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Green hotels as a means of achieving sustainable tourism development: A reading of the Egyptian experience

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Abstract :

This study aimed to assess the extent of Egyptian hotels' commitment to obtaining the Green Star certification to support sustainable ecological tourism. The Green Star Hotel (GSH) program aims to enhance the environmental performance of hotels, including Egyptian ones, while improving social standards and reducing operational costs. By 2024, 183 hotels had received the Green Star certification, compared to only 12 in 2013. However, given Egypt's tourism potential, this number remains relatively low. Recommendations include awarding hotels that implement green practices, offering training courses for hotel staff, and ensuring effective supervision to enforce green practices.

Keywords: **:**Green Hotels, Green Practices, Ecotourism, Sustainable Tourism, Sustainable Tourism Development, Egypt.

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1. INTRODUCTION:

There has been a global shift towards adopting sustainable practices in response to these daunting challenges. This shift is evident in the efforts of governments worldwide, committing to ambitious targets, such as substantial reductions in carbon emissions and achieving net-zero emissions by 2050, as stipulated in the Paris Agreement. Moreover, the adoption of environmentally friendly practices by organizations has become more prevalent as a strategy to mitigate the adverse environmental impacts of their operations. Green behavior has gained popularity as a response to urgent environmental issues. Ecological degradation, resource depletion, and climate change underscore the necessity for a significant adjustment in human behavior toward sustainability. The complexities of eco-friendly conduct are explored by scholars and professionals in fields such as environmental science, management, sociology, and psychology. This interdisciplinary exploration represents a holistic approach that considers the social, organizational, and individual factors influencing sustainable behaviors (Noor Islam et al., 2025).

The tourism sector, particularly hotels, faces numerous challenges that have a direct or indirect impact on the environment. These challenges include the inefficient use of energy, poor waste management practices, inadequate sewage treatment, water pollution, and threats to marine life. These issues have become more pronounced in recent decades due to the lack of effective resource management practices, inefficient operational systems, and the absence of quality standards and practical environmental requirements for managing resorts, hotels, and other tourism establishments. Additionally, there is a shortage of qualified experts in sustainable, environmentally friendly hotel management. As a result, many global hotels are increasingly adopting the concept of ‘’green hotels,’’ implementing various eco-friendly practices, and activating initiatives that contribute to promoting the culture of environmentally responsible green hotels. These hotels are also entering into agreements aimed at environmental protection. This trend is part of the modern movement toward sustainable ecotourism, where the Global Sustainable Tourism Council (GSTC) grants green certifications and stars to hotel establishments, recognizing their level of service and the extent to which global sustainable tourism standards are met. Hotels around the world are striving to obtain these certifications due to their positive impact on business performance and profitability, as well as the enhancement of their global reputation.

1.1. Statement of the Problem:

The study explores the impact of green hotel practices on the development of sustainable tourism.

what extent do Egyptian hotels commit to obtaining the Green Star to promote sustainable ecotourism?

1.2. Research Questions :

From the main research question, the following sub-questions arise:

- What is meant by green hotels, what are their specifications and requirements, and why is it important to implement them?
- What is the significance of sustainable ecotourism, and how does it contribute to fostering sustainable development?
- How has the Egyptian government supported hotels in adopting green practices?
- What is the Green Star Program, and how committed are Egyptian hotels to implementing it?
- Do Egyptian hotels prioritize obtaining the Green Star certification?
- What operational aspects in hotels contribute to obtaining the Green Star certificate, and what objectives do they aim to achieve from this?

1.3. Hypothesis/ hypotheses:

- The Egyptian government has encouraged and urged the hotel sector to take the necessary active and effective measures to preserve and protect natural resources by implementing the Green Star system in its hotel operations, training its employees, and engaging its guests accordingly. This is evident in the growing number of Egyptian hotels that have obtained the Green Star.

1.4. Significance of the Study :

The significance of this study stems from the importance of green hotels and sustainable eco-tourism, as well as the role of green practices and the pursuit of green stars in boosting tourism and protecting the environment. Furthermore, the study aims to investigate the current state of Egyptian hotels in implementing the concept of sustainable eco-tourism through adherence to green hotel standards and the acquisition of green stars.

1.5. Objectives of the Study:

- Identifying green hotels, their characteristics, and the importance of their implementation.
- Focusing on sustainable eco-tourism, its significance, and how it can be realized through the hotel industry.

Examining the level of commitment of Egyptian hotels to adopting green practices and their efforts to earn green stars

1.6. methodology of the Study:

Our empirical materials were collected were collected through a case study of the Green Star program in Egyptian hotels, the procedures required to obtain the Green Star

rating, and the procedures specified by the Egyptian government for obtaining it. Statistics were also presented.

Our study also reinforces the need to highlight the importance of green hotels adhering to the Green Star standard in achieving the concept of economic development, and its impact on preserving resources and human rights in the coming decades, leading to a sustainable future .

1.7. previous researches :(literature review)

-Mohamed Ali Dachah, Hanane Drid, Green Hotels: A Key Experience for Sustainable Ecotourism in Light of the New Algerian Tourism Strategy by 2025, Al-Badil Al-Iqtisadi Magazine, Volume 5, Issue 1, 2018. The study aimed to answer the following question: How do green practices contribute to putting hotels on the path to sustainable environmental tourism development? What are the hotel components that Algeria has outlined to promote the hotel sector? What did the Tourism Development Master Plan Horizons 2025 bring to integrate the environmental dimension into hotel management? The study concluded that those in charge of the hotel industry must realize the importance of sound and green practices towards the environment and society, due to the benefit they bring in reducing costs through reducing the value of water and energy consumption, treating wastewater, disposing of solid waste, and gaining a good reputation that may make the hotel itself a tourist destination . Hotels in Algeria can take advantage of these experiences, especially since they are still on their way to developing their tourism sector through the tourism development master plan.

- Noor Islam Jasim ,Saraswathy Shamini Gunasekaran, Mohammed A. Al-Sharafi , Muhammed Ibrahim , Abba Hassan , Moamin A. Mahmoud , Adnan Bakather Exploring a nexus among green behavior and environmental sustainability: Asystematic literature review and avenues for future research, The research focuses on the following research questions: What are the main focuses of the included studies? What are the problems that included studies are trying to solve? Which factors most significantly influence individuals and organizations in adopting green behavior to promote environmental sustainability? In what ways can green behavior act as a predictive measure of environmental sustainability? The study results indicate that combining personal conviction with supportive organizational environments greatly enhances the likelihood of adopting green behaviors, thereby promoting environmental sustainability at both the individual and collective levels.

-. Houidi, A. J. (2014). The interactive Relationship between ecological tourism and sustainable development. Journal of Social Studies and Research, 2(6), 217-218. Hamma Lakhdar University of El Oued, Algeria, This research paper was presented as an attempt to address the topic of sustainable development and ways to achieve it through the

development of ecotourism. The study concluded that the relationship between tourism and the environment must be symbiotic, a delicate balance between development and environmental protection. And to emphasize the need to avoid harming the social and economic interests of the inhabitants of tourist areas, or the environment, natural resources, and historical and cultural sites that are the main attraction for tourism. It is also essential for local and international communities to take the necessary steps to preserve it.

- Through this study, we will try to clarify the various concepts related to sustainable development and green hotels as a means to achieve sustainable tourism development and the nature of the relationship between them, and to highlight Egypt's experience in this field.

1.8. Organization of the Study :

The remainder of this paper is organized as follows. The second section discusses the literature related to the definition of green hotels and the importance of adopting them. The third section covers the concept of sustainable ecotourism and its role in promoting sustainable development. The fourth section presents a case study of the Green Star program in Egyptian hotels and the measures taken by the Egyptian government to implement it, including an introduction to the program and the presentation of statistics.

2. Title: Green Hotels

The term ''green hotels'' refers to hotels that strive to be more environmentally friendly by using energy, water, and resources efficiently while providing excellent services. The benefits of cost reduction, increasing obligations, and positive cash flows, along with the identification of these benefits and incentives, have led to the continuous growth of green hotels and a rising demand for them.

2.1 First Subtitle: Concept of Green Hotels

The term ''green hotels'' refers to hotels that strive to be more environmentally friendly by using energy, water, and resources efficiently while providing excellent services. The benefits of cost reduction, increasing obligations, and positive cash flows, along with the identification of these benefits and incentives, have led to the continuous growth of green hotels and a rising demand for them.

Several definitions have been given for the concept of a green hotel, with the most notable being: The eco-hotel or green hotel is a contemporary trend in sustainable tourism. This type of hotel focuses on reducing the consumption of traditional energy, while transitioning to the use of renewable energy sources (Bendaoud, 2020). A green hotel is defined as: A commercial label for a tourism product used to distinguish a specific type of tourist accommodation that relies on natural elements and adheres to the principles of sustainable tourism, such as ecotourism. It also refers to a category of hotels that are

environmentally conscious and embody the philosophy and principles of ecotourism. These eco-friendly hotels offer tourism as an educational and participatory experience, engaging with the local community. Such hotels must be managed and operated in an environmentally responsible way that protects and preserves the ecosystem (Decha et al., 2018).

2.2 Second Subtitle: Characteristics and requirements of green hotels

Designing an eco-hotel requires the adoption of a new architectural approach known as Ecodesign. This methodology is based on the following principles (Tahraoui et al, 2018):

- The hotel should be constructed using locally sourced or recycled materials, with a design that is both environmentally friendly and fully integrated into the natural landscape and cultural context of the area, relying on abundant renewable energy sources such as solar power.
- Design solutions should be inspired by the surrounding natural environment to ensure the hotel harmonizes with its location, providing guests with an immersive eco-tourism experience rooted in the local nature.
- The design must adhere to ecological standards and environmental regulations.

From this, it can be concluded that green hotels must meet a set of specific requirements related to the resources used and the operational approach, as well as the architectural design. These criteria include:

- A local architectural style that reflects the region's cultural heritage.
- Meeting the luxury expectations of tourists, tailored to the local context.
- Emphasizing nature-based activities and cultural promotion.
- The design and layout should blend seamlessly with the local environment, making the hotel feel like a natural extension of its surroundings.
- Investments are generally moderate, with profitability driven by the uniqueness of the location.
- The hotel's appeal is based on the environmental attractions of the area, followed by the quality of services and amenities offered.
- Marketing strategies focus on individual networks and word-of-mouth.
- Environmental responsibility is a core principle, starting from the construction phase and ensuring sustainable practices that protect the environment.

2.3. the third Subtitle : : Objectives of green hotels:

Green hotels, by following eco-friendly principles, aim to achieve the following (Benmir et al., 2017):

- Preserving biodiversity through the protection of plants, animals, ecosystems, and

conservation of environmentally sensitive areas.

- Reducing the use of chemical pollutants that can harm the soil.
- Creating a relationship between tourists and the environment without causing environmental harm, by allocating part of the hotel's profits towards environmental protection efforts.
- Taking into account tourist feedback and complaints to improve services and sustainability practices.
- Rationally using natural resources such as land, energy, water, and others.
- Reducing pollution in all its forms (solid, liquid, and gaseous).
- Preserving cultural heritage in all its forms, including customs, traditions, and architectural heritage.
- Involving all segments of the local community in development processes while promoting cultural integration.
- Supporting local labor and using locally sourced products to contribute to the local economy.
- Implementing environmental policies across all stages of tourism development to ensure sustainability.

2.4. The fourth Subtitle: The importance of moving towards the implementation of green hotels:

The significance of green practices in the hotel industry lies in the rational and efficient use of natural resources, energy management by reducing consumption, wastewater management, and solid waste management. This can be further explained as follows (Eid Kharii, 2013):

-The Importance of green energy management: Green energy management programs can be categorized into three distinct time periods as follows:

-Short-term recovery period: Less than one year, with no need for large capital investment. The following green practices can be implemented:

-Ensuring that lights and air conditioning are switched off in unoccupied rooms and areas, particularly in hotels that operate seasonally.

-Requiring staff to adopt environmentally friendly work practices.

-Medium-term recovery period: Between 2 to 5 years. This plan requires a more advanced approach, with a set of principles to achieve this stage, including:

-Reducing energy consumption for lighting (lighting accounts for between 15-25% of a hotel's electricity consumption and between 25-30% of the hotel's total cost) by: First, using sensor units that automatically turn off lights in unoccupied areas, which can save more than 30% of the energy required for lighting. Second, using high-efficiency lighting such as installing Compact Fluorescent Lamps (CFLs) throughout the premises, as this type of bulb consumes a quarter of the energy compared to regular bulbs and lasts ten times longer.

-Insulating roofs to prevent the transfer of heat and sound, and installing green roofs.

-Installing automatic door-closing devices.

-Installing temperature control devices for air conditioning in each room.

-Using local products to reduce transportation costs.

-Developing and implementing an ongoing training program for staff on green energy management.

-Long-term recovery period: Over five years. This phase requires significant capital investment and the use of advanced green technologies in operations, leading to a longer payback period of more than five years. Several green initiatives can be adopted at this stage, including:

-Implementing a computer-controlled air conditioning system.

-Using double-glazed windows and energy-efficient kitchen operations.

-Purchasing energy-efficient refrigeration and freezing equipment, as well as energy-efficient transportation options.

-Utilizing renewable energy sources and electronic cards that automatically control or turn off electrical devices when a room is unoccupied. A (2005) study by the Environmental Council on hotels in Hong Kong found that the electronic card system saves $2.36 per room per day, costs $165 per unit, and has a payback period of 70 days.

- The Importance of green water management: The Environmental Council

has emphasized that water conservation programs can reduce water consumption by 24-30% without affecting guest comfort. Hotels are significant consumers of water, sometimes exceeding the water demand of local residents. Therefore, water use in hotels extends beyond meeting guest needs and includes water for hotel operations such as kitchens, laundry rooms, swimming pools, gardens, sports facilities, restaurants, and fitness centers. Excessive water consumption can deplete local water resources, potentially threatening the availability of water for the surrounding community.

Several measures can be implemented to conserve water in hotel establishments, including:

- Using modern water-saving equipment, such as infrared sensor faucets, low-flow toilets, and other water-efficient fixtures.
- Introducing towel and linen reuse programs to reduce water usage.
- Conducting regular maintenance and repairs to prevent water leaks.
- Implementing green water conservation practices in laundry facilities and bathrooms.
- Installing water meters in guest rooms to monitor and track consumption.
- Adopting water-saving techniques in kitchens, such as washing vegetables in basins instead of using running water.
- Utilizing treated water for irrigation and employing drip irrigation systems for green spaces.
- Designing hotel courtyards to collect and use rainwater for various purposes.

- The Importance of green solid waste management: Waste management programs aim to minimize the volume and environmental impact of waste sent to landfills. To achieve this, hotels can implement several green practices for managing solid waste, including:

- Prioritizing durable materials: Avoid using non-reusable bottles, canned drinks, and opt for products with minimal or no packaging.
- Reducing paper consumption by printing on both sides of the paper.
- Returning partially used soap to manufacturers for recycling and remanufacturing.
- Purchasing food and cleaning supplies in bulk to reduce packaging waste.
- Returning reusable packaging materials to suppliers for reuse.
- Implementing donation programs (e.g., donating furniture or food to charity organizations) as part of community outreach.
- Converting kitchen waste into organic compost for use in gardening.
- Using refillable soap dispensers to reduce single-use packaging.

- Reducing the use of disposable items to minimize waste generation.
- The impact of greening on the industry is two-fold. First, greening enables a hotel to mitigate the negative impact of its activities on the environment. In particular, hotels can limit their use of energy, water, and detergents, as well as minimize their impact on the surrounding neighborhood (e.g., noise pollution, light pollution, traffic, and construction that disturbs the landscape). Second, greening can affect a hotel's performance both directly and indirectly. The direct impact is associated with reductions in operational costs and increases in performance. For example, inefficient use of lights, heating, and air conditioning results in significant waste of resources and increased expenditures. Performance improvements can also be facilitated by new streams of income generated from attracting new client groups. Additionally, green certification enhances a hotel's market value.
- The indirect impact of greening is connected to strengthening a hotel's relationships with clients and other stakeholders, as well as enhancing its competitiveness. These relationships enable hotels to provide the necessary hospitality resources. With regard to environmental sustainability, hotels can increase tourist satisfaction and loyalty. Moreover, satisfied tourists are more likely to support voluntary practices that help hotels reduce their environmental impacts. Environmental engagement increases a hotel’s visibility and improves its corporate image. A strong green reputation can enhance a hotel’s financial performance, and an effective environmental strategy positively impacts a firm’s competitiveness (Kusa et al., 2023).

3. Title: Sustainable Ecotourism:

Research and studies focusing on environmental issues, including the depletion of resources, energy waste, and pollution, have significantly increased due to growing environmental awareness across various fields of science and knowledge. This heightened awareness has led numerous organizations, government bodies, and non-governmental institutions to address the negative impacts of pollution and the resulting harm to the environment. Tourism, if not properly planned and managed, can contribute to environmental pollution. As a result, there is a critical need to prioritize sustainable ecotourism, which plays a vital role in mitigating environmental risks and preserving resources for future generations

3.1 First The concept and characteristics of sustainable ecotourism:

- The term "ecotourism" emerged in the early 1980s as a relatively new concept, referring to a form of tourism that is environmentally responsible and seeks to preserve both the natural and cultural heritage of the areas visited. Several definitions of sustainable ecotourism have been proposed, including:

The World Tourism Organization (UNWTO) defines sustainable tourism as ‘’tourism that fully considers its current and future economic, social, and environmental impacts, while fulfilling the needs of visitors, the industry, the environment, and host communities’’ (United Nations, 2024).

The International Ecotourism Society (TIES) defines sustainable ecotourism as ‘’responsible travel to natural areas that conserves the environment and ensures the well-being of local communities.’’

Another definition describes ecotourism as ‘’tourism that involves traveling to relatively undisturbed natural areas for a specific purpose, which may include studying, appreciating, and enjoying the natural landscapes, plants, wildlife, and any cultural heritage present in the region, whether historical or contemporary’’ (Elrouadia, 2013).

According to the Global Environment Facility (GEF), ecotourism is ‘’travel to natural areas that have not been polluted and where the ecological balance remains intact, with the aim of enjoying the landscapes, plants, wildlife, and the cultural heritage of the area, both past and present’’ (Benmir, 2017).

The term ‘’ecotourism’’ is a relatively recent concept, introduced to describe a new type of environmentally friendly tourism that aims to preserve both the natural and cultural heritage of the environment. It is a form of tourism that seeks to protect the natural world while allowing people to experience and enjoy it responsibly. Based on the above, **the main characteristics of ecotourism** can be summarized as follows (Zemouri et al., 2021):

- **Green and sustainable:** Ecotourism is primarily rooted in nature, promoting tourism that is beautiful, enjoyable, and beneficial, while ensuring it does not harm or degrade the environment, ecosystems, or cultural heritage. It is a clean, eco-friendly form of tourism that respects ecological, social, and cultural balance.
- **Responsible and conscious:** Ecotourism is driven by awareness, responsibility, and a sense of stewardship. It encourages visitors to make informed choices that support the conservation of wildlife and natural habitats, protect endangered species, and enhance the overall quality of the environment.
- **Personal growth and discovery:** Like traditional tourism, ecotourism aims to promote personal enrichment, self-discovery, and renewal, but it does so in a way that emphasizes environmental awareness and cultural respect.
- **Economic and ethical benefits:** Ecotourism provides both tangible economic benefits and intangible ethical value. It supports local economies while also promoting sustainable practices that help preserve the environment for future generations.

A balance of tradition and modernity: Ecotourism blends the authenticity of cultural

and natural heritage with modern ethical principles. It creates a unique synergy between the past and the present, offering a rich, harmonious experience that respects both tradition and progress.

3.2 Second Subtitle: The principles of eco-tourism: They are as follows *(Houidi, 2015):*

- Establishing designated entry points that offer tourists essential information about the tourism area, provided through the local community, along with the responsible management of natural resources and biodiversity in environmentally sustainable ways. This also includes implementing strict and effective regulations to control the number of tourists, protect their safety, and preserve environmental sites at the same time. Furthermore, it involves providing direct financial support for conservation efforts.
- Integrating and educating local communities on environmental and tourism matters, and providing economic opportunities through the development of tourism-related industries to improve their living conditions. Success in eco-tourism requires collaboration between various sectors involved in tourism and environmental management.
- Minimizing environmental impact by regulating the number of visitors according to the carrying capacity of the site, while fostering awareness and appreciation for the environment and local culture. Adopting a hospitality approach rather than a service provider-client model.
- Offering investment and employment opportunities to enhance the living standards of local communities, in addition to respecting the Universal Declaration of Human Rights and labor protection agreements.
- Striving to generate an appropriate financial return for the region or country where the investment is made, while ensuring the sustainability of future development and progress.

3.3. the third Subtitle: The Importance of Sustainable Eco-Tourism:

Tourism institutions are primarily responsible for the protection of tourist areas, as these areas are often natural reserves, forests, beaches, and other such sites. Any irresponsible tourism activity can lead to negative environmental impacts. In contrast, rational energy use and the practice of what is known as responsible eco-tourism can yield positive results. Based on the above, and as preliminary benefits, the following points outline the importance of sustainable eco-tourism and highlight the need for its focus:

- Reducing the negative effects related to the deterioration of vegetation cover.

Minimizing the impacts associated with the depletion of water resources, particularly

in arid, water-scarce regions.

- Decreasing the negative effects of pollution resulting from: air pollution due to air and land transport, land pollution caused by waste—especially solid waste left behind by tourists, pollution of beaches and coastal areas, and damage to marine ecosystems.
- Mitigating the negative impacts on historical sites caused by visitors.
- Increasing the positive outcomes related to the preservation of historical and environmental heritage in areas where tourism is active, by dedicating a portion of the revenue generated from tourism activities.
- Emphasizing the positive impacts related to raising tourists' awareness about the importance of preserving the environment, wildlife, and marine life.
- Promoting the positive impacts related to energy and resource conservation, such as using fluorescent lamps, installing temperature control devices in all rooms, and other similar measures.
- Utilizing modern water-saving equipment, such as infrared sensor faucets, low-water consumption toilets, regular maintenance and repair of water leaks, and other such technologies.
- Implementing positive impacts related to using green programs to conserve water in laundry rooms and bathrooms.
- Adopting the positive impacts related to the use of renewable energy and electronic cards that automatically control the operation or shutdown of electrical appliances when a room is vacated.
- Leading to the development of the surrounding environment, including the construction of hotels, restaurants, lounges, summer and winter resorts, and other tourism-related activities. The flow of tourists is carefully planned and organized to maintain sustainability.
- Opening employment opportunities for local residents.

3.4. the fourth Subtitle: Types of Eco-Tourism

There are various types of tourism that can be utilized and benefited from, which may be linked to nature or cultural heritage. Eco-tourism primarily focuses on nature, with its stunning landscapes. Therefore, the activities associated with eco-tourism include *(Khan et al., 2010):*

- Wildlife hunting for birds and marine fishing for fish.
- Water sports and diving to explore coral reefs.
- Observing nature and exploring its diverse elements.
- Forest excursions, bird watching, and wildlife observation.

- Exploring valleys and mountains.
- Camping, mountaineering, and hiking.
- Jungle and desert safaris.
- Nature photography and visits to archaeological excavation sites.

The type or category of tourism is determined by the tourist themselves, based on their preferences and desires, as outlined below (Benmir et al., 2017):

- Mountain climbing: Today, there are thousands of professional mountain climbers worldwide, along with hundreds of thousands of amateurs who have taken on the exciting challenge of reaching some of the world's most iconic peaks, such as the Himalayas, Mount Kilimanjaro, the Alps, and other mountain ranges and towering heights across the globe. Climbers reach these summits using their own physical strength, which means no pollution is generated in the process.
- Jungle expeditions: Expeditions into tropical rainforests, such as diving into the depths of the Amazon rainforest, which is often referred to as the ''lungs of the Earth." These visits involve observing the unique species of flora and fauna that inhabit these forests. The focus is not limited to the Amazon; there are many other forests around the world where one can explore the incredible natural life within.
- Wildlife observation tours: These tours involve observing birds, plants, and animals that are endangered. They are typically organized by specialized wildlife conservation groups focused on protecting endangered species and raising environmental awareness about the importance of each organism.
- Desert Expeditions: These trips aim to immerse tourists in nature, free from the constraints of modern civilization, and involve organizing camps with primitive methods to offer a mentally and spiritually cleansing experience for the tourist.
- Hunting expeditions (land or marine): These trips comply with legal and environmental regulations to ensure that they do not disrupt the ecological balance or harm endangered species.
- Nature photography tours: Environmental organizations often organize tours for photography enthusiasts, providing them with the opportunity to immerse themselves in nature and capture its most striking images. These tours may also include participation in international environmental events or local initiatives aimed at raising awareness of specific environmental issues. Such events might include Earth Day, Earth Hour, or other campaigns focused on combating threats to endangered species, forests, nature reserves, or other vital ecosystems.
- A core principle of eco-tourism is to avoid disrupting the environmental balance caused by human activities, especially those of tourists, which can lead to pollution

and damage to the environment.

3.5. the fifth Subtitle: The role of sustainable eco-tourism in promoting sustainable development

Eco-tourism is one of the most important means of achieving sustainable development, as it focuses on leveraging the natural features of a region to attract and engage tourists. Sustainable tourism is grounded in environmental, economic, and social principles, which manifest in several key aspects, including the following (Benmir et al.,2017):

- **Economic dimension:** Eco-tourism can provide a sustainable, self-financing model that benefits the management and development of natural resources for the well-being of communities. By focusing on the preservation of natural assets, it ensures the long-term sustainability of the benefits provided to local populations. Moreover, eco-tourism helps support the economies of rural areas by highlighting natural attractions and integrating them with the interests and aspirations of tourists. This approach not only diversifies the local economy but also enhances infrastructure and increases local economic benefits.
- **Environmental dimension:** This involves protecting and preserving the cultural and historical heritage of local communities. On the other hand, it emphasizes the rational use and conservation of natural resources, contributing to the prosperity of current generations while safeguarding the rights of future generations to these resources. Furthermore, eco-tourism helps reduce regional disparities and imbalances.

It can be said that eco-tourism is a type of tourism grounded in the principle of sustainability. It primarily depends on natural resources, with the social aspect of local communities being a secondary but essential component. This approach is significant in terms of creating employment opportunities, supporting industrial and productive growth, increasing national income, meeting the needs of the labor force, and advancing development programs. Sustainability, in this context, encompasses both environmental and economic sustainability. From an environmental perspective, eco-tourism attracts tourists by offering them the chance to enjoy and visit natural areas. However, it is crucial that investment in environmental resources does not lead to their depletion or exhaustion. Instead, it should focus on conservation and protection under the concept of ‘’sustainable eco-tourism.’’ Eco-tourism can only drive development if it aims to achieve sustainability in both tourism practices and broader development goals.

4. Title: A case study of the Green Star Program in Egyptian hotels

On January 25, 2022, the Ministry of Tourism and Antiquities in Egypt issued a ministerial decree requiring all hotel and tourism establishments in Sharm El-Sheikh (as a first phase) to obtain the Green Star certification from an accredited local or

international organization. This certification confirms that these establishments have implemented all green, eco-friendly practices in accordance with the principles of sustainable tourism. This initiative is part of the Green Star Hotel Program, one of Egypt's green certification programs aimed at promoting sustainable tourism, abbreviated as GSH. The decision was made in preparation for Egypt's hosting of the 27th Conference of the Parties (COP27) to the United Nations Framework Convention on Climate Change in Sharm El-Sheikh in 2022. It also reflects the Ministry's ongoing efforts to transform the Egyptian tourism sector into an environmentally responsible industry. This move is aligned with the Ministry's Sustainable Development Strategy and Egypt's Vision 2030, which focuses on maintaining ecological balance, ensuring the long-term sustainability of tourism and heritage, encouraging the transition to a green economy, and promoting environmentally friendly practices (Fahmi, 2019).

4.1. First Subtitle : The initiation of the green star program:

It was officially adopted for hotels in (2007), and serves as a certification that encourages hotels and their staff to become environmentally responsible. The program aims to implement environmental standards in the use of renewable energy sources, increase greenery, reduce waste, and minimize water consumption. The program consists of (11) criteria, which include guidelines for interactions with hotel guests—both tourists and locals—kitchen operations, and staff training. Egypt is the first country in the Middle East to establish environmental standards for tourist hotels, developed by specialized experts, tailored to the unique characteristics and psychological needs of the Egyptian context.

4.2. Second Subtitle: The concept of the green star hotel program (Green Star Hotel – GSH)

- **Definition of the Program:**

The Green Star Hotel (GSH) program is a national initiative aimed at promoting sustainable tourism, managed by the Egyptian Chamber of Hotel Establishments under the supervision of the Egyptian Ministry of Tourism. This program grants a certification accredited by the Global Sustainable Tourism Council (GSTC), with the goal of enhancing the environmental performance of Egyptian hotels, improving social standards, and reducing operational costs.

The program guides participating hotels through a structured process that includes training and informational support provided by a team of certified local and international experts. Afterward, field inspections are conducted to ensure compliance with the program's rigorous standards before the GSH certification is awarded (iHoreca Blog Team, 2022). A key focus of the program is to promote the adoption of solar energy technologies and improve energy efficiency in hotel operations. The Green Star Hotel certification

system is based on an accreditation model, where hotels are awarded stars based on their level of environmental performance. Earning these stars is not a simple task; hotels must meet strict criteria in areas such as (Fahmi, 2021):

- Successful completion of the capacity-building program under the Green Star Hotel (GSH) initiative.
- The hotel must achieve 100% compliance with 100 mandatory criteria.
- Approval by program officials of the hotel's environmental, social, and innovative practices.
- Verification of implementation through independent audits conducted by the Audit Committee.
- Upon meeting all the above conditions, the hotel is awarded a 3, 4, or 5-star rating based on the level of compliance and performance achieved.

- Levels of Stars in the Program:

There are three levels for awarding Green Stars as follows: the Green Hotel, the Very Green Hotel, and the Extremely Green Hotel.

- **Green Hotel:** This is the entry-level certification, requiring hotels to improve their operations and align them with basic environmental commitments, such as using fluorescent lighting and implementing towel and linen reuse programs.
- **Very Green Hotel:** This is the second level of certification, awarded to hotels that make significant improvements to their operations, including the development and upgrading of efficient recycling systems and other sustainable practices.
- **Extremely Green Hotel:** This is the highest level of certification, awarded to hotels that implement advanced, technologically sophisticated, and costly solutions, requiring long-term investments to achieve and maintain superior environmental performance.

These stars, along with the standard star rating, are displayed in the hotel's entrance lobby and feature the logo shown below:

Figure N°01:The Green Star logo for Green Hotels



Source: : www.greenstarhotel.org

- **Aspects of earning the green star:**

There are operational aspects in hotels that are influenced by the Green Star

certification program, and these are as follows:

- Design, architecture, and surroundings.
- Gardening and beach area.
- Guest information.
- Environmental management.
- Food and beverage / kitchen.
- Housekeeping and guest rooms.
- Waste.
- Water.
- Energy.
- Training and instructions.
- Sustainable management.

In addition to the benefits of implementing sustainability standards in terms of cost reduction and increased return on investment, experts emphasize that tourist destinations adopting green tourism and sustainable practices will be better positioned to attract tourists. This is due to the growing awareness of environmental issues and the recent spread of the ‘’Eco-Friendly’’ concept. As a result, hotels worldwide are striving to obtain such certifications (Habib, 2020).

4.3. Objectives and advantages of the Green Star Program:

-Objectives of the Green Star Program:

- Encouraging the hotel sector in Egypt to transition to Green Hotels: The Green Star program aims to have a profound impact on the development of tourist destinations in Egypt by encouraging and urging the hotel sector to take necessary active and effective measures to conserve and protect natural resources. This is achieved through the implementation of the Green Star system in hotel operations, staff training, and guest participation accordingly.
- Acting as a model for other tourism sectors in Egypt: Starting with the hotel sector, a first step has been taken to transform the entire tourism sector towards optimal sustainability. Over time, this transformation will extend to other sectors such as cruise ships and diving.
- Radically improving the green (environmental) performance of tourist destinations.
- Conserving marine biodiversity in all hotels holding the Green Star.
- Reducing energy and water consumption by 20%–30%.
- Promoting the increased use of renewable energy.
- Ensuring proper waste and sewage treatment.

- Raising awareness of environmental protection and green practices among hotel guests, staff, and visitors, and building sustainable management capabilities within the hotel.

-The benefits hotels gain from joining the Green Star Program:

- The hotel becomes part of effective green marketing and promotional activities supported by local and international project partners.
- Direct and easy access to the markets targeted by the tourism sector in Egypt.
- Hotels are directly promoted through international tourism organizations and projects in conferences, trade shows, workshops, and various online platforms.
- Marketing the hotel and its green activities using the Green Star Hotel brand and related marketing tools.
- Gaining competitive market advantages and promoting the hotel's green efforts among a broad customer base.
- The hotel's active and effective contribution to protecting the natural environment, reducing the environmental impact of its operations, and supporting sustainability activities within the tourism sector.
- Preserving the hotel's appeal to visitors, helping ensure the long-term sustainability of its business operations.
- Contributing to a reduction in operational costs by decreasing energy and water consumption and managing waste positively, which increases operational efficiency and saves money, and ultimately boosting the hotel's profits.
- Enhancing guest satisfaction and improving the hotel's image, especially among environmentally conscious guests and staff.

4.4. The Number of hotels with green star certification and their distribution:

The study relied on reviewing statistics on the development of the number of green hotels in Egypt, their capacity, and their location, as illustrated in the following tables and figures: (Eldjedaoui, 2013), (Mokbil, 2024), (Gheslane, 2019), (Rachad, 2021)) (eLCHEROUK, 2025)

Table N°01: The number of Egyptian hotels that obtained the Green Star rating evolved from 2014 to 2024

year	Nbr hotels	Hotel capacity	Location of hotels

2013	12	----------	esert Ludang in Dakhla Oasis, Al-Tarfa in the valley, Al-Jabal Al-Abyad in Marsa Alam, Al-Karm Eco Resort in the heart of the Saint Catherine Reserve
2014/2015	40	----------	Dakhla Oasis ;Marsa Alam,
2016	67		Cairo, Ain Sokhna, Sharm El Sheikh, Taba, Hurghada and Marsa Alam
2017	76		Cairo, Ain Sokhna, Sharm El Sheikh, Taba, Hurghada and Marsa Alam
2018	82	20000 hotel rooms, an increase of over %8.5 of the total hotel capacity in Egypt.	Cairo, Ain Sokhna, Sharm El Sheikh, Taba, Hurghada and Marsa Alam
2019	88	20,000 hotel rooms	Cairo, Ain Sokhna, Sharm El Sheikh, Taba, Hurghada and Marsa Alam
2020	91		Cairo, Ain Sokhna, Sharm El Sheikh, Taba, Hurghada and Marsa Alam
2021	91	25,000 rooms, an increase of over 10% of the total hotel capacity in Egypt.	Cairo, Ain Sokhna, Sharm El Sheikh, Taba, Hurghada and Marsa Alam
2022	158	40000 hotel rooms	Cairo, Ain Sokhna, Sharm El Sheikh, Taba, Hurghada and Marsa Alam
2023	188	60000 hotel rooms, covering more than 30% of the total hotel	Cairo, Ain Sokhna, Sharm El Sheikh, Taba, Hurghada, Marsa Alam, Safaga, Luxor, Aswan, Matrouh
2024	217	65,000 hotel rooms, covering more than 30% of the total hotel capacity in Egypt.	Marsa Matrouh, Borg El Arab, Cairo, Ain Sokhna, Sharm El Sheikh, Hurghada, Marsa Alam.El Gouna

2025	275	87,5000 hotel rooms, covering more than 37% of the total hotel capacity in Egypt.	Marsa Matrouh, Borg El Arab, Cairo, Ain Sokhna, Sharm El Sheikh, Hurghada, Marsa Alam.El Gouna Red Sea Governorate

Source(s): Table created by authors

Figure N°02: Distribution of Green Hotels by Region in Egypt for 2024



Source: www.greenstarhotel.org/gsh-in-numbers, visited on 13/03/2024 at 14:37

Figure N°03: Percentage distribution of green hotels at the national level in Egypt for 2024



Source: www.greenstarhotel.org/gsh-in-numbers, visited on 13/03/2024 at 14:37

The development of the number of hotels that obtained the Green Star in Egypt from 2015 to 2024 can also be illustrated according to the following figures:



Source: https://elmahrousanews.com/274437/ visited on 07/12/2025 at 11:07

4.5. Measures taken by the Egyptian government to adapt the program to comply with international standards for the Green Star program After 2025

Egyptian and international governmental coordination to develop a circular economy strategy: This includes coordination with the Ministry of Tourism and Antiquities, the Ministry of Environment, the German Agency for International Cooperation (GIZ), and the African Circular Economy Network (ACEN) to develop a national circular economy strategy for the tourism sector, with the aim of increasing the number of certified hotels**.**

The Egyptian government has also adapted the program to meet international standards: The Egyptian government has designed a program suitable for Egyptian hotels, noting that the standards used in it are internationally recognized by the Global Sustainable Development Council (GSTC), and it is managed in coordination with private sector partners such as Travco, TUI and GIZ agencies.

Egypt's commitment to implementing these measures in its Green Star program for hotels and its support for hotels is evident in the achievements it has made, which can be explained as follows:

- By the end of 2025, more than 300 people had received direct training and more than 2,500 people had received indirect training, technical support had been provided to

more than 100 hotels, more than 100 hotels had been reviewed and inspected, and 30 new hotels had joined the list of those who had obtained the certificate.

-Cooperation with major chains and appearances at international conferences: such as Marriott and Accor chains to join the program, the UNDP's Green Sharm program, and the GSTC 2024 World Sustainable Tourism Council conference.

- Through a study at Marriott Resort and Sultan Gardens Resort, regarding sustainability in the hotel: it was found that Marriott Resort, as it relies on Green Star, has implemented it through several factors, including the carbon footprint: 40.19 kg per room per night, and the water footprint: 785.07 liters per room per night. Among the environmental practices is the recycling of room items. In the area of renewable energy at the hotel: Solar water heating at the Marriott resort; there are pipes on the roof through which water is pumped and directed, heated by the sun's rays, to hot water tanks; linens are changed only upon guest request. Regarding Sultan Gardens Resort, the following conclusions were reached: Automation at this resort has led to higher productivity, lower costs, better forecasting, more accurate pricing decisions, a better experience for both staff and guests, efficient service for guests, reduced costs and staffing, self-check-in at reception, and ordering products and services directly from their phones. In addition to energy and water conservation systems, the solution for addressing heat was a two-pronged strategy.

First, highly insulating and heat-resistant materials were used for the outer casing to protect the system when there were changes in ambient temperature. Secondly, by modifying the heating, ventilation, and air conditioning (HVAC) system to maintain air circulation and keep the temperature within an acceptable range, in addition to implementing a customized system using local systems and equipment, and providing training on how to maintain and repair similar systems in the future. (NESMA MOHAMMED ABD EL- MAKSOUD2023)

5. CONCLUSION

A healthy environment is essential for achieving sustainable tourism development, with sustainable tourism emphasizing sound environmental planning. One of the key principles of ecotourism is ensuring that human actions do not disrupt the ecological balance or lead to pollution. This underscores the importance of adopting the concept of green hotels, which are crucial for conserving environmental resources, preventing pollution, enhancing the beauty of the natural surroundings, and maintaining ecological stability, thus protecting ecosystems from degradation.

-Hypothetical test:

The premise upon which the study was based is correct. By the end of 2024, 217 Egyptian hotels had received the Green Star award, representing 30% of the total. Egyptian hotel associations highlighted their efforts in contributing to tourism and

training thousands of employees, explaining the reason for this achievement.(Al-Din, Saeed Jamal.Al-Mahrousa 2025)

The Chamber of Hotel Establishments revealed the results of its efforts in the field of green tourism during the period from January to May 2025, announcing that 34 new hotels had obtained the Green Star certification and another 44 hotels had applied to renew their certification. Egyptian hotels have achieved a significant leap forward in their management of solid waste, water, and energy through these initiatives. Between 2024 and 2025, comprehensive training and qualification was provided to over 75 hotel representatives directly on green certification standards, in addition to indirect training for over 200 people. During the same period, 57 new hotels were being qualified for certification. The Chamber of Hotel Establishments participated in several environmental events, most notably "Green Hurghada."

-Results:

- The concept of environmentally friendly practices represents the optimal approach to maintaining the competitiveness of tourist destinations while preserving natural resources.
- Sustainable ecotourism plays a vital role in the Egyptian economy by preserving natural resources. This means that ecotourism provides continuous self-sufficiency, which benefits the management and development of natural resources for the benefit of humanity. This has led to increased enthusiasm among hotels and communities in Western countries and societies to adopt the concept of green hotels and implement sustainable tourism practices.
- The shift towards eco-friendly hotels contributes to reduced operating costs, optimal energy and water use, and environmentally responsible waste recycling. This improves operational efficiency, saves money, and increases hotel profitability, while supporting sustainable environmental development in the hotel sector.
- Implementing environmentally friendly practices in hotels involves higher initial costs, but in the long run it will provide economic, social and cultural benefits, leading to increased guest numbers and enhanced commitment to environmental protection.
- The Egyptian state has taken significant steps to encourage the hotel sector to transition to green practices through the Green Star Program. This initiative aims to profoundly enhance the development of Egypt’s tourist destinations by promoting sustainable practices. It does so by encouraging hotels to adopt measures that conserve natural resources, integrate the Green Star system into their operations, train staff in sustainability, and engage guests in these efforts

-Recommendations:

- To encourage and promote competition among hotels that adopt environmentally friendly practices, and to motivate their employees by offering both financial and non-financial rewards for their commitment to efficiently implementing these practices.
- Offering hotel employees training programs and scientific lectures aimed at enhancing their operational skills, aligning their mindset with green hotel concepts, and improving their ability to communicate sustainable practices to guests.

- Establishing effective monitoring mechanisms to ensure hotels adhere to green practices and to address challenges faced by Egyptian hotels in implementing sustainability initiatives.
- Encouraging hotels to actively involve employees in the design and implementation of green practices while promoting the use of eco-friendly methods among hotel owners and operators.
- Supporting the creation of organizations focused on fostering and advancing green practices within the hospitality sector.

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