

Role of Strategic Environmental Assessment Tools (SEA) to Guide Strategic Plans in Egypt: New cities Case Study

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Abstract: In recent years, there has been a rise in global interest in environmental issues, and people working to improve environmental performance in development projects and raise environmental awareness, with the aim of integrating environmental concerns with social and economic concerns in development sectors. Therefore, strategic environmental assessment thought was directed as a basis for development plans strategy and adaptation to environmental changes

This has led to an increased interest in increasing environmental awareness among decision makers and a growing interest in sustainability assessments, and strategic environmental impact assessments are emerging to identify the expected environmental, social and economic impacts of projects that need to be strengthened. Strategic environmental impact assessment arose, particularly at a level beyond the project, giving rise to the concept of post-project. This helps decision makers better understand how environmental, social and economic factors factor into strategic decisions.

The research aims to use and activate the concept of strategic environmental assessment tools and methods in the methodologies of strategic plans for new Egyptian cities in order to comply with development goals and sustainable development goals. In new cities, especially new ones.

Keywords: Strategic environmental assessment (SEA) - strategic plan - strategic environmental assessment tools – new cities

1 Introduction

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Environmental sustainability provides long-term economic growth, which in turn helps to maintain political stability, which is necessary for effective long-term development and the attainment of all the

Millennium Development Goals adopted by the United Nations General Assembly in 2000. The ability of development planners to produce long-term beneficial results will be harmed if they do not recognize the importance of the environment in their decisions. Significantly [1] [2].

Strategic environmental assessment is a systematic process of evaluating the environmental impacts of proposed policies, strategies, or holistic plans in order to ensure that all environmental considerations considered alongside economic and social considerations during the early stages of decision-making by decision-makers [3],

[4]. They are the main benefits of SEA include:

Enhancing the sustainability of natural resources, Reducing costly errors in the planning phase, Save time and money, Simplify the EIA procedure for projects, Promote harmonization of holistic schemes, Strengthening development strategies, improving public sector efficiency and Enhance credibility in decision-making [1][4][5].

The SEA also directly supports the requirement of the seventh Millennium Development Goal to integrate the principles of sustainable development into state policies and programs and to reverse the loss of environmental resources [3]. SEA also addresses the need for more comprehensive, integrated and balanced strategic decisions called for at the World Summit on Sustainable Development, 2002. The Paris Declaration on Aid Effectiveness Ownership, Alignment, Harmonization, Results, and Mutual Accountability, endorsed by development officials and ministers from 91 countries in March 2005, emphasizes the importance of SEA in the context of promoting coordinated approaches to environmental assessment [1].

It demonstrates the importance of using SEA tools in Egypt as a result of the presence of current environmental problems and issues by identifying the studies and analyses required to deal with these issues to identify the main environmental issues that contribute to the analysis and evaluation of environmental issues and

problems that new cities are exposed to now and in the future. From the importance of these tools globally and locally to achieve the best ways of environmental harmonization, it is necessary to emphasize the evaluation through these tools before the beginning of planning to avoid the current urban and environmental issues.

Research objectives

The main objective of this study is to apply SEA tools within strategic planning phases to guide urban planner for planning decisions in Egyptian cities. The specific objectives of the study were to execute the following:

- SEA concept, definitions and its benefits
- Identification of SEA tools and method
- Integrate Strategic Environmental Assessment tools with urban Strategic plan.
- Methodology of applying Strategic Environmental Assessment for Egyptian Cities
- appropriate tools of SEA for evaluating new Egyptian Cities

1. Strategic environmental assessment tools to achieve environmental management

1.1 Strategic Environmental Assessment concept

Strategic Environmental Assessment (SEA) is an effective proactive analytical approach to integrate environmental considerations in an integrated manner at the higher levels of decision-making, with the aim of evaluating the environmental impacts of proposed development policies, plans and programs, providing the most sustainable alternatives, implementing appropriate mitigation methods and procedures and providing appropriate recommendations to decision makers [9]

. The SEA aims to ensure that the proposed policy, plan or program to be developed is consistent and coherent with other strategic decisions, and ensures the participation of the public and civil society organizations in the strategic decision-making process [5] SEA consists of two types: sectorial strategic environmental assessment (applied when a large number of new projects fall under one sector), and regional strategic environmental assessment (applied when significant economic development is planned within one region) [6]

The concept of strategic decision covers a wide range of activities, such as land use or development plans for an area. Strategic decisions are usually developed by ministries, institutions and government agencies, and may be developed by private or semi-private companies, such as telecommunications or water companies that have programs to determine the existence of their infrastructure (7)

Also, SEA aids in environmental protection, tries to assure the long-term viability of any development, and expands public participation in decision-making that

expert opinions ensure from the public and advisory authorities are gathered at various stages of the preparation process (8).

It highlights lessons learned from adopting the SEA process, it is to ensure the integration and adoption of environmental considerations during the early stages of preparing master plans and development programs to promote sustainable development [9]. The process of preparing or modifying the master plan should be carried out in parallel with the process of assessing the potential environmental impacts so that environmental issues integrated into the master plan in an integrated manner during the preparation process from the beginning. Thus avoiding, minimizing or offsetting the potentially significant environmental impacts of investment projects. The strategic environmental assessment and the strategic environmental management plan include sufficient details to guide the preparation of the master plan and development projects, providing support and ensuring attention from government agencies necessary to make the strategic environmental assessment and the strategic environmental management plan a reality. [4]

1.2 SEA Methods and tools

In comparison to the specific, practical tools utilized in other scientific domains, the methodologies, and techniques used in SEA operations are undefined [10]

This ambiguity arises from the lack of clearly defined procedures and strategies at each stage of the SEA process. Furthermore, the prevalent mindset regards them as a collection of tools from which users encouraged to choose the ones that are most appropriate for each case [11][12] According to the general requirements [13][14]

SEA methodologies and techniques should be appropriate for the task at hand, i.e., they should be able to address significant concerns and integrate into the decision-making process. Many methods and techniques are available for use in SEA processes, and they appear, as shown in table [1] [2] [14] [15] which reviewed below, as in table 1.

Table 1. General methods and tools used in SEA [11]

Methods/ Techniques	Screening	Scoping	SEA Steps							
			Describe Baseline Status	Identify— Predict impacts	Evaluate Impacts	Identify Cumulative Indirect Impacts	Identify— Compare Alternative	Propose Mitigation	Monitoring	
Checklists	+									
Expert judgment	+++	++		++	+	++		++	++	
GIS			+++	++	+	+		+		
Guiding questions		+		+						
Indicators			+							+++
Literature/ case review	+	+	+++	+						+
Matrices			++	+++	+++	+++	+++	+++	++	
Multi-criteria analysis				+	++	+		+	+	
Participatory methods	+	++		+	+	+		+	+	

+++ used in 50% or more of the examined cases, ++ used in 26–49% of the examined cases, + used in 25% or less of the examined cases.

-Direct method: this method characterized by ease, through which environmental elements identified, and environmental impacts determined Potential in nature, effects identified and interpreted either qualitatively or quantitatively, results are generally subject to personal intuition, an easy, fast, and low-cost method that depends on personal experience, and lacks accuracy. By the direct method, a simple table can be prepared that lists the expected environmental impacts and classifies them in terms of their impact in a way that enables the assessment of the environmental impact directly based on experiences.

-Overlays maps method: An engineering method based on representing the environmental elements of the project area using maps and landscape architecture that include the social and aesthetic nature. These maps superimposed on top of each other in a composite form that appears in the form of a single map, and the effects can be determined by observing the environmental characteristics using (GIS) [16]

-Lists method: this method or method is close to the direct method, and this method consists and focuses on scheduling environmental impacts for the purpose of determining the impact and evaluating through use of descriptive terms, or descriptive terms such as regressive, beneficial impact, short-term impact, long-term impact, and no impact.

- Expert judgment: Expert judgment is a project planning strategy that involves making a decision based on ability, competence, or specialized knowledge in a certain field. An individual's expertise can be based on their training or educational background, work experience, or knowledge [17]

-Matrix method: these matrices vary in their ways of working, their results, and the topics they research, as well as the people (Lyo Bold) who discover or practice their performance and study. For example, the Leo Bold matrix focuses on project alternatives and choosing what distinguishes it that the effects of the environment are less so that it is implemented, while evaluating several topographical places to find out The extent to which environmental elements affected, while the components' matrix focuses on revealing the dependence relationships and interaction between environmental elements that characterize ecosystems. This process helps in tracking project results and observing direct and indirect environmental effects [18] .

-Guiding questions: Guiding questions are intended to help students examine a topic in greater depth and to

inspire them to think critically about it. To find the solution, students must rely on their own judgment [19]

- indicator tool: an instrument for automatically making a diagram that indicates the pressure in and volume of the working fluid of an engine throughout the cycle [20]

- Multi criteria analysis: By evaluating their effects, performance, impacts, and trade-offs, Multi-Criteria Analysis (MCA) can be used to find and compare diverse policy solutions. The resource's goal. MCA is a methodical method for assisting complex decisions based on pre-determined criteria and objectives. [21]

1.3 Integrated between planning methodology and stages, tools of SEA for Egypt

By reviewing the theoretical literature of SEA tools and methods in its basic stages and comparing it with the Stages of SEA methodology for cities [22][23][24] Most of the tools fit the case of the SEA study for urban plans in cities in Egypt so that, paper identifying basic Appropriate tools that may replace data and information that are difficult to obtain to guide decision makers, as shown in table 2. and fig1.

Table 2. Integrated between planning methodology and stages, tools of SEA for Egypt

phases of SEA for Egypt	Urban methodology phases	Appropriate tools	Data sources
Description and assessment of the surrounding environment	current situation studies(Study of the city, its relationship and regional role)	guiding questions(stakeholder) -expert judgment -Overlay maps using GIS	2030 strategy environmental perspective National Plan 2052 Environmental characterization
evaluation of the objectives of the city's strategic plan for the major environmental issues	current situation studies(Study of the city, its relationship and regional role)	guiding questions tool - matrix - expert judgment tool	Strategies environmental characterization
identifying the main environmental impacts	Analysis of current situation studies	checklist tool matrix tool	Analysis of current situation studies
Environmental Adaptation, Mitigation Strategies Action Plan	Define a future vision & General strategic plan	Using expert judgment and guiding question for stakeholder and indicator tools.	General strategic plan

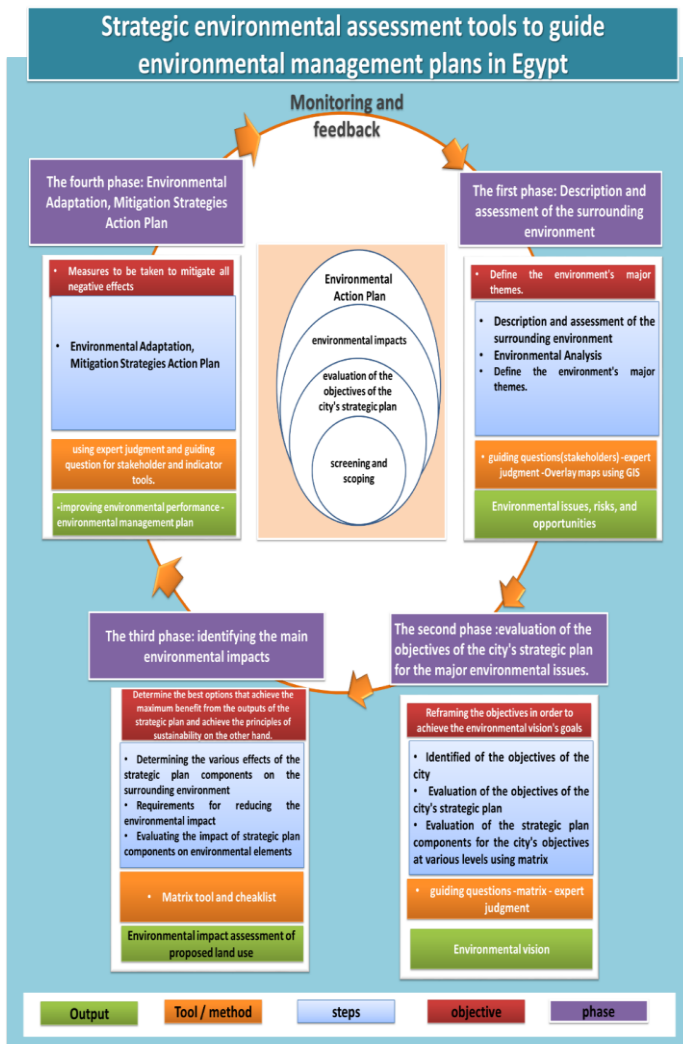


Fig 1.Role of strategic environmental assessment tools (SEA) to guide strategic plans in Egypt

The first Phase: Description and assessment of the surrounding environment by Define the environment's major characterizes flowing this steps

- (Description and assessment of the surrounding environment, Environmental Analysis, Define the environment's major themes using guiding questions (stakeholder) - expert judgment -Overlay maps using GIS

- The second phase : evaluation of the objectives of the city's**

- strategic plan for the major environmental issues** by Reframing the objectives in order to achieve the environmental vision's goals flowing this steps (Identified of the objectives of the city , Evaluation of the objectives of the city's strategic plan

Evaluation of the strategic plan components for the city's objectives at various levels using matrix) using guiding questions tool - matrix - expert judgment tool

- **The third phase: identifying the main environmental impacts** by Determine the best options that achieve the maximum benefit from the outputs of the strategic plan and achieve the principles of sustainability on the other hand flowing this steps (Determining the various effects of the strategic plan components on the surrounding environment, Requirements for reducing the environmental impact Evaluating the impact of strategic plan components on environmental elements) using Check list –matrix tool.

- **The fourth phase: Environmental Adaptation, Mitigation Strategies Action Plan** by Measures to be taken to mitigate all negative effects flowing this steps(Environmental Adaptation, Mitigation Strategies Action Plan) using expert judgment and guiding question for stakeholder and indicator tools., All of these steps are in the framework of evaluation of the objectives of the city's strategic plan, environmental impacts to achieve Environmental Action Plan.

2. Role of strategic environmental assessment tools to guide environmental management in Egypt: New cities case study

Due to the special characteristics of new urban settlements, the research also revealed that the strategic environmental analysis approach is a proactive approach to integrate environmental issues, assist decision makers, and achieve environmental management. This approach has increasingly been used for evaluation in Egyptian cities as a result of increased environment protection among decision makers seeking to determine environmental impacts and get a better knowledge of how environmental, social, and economic factors impact strategic decisions. The stages following describe a general technique for integrating SEA tools into the methodology as well as their applicability in new cities

2.1The first stage: Description and assessment of the surrounding environment

This stage includes a description of the natural environment, which is based on two stages: screening ,scoping and reviewing environmental studies ,natural characteristics of surrounding environment to determine environmental issues , risks, and opportunities to reach the main environmental themes from environmental studies and data (2030 strategy –environmental perspective – National Plan 2052 –Environmental characterization) .

We can apply stakeholder questions(Officials in the governorate, localities and neighborhoods) tool at this stage to help identify description and assessment of the surrounding environment **as shown in the table (3)**, overlay maps tool which was produced using the ArcGIS program to determine environmental risks and themes in surrounding environment, **as shown in the fig (2)**and SWOT analysis using expert judgment tool, as shown in **the following table (4)**, which enables to identify the main surrounding environmental themes(water quality, air quality, pollution,...etc) in the city

Table 3. Description and assessment of the surrounding environment using the stakeholder questions tool

The stakeholder questions
What are the basic aspects of the current environmental situation been described through the study of natural environment analysis?
Have the basic studies related to the current environmental situation been described through the study of natural environment analysis?
What are the current environmental issues?
What are environmental characteristics of the city likely to be significantly influenced by this study in the plans/programs?
Is there a set of metrics that can be used to predict a possible (normal) study change?
What are the gaps in the existing data been identified
What are additional data sources been identified?

Table 4. Environmental Analysis using the expert judgment tool in matrix city in Capital Gardens City[26]

Weaknesses	Strengthens
The presence of a major factor in the area, namely the exit of a torrent that branches off from the valleys of "Jafar - Al-Ghoul."	The distinct ground formation (topography - tendencies) that allows for the settlement of a wide range of uses without limitations or . barriers
Due to its location in desert areas, the study area has a low level of thermal comfort during the summer and the first seasons in the winter.	The study area has geological characteristics that allow for the settlement of all activities and uses.
Water resource shortage and scarcity in the study area	The soil's suitability for the urban development process due to the absence of determinants or barriers to the development
RISK	OPPORTUNITIES
The presence of a dense network of torrent drains at the city-wide level coming from the far north - the city of the tenth of Ramadan - necessarily requires comprehensive research and policy.	The city's location in relation to the surrounding industrial areas highlighted the role of the presence of integrated ecological logistical industries with the surroundings.

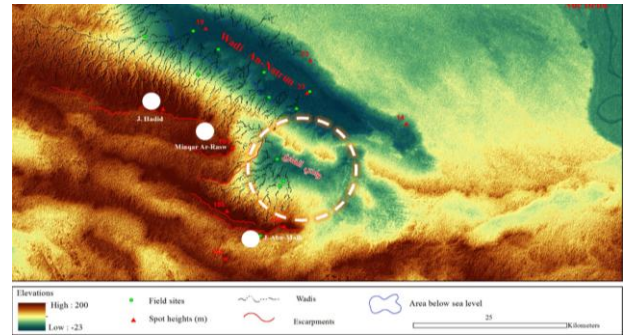


Fig 2. Description of the surrounding environment using the overlay maps arcgis tool in new sphinx city(25)

2.2 The second stage is an evaluation of the objectives of the city's strategic plan for the major environmental issues.

Define the objectives of strategic plan and objectives of the city to evaluate suggests vision depends on a guiding questions (stakeholder- local community) and expert judgment tool **as shown in table 5.** to determine environmental situation(Weaknesses- Strengthens). Then, evaluation of the strategic plan components for the City's using matrix tool to highlights how to use the tool to complete the second stage of the environmental assessment, as **shown in table 6.**

Table 5. Evaluation of the objectives of the city's strategic plan using a guiding questions tool

Proposed land use	General objectives			Environmental objectives Desired
	Overarching goals	Overarching goals	global assessment objectives	
residential	Yes		Yes	
Industrial	Yes	no		
Services		Yes	Yes	

Table 6. Evaluation of the strategic plan components for the city's objectives at various levels using matrix

questions	answers
Have the components of the city's strategic plan addressed and mitigated environmental issues?	yes
Were there environmental priorities to be addressed based on the environmental impacts on the environmental situation?	
Have a set of detailed sub-objectives of environmental issues been developed and clarified their actual interrelationships with one another in order to guide the city's environmental assessment's follow-up phase?	no
Did the strategic plan's components address public and private environmental goals?	yes

2.3 Third phase: Determining the various effects of the strategic plan components on the surrounding environment:

Determine impact proposed land uses of strategic plan on the environment (air, water, and energy) using checklist tool to quantify and qualitatively assess the impact of each component of the plan on the environmental elements, **as shown in the table 7.**, evaluate land use of the strategic plan based on matrix tool **as shown in Table 8.**, the quality of these effects, whether quantitative or qualitative, and the extent of their impact, this confirms the knowledge of the impact of the proposed uses, as well as how to confront and deal with the strategic plan in light of the current environmental situation. In addition to determine if these components came to reduce the effects on environmental elements, as well as Elements of the environment likely to be affected by the city's activities and uses.

Table 7. Identifying the environmental impact of the plan's components on environmental elements using checklist tool

Questions	Answers
Are there any negative effects of the strategic plan components on environmental elements?	Yes
Did the proposed strategic plan's components include ideas and principles of environmental sustainability aimed at preserving the environment's elements?	No
Are the proposed strategic plan's components consistent with global and national plans, as well as the goals of the strategic environmental assessment at all levels?	yes
Is the assessment of the impact of the strategic plan components on the elements of the environment a baseline that indicates the strengths and weaknesses that must be considered?	yes
Was the measure of the strata's impacts significant?	no
Was the measure of the impacts of the strategic plan's components available on a regular basis using standard indicators	yes
Is the level of interaction, interaction, and appropriateness between environmental elements and strategic plan components sufficient to guide the SEA process toward its goals?	no

Table 8. Evaluate land use of the strategic plan based on the elements using matrix tool

Proposed landuses	soil		land		energ		Water		Air	
	Quantitative	qualitative	Quantitative	qualitative	Quantitative	qualitative	Quantitative	qualitative	Quantitative	qualitative
residential										
Industrial										
Services										

2.4The fourth stage: Environmental Adaptation, Mitigation Strategies Action Plan

At this stage, the requirements to mitigate effects of environmental impact of the components of the strategic plan for new urban communities are established so that we can direct the appropriate strategies to achieve environmental sustainability by reducing the environmental impact of the plan's components the expert judgment tool will be used to determine the expert's opinion of each element and guiding question for stakeholder **as shown in the table (9)** ,Identify brief description of all significant and expected negative impacts, Description of each mitigation and adaptation measure and Clarification of the plan of action to mitigate negative impacts (projects that help in the implementation of the mitigation plan

Table9.Evaluated of pervious phases of SEA (feedback) based on environmental requirement to mitigate effects of strategic plan of city using expert judgment and guiding question for stakeholder

Environmental considerations	expert judgment and guiding question for stakeholder
selection and environmental compatibility with nearby projects and activities	environmentally unsuitable- Environmentally appropriate
In terms of environmental compliance, the plan's objectives must be met.	Align with objectives - Incompatible with objectives
Determining the resulting effects on the elements of the environment	Environment's supportive effect - Environment's supportive effect with conditions - Indirect effect on environmental elements - Negative effect on environmental elements - No effect
Environmental load estimation	The environmental loads have been estimated - The environmental loads have not been estimated

Strategic plan needs unified identification card for detailed study of environmental indicators using indicator tool **as shown as table (10)** to improve environmental performance and proposed environmental management plan.

Table 10. Indicator identification card using Indicator tool

The main environmental themes
Definition of indicator
Measuring unit
type of indicator
The purpose of indicator
Relationship and Importance
Relationship to other indicators
Data from measurements The information needed to calculate the indicator
Definitions and related indicators
Methods of measurement
References

3 Conclusion

- The paper recommended apply a methodology in the selection of methods and tools, resulting in the utilization of comparable criteria, for the selection of the most

- Appropriate methods and techniques during SEA processes linked with the phases of SEA.

The majority of applied methods and techniques contribute to simple and expedited processes, and can be used even when there is insufficient or uncertain information (with expert judgment, matrices, literature/case review, and indicators as notable examples). They can also be used even when financial resources are limited because they do not require specialized equipment. GIS was the most extensively utilized quantitative method and technology in the creation of maps and composite diagrams

- Thus, the tools for strategic environmental assessment of new urban communities, as well as the extent to which it addresses environmental issues, to determine whether the presence of environmental challenges was one of the strategic plan's components, or whether those components were consistent with the principles of achieving environmental sustainability.

- Strategic environmental assessment tools help in the clarification of appropriate strategies for dealing with any potential environmental impacts on the environment's elements.

Strategic environmental assessment tools that must be applied and guided during the strategic plan Phase, including a set of strategies for mitigating environmental effects.

- As a result, strategic environmental assessment tools will direct us toward mitigation and adaptation strategies that will help us reduce any environmental impacts.

- An environmental action plan must be developed that establishes the main lines of action for mitigating and adapting to environmental impacts and loads through a set of procedures, requirements, and means of implementation.

References

- [1] R. Al-Zu'bi, "Strategic environmental assessment as a tool for planning and integrating the concept of sustainability into development in Jordan," 2019. [Online]. Available: <https://www.ecomena.org/sea-jordan-ar/>.
- [2] OECD, "Applying Strategic Environmental Assessment to Development Co-operation," 2006.
- [3] K. Gamal, "strategic environmental assessment," 2019.
- [4] UNDP, REC, "Benefits of Strategic Environmental

- Assesment," 2012.
- [5] Environment and Forestry Directorate, Local Government and Communities Directorate, "Environmental assessment," 2018. [Online]. Available: <https://www.gov.scot/policies/environmental-assessment/strategic-environmental-assessment-sea/>.
- [6] Antonios Souloutzoglou, Anastasia Tasopoulou, "The Methods and Techniques of Strategic Environmental Assessment. Comparative Evaluation of Greek and International Experience," *sustainability*, pp. 1,5-20, 2020.
- [7] L. W. Cantar, "Environmantal Impact Assessment," 2012.
- [8] R. H. Y. Amer, "Develop an environmental impact assessment methodology in line with the development and environmental needs of the Palestinian community, 2006," pp. 35-42.
- [9] Sameh Gharbia, Yahya Al-Farhan, "Introduction to Environmental Sciences," 2002.
- [10] ICEM, "Strategic Environmental Assessment Methodology," 2016.
- [11] Maria Rosário Partidário, Michael Paddon, Markus Eggenberger, Dao Minh Chau and Nguyen Van Duyen, "Linking strategic environmental assessment (SEA) and city development strategy in Vietnam," *Impact Assessment and Project Appraisal*, pp. 220-222, 2008.
- [12] Juan Azcárate, Berit Balfors, Arvid Bring, and Georgia Destouni, "Strategic environmental assessment and monitoring: Arctic key gaps and bridging pathways," *Environmental Research Letters*, pp. 4-5, 2013.
- [13] VdP, "strategic environmental assessment and environmental studies," 2017. [Online]. Available: <http://www.vdpsrl.it/en/servizi/studi-ambientali-e-permitting/3/valutazioni-ambientali-strategiche-vas/>.
- [14] Mervat Abd El-Magied El-Sonbati, El-Sayed A. Badr, "Strategic environmental assessment for achieving sustainable development in Egypt," pp. 72-75, 2008.
- [15] E.A. Taher, "Urban Perspective of Smart Cities A Case Study of New Cities in Egypt", 2016
- [16] C. Maria, "What Are Guiding Questions? Examples + Tips," 2020.
- [17] wrik, "PROJECT MANAGEMENT GUIDE," 2021. [Online]. Available: <https://www.wrike.com/project-management-guide/faq/what-is-expert-judgment-in-project-management/>.
- [18] merriam-webster, "merriam-webster.com/dictionary," 2020. [Online]. Available: <https://www.merriam-webster.com/dictionary/indicator>.
- [19] IPBES, "Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services," 2021. [Online]. Available: <https://ipbes.net/policy-support/tools-instruments/multi-criteria-analysis-mca>.
- [20] O. Bina, "Strategic Environmental Assessment," *Integrating environment for sustainability*, pp. 1-3, 2008.
- [21] D. o. A. a. Tourism, "STRATEGIC

ENVIRONMENTAL ASSESSMENT," 2017.

- [22] M. Liou ,S. Yeh و Y. Yu " .Reconstruction and systemization of the methodologies for strategic environmental assessment in Taiwan ". Environ. Impact Assess من 1% من المجلدات 26 . Rev. , 26 . p . 2006 .. 184 - 170 .
- [23] A. Brown و R. Thérivel " .Principles to guide the development of strategic environmental assessment methodology ". Impact Assess. Proj. Apprais . . pp . . 2000 .. 189 - 183 , 18
- [24] T. Fischer " .Theory and Practice of SEA: Towards a More Systematic Approach ". Earthscan: London, UK . . 2007
- [25] R. Therivel و G. Wood " .Tools for SEA. In Implementing Strategic Environmental Assessment. Environmental Protection in the European Union; Schmidt, M., Joao, E., Albrecht, E., Eds ; ". Springer Science & Business Media: Berlin/Heidelberg, Germany . 2005 .
- [26] New Urban Communities Authority " .the general strategic plan for the new city of Sphinx . 2020 " .
- [27] New Urban Communities Authority " .the general strategic plan for the new city of New badr . 2019 " .
- [28] T. G. A. f. U. planning " .the environmental perspective of the urban development strategy at the level of the Republic, Greater Cairo Region . 2010 " .