

Strategic Environmental Assessment Mechanism for Sustainable Tourism Development in Marina El Alamein

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ABSTRACT

The environmental and social challenges have a direct impact and pose a significant obstacle to the sustainability of tourism development. Decision-makers face challenges that can be supported and guided by strategic environmental assessment (SEA). This can be achieved by implementing various mechanisms and policies based on spatial and temporal environmental analysis and assessment to mitigate expected negative effects and risks. The research methodology clarifies key concepts such as sustainable tourism development and strategic environmental assessment, and demonstrates how theoretical and analytical thinking is reflected in the research outcomes. These outcomes include identifying the stages of strategic environmental assessment and its contribution to managing the surrounding environment in tourist areas. Finally, the research findings highlight how to achieve sustainable tourism development in light of the proposed policies and strategies, utilizing SEA mechanisms to address environmental and social challenges through systematic stages aimed at finding alternative solutions for tourism development. This is done based on environmental analysis, assessment, and stakeholder participation in tourism development areas (e.g., Marina El Alamein Center).

Keywords: Strategic Environmental Assessment, Sustainability, Tourism Development, Marina Al Alamein Center.

INTRODUCTION

The tourism industry has gained significant importance worldwide due to its crucial role in promoting economic, social, cultural, and environmental development. Given the close relationship between tourism and the environment, and the widespread forms of degradation resulting from tourism activities that introduce various elements into the environment, affecting its components, there has become a pressing need to analyze and assess the environmental impacts of tourism activities. This also requires raising awareness of the need to protect and preserve the environment, in addition to ensuring a balance between tourism development projects and environmental considerations to achieve sustainability.

This balance is necessary to adapt to the surrounding environment and make optimal use of natural resources while preserving the rights of future generations.

The importance of this research lies in the following points:

- Discussing the concept of sustainable tourism development and its connection to environmental aspects.
- Addressing the challenges facing sustainable tourism development in Egypt.
- Identifying indicators of sustainable tourism development.
- Understanding the role of Strategic Environmental Assessment (SEA) in sustaining tourism development.
- Investigating the impacts of implementing SEA on sustainable

tourism development in Marina El Alamein Center.

Research Problem

In light of the points mentioned earlier, the main issue addressed by this research is the need for an environmental assessment of natural tourism environments. Understanding and keeping pace with the environment and studying potential impacts have become essential steps. This necessity highlights the importance of establishing mechanisms and methods for environmental assessment in tourism development areas to avoid reaching dangerous levels that threaten the sustainability of development. Therefore, Egypt must focus on incorporating Strategic Environmental Assessment

(SEA) in its strategic plans when formulating tourism development policies, particularly in strategic plans like the Marina El Alamein Center.

Research objective

The research aims to study the use of environmental assessment mechanisms for tourist development areas to avoid potential negative effects and achieve the concept of sustainability by applying it to the Marina Al Alamein Center.

METHODOLOGY

Figure (1) illustrates the research steps to reach to a total management of a tourism project by applying SEA on Marina El Alamein Center).

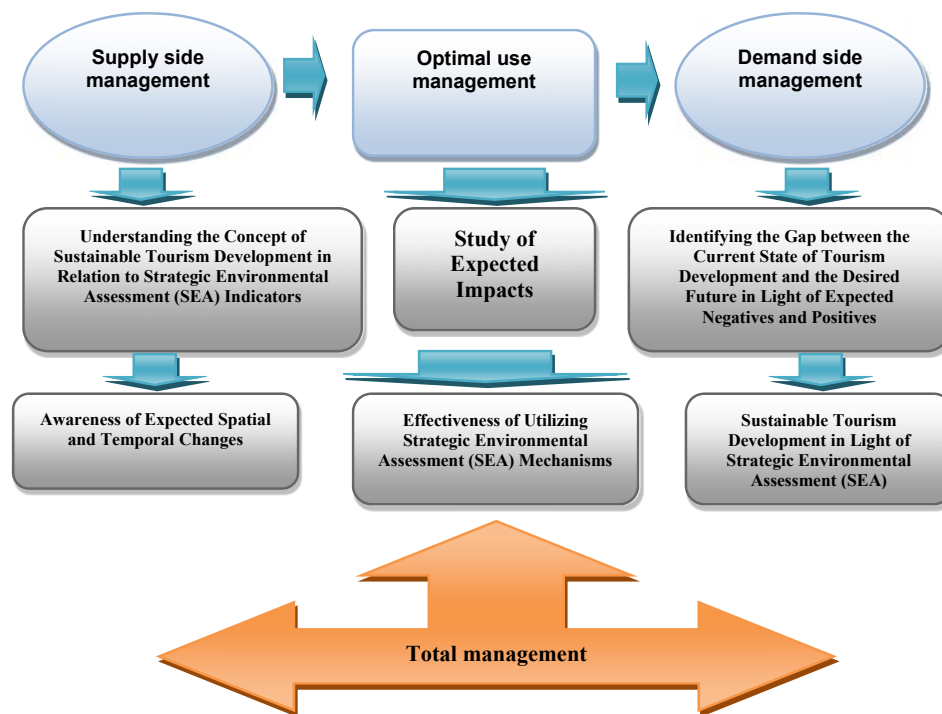


Fig. (1). Research steps and procedures

RESULTS AND DISCUSSION

1. The concept of sustainable tourism development

With the exacerbation of the problem of environmental degradation and the beginning of a collision between the demands of environmental protection and the demands of economic development, and after the United Nations sounded the alarm and alerted to the dangers to which the planet is exposed, the concept of sustainable development came as an expanded alternative to previous development concepts, and since the field of tourism is an integral part of development and the connection between activity. Tourism is primarily related to the environment and all its aspects. The principle of sustainability was introduced in the development and promotion of tourism in 1980 in the Manila Declaration (Philippines) by the World Tourism Organization (WTO) and the International Union for Conservation of Nature and the Environment (International Union for (IUCN) Conservation of Nature). and Natural Resources, the Global Environment Facility (GEF), which stressed that tourism needs should not be met in a way that harms the economic and social interests of the residents of tourist areas, or the natural environment that the Almighty Creator gave to man, and the historical and cultural sites that are factors A major attraction for tourism, the declaration stresses that these resources are part of the heritage of humanity and that local communities and the international community should take the necessary steps to preserve them, and work to create a balance between the environment and tourism so that the latter becomes a sustainable development activity (World Tourism Organization, 1980). As a result of the large and rapid expansion of the tourism sector and also due to the capabilities that this sector enjoys, which make it generate economic benefits for societies, alleviate poverty, preserve natural and cultural wealth, and other benefits.

2. Definitions of sustainable tourism development

There are multiple definitions of sustainable tourism development. In 1993, the European Union for the Environment and National Parks defined sustainable tourism development as “an activity that preserves the environment, achieves economic and social integration, and enhances the architectural environment (Helmy, 1999). Both Myburgh and Saayman (1999) considered that sustainable tourism development is embodied in... On the relationship between environmental, social and economic issues, this means that sustainable tourism must be taken into account as part of planning processes that complement tourism with other economic development initiatives, in an attempt to achieve sustainability (Mbaiwa, 2005), as for the World Tourism Organization (WTO). Sustainable tourism development has been defined as “that development that meets the needs of tourists and host sites in addition to protecting the right of future generations to enjoy these sites in the future. That is, it is the guiding rules in the field of resource management in a way that fulfills the requirements of economic, social and cultural development, as well as cultural integration with environmental factors and diversity.” Biotechnology and life support systems (World Tourism Organization, 2004).

(Liu, Z.2003) also confirms that sustainable tourism development meets the needs of current tourists and host regions and works to provide opportunities for protection and improvement for the future, and the management of all resources can be performed in a way that makes economic, social and aesthetic needs fulfilled.

As Reda (2017) defined it, it is: relying on nature and not working to exploit its components, as it is, in essence, a process of change that involves exploiting resources, directing investments and technological development, and working to

enhance the possibility of linking the present and the future and meeting the basic needs of tourists.

Bakri (2019) defined it as: the process of satisfying the needs of tourists and meeting their requirements without prejudice to the rights of future generations in their needs to enjoy the environment. That is, it is development that takes into account justice and equality between generations in enjoying natural resources and thus relying on nature and not exploiting it.

Sustainable tourism is a point of convergence between the needs of visitors and the region hosting them, which leads to the protection and support of future development opportunities so that all resources are managed in a way that provides economic, social and spiritual needs, but at the same time preserves the urban reality and environmental pattern of the tourist destination (Al-Bakri, 2004).

According to the World Tourism Organization's perspective, "which together encourages the desires of tourists and the needs of host communities so as to ensure the protection and improvement of future tourism prospects through the management of tourism resources in a way that responds to economic and cultural needs, biodiversity, environmental processes and livelihood systems. Recently, sustainable tourism development has been defined as that tourism system that takes into account

all social, economic and environmental impacts, and is defined as an activity that preserves the environment and achieves social, economic and environmental integration.

Recently, sustainable tourism development has been defined as the tourism system that takes into account all social, economic and environmental impacts, and is defined as the activity that preserves the environment and achieves social, economic and environmental integration. From the previous definitions, tourism development can be considered the process of satisfying the psychological needs of tourists and obtaining their requirements without compromising the rights of future generations. Sustainable tourism is not a product, but rather a model for development based on strategic axes, as shown in Figure (2), which can be summarized in:

- The axis of time space, which aims to monitor tourism activity and development for temporal variables.
- The axis of spatial space, which aims to protect nature and its systems.
- The axis of transactions, which aims to achieve economic, social, cultural and environmental integration.
- The value axis, which aims to include responsible values and behaviors among everyone.

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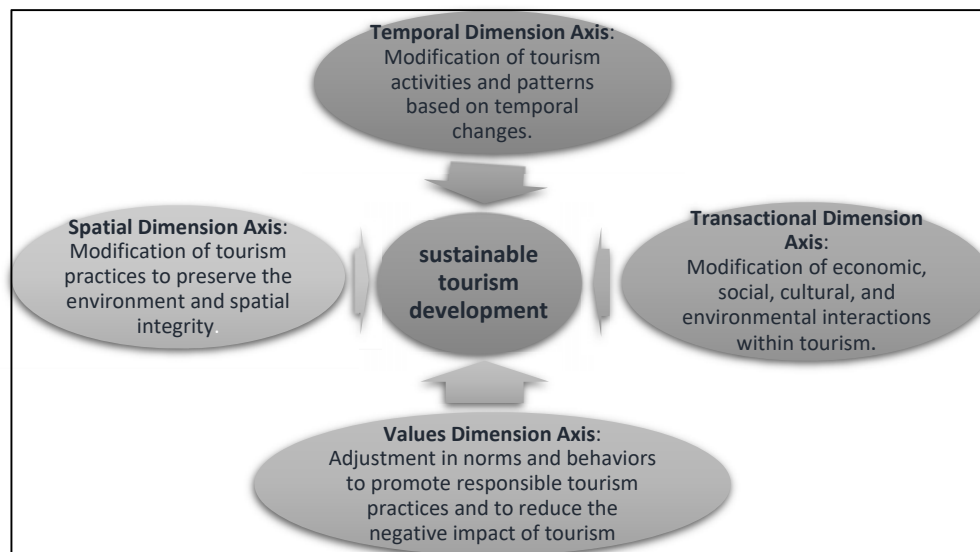


Fig. (2). Strategic axes for sustainable tourism development.
Source : Garg and Pandey (2020).

3. Principles and Foundations of Sustainable Tourism Development

The application of the concept of sustainable tourism relies on principles and foundations that must be integrated into tourism activities. This is achieved by incorporating environmental dimensions into the elements of tourism development to ensure the sustainability and enhancement of tourism.

Based on the above, the following principles should be taken into account for sustainable tourism (UN Program, 2002):

- Tourism planning, development, and management should be part of the region or country's protection or sustainable development strategies. Tourism should be planned and managed in an integrated and unified way, involving various government agencies, private institutions, and citizens—whether as groups or individuals—to maximize benefits.
- These agencies, institutions, groups, and individuals must follow ethical principles and respect the culture, environment, and economy of the host region. They should also respect the

traditional lifestyle and behavior of the local community, including political patterns, by finding a consensus between the host community's culture and the visiting tourists. This can be achieved by fostering and maintaining the local culture and ensuring its transmission to foreign visitors.

- Tourism should be planned and managed sustainably to maintain the productivity of tourism resources, ensuring that tourism remains an attractive draw for visitors while preserving environmental diversity and avoiding harmful environmental changes.
- There should be studies and information available on the nature of tourism and its impacts on the population and cultural environment before and during development. Local communities should be involved in sustainable tourism development to transform the host regions into tourist destinations capable of attracting both tourists and investors.

- Environmental awareness and issues should be promoted among tourists, workers in the tourism sector, and host communities. Environmental accountability standards should be established, and negative impacts on tourism should be monitored to ensure intergenerational equity and the sustainable use of tourism resources. This adheres to the principle of sustainable development, which aims to avoid any distortion that might reduce the future productivity of natural tourism environments.
- Environmental, social, and economic planning analyses should be conducted before implementing tourism development to ensure harmony between the needs of the community and the environment.
- New investment opportunities should be created, leading to job creation, economic diversification, increased national income, and improved infrastructure and public services in host communities. This should also meet basic human needs and improve living standards through the effective use of land and planning of spaces in accordance with the surrounding environment.
- Contribute to alleviating poverty in the host community by ensuring long-term economic growth and providing economic and social returns that are fairly distributed among the host community and participating companies.
- A program for monitoring, auditing, and correcting should be implemented throughout all stages of tourism development and management.

4. The Concept of Sustainable Tourism Development in Light of the United Nations' Goals

Tourism significantly contributes to achieving the 17 Sustainable Development Goals (SDGs) when these

goals are integrated into tourism industry decision-making. The UN's development goals focus on promoting good resource management and aligning environmental, economic, social, legislative, and technological aspects to ensure sustainable development. Sustainable tourism directly contributes to the achievement of several specific SDGs:

- Goal 6: Ensuring clean water, sanitation, and hygiene.
- Goal 8: Promoting economic growth and decent work.
- Goal 12: Encouraging sustainable consumption and production.
- Goal 14: Promoting the responsible use of marine and ocean resources (<https://sustainabledevelopment.un.org>; <https://www.investni.com>).

Moreover, sustainable tourism contributes directly or indirectly to all SDGs, integrating with each country's specific circumstances based on its economic, social, and political capacities.

The objectives of sustainable tourism development can be categorized as follows:

- Economic objectives: These include eliminating extreme poverty and hunger globally, improving labor productivity and economic growth, developing suitable infrastructure, industry, and technology, and ensuring sustainable consumption and production frameworks.
- Social objectives: These focus on enhancing well-being, improving health, advancing education systems, reducing illiteracy, promoting gender equality and preventing discrimination, achieving regional balance, developing local communities, and building institutions that work towards justice and social peace.
- Environmental objectives: These involve protecting aquatic life, providing clean water, ensuring sanitation, utilizing clean energy sources, creating sustainable smart

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cities, mitigating climate change, preserving sustainable agriculture, and fostering cooperation to achieve global sustainable development goals (Salah, 2016).

5. Challenges to Sustainable Tourism Development in Egypt

Tourism activities in Egypt have faced numerous challenges over time, hindering the achievement of sustainable tourism development goals. The most significant of these challenges can be categorized as follows:

5.1 External Challenges (Allam, 2008)

- Lack of an International Marketing Strategy: Egypt does not have a scientifically grounded, continuous, and diverse international marketing policy tailored to each tourism market globally.
- Insufficient Egyptian Tourist Offices Abroad: The limited number of Egyptian tourism offices overseas, combined with scarce financial resources, hampers efforts to promote tourism marketing effectively.
- Inadequate Funding for Tourism Research: There is a lack of financial resources to conduct sufficient tourism studies for developing the sector. Additionally, there is insufficient data and statistics for preparing and evaluating tourism plans and studies based on scientific foundations for optimal service marketing.
- Distance from Major Tourism Markets: Egypt's geographical distance from major tourism markets like Western Europe, North America, and Japan requires long travel periods and incurs high costs due to expensive air transportation (Ibrahim, 2006).

5.2 Internal Challenges

- Lack of Environmental Awareness: There is limited understanding of how to optimally utilize natural resources

in tourist areas to ensure long-term sustainability in tourism development.

- Shortcomings in Basic Infrastructure: Many key tourist areas lack essential infrastructure for tourism growth, including road networks, water, sanitation, electricity, communications, and transportation.
- Rigid and Bureaucratic Tourism Organization: Tourism administration in Egypt is often characterized by traditional, complex, and routine processes, which contradict the fast-paced nature of tourism and the need for quick responses to tourist demand.
- Neglect of Archaeological Sites: There is a failure to maintain and clean archaeological sites, which negatively impacts their appearance and preservation.
- Poor Museum Organization: Many Egyptian museums lack proper organization and modern techniques for displaying artifacts.
- Lack of Tourism Awareness: The general public often lacks awareness of the importance of tourism, and behaviors such as begging, theft, and occasional violent incidents tarnish Egypt's cultural image.
- Environmental Pollution: Air pollution is exacerbated by the destruction of green spaces and the spread of factory chimneys in urban areas. Water and beach pollution also pose significant challenges.
- Weak Financial Investments in Tourism: The state provides inadequate financial allocations and investments for the tourism sector, which are necessary for training and upgrading existing hotels to keep pace with global tourism developments.
- Lack of Coordination Between Tourism Agencies: There is poor coordination between organizations involved in tourism management and

marketing, leading to a geographical disconnect in the tourism industry.

- **Complicated Investment Procedures:** The approval process for establishing tourism investment projects is complex and slow, delaying project execution.
- **Unclear Land Policy for Tourism Projects:** There is no clear, consistent policy regarding state-owned land suitable for tourism projects, with land prices often being high.
- **Lack of Investment Regulations:** There are insufficient laws and regulations governing investment in the tourism sector.
- **Focus on Traditional Tourist Areas:** Tourism activity is concentrated in traditional, high-return areas, with limited attention to other potentially valuable regions.

These challenges have collectively impeded the sustainable development of Egypt's tourism industry, requiring comprehensive reforms to overcome them and achieve long-term growth.

6. Indicators of Sustainable Tourism Development

Indicators for achieving sustainable tourism development are tools for evaluating and demonstrating that sustainability is a tangible and essential foundation for managing and developing tourism activities. These indicators serve as early warning systems for potential risks and provide methods for identifying and measuring outcomes, including managing and monitoring the impacts of tourism development (Ahmed, 2007). Several sustainable tourism development indicators were developed and tested in various countries as part of initiatives by the World Tourism Organization (1997-1999). The purpose of these indicators is to monitor the social, economic, and environmental impacts of tourism. They are categorized into three main groups (Abdel Basset, 2005).

6.1 Environmental Indicators:

These indicators focus on the level of human activity pressure on the environment in tourist destinations. If a tourism area exceeds its carrying capacity, it typically results in negative effects, which are measured by different environmental indicators, such as:

- **Waste Treatment Indicator:** Measures how solid and liquid waste is managed.
- **Land Use Density Indicator:** Measures either the ratio of tourists to local residents or the proportion of land occupied by tourism-related infrastructure compared to the total available area.
- **Water Usage Density Indicator:** Measures the volume of water used by tourists compared to that used by local residents or the total available supply of potable water.
- **Air Pollution Protection Indicator:** Measures air pollution levels during different times of the year and tourist seasons, indicating whether the site's carrying capacity has been exceeded, which can affect the quality of the environment and visitor satisfaction.

6.2 Social Indicators:

These focus on the significant impact of tourism on the social environment. Several key indicators measure tourism's effects on social aspects, including:

- **Social Impact Indicator:** Measures the effect of tourism on the living conditions of local residents, such as employment and education.
- **Local Resident Satisfaction Indicator:** Determines the level of satisfaction among residents with tourism projects and their willingness to engage with them.
- **Security Indicator:** Measures how tourist inflow affects the security situation, evaluated through the development of crime rates among the local population in tourist areas.

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- **Public Health Indicator:** Assesses the impact of tourism activity on local public health, such as the ratio of doctors and nurses to the population or the number of people affected by sexually transmitted diseases.

6.3. Economic Indicators:

These are related to measuring tourism's impact on the local economy. Key indicators include:

- **Foreign Currency Indicator:** Tracks the inflow of foreign currency due to tourism.
- **Income and Investment Indicator:** Measures the income generated by tourism and the level of investment in the tourism sector.

These indicators provide a comprehensive approach to evaluating the sustainability of tourism development across environmental, social, and economic dimensions.

7. Analysis of Sustainable Tourism Development Indicators in Egypt

Tourism development in Egypt relies on several indicators to align with global standards and to achieve environmental, social, and economic sustainability. According to the 2020 World Economic Forum's Travel and Tourism Competitiveness Index, Egypt was ranked based on 14 sub-indicators, demonstrating its position on the global tourism map. These indicators are analyzed as follows:

a. Enabling Environment - Sustainable Tourism Development Indicators

Egypt ranked 33rd out of 140 countries in terms of enabling environment, which is divided into five key governing indicators:

1. Business Environment:

This indicator reflects the policies regulating business management in the country. Studies have shown a close relationship between economic growth,

property rights protection, and the presence of a legal framework. Competitiveness and tax policies are also measured by the level of foreign direct investment and its impact on production efficiency.

2. Human Resources and Labor Market:

This indicator measures the quality and improvement of efforts in education and training within the country, as well as women's participation in the labor market and their responsiveness to market needs.

3. Information and Communication Technology (ICT) Readiness:

This indicator measures the country's technological infrastructure readiness. The availability of online services such as booking flights and hotel rooms enhances the competitiveness of the travel and tourism sector.

4. Health and Hygiene:

This indicator assesses the availability of a clean and comfortable health environment for tourists, including the quality of drinking water, sanitation, and the healthcare system's ability to treat tourists in case of illness.

5. Safety and Security:

Safety and security are crucial indicators for travel and tourism competitiveness. This indicator considers the rate of crime, terrorism, violence, and the efficiency of security forces in protecting individuals.

b. Policy and Enabling Conditions - Sustainable Tourism Development Indicators

Egypt ranked 45th out of 140 countries in this category, which is divided into four key indicators:

1. Price Competitiveness:

Low travel and accommodation costs attract tourists and investments in the travel and tourism sector. This indicator measures aspects such as taxes on airline

tickets, hotel room prices, transportation, living costs, fuel prices, and the purchasing power of the country's currency.

2. Priority of Travel and Tourism:

This indicator measures the government's prioritization of tourism, reflected in allocating resources to development projects, adopting stable policies that attract investments, and launching promotional campaigns to draw more tourists.

3. Environmental Sustainability:

This indicator evaluates the effectiveness of environmental laws in maintaining a clean environment and promoting sustainable tourism-related industries. Green spaces are important attractions for tourists, emphasizing the need for a focus on sustainable environmental practices.

4. International Openness:

A competitive tourism sector requires measures that ease travel between countries, including visa facilitation and international agreements to allow more fluid movement of tourists.

c. Infrastructure - Sustainable Tourism Development Indicators

Egypt ranked 76th out of 140 countries in terms of infrastructure, which is divided into three key indicators:

1. Air Transport Infrastructure:

This indicator measures the quality of aviation infrastructure, including the availability of flights and the density of airline routes, both domestically and internationally. It assesses the extent to which air transport networks facilitate easy travel for tourists.

2. Ground and Port Infrastructure:

The presence of a comprehensive road network, railways, and ports that meet

global safety standards play a key role in facilitating internal tourism and attracting more tourists.

3. Tourism Service Infrastructure:

This indicator evaluates the availability of hotels and related services, such as taxis, public transportation, and ATMs. High-quality accommodations and diverse entertainment options increase the country's tourism competitiveness.

e. Natural and Cultural Resources - Sustainable Tourism Development Indicators

Egypt ranked 33rd out of 140 countries in this category, divided into two key indicators:

1. Natural Resources:

This indicator measures the availability of historical, cultural, and environmental sites, such as parks and natural landscapes.

2. Cultural Resources and Business Travel:

This indicator reflects the availability of cultural resources in the country, including the potential to host international sports or cultural events, the number of global museums, and international conferences. The results of these indicators, as shown in Figure 3, highlight the decline in the number of tourists visiting Egypt between 2010 and 2020. This underscores the need for Egypt to develop its tourism sector sustainably, addressing challenges, and adopting new evaluation methods for tourism projects. Environmental assessment plans should be developed to guide sustainable tourism strategies in Egypt in an effective and attractive manner.

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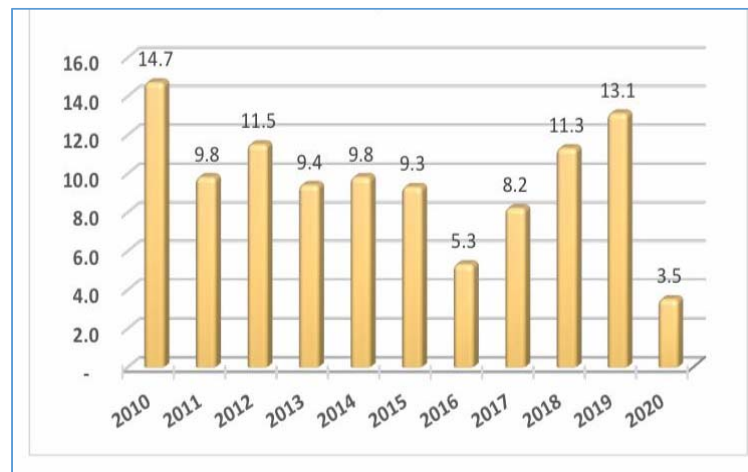


Fig. (3). Number of Tourists Arriving in Egypt (in millions) 2010–2020. Source: CAPMAS, 2021.

8. Concept of Strategic Environmental Assessment

In recent years, there has been an increasing global interest in environmental issues, with significant efforts devoted to improving environmental performance in development projects and raising environmental awareness. The aim is to integrate environmental considerations with social and economic issues in various development sectors. However, environmental decisions have remained subject to endless questions, not merely because they lacked appropriate legal mechanisms or effective implementation tools, or failed to seek solutions for critical environmental degradation, but fundamentally because they have not responded efficiently to new challenges or achieved the expected results regarding environmental safety and its integration with development, also known as sustainable development.

This situation necessitated a heightened awareness of environmental issues among decision-makers and an increasing interest in sustainability analyses and assessments, based on the United Nations Conference on Environment and Development (Brazil 1992), particularly the Rio Declaration on Environment and Development and the Agenda 21, as well as

the World Summit on Sustainable Development (Johannesburg 2002).

Thus, the topic of environmental analysis and assessment has gained significant attention due to the importance of its relationship with improving the performance of tourism activities through a set of indicators measuring the performance of sustainable tourism development. It is crucial to evaluate the environmental impact to determine the expected environmental and social effects of projects, considering that the environmental assessment process is directed, multidisciplinary, interactive, and aims to provide a clearer understanding of the relationship between ecological, social, economic, and political systems (Roe et al., 1995). This ensures that the proposed project does not cause harm to the surrounding environment at any stage of its implementation or operation.

With large projects that transcend international borders or are located in areas belonging to more than one country, as well as developmental sectors or strategic decisions impacting the environment, the need to enhance environmental impact assessments has emerged, especially in the decision-making process at a level that transcends individual projects. This has led to the emergence of the concept of strategic

environmental assessment, which aids decision-makers in better understanding how to integrate environmental and social considerations into their strategic decisions.

8.1 Definitions of Strategic Environmental Assessment (UNEP, 2000)

The concept of strategic environmental assessment focuses on various proposed policies, plans, programs, and strategic activities that have an impact on the environment in general. The assessment process involves diagnosing and monitoring the sources of environmental impacts resulting from different projects.

Strategic environmental assessment can be defined as a proactive analytical approach aimed at integrating environmental considerations in a comprehensive manner at the higher levels of decision-making. Its goal is to evaluate the environmental effects of proposed development policies, plans, and programs, provide more sustainable alternatives, implement appropriate mitigation methods, and inform decision-makers through a technical report and a non-technical summary.

The objective of strategic environmental assessment is to ensure that the proposed policy, plan, or program is coherent and harmonized with other strategic decisions. It also ensures public participation and the involvement of civil

society organizations in the strategic decision-making process.

The strategic environmental assessment process begins with studying the scope of the strategic decision (policy, plan, program), as illustrated in Figure (4). This includes understanding the motivations behind the decision, its importance, objectives, reviewing relevant local, national, and international policies, plans, and programs, and proposing objectives for the strategic environmental assessment. This provides a basis for comparing them with the expected environmental impacts of the strategic decision and the proposed alternatives.

The assessment processes also include the measures intended to monitor and oversee the environmental impacts resulting from the implementation of the strategic decision, as well as the noticeable transboundary effects that could potentially harm the environment. It is noteworthy that predicting environmental consequences at the strategic level generally becomes weaker than at the project level and increases in complexity due to the multiple stakeholders involved in decision-making and the broad range of alternatives available.

The strategic decisions that require assessment include policies, programs, and plans related to energy, agriculture, water, waste management, development areas, climate change mitigation, and major projects.

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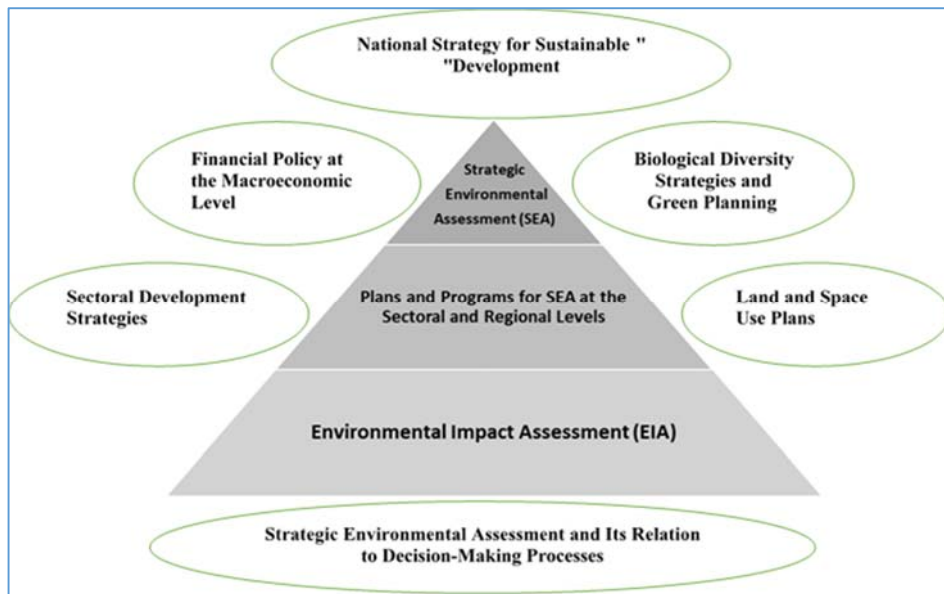


Fig. (4). Strategic Environmental Assessment and Its Relation to Decision-Making Processes. Source: (UNEP, 2002).

8.2 Procedures for Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) explores and evaluates suitable alternatives early in the formulation of policies, plans, and

programs (NEMA, 2020; EPA, 2023). There is a set of procedures followed when conducting a strategic environmental assessment, which can be outlined as shown in Figure (5).

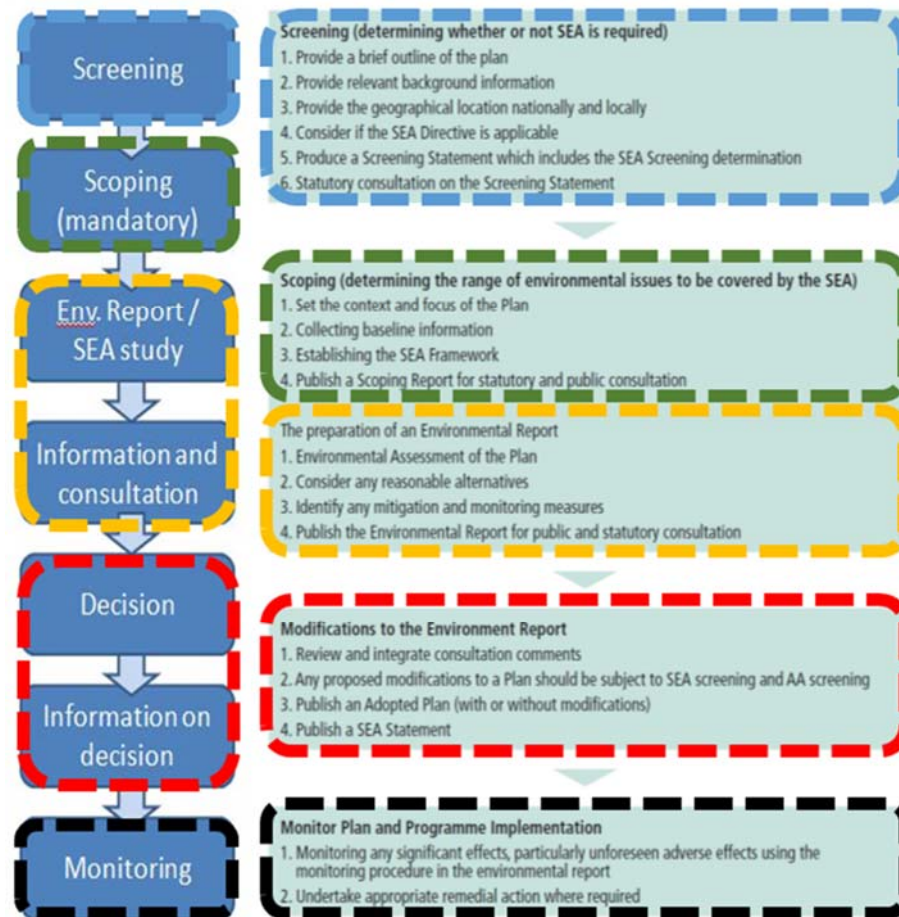


Fig. (5). Strategic environmental planning procedures. Source: NEMA, 2020; EPA, 2023.

Screening Process

This involves identifying the potentials, constraints, and key issues that may have environmental or social impacts resulting from a policy, plan, or program. The importance of involving stakeholders and experts at this stage is also highlighted.

Scoping

It defines the content of the strategic environmental assessment (SEA) and the relevant assessment criteria. It is essential to reach an agreement among stakeholders regarding the most critical issues and objectives that need to be addressed in the SEA. Identifying environmental goals and sustainability challenges that complement

the already defined objectives of the policy, plan, or program is also important. This requires a practical perspective on what can be achieved considering the available timeline, resources, and existing knowledge about key issues through an open and structured process. Scoping may also recommend alternatives to consider and appropriate methods to analyze key issues and relevant data sources.

The scoping process involves steps to complete this phase, beginning with the preparatory phase to define the scope, followed by identifying relevant plans, programs, and other environmental protection objectives, collecting essential data and information, and conducting

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background studies necessary during scoping. Additionally, developing SEA objectives by identifying useful information needed for scoping and approving the terms of reference for the SEA.

Strategic Environmental Assessment

The study of the SEA relies on an appropriate level of detail that should follow the following:

- Testing Policy, Plan, or Program Objectives Against SEA Objectives

This required to identify potential synergies and contradictions. This information may help develop alternatives during the formulation of the policy, plan, or program and, in some cases, may aid in improving the objectives themselves. In cases where there are multiple objectives for the policy, plan, or program, it may also be beneficial to test them against each other, as contradictions may lead to harmful environmental, health, and social impacts.

- Identifying and Evaluating Strategic Options

The SEA should allow for an early comparative assessment of the needs and impacts of different options, including a wide range of alternatives, long before any irreversible decisions are made. Each alternative should be assessed in light of the SEA objectives, considering positive and negative impacts while noting the uncertainties regarding the nature and significance of these impacts. Stakeholders can propose and evaluate alternative solutions based on expert judgment by developing and forecasting scenarios to assist decision-makers.

The final selection of the preferred alternative should consider:

1. Mitigation requirements and residual impacts of the preferred alternative scenarios.
2. Management measures and resources necessary for implementation to ensure environmental protection.

3. Justification for the preferred alternative (the optimal alternative is the most environmentally and socially sustainable and feasible both technically and economically). Stakeholders should be involved in the analysis of alternatives/options through appropriate consultation mechanisms.

- Defining the Scope and Nature of Potential Impacts

The assessment should be based on the screening and scoping stages to describe the scope and nature of the environmental and social impacts that may arise from implementing the proposed policy, plan, or program; how these impacts could affect development; and whether the impacts are positive or negative.

- Identifying and Evaluating Environmental Issues and their Connections

A SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis is needed to identify environmental and social constraints, issues, opportunities, and connections based on the results of baseline studies, focusing on the causes of impacts and the results of the affected areas.

- Identifying Risks and Opportunities

Implementing policies, plans, or programs within any framework involves risks and opportunities. It is always expected that policies, plans, or programs will involve the use of various resources, including human, financial, and natural resources. Therefore, it is essential to identify risks and opportunities while conducting a strategic environmental assessment. Risks will take the form of negative impacts, while opportunities will manifest as positive or beneficial impacts in the SEA process. Some types of impacts or risks may be direct, indirect, cumulative, negative, positive, or residual.

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- Enhancement and Mitigation Measures

The SEA examines opportunities to enhance potential environmental, economic, and social benefits and considers mitigation measures that can reduce or eliminate the potential negative environmental and social consequences of the proposed policy, plan, or program.

1. **Enhancement:** This refers to actions aimed at improving the positive impacts or opportunities associated with the policy, plan, or program. In cases where sensitive or important ecosystems or other environmental and social features are likely to be directly or indirectly affected by the policy, plan, or program, measures can be implemented to ensure long-term protection of these ecosystems.
2. **Mitigation:** This step involves identifying necessary measures to avoid, reduce, restore, or compensate for negative impacts while also enhancing the potential benefits of the selected alternative. Mitigation measures should be considered during the preparation of policies, plans, and programs to address specific impacts identified in the SEA.

- Recommendations for Each Evaluated Strategic Option

The SEA provides information about the relative environmental and social performance of alternatives. The purpose of the SEA is not to decide which alternative to choose for the policy, plan, or program; instead, it is the role of decision-makers to make choices regarding the policy, plan, or program to be adopted. The SEA makes the decision-making process more transparent, allowing the recommendations presented to policymakers to be taken into consideration.

- Environmental Management and Monitoring Plan

A strategic management and monitoring plan should be established to monitor the significant environmental and social impacts resulting from the

implementation of policies, plans, and programs to identify any unforeseen negative impacts and enable appropriate corrective actions. Decisions regarding what to monitor and how to do so should be considered early in the SEA process and throughout the preparation of the policy, plan, or program.

The SEA should also take into account the need for follow-up measures to monitor the environmental and social impacts of the policy, plan, or program, or to ensure that the implementation of the policy, plan, or program supports national development strategies and sustainable development goals. Monitoring the overall potential environmental, health, and social impacts of the policy, plan, or program after considering opportunities for enhancement and mitigation is essential.

- Public and Stakeholder Engagement After Identifying Options

The SEA should guide decision-makers on how to address concerns regarding environmental and social impacts among those most likely to be affected currently and in the future. Stakeholders and the public can be vital sources of local and traditional knowledge regarding potential environmental and social impacts.

- Synchronizing the Integration of SEA into Policy, Plan, and Program Development

The importance of SEA becomes evident during the formulation of policies, plans, and programs, and thus its coordination is critically timed when making developmental decisions, taking into account the outcomes of the SEA and the recommended measures to prevent or mitigate negative impacts.

- Preparing and Reviewing the SEA Report

Once the assessment is complete, a draft SEA report should be prepared, outlining the alternatives considered and their potential positive and negative environmental and social impacts, along

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with the strategic environmental management and monitoring plan. This is followed by a review phase for the report to reach its final form and be recommended to decision-makers.

Impact of the SEA Study on the Decision-Making Process

- Assessing Changes

When significant changes are made to the proposed policies, plans, or programs, it should be considered whether there is a need for an amended SEA report to be recommended.

- Decision-Making and Information Provision

Information in the SEA report should be taken into account during the preparation of the policy, plan, or program, along with sufficient information to clarify whether any changes or updates have been made. The final SEA report should be attached to the policy, plan, or program, containing proposed monitoring mechanisms or measures that can be confirmed or modified based on stakeholder participation. The policy, plan, or program itself should also be made available to the public after its approval.

- Documentation and Reporting

Report preparation is crucial to demonstrate that environmental and social factors have been integrated into the decision-making process. Decision-makers need to understand the available options, the potential impacts of these choices, and the consequences of failing to reach a decision. This information should be clearly articulated in the advice provided by the SEA team.

Monitoring, Observation, and Evaluation Stage

Monitoring, observation, and evaluation are essential stages in the SEA process to achieve the desired goals and objectives of the project. Feedback from the monitoring and observation process helps provide more accurate information leading

to correct decision-making. The monitoring, observation, and evaluation stage includes (inputs - outputs - outcomes - impacts) based on established goals, standard indicators, data collection, analysis, and evaluation criteria.

9. Sustainable Tourism Development in Light of the Importance of ESA

9.1 Impact of ESA on Sustainable Tourism Development

There exists a distinct and unique relationship between tourism and the environment, whereby the tourism supply environment must possess its uniqueness and individuality to attract tourism activities. Consequently, the natural environment offers multiple environmental components that reflect on increasing rates of tourism development. These increases in tourist influx rates are one of the environmental impacts of the tourism industry, which exacerbates the issue of enacting legislation aimed at protecting natural environmental components. Therefore, it is essential to achieve a balance between the required rates for tourism development in a specific location and the extent of those rates' impact on the environment and resource depletion (Font, 1999).

From this standpoint, the importance of conducting strategic environmental assessment studies becomes evident to determine the comprehensive frameworks for acceptable environmental conditions and their impacts. Conducting a strategic environmental assessment for tourism activities means the potential for long-term exploitation and maximizing economic viability while ensuring continuity. Thus, there has arisen a legal necessity in many countries, including Egypt, to conduct strategic environmental assessment studies for proposed tourism projects.

ESA study directs the sustainability of tourism development in the following areas:

- Monitoring and addressing issues and their impact on the overall economic cost and achieving environmental protection objectives.
- Examining the study area and identifying the environmental burden of the proposed tourism activities in light of monitoring the natural resources in the area (the geomorphological and topographical formation of the area, soil types, water bodies and their efficiency in use, and the biological diversity in the area), as well as the environmental risks in the study area. The strategic environmental assessment enjoys the advantage of integrating risks and tourism determinants while proposing planning policies, thereby facilitating consultation among various organizations and the public in Egypt.
- Identifying the reciprocal environmental impacts of proposed tourism projects on environmental elements and considering them.
- Developing planning alternatives that align with the proposed recommendations. The strategic environmental assessment also allows for a more comprehensive approach to examining alternatives for projects, effectively implementing mitigation and compensation measures.

9.2 Sustainable Tourism Development through Global Experiences in Light of ESA

9.3 Recommendations

Several global experiences have been studied to demonstrate how to apply the recommendations of strategic environmental assessment to achieve sustainable tourism development objectives. Countries such as Kenya and Mauritius face environmental challenges that directly affect the sustainability of tourism development, such as solid waste, wastewater pollution, accelerated coastal erosion, overfishing, coral reef damage, shell collection, mangrove tree cutting, deforestation, and soil erosion.

Some countries have implemented specific policies, plans, and programs and have conducted experimental strategic environmental assessments supported by donors (such as Tanzania and Mauritius). As shown in Table (1), all experiences have identified problems, described them, analyzed them, and extracted weaknesses while working on available opportunities to achieve the sustainability of the strategic action plan for tourism development through the guidelines of strategic environmental assessment, which recommended:

- Raising awareness and capacities regarding strategic environmental assessment before engaging in the use of the tool, and addressing all relevant authorities (especially in environment, tourism, and land-use planning) at different levels (national, regional, and local), as well as other key stakeholders (such as environmental NGOs and consultants likely to participate in preparing strategic environmental assessments).
- Increased immediate attention to training on strategic environmental assessment/raising awareness about it.
- It is recommended to establish a regulatory framework for strategic environmental impact assessment, as the institutional framework for environmental planning and management has matured. Various sectoral planning processes could significantly benefit from strategic environmental impact assessment.
- The use of strategic environmental assessment must have clear entry points into sectoral planning and land-use planning. For this to happen, the strategic environmental assessment process must be "owned" by sectoral authorities and land-use planning authorities. Ensuring these links will be essential for any progress in strategic environmental assessment.

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Table (1). Application of the recommendations of the strategic environmental assessment for sustainable tourism development in global experiences.

Experience	Problem Description	Objective	Strategic Environmental Assessment Procedures	Sustainability of Tourism Development
1- Tanzania	<ul style="list-style-type: none"> - Disposal of wastewater from hotels into the ocean, leading to contamination of seafood. - Increased urbanization and pressure on natural resources, infrastructure, and existing services. - Spread of subsistence farming leading to nutrient loading and increased sedimentation in the marine environment. - Beach erosion and pollution due to garbage accumulation on beaches. - Habitat degradation and overexploitation of certain marine resources such as shell collection, lobster fishing, and damage to coral reefs. - Overfishing and destruction of natural habitats. 	<ul style="list-style-type: none"> - Promote and develop environmentally friendly and sustainable tourism. - Promote and develop tourist areas in a coordinated manner to attract private investment and ensure sustainable tourism development. 	<ul style="list-style-type: none"> - Review the screening process so that environmental impact assessments are only required for projects that may have significant environmental impacts. - Capacity building is needed, especially at the local level, particularly regarding monitoring and implementing the environmental management plan. - Review the current strategic environmental assessment regulations to ensure a participatory process. - Build capacity to ensure a comprehensive understanding of strategic environmental assessments for environmental management and sectoral authorities, targeting other stakeholders such as NGOs and consultants. 	<ul style="list-style-type: none"> - Address key issues affecting the coastal environment, particularly coral mining, destructive fishing, wastewater treatment, and mangrove cutting, as these issues could impact tourism potential, including raising awareness at the local level. - Pay special attention to the key sensitive areas identified by the Marine Environmental Areas Project to ensure their conservation plans align with tourism development. - Promote the implementation of coastal tourism development guidelines for all projects.
2- Mauritius	<ul style="list-style-type: none"> - Beach erosion is a serious problem in many parts of Mauritius. - Tourism activities have damaged coral reefs. 	<ul style="list-style-type: none"> - Develop tourism with minimal impact on the natural environment, pledging to "keep beaches open and provide access for all residents of Mauritius," and regulate hotel growth along the beaches. - Enhance integrated coastal area management planning and promote sustainable tourism. 	<ul style="list-style-type: none"> - An environmental strategic assessment was conducted to identify suitable locations for moorings, jet ski lanes, and bathing areas, providing guidelines for their construction. - Staff at the Ministry of Environment receive adequate training and capacity building on coastal erosion and specific beach hazard issues at the technical level. 	<ul style="list-style-type: none"> - Launch a beach nourishment program at the public Flic en Flac beach and set a mandatory setback distance for constructions along the coast (30 meters as stipulated in planning policy guidelines). - Remove illegal structures that interfere with the dynamic beach area. - Regarding wastewater management, regulatory bodies have imposed a mandatory requirement for hotels with more than 80 rooms to have a dedicated sewage treatment plant. - Authorities are establishing mooring buoys, particularly in protected marine areas. - The Ministry of Housing and Land is considering land use planning for coastal beaches to clearly identify suitable development areas and those needing protection due to environmental sensitivity.
3- Kenya	<ul style="list-style-type: none"> - Environmental challenges such as water pollution and increased solid waste. 	<ul style="list-style-type: none"> - Enhance sustainability and reduce negative impacts on the environment. 	<ul style="list-style-type: none"> - Implement comprehensive studies to identify and monitor environmental issues. 	<ul style="list-style-type: none"> - Improve the quality of tourist destinations and increase tourist attractiveness.

Source: Palerm (2007).

10. Sustainable Tourism Development at Marina El Alamein Center in Light of Implementing ESA Mechanisms

The geographical location of the Marina El Alamein Center is characterized by its proximity to the city of El Alamein in Matrouh Governorate, along the

northwestern Mediterranean coast of Egypt, as illustrated in Figure (6). It extends over a length of 20.37 km and is approximately 300 km from Cairo at kilometer 94 on the Alexandria-Matrouh coastal road, situated at a latitude of 30.51° - 30.49° N and a longitude of 28.57° - 29.45° E. The Marina

El Alamein Center encompasses a lagoon separated from the Mediterranean Sea by a

long sandy barrier divided into four entrances (first, second, third, and fourth).



Fig. (6). Google Earth photo of the geographical location of Marina El Alamein Center.

9.1 Screening Process

The screening process is a phase that describes the current situation, during which potentials, constraints, and key issues are identified that may have

environmental or social impacts resulting from a policy, plan, or program. Additionally, the importance of involving public stakeholders and experts in this phase is emphasized.

9.1.1 Analysis of Strengths, Weaknesses, and Environmental Risks of Environmental Issues at Marina El Alamein Center

Table (2). Analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT)

Weaknesses (Internal Environmental Weaknesses of the Study Area)	Strengths (Internal Environmental Strengths of the Study Area)
1. Coastal pollution from coastal activities (construction of coastal barriers and jetties, yacht and boat tourism activities).	1. Presence of tourism resources in the area represented by the sea, sandy beaches, and the Al-Ameed Protected Area, which are significant attractions.
2. Risks of groundwater pollution and salinity due to drainage activities (not in compliance with the water quality standards set forth in Law 48 of 1982).	2. The gentle slope in the study area contributes to its tourism distinction.
3. Limited utilization of deep groundwater resources in the area.	3. The area enjoys a moderate climate suitable for environmental planning and design.
4. Traditional waste disposal methods need modern technologies.	4. The long tourist season lasts 6 months from October to March in terms of thermal comfort (temperature and relative humidity), with 5 months suitable for international tourism from November to March.
	5. Existence of many water islands for tourism development, which are being reconsidered for development.
Risks (External Environmental Risks and Threats to the Study Area)	Opportunities (External Opportunities in the Study Area)
1. The study area is situated in a zone referred to as an "Ecological Dilemma," where urban growth	1. Opportunities to rehabilitate archaeological sites in the area for international and local tourism.

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requirements inversely relate to the ecological system that aims to preserve the natural environment.	
2. Lack of knowledge about the mechanisms for preserving the natural environment and biodiversity in the area.	2. Opportunities for diverse tourism patterns in the area, including beach, archaeological, scientific (in the reserve), and ecological tourism.
3. Need to provide mechanisms to protect development processes from the risks of rising sea levels and erosion and sedimentation in the area.	3. The groundwater reservoir is renewable and can be accessed by drilling shallow wells or pumping.
4. Issue of rising groundwater levels negatively affecting buildings and drinking water.	4. Potential to benefit from the Al-Hamam Canal passing south of the area.
5. Issue of dunes and sandstorms and their direct impact on pollution in the area.	5. Opportunity to utilize rainwater harvesting techniques in the development of the study area.
6. The study area is within the seismic impact zone and geological faults over the long term.	6. Potential to use treated wastewater for irrigation of green spaces.

9.2 Scoping

9.2.1 Environmental Objectives

The sustainable environmental development plans for the Marina Alamein Center aim to achieve integration among projects in light of the focus on creating external axes for the management of natural resources and establishing connectivity between them and social and economic factors while avoiding threats and risks through proposing a long-term plan that achieves the concept of sustainable development.

In light of this, there are a number of considerations to improve the tourism and environmental management of the Marina Alamein Center and to develop plans, programs, and projects that encompass the following ideas:

- Restoring and maintaining the functional performance of the ecosystem.
- Reducing the environmental impact resulting from marine and coastal infrastructure.
- Relying on environmental enhancements and engineering techniques to preserve the environment.

- Increasing protected areas and those whose use is subject to monitoring.
- Optimal utilization of environmental and natural resources.
- Working to avoid environmental risks and threats.

9.2.2 Environmental Issues in the Study Area and Degree of Severity – Response Methods

The Marina Alamein Center is situated in an area referred to as an "Ecological Dilemma," where the requirements for urban growth are inversely related to the ecological system that seeks to maintain the natural environment. Therefore, efforts should be made to achieve the lost balance between the natural environment and the built environment and activate the dimensions of environmental sustainability in updating the area's planning.

Accordingly, it is essential to identify the most important environmental issues in the area, considering their geographical impact and direct effects on the region, as well as determining the degree of severity and response methods, as illustrated in Table (3).

Table (3) Environmental issues of Marina El Alamein Center.

Environmental Issues	Geographical Situation	Severity Degree	Mitigation or Control Factors
Rising Sea Level Risks of Erosion and Sedimentation	Marina Center is located within the zone of rising sea levels and is exposed to erosion and sedimentation processes.	High	Establish coastal treatment measures to mitigate this risk.
Dunes and Sandstorms	Marina Center is within the zone of sandstorms and Khamsin winds, which are important issues that must be addressed in planning and design.	Moderate	Establish tree fences and windbreaks.
Rising Groundwater Levels and Salinity	Within the study area.	High	Develop a plan to manage and preserve groundwater.
Work on modernizing buildings and infrastructure to reduce salinity impact.			
Flooding	Outside the study area.	Low	Monitor the movement of valleys and water pathways in the surrounding area.
Earthquakes	Outside the study area.	Moderate	Develop a plan for constructing buildings that can withstand earthquakes.
Geological Structures	Outside the study area.	Moderate	Monitor the study of fault activity surrounding the study area.
Pollution	Inside Marina – water, soil, and air pollution.	Moderate	Develop a plan to monitor air, water, and soil pollution in Marina Center.

Source: Author

9.2.3 Proposed Environmental Programs and Projects for Marina El Alamein Center

Table (4) illustrates the proposed programs and projects aimed at meeting the

needs of Marina Center to achieve the optimal use of environmental and natural resources and to serve the residents and tourists within the study area.

Table (4). Proposed programs and projects for Marina El Alamein Center

Proposed Programs and Projects for Marina El-Alamein	
Tourist Resorts	Restaurants and Cafés
Tourist Housing	Commercial
Mixed Housing	Services
Mixed Use (Commercial – Administrative)	Regional Services
Services	Entertainment Services – Water Park
Commercial Entertainment	Logistics Services
Entertainment Walkway – Recreational Park	Exhibition Area
Cabin and Café Area	Shopping City
Proposed Recreational Area	Handicraft Workshops
Sports Fields	Environmental Features (Lake – Beaches for Recreation)
Road Development – Parking Areas	Wastewater Treatment Plant
Hotels and Motels	Open Green Areas
Upper Middle-Class Housing – Middle-Class Housing	Road Network – Vehicle Bridges – Parking Areas
Mixed Housing – Worker Housing	Pedestrian Bridges – Extension Area Entrances

Source: Author

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9.3 Strategic Environmental Assessment Study

The step of assessing the components of the strategic plan, represented in the assessment of (uses, activities, and services), aims to evaluate the direct and indirect environmental impacts on the environmental status of Marina Alamein Center. It emphasizes the importance of evaluating the components of the strategic plan for the southern extension of Marina Alamein Center and its effects on the environmental status. The environmental assessment of the plan is conducted through a series of steps, which are:

9.3.1 Predicting Environmental Effects (Testing Policy, Plan, or Program Objectives Against Strategic Environmental Assessment Objectives)

The environmental impact assessment studies for updating the plan of Marina Alamein Center begin in light of the results of the current situation studies and the identification of the main environmental issues in the study area. Through this study,

a detailed analysis of the data can be conducted, estimating the magnitude and intensity of the potential impact, whether direct, indirect, or negligible, and how it addresses the existing environmental issues of Marina Alamein and its extension, concerning the various elements of the proposed strategic plan, as follows:

First: The Expected Influence of the Strategic Plan Components for Marina Alamein Center on the Environmental Status:

This step aims to evaluate the components of the strategic plan for Marina Alamein Center and the direct and indirect impacts on the environmental status. The following evaluation of the existing components of the strategic plan for Marina Alamein Center has shown that they have a clear negative impact on the environmental status, leading to the presence of many key environmental issues that must be addressed. Hence, the components of the strategic plan have been developed to deal with these direct negative impacts and work to preserve the environment and ensure its sustainability, as illustrated in Table (5).

Table (5). Direct and indirect impacts of the strategic plan for Marina El Alamein Center on the environment.

Components of the strategic plan for Marina El Alamein Center	Zero effect	indirect effect	Direct impact on the environment	
			negative impact	positive impact
Villas and chalets				
Buildings				
Hotels, tourist villages and Porto Marina				
Commercial areas				
Yacht port - development of the yacht marina area				
Services - religious - facilities				
Road network and waiting areas				
Facilities and infrastructure				
Environmental aspects (lake - beaches)				
Playgrounds				
Green and open areas				
Archaeological area				
Vacant lands				
Lands offered for investment				
Buildings and spaces to be rehabilitated				

Heba Nabil Abed Elhamed

Upgrading and developing existing hotel accommodation elements				
Modified Marina wall - Expansion of existing bridge - Development of Marina entrances and gates -				
Tourist resorts				
Tourist housing				
Mixed housing				
Mixed uses (commercial - administrative)				
Services				
Commercial entertainment				
Recreational walkway - Recreational park				
Cabins and cafeterias area				
Proposed entertainment				
Tourist housing				
Hotels & Motels				
Above Average Accommodation - Average Accommodation				
Mixed housing - workers housing				
Restaurants and cafes				
Commercial				
Services				
Regional services				
Entertainment services - Water park				
Logistics services				
Exhibition area				
Shopping city				
Craft workshops				
Environmental aspects (lake - beaches for entertainment)				
Sewage treatment plant				
Open green areas				
Road network - Vehicle bridges - Waiting areas				
Pedestrian bridges - Entrances to the extension area				

Source: Author

Second: The Connection between the Marina Alamein Center Master Plan Update and Environmental Issues

The evaluation of the components of the Marina Alamein Center master plan revealed how environmental issues were addressed. A significant portion of the proposed master plan for updating the existing Marina has dealt with the environmental topics identified during the

first phase of the environmental assessment, as shown in Table (6). Green and open areas, along with a recreational park, were proposed to emphasize the role of green spaces in supporting the environment. Additionally, a car-free road network, embodied in the concept of a recreational promenade, has been suggested.

Heba Nabil Abed Elhamed

Entertainment services - Water park								
Logistics services								
Exhibition area								
Shopping city								
Craft workshops								
Environmental aspects (lake - beaches for entertainment)								
Sewage treatment plant								
Open green areas								
Road network - Vehicle bridges - Waiting areas								
Pedestrian bridges - Entrances to the extension area								
	No effect				There is an effect			

Source: Author

It was found that the components of the general plan for the southern extension of the Marina Alamein Center achieved the objectives of the Strategic Environmental Assessment (SEA) by proposing certain uses that reduce environmental load and address environmental issues resulting from the direct impacts of existing land uses. These proposed components include (green eco-friendly hotels and motels, parks and open spaces, environmental features such as the lake and beaches, recreational services, a water park, a shopping city, and regional services based on the concept of environmental management) along with other uses that have become of current and future importance in improving the environmental status of the area.

Accordingly, the different impacts of the strategic plan components on the surrounding environment were identified. In this stage, the impact of the Marina Alamein Center strategic plan components on environmental elements, such as air, energy, and water, is being assessed, and the nature of these impacts—whether quantitative or qualitative—and their degree of influence are determined. This highlights the importance of understanding the type and degree of impact on the proposed uses and how the plan addresses the current environmental situation. It also assesses whether these components have reduced the effects on environmental

elements and identifies which environmental factors might be harmed by the activities and uses, particularly in terms of water and air quality.

The evaluation of the impact of the strategic plan components on environmental elements such as water, air, land, and soil revealed the following:

- There are some negative impacts from the existing strategic plan components, including housing, road networks, and parking areas, on environmental elements. This impact was both quantitative and qualitative, especially on water, followed by air and energy.
- However, the proposed strategic plan components embrace ideas and principles of environmental sustainability regarding environmental elements, aiming to preserve them and aligning with global and national plans, as well as the goals of environmental assessment at all levels. For example, green or open areas, non-polluting activities, and facilities such as a wastewater treatment plant to reuse treated water for irrigation and green spaces.
- This evaluation of the impact of the strategic plan components on environmental elements serves as the baseline, indicating strengths and

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weaknesses that must be considered. The scale of the impacts of the general plan components must be monitored regularly using key indicators, as mentioned in the first phase of the environmental assessment for the Marina Alamein Center and its southern extension, to understand the interaction, handling, and compatibility between environmental elements and the general plan components. This ensures that the environmental assessment process is directed toward its objectives.

9.3.2 Environmental and Social Impacts of the Marina Alamein Center Master Plan Implementation Phases

First: Direct Impact Areas:

The direct impacts of the proposed projects in the master plan include those resulting from project activities and components on the environmental and social elements at the project site and time. The direct impact area of the project encompasses the environmental elements of the entire study area and its surrounding urban environment, which will be affected by the development process, as well as the workers in the area and users of its services and facilities. The nature and scope of the impacts vary depending on the different phases of the project. The areas directly impacted include those involved during the preparation phase for project implementation, actual construction operations, and the operational phase after project completion, which represent the scope of the expected positive and negative impacts. The direct impact area includes the following environmental and social elements of the plan:

- The natural and ecological characteristics of the southern extension of the

Marina Alamein Center: Based on studies of the current situation, it has been possible to identify the various environmental values of the internal areas and define the building and planning regulations for them. Therefore, the development and growth process may have a direct impact on these areas. – Residents of the study area: This includes the impact of implementing the proposed development projects on employment opportunities, average income levels, living costs, connectivity, accessibility to the study area, exposure to health and environmental

risks, and living conditions in general. – Land and property owners: This includes the impact on the market value of land and properties and the variety of housing patterns, from simple residential buildings to villa owners and detached housing units. – Business and tourism owners: This includes the size of businesses, the cost of doing business, income levels, exposure to health and environmental risks, and general living conditions. – Temporary visitors (including workers in the area): This includes the impact on job opportunities, average income, and living costs for visitors to Marina.

Second: Indirect Impact Areas:

The indirect impacts of the plan development include those resulting from project activities and components on natural and social environmental elements outside the project's location or timeframe, which can be anticipated despite spatial and temporal differences. The indirect impact area of the project involves two levels. The first level concerns the residents of areas adjacent to the direct impact area or those connected to it due to shared or influenced services and facilities being developed. The second, broader level of indirect impacts includes the potential effects of the project on the surrounding region at a regional level.

9.3.3 Analysis of Strategic Impacts on Environmental, Economic, and Social Elements Affected During the Project Phases:

To predict strategic impacts, detailed data analysis and the estimation of the scale and intensity of potential impacts (whether negative or positive), both direct and indirect, are required for the different phases of the strategic plan. This is done using semi-quantitative matrices for impact assessment. The matrix structure at this stage of the study is based on the lists of environmental and social elements in the proposed direct and indirect impact areas of the plan. The Strategic Environmental Assessment (SEA) examines opportunities to enhance potential environmental, economic, and social benefits, and also considers mitigation measures that could reduce or eliminate potential negative environmental and social consequences of the proposed policy, plan, or program.

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Table (9). Mutual effects between response to planning, environmental and social standards and project implementation stages

Impact Areas	Project Stages																											
	Operation Phase							Execution Phase										Pre-Execution Phase										
	Operation of Sewage, Drinking Water and Electricity Networks	Expansion of the Existing Bridge	Development of Entrances and	Development of the Marina Area	Traffic on the New Road Network	Operational Plan for	Beautification and Landscaping,	New Residential Activities in the	New Commercial, Services and	Harmful Emissions	Noise	Work Crew Activities	Site Landscaping Works	Operation of Heavy Equipment	اعمال paving	General Construction Works	Traffic Diversions During	Road Occupation in the Work Area	Site Preparation, Leveling, and	Storage of Demolition Works and	Transport of Demolition Works and	Demolition Works and	Clearing General Occupations	Site Preparation Works	Establishment of an Initial	Rehabilitation Needs for Interstitial	Identification of Buildings to be	Land Requirements for the Project
	Respond to the planning standards of the vision																											
Contribute to creating new investment opportunities	█	█	█	█	█	█	█	█																	█	█		
Improving the visual and aesthetic image	█	█	█	█	█	█	█	█																	█	█		
Dealing with community priority problems	█	█				█	█																		█	█		
	Respond to environmental and social standards																											
Dealing with the needs of the local community	█	█	█	█	█	█	█	█																				
Impacting the traditional daily lifestyle	█	█	█	█	█	█	█	█				█	█	█	█	█	█	█	█	█	█	█	█	█	█			
Developing road services and infrastructure			█																									
Contributing to creating new economic resources	█	█	█	█	█	█	█	█																				
Contributing to increasing development rates	█	█	█	█	█	█	█	█																				
											No Impact					Strong Negative	Specific Negative Impact	Positive Impact	█									

Source: Author

9.3.4 Assessment of Response Degree to Impact

Based on identifying and evaluating the significance of the various negative impacts of the proposed projects on different segments of society, priority environmental and social impacts and the most affected community groups have been determined. The results of this analysis represent the basis for reaching the best socially acceptable solutions to the problems and damages that may accompany the implementation of the proposed projects. Among the most significant negative impacts that are expected to be addressed are:

- Air pollution or water pollution
- Disruption of the ecological balance of the aquatic systems in the study area
- Deterioration of the visual and aesthetic values of the location
- Resettlement
- Increased cost of land and housing
- Loss of traditional livelihoods
- Loss or reduction of unaccounted income
- Rising cost of living
- Loss of social structure and networks of relationships
- Loss and deterioration of the levels of community infrastructure services (drinking water, sewage, health, education, transportation, security, etc.) or their increased costs

9.3.5 Identification of Potential Risks During Project Implementation

Based on the results of the previous step, the risks associated with some of the proposed flagship projects can be studied in the event that the recommended corrective actions are not completed, including completing social and environmental impact assessments for these projects or some of their components in greater detail.

9.3.6 Conditions for Reducing Environmental Impact of Project Components

Conducting the environmental assessment of the general plan projects contributes to establishing appropriate conditions and strategies to reduce the environmental impact of the components of the general plan for the Marina Alamein Center and its southern extension to achieve environmental sustainability. The evaluation will be conducted by compiling the main elements of the previous essential stages that affect the environmental assessment process, represented in:

- Choosing the site and its environmental suitability concerning the surrounding projects and activities.
- Compatibility with the environmental objectives of the plan.
- Identifying the impacts resulting from environmental elements.
- Estimating environmental loads.
- Presence of primary and secondary measurements and indicators for environmental issues in a periodic and measured manner.

Therefore, the evaluation will guide us to follow mitigation and adaptation strategies to minimize any impacts on the environment. An environmental action plan must be established, including an environmental management plan that outlines the main lines of work for mitigating and adapting to environmental impacts and loads through a set of procedures, requirements, and means that implement these requirements and procedures. This will ensure the implementation of the strategic environmental assessment approach and its objectives, leading to the development of a mitigation and adaptation plan using mitigation and adaptation strategies to address the impacts of the components of the general plan and establish a framework for their implementation to guide the

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monitoring process of the plan's components.

9.3.7 Environmental Mitigation and Adaptation Strategy Plan and Procedures

The action plan with environmental mitigation and adaptation strategies includes a set of steps that will be clarified by activating each component of the strategic plan:

- Identifying and briefly describing all significant expected negative impacts.
- Describing each mitigation and adaptation measure.
- Clarifying the mitigation plan for negative impacts (projects that help implement the mitigation plan).
- Establishing cooperative programs to implement mitigation measures between the public and private sectors.
- Creating working groups to assess the negative impacts of environmental issues (environmental risks).
- Developing a plan for managing inputs and resources and addressing environmental issues.
- Creating a plan to adapt to negative environmental forecasts to mitigate environmental issues.
- Identifying plans and projects that evaluate the negative impacts that address these risks and environmental issues.
- Establishing a strategy for awareness.
- Reviewing community capacities and stakeholders.
- Reviewing and approving the plan.

First: Mitigation and Adaptation Procedures for Ecosystem-based Projects:

- Periodic monitoring to measure indicators related to environmental and natural values in the study area.

Second: Mitigation and Adaptation Procedures for Recreational Projects ("Green and Open Spaces"):

- Determining the volume of water needed for irrigating trees and plants.
- Identifying suitable types of flowers and plants for the area's nature and existing values.
- Periodic monitoring of the quality of plant and tree life in parks and open areas.

9.4 Impact of Strategic Environmental Assessment Study on Decision-Making

The information contained in the strategic environmental assessment report should be considered during the preparation of policy, plan, or program, along with sufficient information to clarify whether any changes or updates have been made.

The final strategic environmental assessment report should be attached to the policy, plan, or program, containing proposed monitoring mechanisms or measures, which can be confirmed or adjusted in light of stakeholder participation. The policy, plan, or program itself should be made available to the public after approval.

9.5 Monitoring, Tracking, and Evaluation Stage

Monitoring, tracking, and evaluation is a crucial phase in the strategic environmental assessment process to achieve the project's goals and objectives, as feedback from monitoring and tracking provides more accurate information that leads to correct decision-making. The monitoring, tracking, and evaluation phase involves (inputs - outputs - results - impacts) based on goals, standard indicators, and collecting and analyzing data, as well as evaluation criteria.

Conclusion:**General conclusion**

- Tourism development has evolved over the past few decades, and a number of specific procedures and techniques have been developed and applied to control the sustainability of tourism growth, in addition to scenario analysis and capacity management.
- There is a highly distinctive and unique relationship between tourism and the environment, aiming to achieve a balance between the rates required for tourism development in a specific place and the extent of those equations' impact on the environment and resource depletion.
- Planning for tourism, its development, and management is part of the protection or sustainable development strategies for the region or country.
- The importance of conducting strategic environmental assessment studies to define comprehensive frameworks for acceptable environmental conditions and their impacts through a cross-analysis of environmental, social, and economic planning before implementing tourism development, where compatibility between community and environmental requirements is achieved.
- Indicators for achieving sustainable tourism development represent tools for evaluating and indicating that the sustainability of tourism development is a material and tangible basis for managing and developing tourism activity.
- Strategic environmental assessment is a mechanism aimed at demonstrating the importance of the relationship between sustainable tourism development performance and the necessity of assessing environmental impacts to identify the expected environmental and social impacts of projects, considering the environmental assessment process as a guided,

multidisciplinary, and interactive process that achieves a clearer understanding of the relationship between ecological, social, economic, and political systems.

- The strategic environmental assessment for tourism activities aims to recognize the potential for long-term exploitation and maximize economic feasibility with its sustainability.
- The goal of strategic environmental assessment is to ensure that the proposed policy, plan, or program is consistent and harmonious with other strategic decisions and ensures public participation and civil society organizations in the strategic decision-making process.

For the Study Area

- The sustainable environmental development plans for Marina Alamein Center aim to achieve integration among projects in light of the interest in creating external axes for managing natural resources and establishing connectivity between them and social and economic factors while avoiding threats and risks through proposing a long-term plan that achieves the concept of sustainable development.
- Conducting the strategic environmental assessment of the general plan projects contributed to establishing appropriate conditions and strategies to reduce the environmental impact of the components of the general plan for Marina Alamein Center and its southern extension, enabling us to achieve environmental sustainability.
- Optimal use of resources and confronting environmental risks and constraints in the Marina Alamein Center plan, based on the recommendations of the strategic environmental assessment.

Recommendations

- This study emphasizes the necessity of conducting strategic

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environmental assessment studies for targeted development areas in Egyptian strategies to activate the environmental role among the dimensions of development to support decision-makers before approving developmental tourism projects to preserve natural resources within the framework of proposed ecological systems aimed at achieving sustainability

- Policies and strategies for tourism development should aim to apply strategic environmental assessment to achieve sustainability.
- Laws, regulations, and technical offers should require conducting strategic environmental assessment studies in all targeted sectoral development areas.
- More research and practices should focus on how to integrate sectoral measures and techniques with strategic environmental assessment (SEA) to identify the best ways to strategically consider tourism development and its environmental consequences.

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ألية التقييم البيئي الاستراتيجي للتنمية السياحية المستدامة بمارينا العلمين

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المستخلص

إن التحديات البيئية والاجتماعية لها تأثير مباشر وتشكل عائقا كبيرا أمام استدامة التنمية السياحية. يواجه صناع القرار تحديات يمكن دعمها وتوجيهها من خلال التقييم البيئي الاستراتيجي (SEA). ويمكن تحقيق ذلك من خلال تنفيذ آليات وسياسات مختلفة تعتمد على التحليل والتقييم البيئي المكاني والزمني للتخفيف من الآثار والمخاطر السلبية المتوقعة. وتوضح منهجية البحث المفاهيم الأساسية مثل تنمية السياحة المستدامة والتقييم البيئي الاستراتيجي، وتوضح كيف ينعكس التفكير النظري والتحليلي في نتائج البحث. وتشمل هذه النتائج التعرف على مراحل التقييم البيئي الاستراتيجي ومساهمته في إدارة البيئة المحيطة في المناطق السياحية. وأخيرا، أبرزت نتائج البحث كيفية تحقيق التنمية السياحية المستدامة في ضوء السياسات والاستراتيجيات المقترحة، مع الاستفادة من آليات التقييم البيئي الاستراتيجي لمواجهة التحديات البيئية والاجتماعية من خلال مراحل منهجية تهدف إلى إيجاد حلول بديلة للتنمية السياحية. ويتم ذلك بناءً على التحليل البيئي والتقييم ومشاركة أصحاب المصلحة في مناطق التنمية السياحية (على سبيل المثال، مركز مارينا العلمين).

الكلمات المفتاحية: التقييم البيئي الاستراتيجي، الاستدامة، التنمية السياحية، مركز مارينا العلمين.