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Assessment of Resettlement Policies for Informal Areas Considering the resident as the Main Element in Development

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ABSTRACT

This research addresses a contemporary issue: the problem of informal settlements and the risks they pose, as well as the challenges faced by the state in improving or resettling residents of these areas. In recent years, the state has adopted several policies aimed at developing and enhancing informal settlements, but this development has primarily focused on improving facilities, often without aligning with the needs of citizens. There is a clear mismatch in the behaviors of residents of informal settlements in new communities and their sense of belonging to them. Therefore, development efforts in informal settlements should extend to understanding the social and economic aspects of these populations. This can be achieved by establishing a comprehensive development strategy that includes citizens as a key determinant in the development process, ensuring that the required improvements meet their needs and align with their capabilities. This strategy can be developed by studying the comprehensive dimensions of urban development and applying them to a specific new area to assess the effectiveness of resettlement policies for informal settlements and new cities. Additionally, lessons can be drawn from successful global examples to maximize the benefits of the strategy and enhance its applicability in future initiatives aimed at developing informal settlements.

Keywords: Resettlement Policies – Development – Informal Areas – Urban Development

1. Introduction

The phenomenon of spontaneous urban growth is a global phenomenon characterized by the majority of developing countries, resulting from difficult political and economic conditions and the private sector's reluctance to build for low-income individuals. The low-income populations have managed to provide suitable housing through their own efforts, in addition to the accelerating urban growth and increased migration from rural to urban areas. Consequently, many informal settlements emerged, lacking essential services and deteriorating environmental health [1]. The forms and images of informal settlements have varied and spread on the outskirts of cities, initially on agricultural land or desert areas, then gradually seeped into their suburbs and eventually into the cities themselves. The population of informal settlements in developing countries is estimated to be between a significant portion 24: 30% of the total urban population.

The state has become aware of the dangers posed by informal settlements to the reality of society, and has adopted several policies in the field of developing and improving informal areas in recent years. Recently, the Egyptian state witnessed an expansion in the implementation of a policy to replace unsafe informal housing areas, following the rock collapse incident in the Duweika area in 2008. Based on the state's vision for rapid intervention to protect the residents of these areas, the "Fund for the Development of Informal Areas" was established, which is under the presidency of the Council of Ministers. Its role has been limited to carrying out replacement projects for unsafe housing areas after surveying and classifying these areas according to intervention priorities. The fund carries out its responsibilities in coordination with ministries, relevant authorities, and local administrative units [2].

In 2016, the Egyptian government launched a plan to eliminate informal settlements in Egypt permanently by 2030, allocating about 17 billion Egyptian pounds for the redevelopment of these areas. An additional billion Egyptian pounds was allocated to eliminate "unsafe zones" in Cairo over two years. On the other hand, the state issued

decisions to prohibit construction licensing for six months to address encroachments and violations. Additionally, a law for reconciling building violations was enacted, which included severe penalties for violators [3].

Research Problem

The research problem lies in the state's adoption of resettlement and relocation policies for unsafe informal settlements, which can sometimes harm the social and economic structure of the residents. The policies and planning regulations put forth by the state often do not correspond to the actual social and economic needs of the individuals living in these areas. This necessitates studying the actual needs of these residents to achieve a comprehensive and integrated development process that considers individuals as a fundamental element in the development process. The problem becomes evident through studying, analyzing, and evaluating the impact on residents of a recent resettlement project, specifically the Bashayer Al-Khair project in Alexandria, and comparing the results to ascertain the extent to which the targeted urban development dimensions have been achieved in the project.

Importance of Research

- The study of informal settlements is one of the topics that gains significant importance in the field of environmental and anthropological studies in both developed and developing societies. Since the existence of such settlements has become an inevitable issue in these communities, understanding the nature of these settlements and their social, cultural, and economic systems, as well as how to deal with them, is a necessity.
- Studying the problems of environmental adaptation resulting from the neglect of the social and environmental dimensions of resettled populations, and directing the attention of the Slum Development Fund and the New Urban Communities Authority to the importance of establishing comprehensive development policies that stem from the needs of residents in informal areas to help them adapt to their new environments and feel a sense of belonging.

Study Objective:

The main objective of the research paper is to identify the extent of adaptation of slums residents to their resettlement in new cities and the relationship of this adaptation to their sense of belonging and community participation. It also seeks to examine whether the state's plans consider the social, economic, and psychological dimensions of the residents when they move to new communities. This will be achieved through studying, analyzing, and evaluating a recent project for resettling informal settlement residents and comparing the results with the principles and dimensions of sustainable urban development to determine how closely or distantly they align. Recommendations will be made through analyzing successful global examples of dealing with similar projects to be utilized in formulating any future development strategy.

Research Methodology:

- The study relied on a descriptive approach to describe and analyze the phenomenon of slums populations in different social environments, aiming to understand the nature of the relationship and correlation between various social environmental factors and the emergence of resettlement problems, as well as examining the adaptive methods of informal settlement residents to their environments and the relationship of this adaptation to their sense of belonging.
- Analyzing the information collected from previous studies, published journals, field studies, personal interviews, and identifying similar experiences in dealing with the same problem globally.

2- Deteriorating Residential Areas "Informal Settlements".

There are many approaches that clarify the definition of informal areas. Some are related to the urban approach, where informal areas are defined as urban clusters that lack a comprehensive urban planning scheme or have halted its implementation or non-compliance with it. They are also areas that arise from illegal occupation and settlement on state-owned properties and vacant lands, consequently suffering from a lack of essential services and utilities. The economic and social approach defines informal areas as synonymous with pockets of poverty, where residents experience low social living standards and are drawn to these areas due to limited economic opportunities for housing. The legal-administrative approach defines informal areas as unauthorized, unlicensed construction zones, where building is prohibited for legal reasons [4]. Therefore, the broadest term for informal areas is: "Neglected parts of cities that lack basic planning and environmental requirements and the necessary services for a decent life."

3- General Characteristics of Informal Areas

When studying the phenomenon of informal housing in its various forms, it is essential not to only focus on presenting the negative aspects, However, we must go beyond these issues to extract positive aspects from these negatives that can serve as indicators on the path to the correct and appropriate solution to this problem.

3-1 Advantages of Informal Settlements:

- The financing method in these areas allows land to be purchased in installments without interest or any procedures or fees, creating a good financing system that is free of complications for residents, relying on self-efforts without support or aid from official entities.

- The ownership or possession system sometimes leads to improvements in building conditions, housing quality, and the environment, as well as an increase in maintenance levels.

- Community residents' participation in the construction process results in homes that reflect individual personalities and needs, fostering a sense of belonging to the place, which aids in the sustainability, maintenance, and improvement of the project.

- Involvement in construction provides community members with experience that helps them maintain and extend the project in the future.

- The gradual growth of housing allows for flexibility, ensuring that the resulting dwellings align with the diverse needs and capabilities of users.

- The integration of commercial and residential uses in these areas.

- Collective commitment to construction methods regarding planning, plot dimensions, and the regularity of heights in line with prevailing customs in the area, which serves as an alternative or complement to the laws and legislative requirements related to construction [1].

3-2 Disadvantages of Informal Housing:

- The rapid and unplanned growth of poor informal areas negatively affects other parts of the existing urban fabric and poses an obstacle to the city's growth and urban expansion according to urban areas.

- The conversion of large portions of agricultural land into construction land has impacted the national output of these countries.

- Extremely high levels of congestion both within and outside the residential areas.

- Lack of basic services such as drinking water supply, sewage, waste collection, and electricity networks.

- Absence of essential educational, health, social, and recreational services.

- Buildings lack sunlight and natural ventilation, resulting in a loss of privacy and an increase in auditory and visual pollution.

- Poor health and environmental conditions, widespread epidemics and diseases, and a rise in physical, social, and psychological illnesses, along with security tensions [5].

3-3 Concept of Slum Culture: Culture of Slum Inhabitants

Sociologists have found that slums create a pattern of values, customs, and traditions known as "subculture," referred to as "slum culture." This culture represents a dominant pattern that reflects the feelings and common language of its residents. Additionally, there is psychological and behavioral randomness among inhabitants; they view themselves as outcasts in society. Slums have begun to export a peculiar culture characterized by feelings of social exclusion, leading to the emergence of resentment towards society, along with congestion, urban ugliness, indifference, selfishness, disorganized behavior, lawlessness, a lack of future vision, absence of loyalty to the homeland or original societal values, and an increasing sense of alienation and rejection of others, among other issues [3].

4- Policies for Addressing Unsafe Slum Areas

The policies implemented by the state to address slum areas across the republic have varied, including the provision of public utilities to these areas, especially when faced with challenges in improving conditions due to the complex urban fabric and increased population density and construction in these communities. Sectoral development policy may be employed, along with planning and partial restructuring of urban areas, and also the complete redevelopment of informal settlements in the same location, or complete redevelopment with the relocation of residents to another site [3].

4-1 Concept of Unsafe Informal Settlements:
Families in unsafe informal settlements are defined as: a group of individuals living under one roof and exposed to one or more of the following conditions: areas constructed in hazardous locations, deteriorating structures, or housing vulnerable to railway accidents, or those built on landfill sites or under overhead power lines, or constructed in areas exposed to heavy industrial pollution. They also include areas lacking sufficient living space (where more than two people live in one room), areas without access to clean water or sewage networks, and areas lacking secure housing tenure [6].

4-2 Concept of Resettlement for Unsafe Informal Settlements:
Resettlement of informal settlements is defined as the process of finding alternative housing for residents affected by the removal of the informal areas they inhabited. Residents are relocated to another area that may not be close to the original site, and they are provided with new housing units in government-owned buildings at low rent or under favorable ownership conditions [7]. Resettlement policies are implemented in cases of unsafe areas that threaten the lives of their inhabitants or in deteriorated urban areas suffering from high population density, where most of the buildings are dilapidated. Resettlement may also be carried out for social purposes, targeting areas facing social deterioration characterized by crime or public health issues. Resettlement methods can also be employed to facilitate economic projects or fulfill or realizing national benefits from the location of the informal area, and this recent policy is the focus of the study, as this pattern of informal settlement development policies is the most transformative for the area. It also involves the resettlement of residents and their relocation to new government housing projects.

5-   Study and analysis of resettlement policies "relocation" for unsafe informal areas
The process of resettlement represents a significant issue that oscillates between supporters and opponents; however, it sometimes serves as an ideal solution for countries to achieve developmental goals, eliminate informal areas, beautify cities, reduce crime, and protect valuable lands. Yet, it can also lead to a reduction in the rights of the residents of those areas, especially if accompanied by violence or forced eviction when residents refuse to vacate [7]. Numerous experiences indicate that relocation policies may lead to serious risks, the most significant being the destruction of the social and economic structure of the local community in informal settlements due to the individual's separation from the environment in which they were raised and from their economic, social, and environmental resources. Resettlement occurs without comprehensive plans to address this issue in both individual and institutional dimensions, leading to many problems, the most important of which is the inability to adapt to the new environment, feelings of social and environmental alienation, and the inability to belong and participate [8].

5-1 Resettlement Policies – Environmental Adaptation
Several trends address the relationship between humans and their environment, including the ecological systems theory, which discusses the relationship between humans and their environment and the set of relationships existing between them and their interacting surroundings, through which they meet their various needs. The ecological systems theory provides us with a conceptual framework that allows for the organization of various aspects and dimensions of the resettlement process for residents of informal settlements, the foundations of the ecological system indicate that the resettlement of residents from informal settlements into new cities is a multidimensional process influenced by various factors operating at multiple levels. This process begins with the individual, then moves to the group level, followed by the local community in which they reside, and finally the broader social environment of the community as a whole. Each of these levels includes a set of both material and immaterial systems that achieve balance and integration among the components of the community's overall ecological system. This balance affects their social and environmental adaptation and their sense of belonging. Environmental adaptation is reflected in the individual's ability to coexist with the external world, the alignment of their desires and goals with their environmental context, their adjustment in dealing with environmental conditions, and their capacity to cope with changes in their ecological systems, including challenges and problems, by modifying their behavior and enhancing their skills or by altering their environment [8].

5-2 The Interplay Between the Urban Environment and Behavior
The behavior of individuals or groups comprises a range of activities carried out within the urban environment, through which they interact with their surroundings and express their identities. It can be stated that behavior evolves over time in response to the user's needs from the space; thus, the environment significantly influences behavior. Several researchers have emphasized that while socio-economic forces and their psychological impacts are fundamental in shaping living patterns, urban design can either facilitate or hinder adaptation. Urban spaces play a crucial role in fostering a sense of local community or population group among residents, and this influence

varies according to the characteristics of the individuals involved. Urban spaces represent an environment that affects the values and behaviors of the residents. Participation in a residential environment gives the residents of that area a communal identity that influences social relationship patterns. Environmental psychologists have distinguished between residential neighborhoods and local communities, which consist of shared collective bonds and social interaction, characterized by a high degree of personal familiarity, emotional depth, and social cohesion. The prevailing opinion is that residential neighborhoods play a fundamental role in determining individuals' opportunities for personal interaction and significantly contribute to social mobility. There are four main elements in the sense of local community: group belonging, the individual's ability to influence the group, the group's fulfillment of the individual's personal values and needs, and the shared emotional connection, which often arises from a common historical background [9].

5-3 The Impact of Resettlement Policies on the Sense of Belonging to a Place Among Residents of Informal Settlements

Belonging is defined as "the tendency that drives an individual to enter a specific social and intellectual framework, necessitating a commitment to the standards and rules of this framework and to support and defend it against other social and intellectual frameworks. Belonging manifests as an individual's feeling of interconnectedness and integration with their social or environmental surroundings, perceiving themselves as part of the community and place. There exists a reciprocal relationship between them, where each relies on the other to solve its problems and meet its material and moral needs [8]. A person does not feel a sense of belonging to a place unless they feel protection and security in that very place [9].

Integrated development for space users can only be achieved when individuals feel a sense of belonging to it, leading to behaviors that enhance the potential for positive intervention to preserve and develop urban spaces, which is a targeted planning goal and serves as an impetus for sustainable development in the urban area [3].

Social factors are among the most important influences on the diversity of spatial formation that expresses the cultural background of the population. The social customs of residents, their way of life, movements, and activities significantly affect the housing distribution system, land uses, distribution of spaces, and movement paths. Moreover, neglecting the social, psychological, and behavioral needs of space users, along with a failure to analyze their behaviors in alignment with their requirements, leads to negative behaviors stemming from a loss of spatial belonging. The new reconstruction policies rarely consider social relationships through their principles, the most important of which is the functional separation of different activities. This contrasts with the spontaneous social interactions that residents of informal settlements experienced in their neighborhoods, which they do not find in new cities upon resettlement. This can sometimes cause deterioration and a return to informality in redevelopment projects. Therefore, it can be said that urban spaces must foster a sense of belonging by incorporating flexibility in changes that meet the social, cultural, functional, and human needs of users. The presence of urban space with a clearly defined organic formation helps achieve a sense of belonging by addressing users' needs and promoting a sense of security. Additionally, employing a friendly scale and a human scale in space fosters inclusivity, privacy, social cohesion, and an increased sense of spatial boundaries, resulting in a feeling of belonging to the place [9].

5-4 Problems of Resettlement

For residents of informal settlements, adapting to the idea of living in high-rise buildings proves challenging, and they struggle to maintain the social and cultural unity they once had in their informal neighborhoods. Therefore, the state and its institutions must reassess the general approach to urban renewal and policies to enhance their applicability and success rates. Many studies have shown that designers' choices and priorities in shaping the residential environment differ from residents' actual perceptions and uses of the spaces and buildings. These differences are clearly evident in the modifications made by residents in the implemented and operational housing projects. Residents have sometimes expressed their needs by altering residential buildings and public and semi-public spaces in those areas. Examples include the "New Duweika" area, where the majority of ground-floor residential units have shifted from residential to commercial and artisanal use; the "Zeinham Hills" area, where some social and economic activities have emerged in semi-public spaces; and the "Elderly" area, where residents have added an entire room to the original residential unit. This represented a fundamental change in the urban fabric of those projects and highlighted their shortcomings as shown in Fig (1) [2].
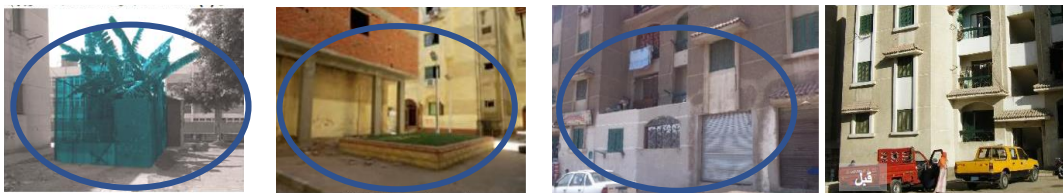
Fig (1) The New Dweika Area: Before and After Urban Transformations- Addition of a Room to the Housing Unit in the Elderly Area- Installation of Kiosks in the Public Spaces of the Zainhum Area. source [٢] edited by the author.

6- Sustainable Planning as a Basis for Redevelopment Areas

Traditional planning is the document governing urban development in terms of land uses only. This type of planning is a repetitive process that produces the same results and various problems without development, necessitating the emergence of a new concept to address these areas: sustainable planning, which achieves the concept of comprehensive development [5].

6-1 Concept of Sustainability:

It is a comprehensive term related to the development required for human society, integrating all essential axes without separating them from each other.

Environmental Dimension: It focuses on achieving ecological balance and preserving the environment, whether natural or constructed.

Social Dimension: It focuses on achieving social empowerment and stability for various human societies.

The economic dimension: focuses on achieving economic development and increasing productivity.

6-2 The Concept of Sustainable Urban Planning:

Sustainable urban planning can be defined as encompassing all the foundations of traditional urban planning, while placing greater emphasis on environmental, climatic, and local characteristics of the area, including all its cultural and social aspects. This approach ensures the optimal utilization of resources and available potential. It serves as a tool for coordinating various policies that address informal settlements on a large scale, considering developmental trends that integrate political objectives and urban design, with participation as a fundamental principle. This is achieved by activating its elements and linking them to standards and indicators derived from sustainability goals [5].

The relationship between urban formation and sustainability is one of the most pressing issues on the global environmental agenda. Numerous theories for sustainable urban formation have emerged, including the "new urbanism" theory, which posits that new urban developments should draw on certain characteristics of traditional urbanism rather than modern housing trends [10].

Residential neighborhoods established in the 19th century, known for their diversity in buildings and land uses, are among the most vibrant and popular areas today. The concept of zoning often contradicts diversity in urban formation, and given that residents' development methods are characterized as "smart," there is a need to develop planning theories and guidelines that incorporate sustainability principles and leverage the strengths of informal areas, aiming for specific theories and applications tailored to the local context [11], And attempting to leverage the positives of urban development to establish indicators for appropriate urban planning that meets the needs and requirements of residents in informal areas [12], as well as studying the activities present in these informal areas through field studies to identify local patterns and integrate them into future housing projects [13].

The suitable approach for studying the reciprocal relationship between humans and their environment should be through an environmental framework that encompasses broad dimensions, including social and cultural aspects, to ensure an adequate understanding of the impact on architecture and urbanism. As stated, "space is not a place unless it carries meaning derived from cultural and regional content, and the essence of the theory of place in urban design lies in understanding the cultural and human characteristics within urban spaces" [9].

7- Examining successful global experiences in addressing housing projects for low-income individuals

There are only a limited number of housing experiences worldwide that have successfully achieved social goals for their residents. Dissatisfaction with modern housing solutions has prompted a reevaluation of traditional methods and a shift towards studying and understanding the production and functioning of informal housing areas [14]. Numerous attempts have emerged to design housing areas for low-income individuals that align with their social characteristics and meet their needs, including projects inspired by the architecture of informal housing areas [15]. Additionally, the concept of progressive housing has emerged, inspired by the growth mechanisms of informal housing areas, which evolve gradually according to the capabilities of the residents in those areas [2]. This is referred to as basic housing "shelter," representing a structure designed professionally to be minimal in size or the level of completion at the beginning, Only the essentials are provided to lower costs, and families then reorganize and gradually expand their homes over time in response to their evolving needs and economic capabilities, enabling

them to gradually own their homes at an affordable price. Basic housing can simply be described as housing projects provided or supported by the government, aimed at offering decent housing for families who cannot access it under market conditions and prices [16].

Progressive housing is considered a prominent transformation model in social housing, first implemented in India through the Aranya project. The urban renewal project in Quinta Monroy, Chile, is also a successful and significant example of progressive housing, providing an alternative solution derived from a thorough analysis of needs, user collaboration, and thoughtful design, serving as a model for improved urban renewal solutions [17].

7-1 Ceuta City in Spain

An example of successful experiences in planning and designing housing projects for low-income individuals is the case of Ceuta City in Spain. The design of the project was inspired by an informal area adjacent to it, characterized by hundreds of self-constructed buildings. These structures feature small unit sizes, cubic shapes, and winding street patterns, with a scarcity of public spaces. Moreover, it provides multiple models of housing units to accommodate the diversity in family sizes. The urban form was tailored to the residents' needs, blending the grid pattern design commonly used in such projects with the spontaneous style found in informal areas as shown in Fig (2). A compact pattern was also utilized, resembling chess pieces, which offers appropriate ventilation and natural lighting. A mixed land use pattern was utilized, providing commercial shops beneath the buildings in areas where residents gather, along with pedestrian pathways between the buildings and semi-private spaces that are close to the traditional housing pattern for the residents. Semi-private terraces for residents were also created, serving as recreational areas for them [10].
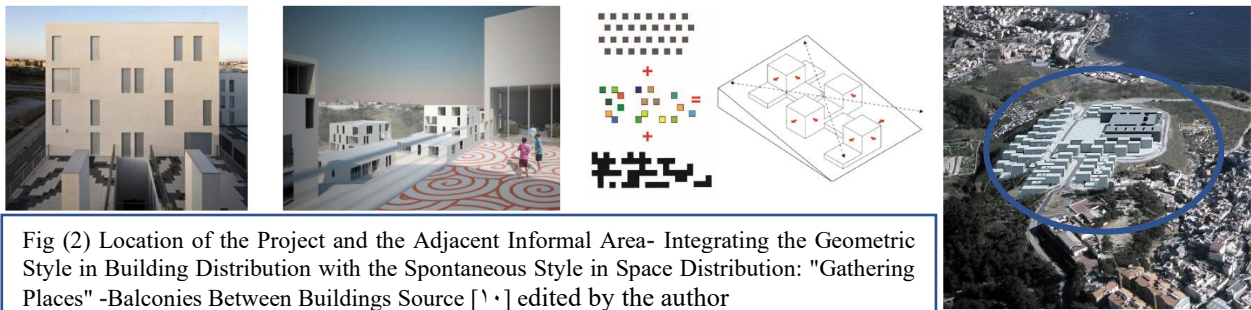

Fig (2) Location of the Project and the Adjacent Informal Area- Integrating the Geometric Style in Building Distribution with the Spontaneous Style in Space Distribution: "Gathering Places" -Balconies Between Buildings Source [١٠] edited by the author

7-2 Kenya Experience: "Mavoko" Development Project

"Mavoko" is located 20 km southeast of Nairobi, Kenya. The program aimed to enhance the capacities of local communities, the private sector, and local authorities to provide housing, infrastructure, and social services [18]. The program primarily focused on improving the livelihoods of residents by training them in income-generating activities, such as producing building materials and components, artisan development, and capacity building, along with providing small and medium-term loans to help start new businesses. The project was implemented with the active participation of residents from informal housing areas, leveraging their ability to contribute ideas and resources necessary for achieving strategies to improve their living conditions. The "Habitat" organization, in collaboration with the Government of Finland, provided technical support for the program, while the municipality monitored the project through post-occupancy evaluations, which helped avoid many potential errors.

*7-٣ Aranya Low-Cost Housing Project –Architect -*Balkrishna Doshi - India-1989

- A unique project in terms of its approach, design philosophy, and the impact it had on the lives of its users. This project received the Aga Khan Award in its 95 cycle1993, as the jurors believed it "should be studied extensively" [19].

- The project consists of six sectors where movement gradually flows from the central spine of the facilities and public spaces, branching out into a series of distribution pathways that form at different levels of the hierarchy. The pedestrian pathways represent the final level [20]. Community public spaces also follow a hierarchical sequence, and the street network is characterized by a clear separation between vehicle traffic and pedestrians, directing vehicles towards the main peripheral road and
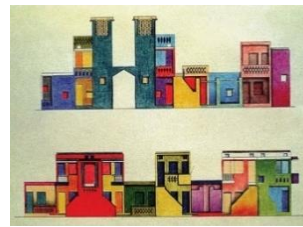

Fig (3), The Arania Low-Cost Housing Project, source [22].

Fig (4), Planning of the Arania Housing Project, source [22].

pedestrians towards informal pathways, which stimulates informal public activities and interactions [21].

- The main value of this project lies in its new operational strategy for developing housing constructed with limited financial and material resources in contexts of social vulnerability. It aims to create an open model capable of evolving and growing gradually, relying on the construct[...] [20].

- To initiate development, 80 prototype homes have been planned and built for families, representing the minimum housing unit with an area of just 35 m², with variations in size, spatial planning, and massing. Residents can shape the space according to their basic needs and lifestyles [21]. This core possesses potential character and offers local and urban identity, and over time, the building grows [20].

Fig (5), Gradual Growth of the Housing Unit, source [٢١].

- The proposed growth of housing is directed by the nature of the infrastructure, allowing for gradual potential growth in small doses both horizontally and vertically, giving it an organic quality. Thus, alongside the service core, foundations for future wall expansions are constructed; if there is no need to expand the house, the foundations will remain buried, while other activities can be developed on the surface of the courtyard [20].

- Doushi analyzed social structures and the evolution of daily habits into physical spaces by observing and studying traditional lifestyles, local customs, and previously built residential structures.

Fig (6), Gradual Growth of the Residential Area, source [٢١] edited by the author

- Each group of 10 houses was oriented to minimize heat exposure and shared a courtyard that provides shade for both homes [21]. A half-meter-wide free strip was also established between the boundaries of each plot and the pedestrian path, serving as an undefined transitional area between public and private spaces that allows for various functions and strengthens social relationships among residents in informal areas. This includes deep, shaded corridors that help isolate the interior while also extending the home into the public realm, shared staircases whose function extends beyond merely going up and down, and balconies that serve as platforms for social interaction. A common feature in vernacular Indian architecture, known as "Ota," refers to an external platform in front of the house or at the center of a cluster of homes, functioning as a gathering place for the community and enhancing a sense of belonging [20].

- These improvised elements create a social fabric with a strong urban and social character. The overall environment of the area integrates structures, spaces, and culture into a cohesive entity, where narrow alleys are vibrant with community life, effectively creating a "habitat for humanity" [19].

Fig (7), Informal Spaces and Social Squares in the Area, source [٢١] & [20]& [22] edited by the author

- The appropriate human scale used throughout the project helped foster a sense of belonging, confirmed by involving users in the design process and allowing them the freedom to decorate and modify the display homes, as well as choose their ornaments, materials, and color palettes [20].

- During interviews with residents, they confirmed that the resale price of a narrow random resettlement plot had increased tenfold compared to its original cost after completion [19].
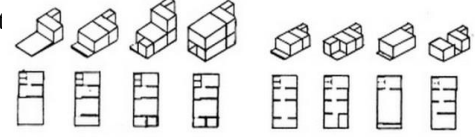
7-4 Quinta Monroy   low cost housing /Iquique, Chile, Architects: Alejandro Aravena, ELEMENTAL -Area: 5000 m² -Year: 2003

- An important example of incremental housing that has received widespread acclaim globally and is considered an innovative approach in the collective housing model. It was built in the province of Iquique in northern

Chile to resettle 93 families who were living there in makeshift homes at the same location [23], instead of displacing them to the outskirts far from the services provided by cities. This was achieved with support of $7,500 for land, infrastructure, and architecture [17].

- Elemental is an architectural firm that recognizes the importance of a social and humanitarian approach in architecture, demonstrating how architecture can enhance people's lives. The firm's director received the Pritzker Prize and organized the Venice Architecture Biennale in 2016 [24].

Fig (8), Quinta Monroy, source [17] edited by the author

- The land price was three times what social housing could typically afford due to its central location. Therefore, it was necessary to make the units smaller and use lower-quality materials, or to opt for vertical construction that prevents expansions. The alternative was to build a basic structure, a "half-good house," which contains service areas with adequate spaces that residents cannot build themselves. For the possibility of expansion, it was sufficient for the dwelling to have only a ground floor and an upper floor [23].
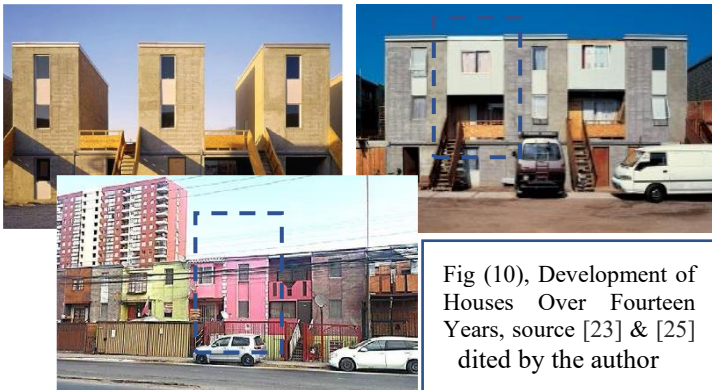

Fig (10), Development of Houses Over Fourteen Years, source [23] & [25] dited by the author
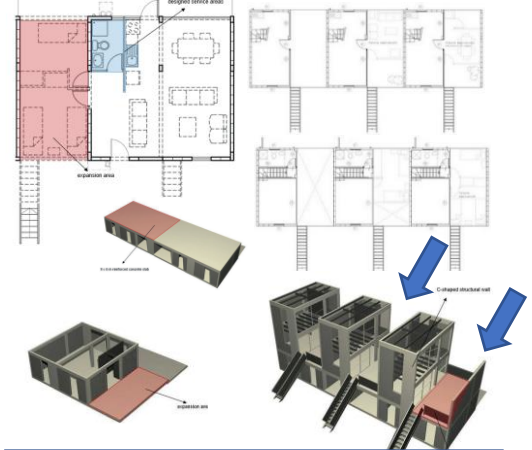

Fig (9), Gradual Growth of the Housing Unit, source [23] edited by the author

- The company coined the term "parallel house," which contains two different housing units within one complete structure. The strong box-like structures alternate with an empty space of the same size, allowing families to expand the home to achieve medium-term social housing.

- This approach helped avoid certain architectural elements, such as elevators, which require regular maintenance and reduce the value of the home. Thus, the dwelling represents an investment, unlike typical social housing, which often loses value from the moment it is built [24].

- With the relocation of the population, they were able to adapt the structure to meet their needs and define the internal organization of their homes with the assistance of designers, achieving satisfactory results. The choice of materials and decorative details in the interior spaces was left to the residents, adding color, texture, and life, along with a sense of ownership and belonging to their homes. The value of each dwelling more than doubled within a year [24].

- The company organized workshops and seminars to educate residents on how to build expansion areas and maintain their homes in a safe and healthy environment [23].

- Although the end users developed their homes over a period of five to fourteen years, the houses exhibit an organic quality, having evolved to varying degrees of completeness and complexity according to the desires and capabilities of the residents [25].

8- Case Study: Evaluation of the Resettlement Policy for Informal Settlements through the Bashayer El Kheir Project

The Bashayer El Kheir projects are the most significant in Alexandria Governorate over the past decade, addressing the issue of informal settlements that have formed on the outskirts of the city. According to the local human development report issued by the Ministry of Local Development and the National Planning Institute in 2014, the coastal city contained 33 informal settlements, including 8 unsafe areas where residents lived in houses at risk of collapse [26]. Therefore, the Egyptian state, led by President Abdel Fattah El-Sisi, prioritized the re-planning of

informal settlements in Alexandria, which was achieved through collaboration between the public and private sectors to protect residents from the dangers of their homes collapsing or from diseases caused by high pollution levels in their surroundings. Some of these areas include: Gheit El Anab, Kom El Malh, Farne El Garaya, Ma'wa El Sayadeen, Nag' El Aluminum, El Mafrouza 1 and 2, part of Nag' El Arab, and regions in Beheira Governorate[27].

The project was implemented in phases across various areas according to each stage. The first and second phases are located in the Gheit El-Anab area of the Karmouz district, the third phase in the Fishermen's Shelter area, the fourth phase in Beheira Governorate, and the fifth phase in the Al-Qabari area of Alexandria [27].

Work is currently underway on the implementation of phases 6, 7, and 8 of "Bashayer El-Kheir," in addition to the ongoing fourth phase established in Rashid city in Beheira [26].

Fig (11) Bashayer Al-Khayr Project in Alexandria, source [26] edited by the author

	Phase	Area in Acres	Number of buildings	Available Services	Green Areas
Phase one-Year of Opening 2018, [27].		13.5 Acres, [27].	34 Buildings -14 Stories High with Two Elevators per Building - 1632 Equipped Housing Units- Unit Area: 90 m², [27]	Mosque - Hospital - Vocational Training Center - Commercial Shops - Commercial Market - Real Estate Registration Office - Post Office - Educational Garden for Children - Center for People with Disabilities [27]	20 thousand m², source [27]
Phase two	Phase one 2020	12 Acres, [26].	37 Buildings - 1869 Equipped Housing Units with an Area of 95 m² per Apartment [26].	Service Headquarters, Shops, and Commercial Centers on the Ground and First Floors of Each Building, source [26].	15 thousand m², [26]
	Phase two	6 Acres, [27].	20 Buildings - 992 Equipped Housing Units with an Area of 95 m² per Apartment [26]	The Number of Shops in This Phase Reached 216 Commercial Shops, source [27]	7200 m², [27]
Phase three-Year of Opening 2022, [27]		105 Acres, source [27]	200 Buildings with four Elevators per Building - 10600 Equipped Housing Units with an Area of 90 m² per Apartment [27]	Emphasis was Placed on Increasing Investment Opportunities to Provide Jobs; Commercial Shops Were Built on the First Floors of Residential Buildings Overlooking Main Streets. An Investment and Commercial Zone Consisting of 8 Commercial Buildings was Established, along with Another 36 Commercial Malls in the Area [27], Equipped with a Service Area Including an Educational Facility, a Hospital, Two Mosques, Four Small Mosques, a Church, and a Youth Center. A bank, a post office, and an area for administrative and recreational activities, source [26]	
Phase five		90Acres	15200 Equipped Housing Units	Commercial spaces in total 99465 m²	

Social Survey by Sample: This study employs a social survey methodology by sample, defined as a specific form of gathering information about individuals' conditions, behaviors, perceptions, feelings, and attitudes. A personal interview was conducted to fill out a questionnaire with a sample of 30 individuals from the Bashayer El-Kheir neighborhood, considering diversity in age, educational level, social status, nature of work, as well as the informal area from which the individuals originated, and the resettlement areas across the various project phases. Emphasis was placed on the economic and social aspects due to their significant impact on resident satisfaction.

Indicators		bad	Accep	good	Indicators		bad	Accep	good
Urban dimension									
Land uses	Diversity of land uses in the urban community		●		Urban void ratios	Ratios of building height to urban void width		●	
Land Scape elements	Use of economical and highly durable Land Scape elements		●		Urban character	Suitability of building facade designs to the area	●		
	Trees and local plants that require low water consumption		●			Building ratio - land occupancy ratio			●
Parking	Suitability of parking wait times with population size			●	Connectivity within the area and with surrounding areas	Availability of connections to main roads and gathering points			●
Efficiency of land use	Building ratio			●		Number of entry and exit points and their ratio to the perimeter length			●
	Population density of the area			●		Design of internal street networks and traffic systems		●	
Environmental dimension									
Environmental suitability of construction materials and systems.	Use of building materials that do not cause negative environmental impacts	●			Efficiency of infrastructure networks	Level of resident satisfaction with infrastructure services		●	
	.Use of environmentally friendly construction elements such as domes and vaults.	●				Level of residents' awareness about consumption rationalization		●	
Waste management	Waste collection: availability of waste bins distributed throughout the area			●	Environmental suitability of building and housing unit designs	Natural ventilation and lighting solutions			●
	Availability of awareness programs for waste separation		●			Suitability of facades to the region's climate		●	
	Availability of a technical system for sorting and recycling waste	●				Increase in the ratio of shaded areas on facades		●	
						Elements of shade formation	●		
Street Network and Widths			●		Housing Units orientation		●		
Choosing an Environmentally Suitable Location	Rate of Environmental Pollution at the Site		●		Environmental Suitability for Urban Development	Preserving the Natural Environment at the Site		●	
Green Spaces	Per Capita Green Spaces		●						
Social and cultural dimension									
Architectural Design of Housing Units	Flexibility in Housing Units to Meet Residents' Needs	●			Community Belonging	Level of Compliance with Housing Unit Legalization Procedures	●		
	Considering Family Types and Their Relation to the Design of Residential Buildings		●			A Place or Space for Meeting Friends Within the Area		●	
	Providing Housing Units for Extended Families if Available	●				Achieving Integration with Surrounding Areas		●	
Choosing a Socially Suitable Location	Providing Connectivity to Work Locations That Match Resident Categories		●		Achieving Privacy Within the Area	Internal Privacy: Rate of Crowding			●
	Linking to Central Service Locations and Ease of Access		●			External Privacy: Distances Between Buildings		●	

Category	Item				Category	Item			
Non-profit organizations or charitable associations	The availability of civil society organizations and their role within the region.		●		Providing Job Opportunities Within the Project	Encouraging the Private Sector		●	
	The assistance provided by the association - Social		●			Providing Accessible Loans to Establish Small Projects		●	
	Financial Assistance Provided by the Association Community Participation		●			Establishing Training, Production, and Qualification Centers for Residents for the Labor Market		●	
Services Within the Area	Availability of Basic Local Services in the Area			●	Community Participation	Residents' Participation in the Area Development Project	●		
	Level of Resident Satisfaction with Local Services		●			Residents' Participation In Maintenance Work Within the Area		●	
	Spatial Justice in Accessing Services at Distances			●	The feeling of security and safety	Crime rate within the area: presence of thuggery, riots, or violence	●		
	Services That Residents Depend on Outside the Area		●			Availability of security services (police station, ambulance, fire department)	●		
	Ease of Access to Services via a Good Road Network			●		Ease of access for ambulances and fire trucks		●	
						Street lighting at night	●		
Economic dimension									
Economics of construction and building: cost savings in construction.	Method of grouping housing units			●	Providing job opportunities for the population	Extent of providing alternative job opportunities for local labor after development	●		
	Use of a standardized module for unit repetition and quick implementation			●		Availability of factories, institutions, or commercial establishments		●	
	Standardization of construction elements (doors, windows, finishes, etc.)			●		Availability of work-from-home opportunities	●		
	Use of low-cost finishing materials			●		Skill development for residents to create new job opportunities		●	
Economic efficiency / Economic return of the project	Provision of economic resources for the sustainability of maintenance and preservation returns		●		Choosing a suitable economic location.	Connectivity of the site to service areas and its link to main road networks			●
	Recovery of the costs of establishing the new area		●			Distance of the resettlement area from the original areas of the residents		●	
income	Determining housing costs based on the average income of families in the area	●			Support and financing systems for the project.	State support in contributing to the provision of project land			●
	Ability to continuously pay installments for the housing unit	●				State contribution to providing utilities, services, and infrastructure			●
	Residents' ability to cover maintenance, utilities, and service expenses		●			Facilitating access to housing units through easy methods		●	
Institutional dimension									
Local administration	The presence of an organizational structure that ensures continuous oversight to maintain the area and monitor the maintenance process							●	
	The existence of an executive mechanism to prevent encroachments on the area.								●
	The existence of a mechanism to identify beneficiaries to ensure that units reach those who deserve them							●	

The researcher, with reference to [7], [27].

Urban Dimension:

- The land use index in the area does not accurately reflect reality, as not all commercial shops have been sold and operated, and many service buildings, such as hospitals, are missing; thus, this index represents a theoretical reality that is disconnected from the truth.

- There is no distinction in architectural character from one phase to another, as the buildings are repetitively designed in a standardized manner without differentiation, resulting in monotony and a lack of visual distinction.

- The facade designs do not convey a specific architectural character and lack aesthetic appeal.

- The project aimed to provide adequate spaces and relationships in the design of urban areas between the buildings; however, there are no coordinating elements present.

- The project stakeholder provides good spaces and relationships in the design of urban areas between buildings; however, there are insufficient site coordination elements such as benches, shaded areas, and plant elements, resulting in residents not utilizing these squares.

- The plant elements in site coordination consist of a group of trees distributed along movement paths and green areas situated among urban clusters; however, the current situation is characterized by some deterioration. Additionally, asphalt has been used on the streets in wide widths, significantly affecting the temperature increase.

- There are plenty of parking spaces available, but the decline in car ownership among the project's beneficiaries has not been taken into account, leading to the need to direct these areas to other uses according to planning rates.

Environmental Dimension:

- The stability of the horizontal projections of the buildings and the lack of orientation for each space according to its use, along with the orthogonal grid planning of the streets, results in a larger amount of solar radiation being received.

- There are no treatments on the architectural facades of the buildings to allow for shadow formation.

- Traditional materials have been used in construction, causing many negative changes that affect the environmental system.

- The project lacks a waste management and recycling system.

- Traditional energy sources are available in the project, natural gas is accessible on site, and there is a good sewage network in the neighborhood. The roads and streets of the neighborhood are paved due to the site's recent development; however, there is a noticeable break in the levels of the sidewalks due to the nature of the land on which the project is built.

Social Dimension:

- The distance to the central market in the neighborhood forces residents to use transportation to purchase their daily needs, increasing household expenses. The payment system for the infrastructure networks using recharge cards is not suitable for the residents. Due to the lack of flexibility, unlike the traditional system that allows residents to postpone payments until their financial situation stabilizes.

- The project provided a single residential unit, leaving no room for adjustments to meet the residents' needs.

- The project failed to consider providing new job opportunities for residents, and there are restrictions on any activities they engage in, whether inside or outside their homes. Residents also do not benefit from facilitated loans and face difficulties in obtaining them due to the nature of their freelance work, along with the absence of repayment guarantees.

- Personal interviews revealed that residents did not participate in the development project in any capacity.

- The majority of families lack security of tenure, as they obtained the units through a lease-to-own system, paying rent for a specified period after which ownership is transferred to them. However, they are not permitted to dispose of the units until the full installments are paid, and most residents struggle to afford the rent, causing anxiety about their housing security.

- The presence of gates at the boundaries of the area and the prohibition of street vendors from entering have resulted in the isolation of residents from their surroundings.

- There are no benches or shaded areas for resting in the spaces between the buildings. Additionally, residents do not know each other due to the diversity of the areas they come from and their reluctance to interact, leading to a lack of community integration.
- Security is provided on-site with a police station within the neighborhood and the constant presence of police patrols, despite occasional minor incidents of apartment theft and fights among youth in the area, particularly between those from different regions.

Economic Aspect:

- The majority of residents have lost their jobs and have not found alternative employment in the neighborhood, while monthly expenses for families have increased significantly. Residents reported the high costs of monthly rent, water, electricity, utility bills, and maintenance, and their inability to pay them regularly.
- A significant number of shops were established; however, they did not improve the economic situation of the residents due to their high prices.
- The study revealed that women were adversely affected by the authorities' prohibition on establishing any small projects outside the home to help improve family income.

Institutional Dimension:

- There are strict monitoring and maintenance agencies for the area, but their role is limited to preventing encroachments or violations, which contradicts the concept of oversight and the flexibility needed to implement changes that could enhance the residents' situation.

9- Interpretation of Results and Discussion

- The emphasis on the urban dimension, while neglecting other human aspects, led to residents' dissatisfaction with their new lives.
- Residents of the Bashayer Al-Kheir area, as indicated by the sample, share common values and culture rooted in complete belonging and loyalty to their area of origin, along with strong social ties developed over many years, which makes it difficult for them to adapt to residents of other areas since they were not segregated in their housing arrangements.
- Furthermore, being deprived of most government services (health- water- electricity), they believe they are not obligated to pay for these services; thus, life in the informal area, from their perspective, is considered easy, simple, and inexpensive given their circumstances, which diminishes their acceptance of the new housing area.
- Some residents expressed that they do not feel a sense of belonging to the area, citing a lack of safety in their residence, and they no longer have work or a source of income, despite having these in their previous places of residence. In addition to their close social ties to their original residences, which heightens their sense of alienation, many residents live in constant fear of losing their housing units and the lack of available shelter.
- Even though some residents prefer to remain in the housing units provided by the government, they continue to live their lives in nearly the same way they did in their original areas, where the values of informal settlements have become a fundamental part of their identity.

10- Study Recommendations:

- Future resettlement projects should not separate financial and architectural considerations from the social and economic aspects of the residents. The development process should address all dimensions of sustainability rather than primarily focusing on the architectural aspect.
- Investment should be directed towards the social segment of the population to ensure the sustainability of new cities after residents from informal settlements relocate there, preventing these new areas from becoming informal settlements over time. Therefore, efforts should concentrate on three key areas: enhancing the living conditions of informal settlement residents, preserving the architectural environment, and fostering their sense of belonging while promoting and maintaining positive behaviors among the residents. The main areas of investment should include: prioritizing education and cultural development for residents, addressing economic needs by providing suitable job opportunities through workshops, factories, and small projects, and finally focusing on the architectural environment by educating residents on how to engage with and improve buildings, as well as facilitating organic growth in housing guided by specialists that aligns with the residents' needs and capabilities. [29].

Fig (12) imagine with artificial intelligence how to uplift informal settlements by investing in the social sector for 25 years. source [29]

Economic Aspects

- Enhancing residents' income levels to meet their living needs, the necessity of establishing a workshop and small industries area that provides job opportunities for residents and achieves elements of economic sustainability before housing begins.
- It is possible to utilize skilled labor in the area during the execution and finishing processes, helping them to improve their income and enhancing their sense of belonging through participation in the area's development.

Cultural and Social Aspects

- Providing open spaces and playgrounds outside the boundaries of clubs that require subscription fees and have specific conditions.
- Focusing on women's and children's services and health awareness by establishing a maternity and childhood center, contributing to the improvement of community culture.
- Emphasizing the establishment of cultural centers to raise cultural awareness among residents, particularly the youth.

Urban Aspects

- Conducting ongoing and periodic studies on improvements based on experiences and projects carried out in this field, while benefiting from the experiences of Arab and foreign countries and adapting them to align with the culture and nature of the region.
- Activating community participation elements and involving residents of informal areas during studies or implementation.
- Community involvement in construction provides them with experience, aiding in the maintenance and future expansion of the project.
- It is essential to involve the private sector and encourage initiatives and grassroots efforts in developing the informal area to contribute to financing.
- All basic services must be provided in resettlement areas prior to relocating residents.
- The diversity in housing types and sizes is one reason residents prefer informal housing areas.
- Offering unconventional, dynamic, and diverse designs for residential units, with a connection between the shapes of the units, contributes to the guidance of the specialized architect responsible for the project Where the unit areas can be made tiered and capable of growth
- The balance in the degree of diversity in land uses; the mixed land use pattern is the most effective, and the distribution of commercial activities follows a strip pattern along the main pedestrian movement corridors.
- The compact building design is more suitable for low-income groups as it facilitates easy pedestrian access between different activities.

- The design of the movement network should prioritize pedestrian flow, ensuring a network of safe and comfortable pathways for pedestrians, while also enhancing local social connectivity, as opportunities for interactions among residents increase in local streets.

- Establishing mechanisms for maintenance and follow-up post-occupancy to achieve sustainability elements.

11- conclusion

The success of new cities is largely tied to their competitiveness with existing cities and their ability to present themselves in a more attractive and efficient manner. The problem of informal settlements extends beyond housing; it fundamentally concerns individuals who lack the capabilities and resources to access better options for housing, employment, and participation in community development. This highlights the close relationship between urban development and human development—human security. It is one of the key factors for the success of implementing the policy of redeveloping informal housing areas, necessitating the study and analysis of diverse population needs during the design and implementation processes. This approach aids in providing a more successful and innovative urban design for the area targeted for development. Redevelopment projects should aim to enhance the quality of life for residents in informal settlements, rather than merely providing housing.

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