint stock company between Giza and one of the experienced national banks maintains an appropriate formula to provide the financial resources for the development process especially in the initial stages of the implementation.

The main promoter of the Imbaba upgrading project is the Giza Governorate, the total cost of which is €100 million, with a start-up amount of €20 million from the promoter, which represents 20% of the total budget. The project is a public-private partnership with the General Authority for Urban Planning, urban experts, social experts, economic experts, experts in different other fields that the project needs, the Central Agency for Public Mobilization and Statistics (CAPMAS), NGO representatives, folks and executives from the northern district of Giza, the European Commission (EC), the French Agency for Development (AFD), the European Investment Bank (EIB), KfW Bank, Caisse des Dépôts (CDC), and the European Bank for Reconstruction and Development (EBRD).

At the interest of involving and representing the stakeholders in the decision making of the development process, more than 145 nongovernmental organizations (NGOs), of which 17 are active associations, need to be involved in the development process.

Evaluation of the Project

The former dean of the faculty of urban planning, Abdel-Mohsen Barada, told *Watani*, “The scheme reflects good

scientific thinking as it is based on offering people places with developed services. The scope for using the area for investment purposes should be as limited as possible since the main objective of the project is to improve people’s lives.”



Fig.9 Lay out Master Plan for the Development Project of Imbaba Airport.

Residential Area: 52.4 acres
Safari Park (Imbaba Airport Park): 38 acres
Investment Services Zone: 69 Acres
Main Services Center: 26.6 Acres.

Source: The Report of North Giza Development Project 2007.

IV. NEW APPROACH TO URBAN REGENERATION PROJECTS

Creating appropriate UR projects that fulfill sustainable development objectives is a hard task for the government, even if it intends to do so and has made a great effort. In view of this, having a tool to assist the government in evaluating the most sustainable UR projects for a renewed area is necessary. Evaluating a sustainable UR project is a difficult and complicated process because a lot of trade-off decisions have to be made, and parties either affected by or involved in the different stages of UR have concerns and expectations that cannot be satisfied.

A. Drawing a Sustainable Framework for Urban the Regeneration Process [16]

Fig. 10 shows the proposed Sustainable Framework for UR Process.

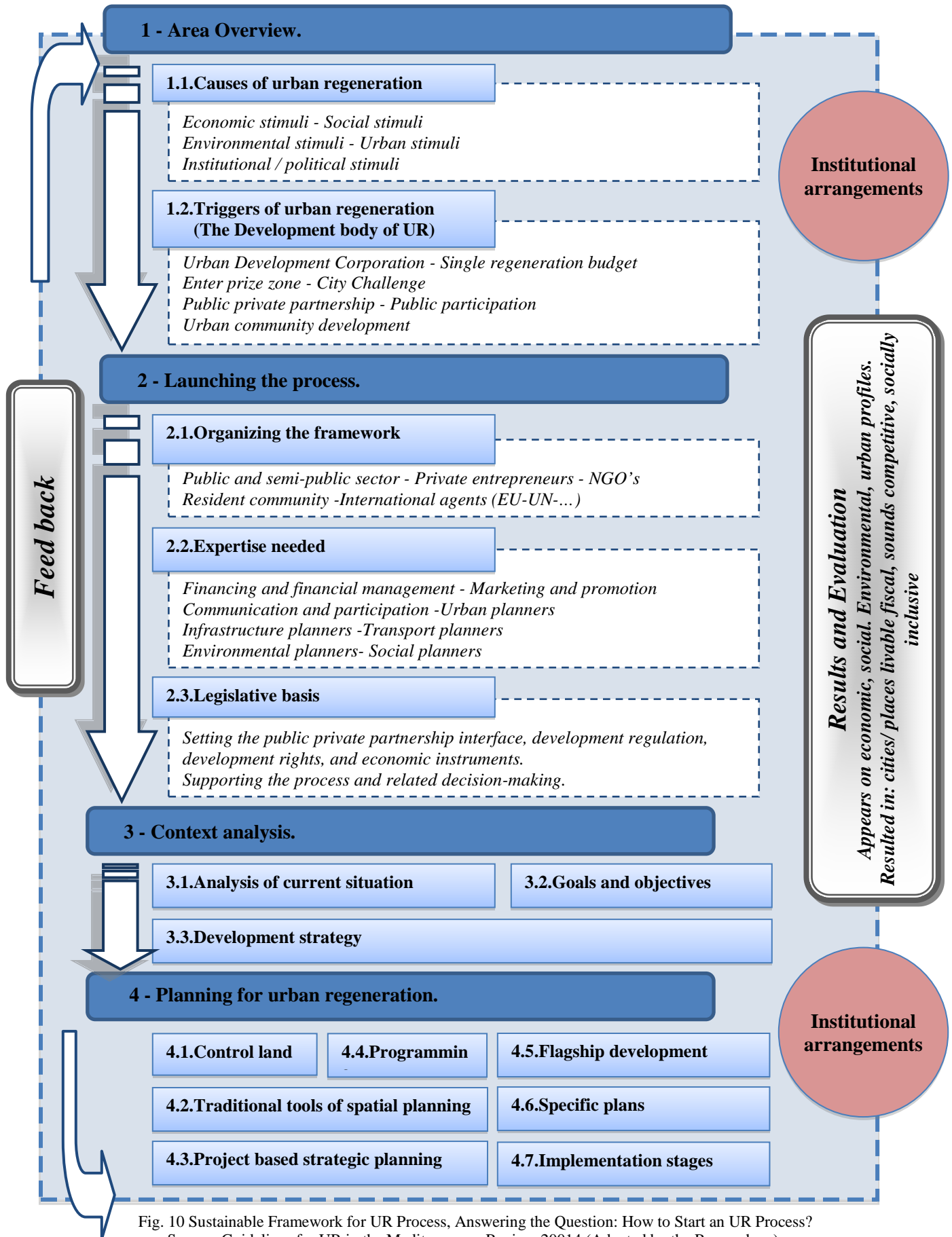


Fig. 10 Sustainable Framework for UR Process, Answering the Question: How to Start an UR Process?
 Source: Guidelines for UR in the Mediterranean Region, 20014 (Adapted by the Researchers).

B. Evaluation Model for Urban Regeneration Projects

Assessing the effectiveness of a regeneration policy and practice has been the subject of numerous evaluations (DOE, 1987, 1988; Robson et al., 1994; Parkinson, 1997; UK Parliament, 2003) [17]. The results of these studies represent an interesting collage of all that can be described as both “good” and “bad” practice in an urban policy. Much of this research has increasingly been critical. Key performance indicators are being adopted to provide a range of measures to assess the achievement of regeneration policy objectives and the impact of actions taken (Audit Commission, 2002) [18].

The targets and outcomes of programs should be matched with the needs of the area concerned and focused on a coherent vision of holistic regeneration. From a policy perspective, there is a widespread consensus on the importance of early, persistent, and rigorous evaluation of regeneration initiatives. This will ensure that existing programs are improved while in progress or terminated if failing. Hence, new initiatives benefit from evaluation and the sharing of best practice. Furthermore, the government is publicly committed to thorough real-time funded evaluations as reflected in the New Deal for Communities [19].

This part is designed to address some of the ambiguities identified in the literature by highlighting a possible indicator-based approach to the evaluation of regeneration initiatives within designated areas. The indicators are selected to measure sustainable criteria and to assess outputs that regeneration agencies have set for area-based regeneration initiatives. The research will use the Hemphill framework indicators, which can measure sustainability by allocating a point score to

various indicators in five indicator sets: economy and work, resource use, building and land use, transport and mobility, and community benefits.

These sets have a total of 52 indicators to be considered. A point score is given to each indicator ranging from 1 to 10 (10 indicating the “maximum” or “optimum” contribution to sustainability). The points are totaled for each of the five indicator sets, and a total point score can then be allocated, providing a sustainability index value that makes projects comparable [19].

Evaluation Model of Sustainable Urban Regeneration (SUR)

The SUR evaluation model is a mathematical model that expresses the affected indicators of sustainability in UR projects. The model is based on 52 individual indicators that have been weighted into five main groups: economy and work (21.5%), resource use (17.5%), building and land use (18.9%), transport and mobility (22.1%), and community benefits (20%).

Sustainable urban regeneration (SUR) is a function of economy and work (Es), resource use (Rs), building and land use (Bs), transport and mobility (Ts), and community benefits (Cs). To assess the performance of a UR project, we have to evaluate the Es, Rs, Bs, Ts, and Cs sets through their subindicators. See table (1).

In other words, we can calculate to which limit the UR project is sustainable through the summation of the effect of each set of indicators.

$$SUR = f(\text{Economy \& Work, Resource Use, Building \& Land Use, Transport \& Mobility, Community Benefit})$$

$$SUR = f(Es, Rs, Bs, Ts, Cs) = 100\%$$

$$SUR = Es + Rs + Bs + Ts + Cs$$

$$SUR = (F_1Es + F_2Rs + F_3Bs + F_4Ts + F_5Cs)$$

$$SUR = 21.5Es + 17.5Rs + 18.9Bs + 22.1Ts + 20Cs$$

Economy and Work Equations

This equation expresses the economy and work set of indicators (Es), which equal the value added from every indicator (from E_1 to E_{10}) affecting the economic sustainability of the UR project.

$$Es = f(E_1, E_2, E_3, E_4, E_5, E_6, E_7, E_8, E_9, E_{10})$$

$$Es = E_1 + E_2 + E_3 + E_4 + E_5 + E_6 + E_7 + E_8 + E_9$$

In other words, we can express economic sustainability (Es) through this equation, where (F_1) is the effect of the variables (E_1) in the performance of the economy and work set of indicators.

$$Es = F_1E_1 + F_2E_2 + F_3E_3 + F_4E_4 + F_5E_5 + F_6E_6 + F_7E_7 + F_8E_8 + F_9E_9 + F_{10}E_{10}$$

This equation expresses the change of the rate Es according to “the number of jobs created” (E_1) in the case of $E_2, E_3, E_4, E_5, E_6, E_7, E_8, E_9,$ and E_{10} being constant.

$$\frac{\delta Es}{\delta E_1} = \frac{\delta}{\delta E_1} (E_1 + E_2 + E_3 + E_4 + E_5 + E_6 + E_7 + E_8 + E_9 + E_{10})$$

In the same way, we can conclude the equations for all the groups of other variables:

Resource use equations:

$$Rs = f(R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9)$$

Building and land use equations:

$$Bs = f(B_1, B_2, B_3, B_4, B_5, B_6, B_7, B_8, B_9, B_{10}, B_{11}, B_{12})$$

Transport and mobility equations:

$$Ts = f(T_1, T_2, T_3, T_4, T_5, T_6, T_7, T_8, T_9)$$

Community benefits equations:

$$Cs = f(C_1, C_2, C_3, C_4, C_5, C_6, C_7, C_8, C_9, C_{10}, C_{11}, C_{12})$$

Table 1 Weightings of Evaluated Indicators and sub-indicators of Sustainable Urban Regeneration [19,20]
 Source: Hemphill L, McGreal S & Berry J (2004), HEMPHILL, L. A., BERRY, J. N. and MCGREAL, W.S. (2002)

Urban Regeneration Results	Indicators Sets	No.	No.	Indicators	Weighing % Score	Ranking
Economic	Economy & work	Es	E1	Number of jobs created	21.5	2
			E2	Net jobs created		
			E3	Number of new enterprises created		
			E4	Quality of jobs created		
			E5	Leverage ratios		
			E6	Performance of incentive mechanisms		
			E7	Partnership structure performance		
			E8	Effectiveness of management after disposal		
			E9	Incorporation of training programs		
			E10	User responses		
Environmental	Resource Use	Rs	R1	Reclamation of building materials	17.5	5
			R2	Retention of environmental features		
			R3	Waste disposal		
			R4	Waste minimization		
			R5	Energy efficiency – building layout and design		
			R6	Energy efficiency – building materials/ construction methods		
			R7	Conservation of built heritage		
			R8	Incorporation of environmental design		
			R9	Performance of environmental management		
Urban	Building & land use	Bs	B1	Ratio of open space to built form	18.9	4
			B2	Ratio of redeveloped buildings to new buildings		
			B3	Reclamation of contaminated land		
			B4	Density levels		
			B5	Mixed use combinations		
			B6	Occupancy levels		
			B7	Office rents		
			B8	Quality of final product		
			B9	Quality of urban design		
			B10	Quality of public space		
			B11	Usage of public space		
			B12	Quality of private space		
Urban	Transportation & Mobility	Ts	T1	Land devoted to roads	22.1	1
			T2	Land dedicated to pedestrians		
			T3	Reorientation of the road network		
			T4	Working travelling habits		
			T5	Leisure travelling habits		
			T6	Public transport links		
			T7	Car-parking provision – residential		
			T8	Car-parking provision – commercial		
			T9	Integration of land use and public transport		
Social	Community Benefit	Cs	C1	Access to open space	20.0	3
			C2	Access to leisure facilities		
			C3	Access to retail facilities		
			C4	Access to educational needs		
			C5	Access to medical facilities		
			C6	Access to entertainment facilities		
			C7	Access to cultural facilities		
			C8	Access to housing		
			C9	Retail facilities		
			C10	Effectiveness of LA21 policy		
			C11	Community ownership		
			C12	Community group involvement		
Sustainable Urban Regeneration Project					100%	

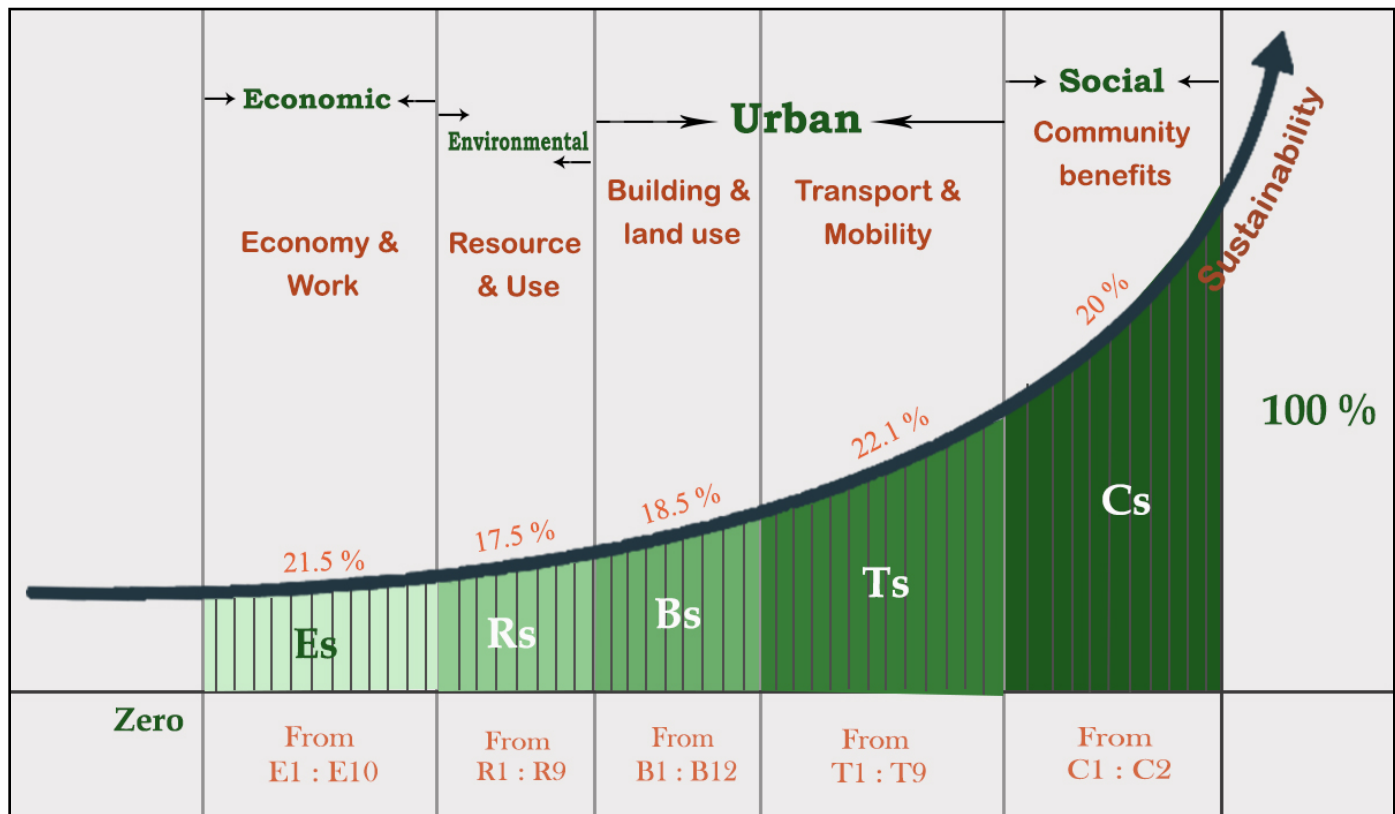


Fig. 11 Evaluation model for "URP" constitute of 5 sets of indicators to achieve 100% sustainability

C. Spotlight on Suitable Locations Fit for the Urban Regeneration Strategy in the GCR

In general, regeneration is an approach that looks at the positive potentials of an area, and thus neglected and informal areas should be looked at not as problems to be solved but as areas with potentials, they be physical and human. With this view, interventions will differ completely [5]. Despite the fact that many UR initiatives in the GCR are focused on the slums and historic areas, so many neglected locations are in precious lands in the city and provide a potential for development in the GCR.

Here, the research highlights suitable locations that can apply for the UR strategy. Fig. 12,13

1. Squatter areas, where populations, particularly children, are threatened by health hazards and rising mortality because of lack of sanitation networks and accumulated waste. The squatter areas in Cairo (Ain Shams, Bolak abo El Ala, and Manshiet Nasr) are perfect examples of such extreme situations.

2. River islands and special characteristics districts.

3. Historical centers, where architectural heritage is concentrated, requiring in-depth evaluation of the state of the buildings, land use, access, and various networks, such as the historic heart of Cairo.

Mataria, for example, has the only obelisk from the City of the Sun, "Heliopolis," and a huge archeological area that is simply left without supervision.

4. Brownfields, the existence and formation of urban derelict land, are frequently observed in the most industrialized cities, leaving an empty space (deserted harbors or railways) or abandoned buildings (warehouses, factories, or barracks). The impact affects harbor sites, wedged too deeply in the urban fabric, as well as underused land, often available for reuse.

Brownfields: An example of this type is the railway sheds and depot on Ramsis Street, which occupy large areas in a highly distinctive location inside the GCR agglomeration, and storage, ship industry uses, and old ports that exist in the western bank of the Nile River in the GCR as shown in figs. 2 and 3.

5. Social unease and unrest in large housing developments, particularly in Ain shams, Imbaba, and also visible in some districts such as Mokatam, and Doweka.

6. Landscape potentials.

7. Graves and residential areas surrounded the city.

8. Old town districts, where dilapidated dwellings are overpopulated, roads saturated, and hazardous activities undertaken, and where surveys are the only means of collecting reliable data.

9. Regional services located in the heart of the city.

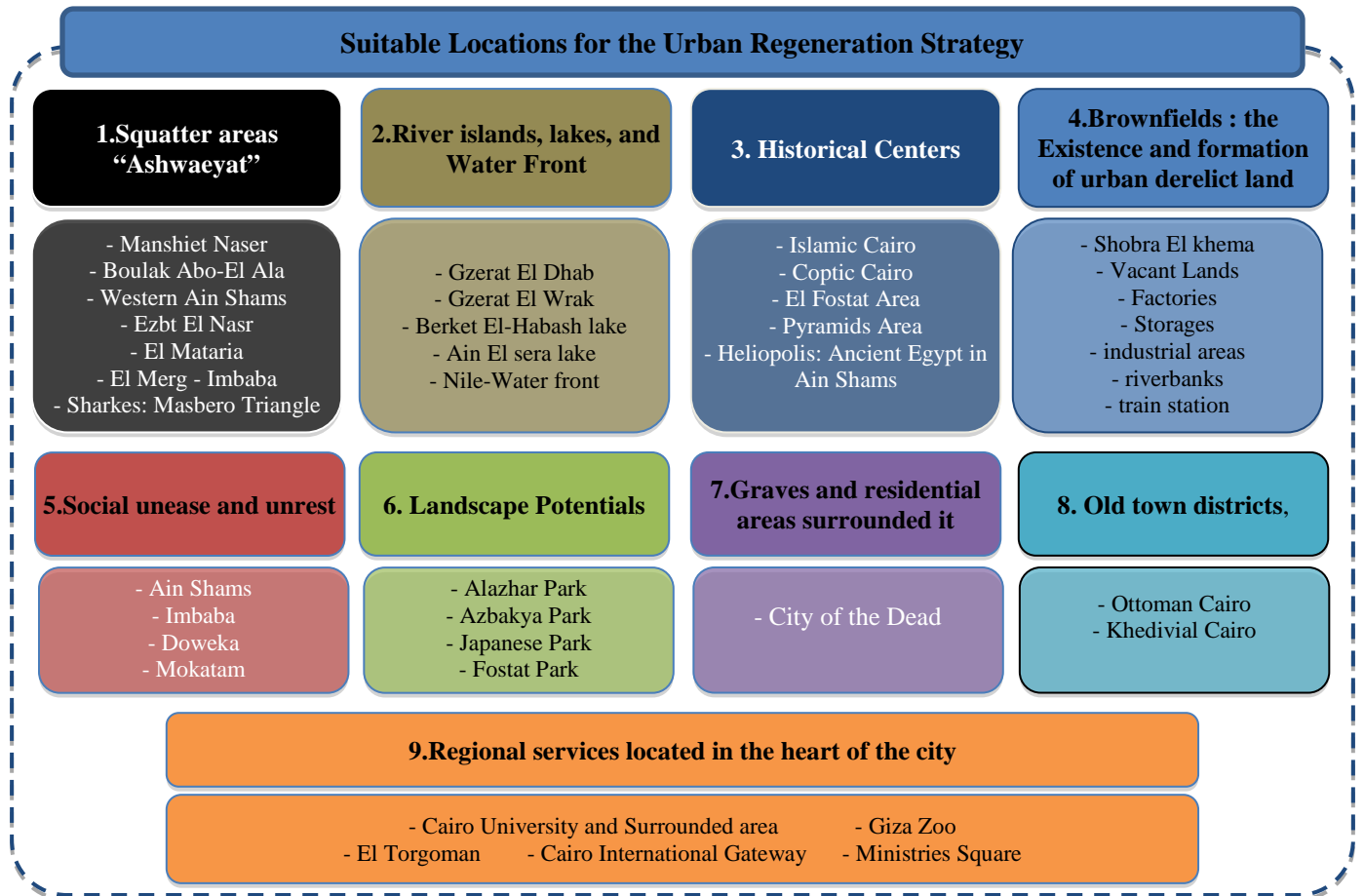


Fig. 12 List of Multiple Potentials of Valuable Lands for Regeneration in Greater Cairo Region
Source: Researchers

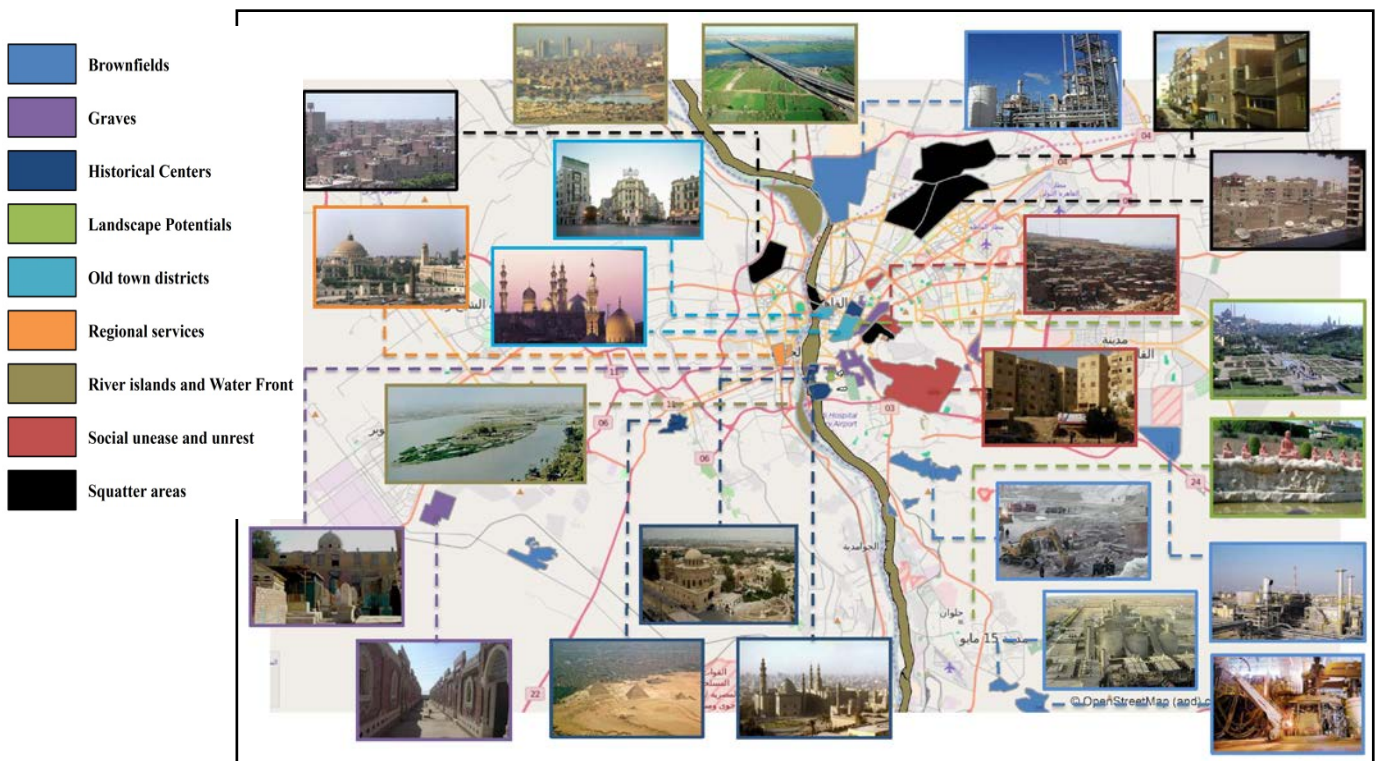


Fig. 13 Location of Multiple Potentials of Valuable Lands for Urban Regeneration in Greater Cairo Region
Source: Researchers

From the above analysis, it is clear that these locations for valuable lands in the GCR have a great potential because they are located in lands that are inside the city, have infrastructures, and are near services. These areas are divided into different uses and properties and vary in land prices. These locations must not be neglected anymore because they present an opportunity for the future development of the city.

V. RESULTS AND CONCLUSIONS:

1. - UR is considered to mean “a return to the city,” “interventionist activity in the city,” and “regenerating people.” In general, regeneration is an approach that looks at the positive potentials of an area, and thus, neglected and informal areas should be looked at not as problems to be solved but as areas with physical and human potentials. With this view, interventions will differ completely.
2. - Governmental intervention in unplanned areas in the GCR was not varying. It appears to be a case-by-case approach. Rather, Egyptian initiatives in UR projects are limited to the historical core and slums areas. The Egyptian Experience suffered from a lack of transparency in decision making between the beneficiaries and the government, and there was no comprehensive vision in establishing the development initiatives, with the main triggers of UR missing.
3. - A successful socioeconomic development project in al-Darb al-Ahmar was supported by the Aga Khan Trust. It had six main phases: data collection, housing and open-space upgrading, a microcredit program to support individuals' income, employment, basic social services, and cross-cutting issues related to the environment, gender, and organizational and institutional development.
4. - A neglected disputed land in the Imbaba Airport from 1990 is the main base for an urban development project in North Giza. A good scientific thinking in the proposed development scheme is based on offering people a “52.4-acre” land with “26.6 acres” for developed services, 38 acres for a park, and “69 acres” for investment purposes. Because of the absence of public participation initiatives and lack of transparency between the government and the Imbaba residents, a lot of fears hound the beneficiaries. They think that they will be forced to leave their place, and they believe that “the land, once developed, will be for the rich.”
5. - Area overview, process launch, context analysis, and planning for UR are the main stages for a comprehensive institutional UR framework, which will provide a good basis for a successful initiative.
6. - Evaluating a sustainable UR project is a difficult and complicated processes because of a lot of trade-off decisions have to be made. The Hemphill framework is capable of measuring sustainability by allocating a point score to various indicators in five indicator sets: economy and work, resource use, building and land use, transport and mobility, and community benefits.
7. - The SUR evaluation model is a mathematical model that expresses the affected indicators of sustainability in UR projects. This model is based on 52 individual indicators, which have been weighted into five main groups: 21.5% economy and work, 18.9% building and land use, 17.5% resource use, 22.1% transport and mobility, and 20% community benefits. Using the SUR mathematical model will help the government assess the performance of UR initiatives in clear numbers.
8. - The GCR is full of precious locations that can apply for the UR strategy, such are squatter areas, river islands, lakes, waterfronts, historical centers, brownfields, social unease areas, landscape potentials, graves, old town districts, and regional services in the heart of the city.

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