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SUMMARY OF REVIEWERS COMMENTS

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| Originality: Good | Technical Quality: Accept | Significance: Accept |
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**Overall Rating:** Accept

**Technical Comments Summary:** Paper is well written. Authors have analyzed the situation in Alexendria. Authors have figured out the problems in the city and identified the work required for transformation. Authors have taken up the case study of German city and got knowledge from there. Authors have proposed the stages involved in this transformation process. Plagiarism report also attached. IJENS Support Staff did initial formatting on behalf of authors so that author(s) can revise their paper easily and send revised formatted paper. Also IJENS Support Staff provide services to improve remaining errors (including formatting errors) on behalf of authors before publication. Overall the paper is accepted for publication in coming issue of journal.

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FURTHER DETAILS ON PAGE 2

# Toward A Paradigm in Managing Sustainable Urban Transition for the Egyptian Cities

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***Abstract*-- The research study aims to present and elaborate a proposed paradigm for managing the sustainable transition of Egyptian cities, so that it is suitable to deal with and apply to most existing and new urban communities, with a view to converting them into sustainable environmental cities and communities, by working to develop a future vision for the sustainable image that the city will reach, dependent on Scientific foundations and an understanding of the problems these regions suffer from, to explain sustainability strategies in light of the general data for these areas and the current and future needs of the population and the available capabilities.**

**The proposed paradigm for sustainable transformation management includes (10) main stages and (25) sub-stages, which in turn are divided into a number of procedures and processes amounting to about (100) executive procedures**

***Index Term*-- Paradigm, Managing, Sustainable Transition, Sustainable city, Egyptian Cities**

## 1. INTRODUCTION

Cities and local governments have become more important players on the frontline of sustainable development, inviting them to play a major role in coordinating and institutionalizing initiatives related to major transformations such as urbanization, climate change, disaster risk and resilience, and as a result it is clear to us the importance of managing transformation as an approach to managing urban sustainability transitions, Creating the desired changes for the structural and societal transformations, in addition to the possibility of applying them to a variety of political domains on the regional and urban scales, so finding the right methods to take advantage of the potential of cities Managing directing its development paths towards sustainability and resilience is extremely important.

Managing urban sustainability transitions requires integration with strategic urban planning processes in order to integrate diverse sources of knowledge and perspectives, while linking the links between local urban challenges and broader global, national and regional developments.

Managing sustainable urban transition in a nutshell, is a new method developed by the researcher to deal with the ongoing problems and risks facing cities that will be clarified later, the basic argument is that these problems are strongly rooted in the structure of our community systems themselves, which means that marginal changes (i.e. improving procedures or solutions Temporary) cannot be effective and will lead to suboptimal results. Therefore, managing sustainable transformation calls for fundamental change that is transformation, in order to address the root causes of persistent problems rather than their symptoms. However, the approach is not just about management, but more than that in influencing transitions by creating spaces for research, learning and experimentation. Through this process, transactions can be influenced, supported and accelerated by playing in current dynamics.

### *1.1. Concept of the Sustainable urban transition*

## 2. SUSTAINABILITY URBAN TRANSITION

### *2.1. Theory of sustainable transition*

A sustainable transition is a "radical transformation towards a sustainable society, as a response to a number of persistent problems confronting contemporary modern societies. [1] The process of change during a transition is highly non-linear within which slow change is followed by rapid change when things reinforce each other which is again followed by fl

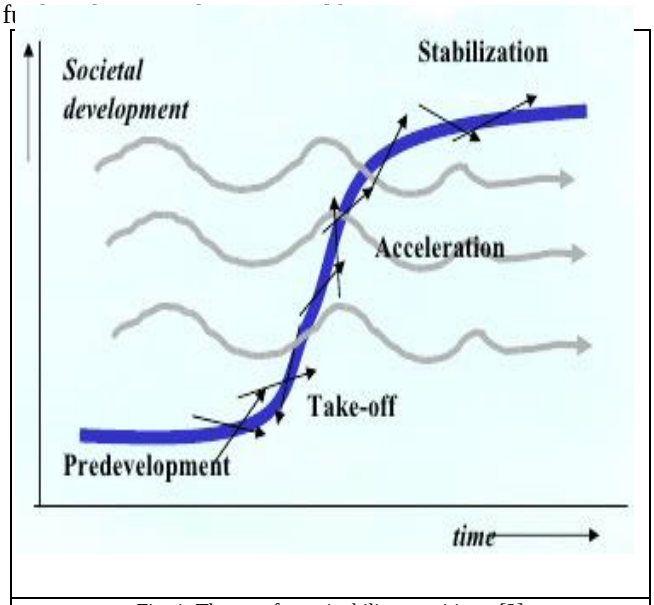


Fig. 1. Theory of sustainability transitions. [2]

The figure (1) clarifies the four phases of a transition.

The y-axis is an appropriate indicator of the system's change, and the x-axis is time. Transition pathways in analyzing transitions, it is useful to have a differentiated concept of transitions by 'type'. Though the transition theory is characterized by non-linear behavior and interplay of diverse forces that once fought with each other and then converge at a later stage, the process itself is a gradual one with different stages. Four phases are distinguished, represented by an S-shape curve. The nature and speed of change differ in each of the transition stages [2]: predevelopment phase, take-off phase, acceleration phase and stabilization phase.

It is essential to separate between sustainable urban development and Sustainable urban transition. sustainable urban development as follows: "A procedure of synergistic combination and co-development among incredible subsystems making up a city (financial, social, physical and ecological), which ensures the neighborhood populace a non-diminishing degree of prosperity in the long haul, without trading off the conceivable outcomes of improvement of encompassing territories and contributing by this towards lessening the destructive impacts of improvement on the biosphere." The sustainable urban transition (SUT) is a complex process within the specific period that processes are accumulative process from old urban system to the new urban system. It is a dynamic and evolutionary process that involves a variety of actors, such as decision-makers, investors, managers, planners, citizens. The old urban system refers to an urban equilibrium, current or original state of a city. The new urban system refers to a more sustainable urban equilibrium, planned or targeted state of a city. The new system is an innovation beyond the old one, targeting at sustainability. [3]

Feasible urban change puts a more grounded accentuation on auxiliary change forms, both multi-dimensional and radical change, which can successfully coordinate urban advancement towards supportability. Set forth plainly, manageable urban advancement is essentially about improvement in urban territories while feasible urban change is about improvement or change of urban regions.

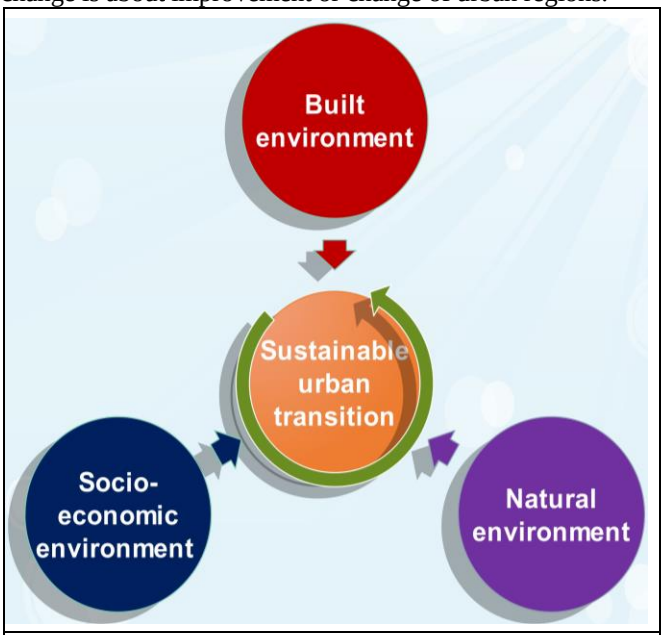


Fig. 2. Sustainable urban transition is based on a balance between three subsystems. [Researcher]

The sustainable urban transition is based on a balance between three subsystems (see Fig. 2): the built environment, the natural environment and the socio-economic environment (constituting human well-being). The built environment refers to the physical and spatial dimension of the city, which is the surrounding man-made environment that provides settings for human activity, starting with Buildings and infrastructure. The natural environment simply refers to the environment (i.e. natural resources, ecosystems, etc.), whose resources are consumed by the city. The socio-economic environment refers to the economic (cultural) dimension of a city that has an impact on the built and natural environment. [4&5].

## 3. SUSTAINABILITY TRANSITION MANAGEMENT

### 3.1. *Concept of sustainability transition management*

Sustainability transition management is a governance approach for strategic environmental planning that can bring together multiple change agents (frontrunners) and mediating innovative solutions to planning processes. [6].

Kemp and Loorbach define transition management as a mathematical equation: transition management = existing policies + long term vision + vertical and horizontal coordination of policies + portfolio-management + process management". This short and concise mathematical illustration is a good description of the core elements of the transition management approach. [7].

The transition management approach proposes seventh principles for influencing transitions: [8&9].

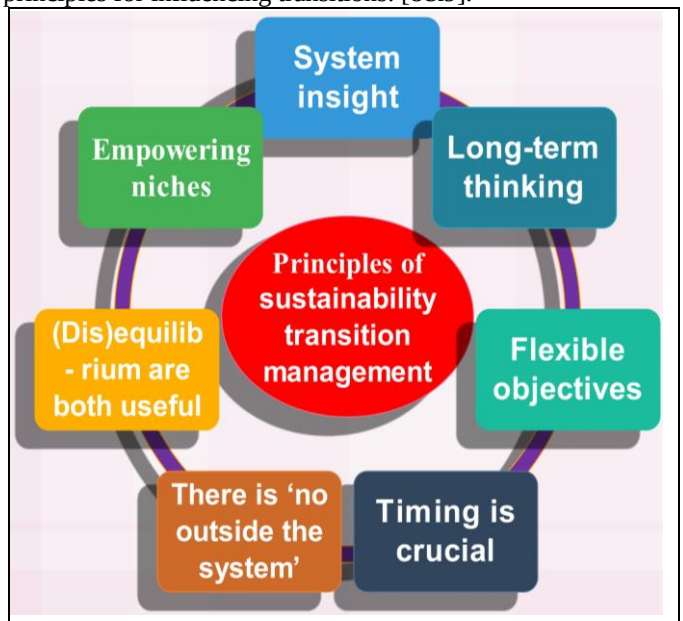


Fig. 3. Principles of sustainability transition management. [Researcher adapted from 7]

1) System insight: It is essential to understand how a sys- tem works to effectively influence it in a sustainable direction.

2) Long-term thinking: Radical societal change unfolds over a minimum of 25 years. [10]

3) Flexible objectives: Societal systems are complex, and rigid blueprints cannot offer adequate directions.

4) Timing is crucial: Crises offer possibilities for immediate and effective interventions, as they can help to overcome system inertia.

5) There is 'no outside the system: It is not possible to influence a system from the outside.

6) (Dis) equilibrium are both useful: Both equilibrium and disequilibrium offer opportunities for influencing a complex system in a desirable direction.

7) Empowering niches: Agents need space to innovate, without the pressure of existing socio- economic structures.

### 3.2. *Phases of transition governance process*

The procedure strategy recognizes the various sorts of intercessions that urban arrangement creators may use to impact the fate of their city. It at that point traces the different change the executive's instruments accessible for every one of the more broad sorts of mediation (see Figure 4). [11&12].

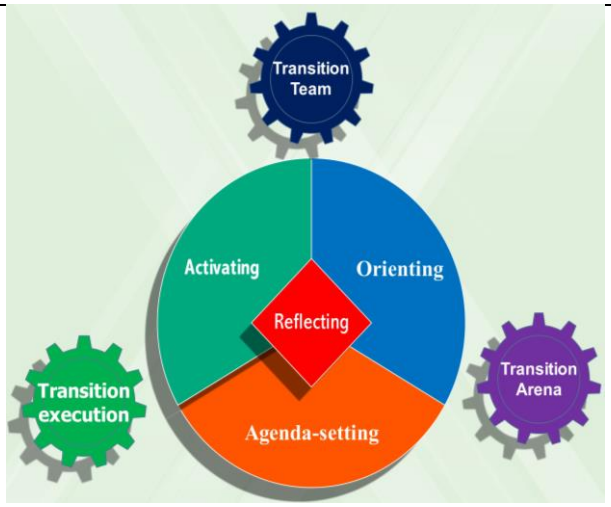


Fig. 4. Framework of transition management process. [Researcher adapted from 12]

1/Interventions planned for coordinating the attention on the city's position versus social and civil improvements opposite different entertainers after some time.
2/Interventions planned for setting a motivation concentrated on strategic management exercises regarding coordinating different motivation and rehearses and making a feeling of shared possession and desire for a supportable future.
3/Activating mediations that attention on practices, ventures and encounters. Progress the board devices incorporate advances.
4/Finally, keen intercessions remember a concentration for supporting and empowering network learning forms through both experience and information sharing. Transitional administration instruments incorporate change, checking and assessment encounters.
The process methodology divides the intervention process into a number of phases, namely [13&14].: (1) setting the scene for transition management, (2) exploring local dynamics, (3) framing the transition challenge, (4) envisioning a sustainable city,(5) reconnecting long term and short term, (6) engaging and anchoring, and (7) getting into action. These stages thus are identified with various settings or on-screen characters that cultivate cooperation and spotlight on the rise of elective thoughts, practices, and social relations; all things considered, it is a well-suited procedure for the predevelopment period of changes. The transition team, the transition arena, and the transition execution (see Fig. 4) can be considered as on-screen characters and settings at the same time.

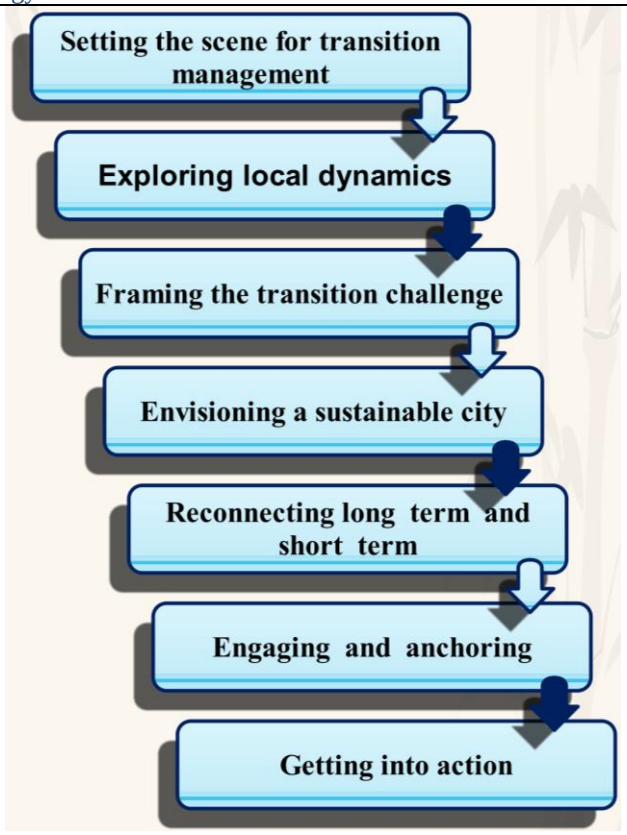


Fig. 5. Phases of transition governance approach. [Researcher adapted from 13&14]

3.3. *A German Experience: Transition Management in Ludwigsburg*

3.3.1. *Sustainability transition process*

1) A transformation team has been established that will implement the transformation management process and consist of two (DSUD) departments in addition to (the head of the Civil Engagement Section - Transition Stages Expert - external official). [15]
2) Ludwigsburg municipality conducted a workshop to analyze internal systems while conducting (30) interviews with local representatives, then at the first participatory meeting held in November 2011 AD, the project transition team and its goals were presented to all interviewees (citizens - men). Business - Professionals).
3) After the inaugural meeting, arena process took place between March and September 2012, with six meetings in which at least 10 people with diverse interests and backgrounds participated in sustainability, then in the first four meetings, the group developed a sustainable city vision in 2050 CE.
4) Through wide-ranging exercises, transition arena developed 21 areas of sustainability, then the vision and the *resulting agenda were presented, discussed and developed* with other actors in the city. [15]
5) The municipality and arena members called for a wide range of participants for the transformation events. The first meeting, the energy roundtable, was to revive the previous participation tool, with the aim of providing a vision and further development and consolidation of tracks, in addition

to reaching and involving new parties, and this was also done through The "Future Conference" where energy was discussed as one of the areas of sustainability, and the last meeting in February 2013 was the Opportunity Market, which was aimed at formulating concrete projects.

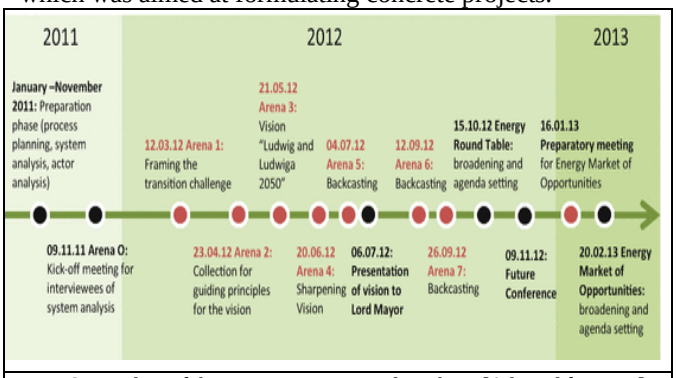


Fig. 6. Timeline of the arena process in Ludwigsburg [Adapted from. 15]

3.3.2. *Experience outcomes*

1) The administration's ambition was to collectively involve the city in promoting the energy revolution through the process of managing transformation, the vision and paths of transformation were presented in July 2012, and the city council was informed through the existing channels, which were the main link between the square and formal decision-making processes.

2) During the energy opportunity market, the "Local Energy Transition" working group was formed, which consisted of some members of the First Arena Group and some interested members. In the fall of 2013, a Sustainability Exhibition was held that focused on energy transformation and sustainable urbanization.

3) The great learning of the members of the transformation team also translated into a structural change within the administration, through the establishment of an inter-ministerial working group for energy, and the participants evaluated the process as an opportunity for active participation, developing new connections, and obtaining insights on the issues most related to the Ludwigsburg sustainability.

4) Ludwigsburg combined the process of managing transformation with the ongoing participatory processes, and the energy revolution in particular, and by focusing on energy the process increased the attention it received; it enabled the local community to communicate, obtain information and develop knowledge about this by mixing it in a concept process Urban development, which is linked to the formal decision-making process.

## 4. CHALLENGES OF SUSTAINABILITY TRANSITIONS OF EGYPTIAN CITIES

### *4.1. Context*

Egypt and its urban communities have experienced numerous political, social and financial changes since the 1952 unrest, going from political emergencies and the toppling of two presidents in the course of the most recent couple of years to auxiliary monetary shortcomings. As indicated by the national report, the primary difficulties Egypt faces today are the ever-developing urban populace, high supremacy and spatial grouping of populace in huge urban areas, for example, Cairo and Alexandria and the expanding youth populace [16].

Another test is the support of a harmony among urban communities and uninhabited territories, which speak to 94% of Egypt's all out land. A parity additionally should be kept up between the measures of urban communities. In spite of the all-out increment in the quantity of urban areas from 188 out of 1986 to 231 of every 2014, there is still irregularity in the dispersion of urban areas of various sizes. The nation's populace is still intensely packed in a couple of enormous urban areas. Egypt has manufactured new urban areas in the desert, however these new urban communities couldn't pull in the objective populace of 8.5 million occupants. In over 40 years they have just pulled in 1.5 million occupants, 17.6% of the objective [16].

The disappointment of the neoliberal monetary approach to create evenhanded financial advancement has been a test for urban communities. Social disparities, urban spread, the spread of casual territories and the casual economy and the absence of sufficient administrations and framework are far reaching. The greater part of the urban development has happened on horticultural land. Around 700,000 feddans of excellent farming terrains have been lost to urbanization. Every one of these issues consolidated caused the disintegration of both the urban and the provincial condition. The absence of good administration, centralization of dynamic and the absence of resident interest added to these issues in no minor manner Empty private units are another squeezing urban issue. There is a relationship between's the three financial marvels of joblessness, prohibition and the high level of empty lodging units from one perspective and distress in the nation on the other. Contrasted with the quantity of families, a lot a larger number of units have been worked in Egypt than is required. The quantity of empty units rose somewhere in the range of 2006 and 2017 from around 8 million to 13 million units and their costs have multiplied. Spain saw a comparative wonder when 7 million units were worked somewhere in the range of 2001 and 2009, while the populace expanded by just 5.2 million. As lodging units are as a rule for families and along these lines more than one individual this brought about 3–6 million empty units. However lodging costs dramatically increased during this period, making it excessively expensive for some and causing hardship for contract holders once lodging costs amended after 2009 [17]. This features the significance of governments' undertakings to discover better approaches to quantify the achievement of their improvement plans, arrangements and projects so as to distinguish issues before resident's rampage to make their voices heard.

### 4.2. *Sustainability transitions issues*

The main issues facing Egyptian cities transitions into sustainability can be grouped into four groups. [17] :( See Figure 8)

A) Urban dominated threats:

It means risks and issues that threaten the built environment (or built environment) and includes the following:

- The spread of dangerous areas, slums, and encroachment on agricultural lands

- Urban deterioration of the old areas.
- Urban sprawl and unorganized expansion in suburban areas.
- Urban depression represented by the lack of cities in the distinct urban jobs and urban attractions.
- Poor state of infrastructure networks such as networks (roads, streets, water, sewage, etc.)

B) Social dominated threats:

- Poverty, social conflicts, lack of social justice and increased crime rates
- Population mobility and rural-to-urban migration that overwhelms the ability of cities to provide basic services.
- The absence of a social dimension in the development of cities, in addition to the lack and low efficiency of social services
- The deterioration of the standard of living of the population and its consequent lack of educational and health quality.

C) Environmental dominated threats:

- Pollution from industrial production, urban waste and emissions (air and water pollution) with climate change.
- Lack of access to environmental services and infrastructure (water and sanitation, waste collection, transportation)
- The degradation of various natural resources.

D) Economic dominated threats:

- Excessive consumption of resources and energy (the high use of those renewable resources that can only be renewed within limited limits. Limits, and high use of non-renewable resources)
- Development needs constrain economic capabilities and local resources.
- Unsustainable production and consumption patterns

E) Other threats:

- Technology issues, this group has the following challenges (using outdated and inappropriate technologies - resettling technology polluting the environment in developing countries - difficulties in transferring modern and clean technology)
- Management and political issues, this group focuses on the following main issues (ineffective institutional and organizational frameworks - not possible legal and legislative frameworks - administrative centralization)
- Awareness issues, knowledge and culture, this group focuses on three prominent challenges: (challenges of lack of awareness and values - challenges of vision and change - challenging the lack of decision-making tools).

The researcher will address the problems of the Sustainability transition of Alexandria as one of the major Egyptian cities.

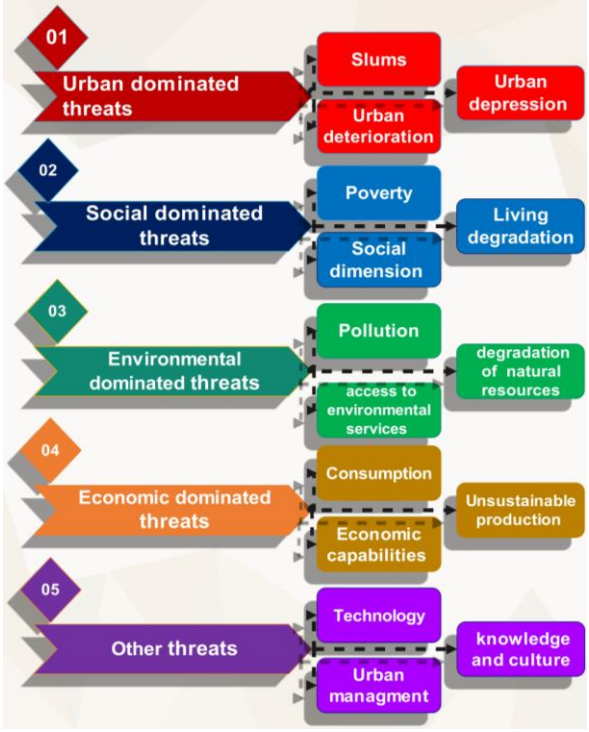


Fig. 7. Timeline of the arena process in Ludwigsburg [Adapted from. 17]

### 4.3. *Sustainability transition of Alexandria city*

#### 4.3.1. *Relative Importance of Alexandria city*

1-Alexandria is a unique city among the coastal cities of the world, and it is unique from all of it as one of the oldest cities, and its first nucleus is a stagnant village, then Alexander founded the city after that in 321 BC, and the heart of Alexandria is considered one of the most important areas of Alexandria, as it is the center of gravity that crystallizes around it. The city, the vibrant heart of the city. [18]

2-The heritage and historical importance of the region, where we see in it the depth of the past and the originality of the present, by including sites Of values that express the spirit of the city and its social depth. [18]

3-Alexandria is the second city in the Republic in terms of population, and the total population is reached in 2019, about 5,182,000 million people are distinguished by a high potential for internal and external tourism. [19]

4- It is one of the most important ports in the Mediterranean Sea, where about 64% of commercial activities pass through Egypt through its ports.

5-It represents the second development pole at the level of the Republic for the diversification of economic activities in terms of production, services and industrial.

6- The industrial activity in Alexandria represents about 40% of the total industrial activity at the level of the Republic, as it is carried out by many important industries.

7-Alexandria is linked to the governorates of the regions (Greater Cairo, Delta, and Alexandria) through a group of regional roads. [20]


Fig. 8. Map of the current Alexandria, showing city center [Adapted from. 20]

4.3.2. *Barriers of Sustainability transition in Alexandria*

1-The city of Alexandria suffers from slums, as more than 50% of the city's population lives in unplanned areas, and there are (13) insecure areas that require the provision of 7900 housing units, in addition to demolishing the supply of housing.

2- The poor condition of the urban bloc in most of its old and new neighborhoods, neglecting development in the old areas

3- Poor distribution and lack of services, especially educational and health services, which is evident in Al-Montazah and Sharq neighborhoods

4- Overlapping land uses and inappropriate installation, and opposing residential and industrial uses, and the negative environmental impacts that result.

5- Spread of random growth adjacent to the main urban blocks.

6- Increased rates of air, water and soil pollution as a result of industrial drainage in Lake Mariout, as well as increased noise levels and vehicle and factory exhausts.

7- Increased traffic problems resulting from the penetration of the regional traffic of the residential block, and the resulting overlapping of local and regional transport traffic, in addition to weak direct communication between the east and west of the city

8-High rise of buildings, especially overlooking the sea, and its impact on the rise in population and building densities.

9- Inability of facilities and roads to absorb unplanned increases and population densities.

10-The deterioration of the elements of domestic and foreign tourism, such as beaches, heritage areas, and those of value.

11-The main problems of the institutional structure of the Alexandria Governorate are concentrated in several elements, including: centralization of management and government control of the final priorities of the planning process as the governorate plans grow locally but are completed and centralized, which causes centralization and absolute control of the government that depends on the financing of projects, and this control represents restrictions on the status of Planning decisions during the formation of the urban development strategy in the governorate


Fig. 9. Map of Distribution of Slums Area in Urban Space of Alexandria [Adapted from. 21]

Fig. 10. Lack of solid waste management in Alexandria [22]

## 5. NEW APPROACH FOR MANAGING CITIES TRANSITIONS TOWARD SUSTAINABILITY

In this article, we present a proposed approach to managing the sustainable transition of Egyptian cities, so that they are suitable to deal with and apply to most existing and new urban societies, with a view to transforming them into sustainable l cities and communities, by working to develop a future vision for the sustainable image that the city will attain, based on scientific foundations Well thought out and understanding of the problems these regions suffer from, to explain sustainability strategies in light of the general data for these areas and the current and future needs of the population and the available capabilities. Our new approach consists of ten main consequent stages of operations and are linked to each other, where the subsequent stage is based on the data of the previous stage, and the success of the previous stage has a positive impact on the success of the next stage and vice versa. (See Table I and Fig.11)

Table I
Overview of proposed paradigm process phases [Researcher]

| Main stages | Sub-stages | Executive procedures |
|---|---|---|
| 1- Preparation and identification of stakeholders | Identify the actors | 1. Political commitment |
| | | 2. Measure the readiness |
| | | 3. Appointing the strategic coordinator and forming the work teams |
| | | 4. Identify stakeholders (development partners) |
| | | 5. Developing an initial communication strategy and designing an advertising campaign |
| | local institutional evaluation | 6. Evaluating the strategic plans being implemented |
| | | 7. Analysis of the institutional environment and local administrations. |
| | | 8. Analyze government structures, processes and capacities |
| | | 9. Evaluating the urban development projects underway |
| | | 10. Evaluate the mobilization of local resources, budget and financing |
| | Design of transition plan | 11. Clarify roles and output plan |
| | | 12. Agree on the operational rules and work plan |
| | | 13. Review planning systems and legislative frameworks |
| | | 14. Plan and approve the time schedule |
| 2-Diagnose the current situation and analyze the actors | Establishing a participatory development process | 15. Actors (Partners) Analysis |
| | | 16. Make strategic decisions with stakeholders |
| | | 17. Building awareness |
| | Study of environmental impact assessment | 18. Environmental examination |
| | | 19. Scoping |
| | | 20. Preparing the environmental report |
| | | 21. Publication of the environmental report |
| | | 22. Environmental decision-making |
| | Analysis of the city's current situation | 23. Collection the transition team |
| | | 24. Review the data sources and prepare the research process |
| | | 25. Strategic context analysis |
| | | 26. Analysis of the main driving forces of the city transformation |
| | | 27. Analysis of indicators of the sustainable transformation of the city |
| | | 28. Analysis of locally selected priority sectors and topics |
| | | 29. Consultation on the results of compiling studies and analyzing the current situation |
| 3-Identify problems and issues | Identify issues and sustainability barriers | 30. Identify urban issues |
| | | 31. Define social issues |
| | | 32. Identify environmental issues |
| | | 33. Identify economic issues |
| | | 34. Defining the institutional framework issues |
| | | 35. Identify other issues |
| | SWOT analysis | 36. Determine the ingredients and capabilities |
| | | 37. Identify weaknesses, strengths, opportunities and risks |
| | | 38. Draw a sustainable transformation pathway |
| | | 39. Consensus on the results of SWOT analysis |
| 4-Preparing the future vision of sustainable city | Designing vision and transition mechanisms | 40. Design the future vision |
| | | 41. Formulating the transition mechanisms of city and build vision harmony |
| | Setting strategic goals and objectives | 42. Set long-term goals for the city transition |
| | | 43. Develop the strategic goals |
| 5- Building strategic plans to transition into a sustainable city | Establishing a sustainable transformation strategy framework | 44. Transforming vision and goals into strategic options |
| | | 45. Design the general framework of the sustainable city strategy |
| | | 46. Clarify the political and legal framework |
| | | 47. Setting project priorities and timetable |
| | | 48. Emphasize consensus on setting implementation priorities |
| | Preparing strategic plans for the development sectors | 49. Developing strategic plans for the development sectors |
| | | 50. Preparing project alternatives and their cost |
| | | 51. Final evaluation of projects and choosing the best alternative |
| | | 52. Consensus on the strategic plans of the development sectors |

| | | |
|---|---|---|
| | | 53. Activating planning decisions for the development sectors |
| | | 54. Converting the developmental sector plans into primary projects |
| | Preparing immediate action plans for development sector projects | 55. Set medium and short-term goals for each development sector |
| | | 56. Establishing immediate action plans for the different development sectors |
| | | 57. Prepare detailed designs for the selected projects |
| | | 58. Coordination between different sector plans and ensuring integration to achieve the goals of a sustainable transformation strategy |
| | Planning funding for sustainable transformation projects | 59. Determine the time frames, financial obligations and human resources needed to implement the selected projects |
| | | 60. Evaluating financial sustainability and assessing creditworthiness |
| | | 61. Determine investment priorities and financing structure |
| 6-Implementation of the transition strategy | Mobilization for implementation the selected projects | 62. Distribution of tasks and responsibilities among the professional departments |
| | | 63. Building partnerships for implementation with actors |
| | | 64. Conduct a number of pilot projects / activities |
| | | 65. Disseminating information about the project and raising awareness about it |
| | Planning project implementation mechanisms | 66. Directing project activities |
| | | 67. Establish a management plan for the implementation schedule |
| | | 68. Develop a cost management plan |
| | | 69. Prepare a quality management plan |
| | | 70. Preparing the project resource management plan |
| | | 71. Develop a project risk management plan |
| | Create a coordination group for implementation work | 72. Coordination of implementation work for immediate action plans |
| | | 73. Supervise the working groups during implementation |
| | | 74. Submit periodic reports to the responsible authorities |
| | Starting transition implementation | 75. Executing all the works shown in the immediate work plans |
| | | 76. The distribution of roles for the business transition team |
| 7- Participation of additional parties and the development of the advertising campaign | Participation of the additional parties | 77. Determine the additional parties |
| | | 78. Review strategies with stakeholders |
| | | 79. Establish networks to transform cities at the national and international levels |
| | Development of the advertising and communication campaign | 80. Preparing a marketing and communication strategy |
| | | 81. Preparing the publication of sustainable city reports and brochures |
| | | 82. Registration in sustainable city systems and indicators |
| 8- Monitoring and documenting data | Development of monitoring mechanisms | 83. Developing advanced systems for documenting monitoring and accounting processes |
| | | 84. Activating environmental monitoring mechanisms |
| | | 85. Writing successful academic cases |
| | | 86. Preparing brochures, pamphlets and periodicals to be published |
| | Notarization and data gathering | 87. Data analysis and information management |
| | | 88. Provide leadership in data exchange |
| | | 89. Evaluate future data acquisition and potential |
| | | 90. Update the indicators of sustainable transformation and monitoring systems |
| | | 91. Integration of data management systems |
| 9- Evaluation, learning and Corrective feedback | Incorporation of monitoring and evaluation mechanisms | 92. Incorporation of follow-up and evaluation mechanisms within the organizational structure |
| | | 93. Linking monitoring and evaluation mechanisms to information centers |
| | Establishing participatory learning mechanisms | 94. Preparing a participatory learning strategy |
| | | 95. Create mechanisms for participatory learning |
| | Establishing feedback mechanisms | 96. Establishing information bases for the coordination body |
| | | 97. Benefiting from documentation processes in future projects |
| 10- Adjust, modification and prepare for the second round | | 98. Review trans transition policies and strategies |
| | | 99. Adjust and modification |
| | | 100. Setup the next round of the transition path |


Fig. 11. Main stages and sub stages of managing sustainable urban transition for the Egyptian cites [Researcher]

5.1. *First stage. Preparation and identification of stakeholders*

The first stage includes procedures for identifying actors, local institutional evaluation, and developing a preliminary plan for the process.

- *Procedures for identifying actors:*

The first step involves obtaining political commitment from the concerned authorities, in addition to the multi-stakeholder participation, all political parties should support the development of a sustainable transformation strategy for the city to be developed and be prepared to persuade its leadership of the process. To ensure commitment, the researcher suggests spending the first meetings discussing the goals and benefits of turning the target city into a sustainable environmental city, while enriching the expectations and interests of key officials and elected members.

The next step is to gauge the city's willingness to engage in transformation. The transformation strategy may be modified based on the readiness of the city, which includes three characteristics: (Capacity - Resources - Readiness)

There will be different levels of commitment. The first relates to the commitment to support the process (political institutions) and the second relates to the actual implementation of the process. The strategic coordinator will form the work team and assume the role of activating the process. It is important for staff to consist of members with decision-making power. This will give the group legitimacy and foster more efficient business relationships, as issues can be addressed more quickly, and the team will then identify key stakeholders within and outside the city who have an interest and influence in the city's transformation. It is important to do this during the preparatory phase, to ensure that all stakeholders are taken into consideration and to establish a reliable participatory process, stakeholder analysis helps to define the legitimacy, interest, and role of each stakeholder in the cooperation process during the city transformation process, it is important to ensure the involvement of stakeholders from diverse groups Stakeholder analysis will provide important information that the city can use to design a communication strategy and advertising campaign. The interim communications strategy will include a plan of events in which stakeholders participate in the entire process and what is expected of them. The strategy will also contain a budget that includes the resources needed for the process. The outputs of this step include: producing an initial communication strategy and designing a campaign.

- *local institutional evaluation:*

The aim of this sub-stage is to evaluate the institutional and organizational bodies that will participate in managing the transformation process. The strategic coordinator, coordination team and experts will evaluate the planning processes and strategic plans in place, and the team will look closely at the political environment, the legal framework and current policies that will affect the preparation and implementation process Transformation projects. In addition, the team will analyze administrative levels and government units, in addition to evaluating local budget mechanisms and financing systems for transformation projects, as well as the powers of local authorities in resource mobilization, this evaluation will be the basis for a resource mobilization strategy, with a focus on the requirements for sustainable urban transformation stages.

- *Design of transition plan:*

The objectives of this sub-stage are for the city to take the necessary steps to clarify roles and mobilize government agencies (national and local) that will participate in city transformation, and to obtain resources and approvals to start business. The coordination team will use the results of the local institutional evaluation as inputs to clarify the responsibilities of government employees who will work on developing the strategy. This plan will look at ways to maximize the use of resources, reduce duplication of work as much as possible, and by using information from the local institutional evaluation regarding the established local planning system, the team will ensure in the action plan that planning for a sustainable transformation process is consistent with existing legal and legislative systems, including This met the operational rules for the sustainable transition process, budget, and planning of personal forces to the coordinating body for approval.

5.2. *Second stage. Diagnose the current situation of the city:*

This stage contains three steps: Establishing a participatory development process, Study of environmental impact assessment and analysis of the city's current situation.

- *Establishing a participatory development process:*

The goal of this step is to prepare the basic elements of the participatory process that are an integral part of the sustainable transformation process. The strategic coordinator and the team will analyze the actors and plan to engage with them.

Actor analysis plays a vital role throughout the transition management process. This is to determine the actors that can contribute strongly in the stages of the transformation processes, until the outputs (visions and strategy) are published at a later stage. With stakeholders, the team should also organize consultations and awareness building activities to support the strategy development process.

- *Study of environmental impact assessment*

It includes several elements, including the following:

1-Environmental examination: determines whether the project complies with the laws, and also shows the extent of its impact on the environment.

2-Scoping: Defining the scope of the issues to be considered in the assessment, and reporting on them in the environmental declaration

3- Preparing an environmental report: it contains the information required to assess the expected environmental impacts and problems.

4-Publication of the environmental report: The

environmental report can be published in general, and the opportunity to express an opinion to the advisory bodies and the general public in order to develop environmental proposals.

5-Decision-making: is carried out by the Ministry of Environment

- *Analysis of the city's current situation*

The objective of this sub-stage is to conduct a diagnosis of the city, and to evaluate the performance of current standards and trends in the development sectors. The team needs reliable information on city issues so that these issues can be discussed in participatory workshops. Current situation analysis serves as the basis for (SWOT) analysis.

The strategic coordinator and coordination team will need to form a team to do an analysis of the city's rampant conditions. They will likely work with consultants, as the case analysis forms a body of research that requires specific skills. However, it is necessary to form a local government team with which the experts will work.

Understanding the current situation in the city requires an understanding of the external factors that affect the city. The experts and the team will analyze the strategic context: the external environment that affects the city and the general trends, and when assessing local issues, it is important that the city be aware of its sphere of influence, experts and the team need to focus on the factors that the city controls and can affect.

5.3. *Third stage. Analyzing problems and issues:*

The third stage includes 2 steps: Identify issues, sustainability barriers and SWOT analysis

- *Identify issues and sustainability barriers*

The transition team will identify the risks, issues, and obstacles to the sustainability of the city, which include the following, risks and issues: (urban - social - environmental - economic - institutional framework - other issues)

- *SWOT analysis*

The aim of this step is to conduct an analysis of the risks, issues and constraints of the city's sustainability through the analysis (SWOT). The work team can process the current situation analysis data and organize it in a framework that can be used for discussions with stakeholder groups. The outcome of this is an important bridge for the development of strategies and procedures. After analyzing the current situation, the strategic coordinator and task forces will conduct the quadruple analysis, which includes the systematic arrangement of information, and it is important to understand that what constitutes "internal factors" and "external" issues depend on the context, a team The experts then consult with stakeholder groups for different sectors, and in the workshops to get feedback on the issues highlighted. This is important because stakeholders often have a different perspective on problems and solutions. The aim is for the team to obtain clarity on priority issues, and based on the results of the quadruple analysis and from the kiss of analyzing the indicators of sustainable city transformation, the city transformation path will be determined according to the prevailing (social-environmental-economic) milestones.

5.4. *Forth stage. Preparation of the city future vision*

This phase aims to form the basis for aspiring to a sustainable future for the city. It begins at a broad level of vision, then expands on the development of strategic goals, and consists of the following steps:

- *Designing vision and transition mechanisms*

The aim of this sub-stage is to set a sustainable vision for the city in the future to achieve its potential, setting the vision is an important step in creating a point on the horizon that the city's actors can focus on, the expert team will prepare the process of a sustainable city vision and conduct a broad participation with the participation of actors, then is done Then collect the final vision elements and work with the main stakeholders to formulate the proposed mechanisms to transform the city into a sustainable environmental city, and also to obtain support and consensus on focus and vision issues, which include relying on the city's untapped potential to provide Plan future as a city in a sustainable

5.5. *Fifth stage. Building city strategic plans*

The fifth stage consists of the following steps,

- *Establishing a sustainable transformation strategy framework*

The goal is to create a framework for the transformation strategy with a focus on "activating" the vision and goals, and converting them into concrete programs and projects, while defining the budgets and locations associated with spatial plans. The team must now take the vision and goals and convert them into strategic options, i.e. to a set of programs and projects that work Together to achieve the goals of sustainable transformation, the team will also organize consultations with major stakeholder groups to discuss project options and get feedback, where strategic options are translated into a general framework for the transformation strategy with a view to presenting sustainable solutions to Cities through the sustainability axes of the urban, social, environmental, economic and administrative areas of the city .. The transformation team will have to set priorities and choose alternatives, which will require working with a multi-criteria decision-making process for selection. The team and departments will have to design a set of objective criteria for evaluating priority projects, then they will be adopted by various.

- *Preparing strategic plans for the development sectors*

The goal of this sub-stage is to prepare strategic plans for each city's development sector. Projects may require new ways to work internally and in a coordinated manner between different departments and sectors, and to form partnerships between the public and private sectors as

part of the strategy. The team will work with development sector partners to put the finishing touches to a strategy the transformation will define the working methods to be performed.

The procedures and processes of sustainable transformation will require the development of the strategic plan for each development sector. These activities may require a committee to coordinate between sectors, whose responsibility is to integrate the project activities in a transparent manner. Its contribution to achieving the goals of the goals of sustainable transformation of the city. Based on the previous steps, the strategic plans for the transformation of the city will be divided into a number of primary projects.

- *Preparing immediate action plans for development sector projects*

The goal of this sub-stage is to develop a set of procedures and projects that have the ability to achieve the specific goals by setting executive plans for all areas such as plans for the solutions assigned to the urban, environmental, transportation and infrastructure sectors, and it is important to work with the relevant departments and key stakeholders to plan projects in detail with coordination between Various sectoral plans in order to ensure the integration of immediate action plans with each other to achieve the strategic goals of sustainable transformation.

- *Planning funding for sustainable transformation projects*

The transition team will assess the funding framework (assets and budget sources). They will begin to determine whether projects will be funded from the governorate's budget or need funds from the national government, the private sector, donors or loans. Work should also be undertaken to outline the multispectral investment plan, and the following elements should also be addressed:

A. Determine the time frames, financial obligations and human resources needed to implement the selected projects.

B. Evaluating financial sustainability and assessing creditworthiness.

C. Determine investment priorities and financing structure.

5.6. *Sixth stage. Implementation of the city transition strategy*

The main activity of this stage is the actual short-term operational practice and concrete activities. Instead of projects,

- *Mobilization for implementation the selected projects*

Includes the following tasks

A- Distributing tasks and responsibilities among the professional departments.

B- Building the partnerships or communications needed to implement with the actors (governmental - non-governmental - private - other).

C- Conducting a number of pilot projects / activities.

D- Disseminating information about the project and raising awareness about it.

- *Planning project implementation mechanisms*

The city transformation structure is prepared to cover the technical, financial and human aspects, the expected final outputs, organization of project progress, and evaluation of project success. The procedures for that step include preparing: the schedule program management plan, the cost management plan implementation, the quality management plan, the project resource management plan preparation, Project risk management plan.

- *Create a coordination framework for implementation work*

Its duties are as follows:

-Coordination of implementation work for immediate work plans between working groups

-Supervising the working groups during the implementation of the transformation projects

-Submit periodic reports to the authority responsible for managing sustainable transformation

- *Starting transition execution*

It is translating the steps of the previous stages and the current stage into an applied reality on the city's ground, and includes the following procedures: executing all the works shown in the immediate work plans and distribution of roles for the business implementation team

5.7. *Seventh stage. Participation of additional parties and* This sub stage include the following:

- *Participation of the additional parties*

The auxiliary parties are a type of entrepreneur who has a great influence on the dynamics of the city's transformation paths at the detailed and strategic levels, usually they are innovative individuals and not institutions, but rather strong representatives who have strategic capabilities in the business sector, the field of politics or the academic and media circles or have a presence In the community. Strategic alliances should be created from the different groups and bodies that bring together the city's sustainability goals. This will expand public networks for the sustainable transformation of existing cities and societies.

- *Development of the advertising and communication campaign*

It may be necessary to employ an external expert or establish an internal marketing and communications authority, with the aim of communicating and obtaining various reactions, which may be linked to monitoring and evaluation. The organization undertaking this task must further develop the marketing and communication campaign in order to regularly promote the strategy locally and nationally. With the preparation and publication of sustainable city reports and brochures, in addition to registration in the networks of cities of transformation.

*5.8. Eighth stage. Monitoring and documenting works and data*

- *Development of monitoring mechanisms*

It is by developing advanced systems for documenting monitoring, follow-up and accounting processes while activating mechanisms for environmental monitoring, in

addition to recording successful academic cases through preparing manuals.

- *Notarization and data gathering*

The following items are followed
-Data analysis and information management
- Providing leadership in data exchange
- Evaluate future data acquisition, needs and capabilities
- Update the indicators of sustainable transformation and monitoring systems
- Integration of data management systems

*5.9. Ninth stage. Evaluation, learning and Corrective feedback*

This sub-stage aims to establish mechanisms for evaluation and feedback, and integrate them within the sustainable transformation management system through the legislative foundations that are set for monitoring and evaluation work.

- *Incorporation of monitoring and evaluation mechanisms*

Monitoring, follow-up and evaluation mechanisms are integrated within the organizational structure through legislative foundations that are developed with the monitoring and evaluation mechanisms linked to the information centers of the coordination institutional structure

- Establishing participatory learning mechanisms

In this step, a collaborative learning strategy is prepared, in addition to establishing mechanisms through the establishment of several participatory learning workshops.

- Establishing feedback mechanisms

Where it is possible to establish databases of information that flow into the coordinating institutional body, while making use of documentation and codification processes to be used in future projects.

*5.10. Tenth stage. Modification and prepare for the second round of the transition path*

This sub-stage aims to make observations and adjustments and adjustments to the vision related to the first transformation path or to change stakeholders and actors to reach the desired goal which is to achieve the first stage of the city transformation work, then the second stage of the transformation cycle comes according to the strategic plans developed for the city in accordance with the frameworks Proposed to overcome challenges and transform cities into sustainable environmental urbanism.

5.11. *Test of Proposed paradigm*

The testing process included the following:

A- The researcher conducted a number of interviews with a group of experts in various specialized fields, including (workers in local government departments, workers in ministries, academics working in universities and research centers, workers in urban departments), where expert opinions were identified in the extent of the comprehensiveness of the proposed guide To manage sustainability transformations, some adjustments were made to the actions taken in the proposed paradigm.

B- The researchers conducted written tests by designing a questionnaire and distributing it to the examiners, in order to determine the extent of the applicability of the proposed paradigm to manage the city transformations towards sustainability.

The results of the tests consisted of a statistically significant relationship at the significance level ($0.05 \geq \alpha$) between the extent of applicability of the proposed visualization phases of transformation management and the support and achievement of sustainable environmental urbanization, and this means that the application of the sustainable transformation management methodology to existing and new cities may help in the transformation of the city To a sustainable environmental urbanization, within the stages of successive processes that achieve sustainability goals

## 6. DISCUSSION

The implementation of urban transition paradigm at the level of Egyptian cities, especially Alexandria, requires a progression of strengthening measures to guarantee that all partners are lined up with the procedure, and ready to accept their obligations in the coproduction of the arrangement and its implementation.

Procuring the arranging and creating abilities is generally done by the state moving human, technical and money related assets through the foundation of fitting neighborhood institutional systems on different regional scales. It requires:

1-giving neighborhood specialists' all the more moving room openly contracting administration;
2-fortifying the limit of all partners to take part in vital urban arranging through preparing and expert abilities improvement;
3-designers or contracting specialists to give the political, specialized and money related guiding of key urban arranging;
4-Project administrators or prime temporary workers to give programed plan and checking of the usage of open strategies;
5-the monetary and business division to offer specialized arrangements and budgetary bundles;
6-"Neighborhood partners" (occupants, laborers, clients) to help the contracting authority and the temporary worker with their nearby and standard aptitude in the structure of interview components.

To put it plainly, there is a requirement for a typical, shared, sensible and painstakingly staged metropolitan methodology dependent on a few little and reasonable undertakings ready to start a bit by bit high-minded advancement process. There is additionally a requirement for solid, proficient administration around the Governorate ready to interface the nearby difficulties with the focal government's vision and plans. Four significant difficulties are created in the following segments:

A-devoted components for the fast usage of urban

undertakings;
B-great land the board including security of urban horticulture and regular resources;
C-environmental change as a driver to manage the flexibility issue (improving debacle anticipation because of cli-mate change, characteristic dangers);
D-the urban restoration plan, as it offers different open doors for what's to come.

## 7-CONCLUSIONS

The results indicate the following:

1. A sustainable urban transition is a series of dynamic processes. In order to manage these processes, we must better understand their personalities, mechanisms, and measurements based on more evidence and city visions. More importantly, developing sustainable urban transformation monitoring systems within an effective methodology will bring our cities closer to sustainability
2. The necessity of activating and adopting the ideas of sustainability and sustainable environment cities and addressing them at all levels (general and planning policies), and at the local and international levels and formulating urgent development scenarios to transform urban urbanization at all levels into an environmentally and sustainable construction that is compatible.
3. Solve urban probles that hinder sustainability. Enact laws and legislations regulating sustainable development, while promoting enforcement of sustainable building codes.
4. The importance of building capacities through training and learning and qualification programs and workshops, exchanging experiences and benefiting from successful global experiences in transforming existing urbanization into sustainable cities, while intensifying the use of information technology and innovation in building effective systems to enhance the role of local administration in finding quick, sustainable and effective solutions to the challenges that Facing it.
5. Expanding the application of the concepts of sustainable environmental urbanization (through the transition management methodology) to some models chosen from Egyptian cities and selected over the planning regions, so that an existing and new city is chosen for each region in order to be transformed into sustainable environmental cities through a mechanism matrix The proposed transition and within the transformation management methodology.
6. In order to achieve a successful sustainable urban transition in Alexandria, it is necessary to develop effective institutional frameworks for the growing city to manage sustainable urban transition, for example, to take into account sustainability in urban management. Urban planning and development departments must develop sustainable planning tools that regulate land use and create livable urban spaces.
7. The sustainability transition management application requires the creation of new types of governance capabilities that allow flexibility, learning, cooperation and coordination. If implemented properly, Transformation Management can support new capabilities through long-term and integrated visions and strategies, diverse and deployed effective networks while formulating innovative solutions for sustainability.
8. The necessity of activating and adopting the ideas of sustainability and sustainable environment cities and addressing them at all levels (general and planning policies), and at the local and global levels and formulating urgent development scenarios to transform urban construction at all levels into environmentally and sustainable urbanization as an urgent necessity and not as a luxury to ensure a better future for future generations and the quality of life In Egypt and the planet as a whole.
9. It is important to involve additional parties (in sustainable transformation processes), from entrepreneurs who have a significant impact on the dynamics of city transformation paths at the detailed and strategic levels, or from innovative individuals and strong representatives who have strategic capabilities in the business sector, policy field, academia and the media Or have a presence in society.
10. In order to achieve a successful sustainable urban transformation in Alexandria, it is necessary to develop effective institutional frameworks for the growing city to manage sustainable urban transformation, for example, to take into account sustainability in urban management. Urban planning and development departments must develop sustainable planning tools that regulate land use and create livable urban spaces. At the same time, the success of these efforts depends on the support of the population and their organized behavior at the community level.

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