

Sustainable Tourism Development: Assessment of Egyptian Sustainable Resorts

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Abstract—Tourism can do a great deal of good in destinations, whether it be by bringing economic benefits to local communities, helping with conservation efforts or in placing a value on aspects of cultural heritage. As responsive travelers, we must all try to do more of the good and less of the negative. This is simply description of the sustainable tourism. This paper aims to set some criteria of successful sustainable tourism development and then through these criteria analyzing the development of some resorts in Egypt known as sustainable resorts. Hence, a comprehensive improvement of the touristic areas is certainly needed to ensure a successful sustainable tourism development radiated the sense of uniformity and coherence. Egypt can benefit from these criteria to develop its resorts in order to preserve and revitalize its unique natural character and achieve mixed uses and tourism development.

Keywords—Egypt, resorts, sustainable tourism, tourism development.

I. INTRODUCTION

TOURISM that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities [1].

Sustainable tourism is about re-focusing and adapting. A balance must be found between limits and usage so that continuous changing, monitoring, and planning ensure that tourism can be managed. This requires thinking long-term (10, 20+ years) and realizing that change is often cumulative, gradual, and irreversible. Economic, social, and environmental aspects of sustainable development must include the interests of all stakeholders including indigenous people, local communities, visitors, industry, and government [2].

Egypt is looking into the possibilities for diversifying its tourism opportunities throughout the country. The main target for expanding the tourism sector is nature-based tourism. The coral reefs and rich marine life in South Sinai and the Red Sea coast have made these two areas among the premier scuba diving destinations in the world. Many beach resorts are now in operation and there are still hundreds to be constructed [3]. The Egyptian Oasis and Deserts are truly one of the natural wonders of the world. From the great sand planes of Siwa to the breathtaking Black and White Deserts of Baharia are known for their outstanding beauty and unique landscape, a haven for artists, geologists, ecologists, and naturalists alike. However, previous tourism development in Egypt has resulted in a series of negative environmental impacts. The ambitious

development plans to receive 16 million tourists by 2017 should take into consideration sustainability concepts.

The government and developers have significant roles to play in adopting and implementing environmentally sound policies and practices to avoid the degradation of the natural heritage of Egypt for the sake of the current as well as future generations [3].

Based on Egypt's national economic and social development objectives, a comprehensive national tourism plan was drawn up for the country. It covered the period lasting until 2020 and it was designed to ensure that tourism development was carried out within a sustainable, environmentally sound framework.

II. SUSTAINABLE DEVELOPMENT

Tourism is an economic activity capable of generating growth and employment, contributing to development and economic and social integration. It has the power to boost destinations development and prosperity; it plays a significant role in sustainable development [4].

“Sustainability” is a concept which inspires policy makers and tourism planners, but it is still quite difficult to implement sustainability [4].

Sustainability starts from the important question of what is being sustained, by whom and for whom, do all interest groups have the same intentions or aspirations in term of sustainability? In other words, who decides what sustainability means, and who dictates how it should be achieved and evaluated? [5].

The concept of sustainability essentially means that effects on renewable resources do not exceed the regenerative capacity of the environment [6]. Sustainability is contested within a continuum of viewpoints ranging from reformism referred to as light green, conservationist or environmentalist that radicalism referred to variously as dark green, deep ecology or phraseology. Concepts of sustainability are now widely accepted as an essential approach to any type of development including tourism.

The concept of sustainable development has been set forth by the World Conservation Union (WCU) as follows: Sustainable development is a process which allows development to take place without degrading or depleting the resources which makes the development possible. It also went on to describe sustainable development as a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs [7].

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Sustainable development entails not only environmental sustainability, but also economic and social sustainability. As well as considering environmental impacts, urban designers need to have regard to social impacts and long term economic viability [8].

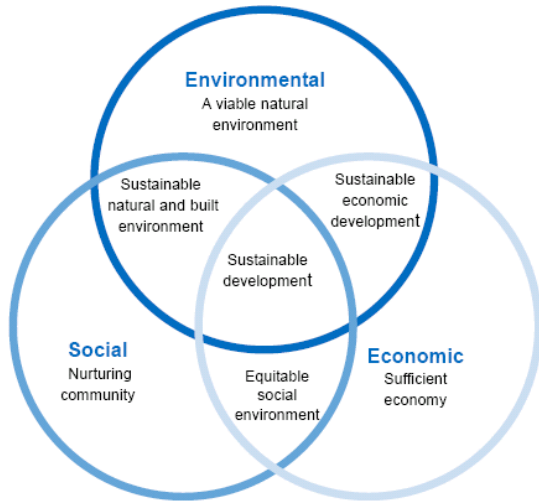


Fig. 1 Sustainable development diagram [9]

Beyond the primary definition of development in terms of fundamental human needs, Friberg and Hettne outline of formula for green principles of development. This formula is based on four main items [10]:

- First, that the social unit of development should be culturally defined community and its development should be rooted in its values and institutions,
- Second, self-reliance, so that each community relies primarily on its own strength and resources,
- Third, social justice,
- Fourth, ecological balance, implying an awareness of local ecosystem potential, and local and global limits.

Obviously this formulation reflects a great deal of thinking from the world Conservation Strategy and the Brundtland report [7].

The segments of the community may or may not share compatible values, goals, and ideas about developing tourism. Each group may have different needs, benefits from tourism in different ways, and possesses different levels of influence on decision-making. Since tourism development may require changes in behavior related to conserving rather than consuming the environment, it is important that all segments of the community receive benefits from tourism which are satisfying enough to motivate the desired changes [11].

No single blueprint of sustainability is possible or even desirable for all countries or regions as economic and social systems and ecological conditions differ widely among countries or indeed among areas within the same country. Each nation or state within a nation have to work out its own policy and develop a monitoring system using performance indicators and performance index to measure individual progress towards sustainable development.

III. SUSTAINABLE TOURISM DEVELOPMENT

Sustainable Tourism involves social responsibility, a strong commitment to nature, and the integration of local people in any tourist operation or development [12]. Sustainable tourism is defined by the World Tourism Organization (WTO), the Tourism Council (WTTC) and the Earth Council as: Sustainable Tourism Development meets the needs of present tourists, host regions while protecting and enhancing opportunity for the future. It is envisaged as leading to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems. Sustainable tourism products are products which are operated in harmony with the local environment, community, and cultures so that these become the beneficiaries not the victims of tourism development [13].

Some factors can be seen as "drivers" pushing the tourism industry towards a sustainable development approach [13]:

- Increasing regulatory pressure;
- Growing awareness of cost savings from sensible resource consumption;
- Tourism professionals and operators recognize that environmental quality is essential for a competitive product;
- The awareness by governments and operators that the growth of tourism can have a negative impact on the environment;
- A growing awareness of communities about their potential to influence tourism policy

Sustainable tourism development is defined as a model form of economic development that is designed to:

- Improve the quality of life of the host community,
- Provide a high quality of experience for the visitors,
- Maintain the quality of the environment on which both the host community and the visitor depend.

Accordingly, tourism must be environmentally sustainable in both the natural and cultural environments to be economically sustainable [14]. Sustainable tourism development requires the demand of tourists satisfied in a manner that destination continues to attract them whilst meeting the needs of the host population with improved standards of living, yet safeguarding the destination's environment and cultural heritage [15].

Almost three elements interact to form the framework of tourism development in the domain of sustainability. These are tourism industry, environmental setting, and the community. Within the new concept of sustainable tourism, the tourism industry seeks a healthy business environment with a financial security, a trained and responsible workforce and attractions of sufficient quality to ensure a steady flow of visitors who stay longer and visit more often. Tourism can benefit the community through cultural interaction, infusion of money, transfer of technology, environmental education, improved land use, creation of working opportunities and local business development [16]. Those interested in natural environment and cultural heritage issues seek: protection of

the environment through prevention, improvement, correction of damage, and restoration, besides motivation of people to be more aware and therefore care for rather than use up resources. On the other hand, community members seek a healthy place in which to live with adequate and clean water, health care, rewarding work, equitable pay, education and recreation, respect for cultural traditions and opportunities to make decisions about the future. The community can provide cultural interaction, visitor services, and local products. Some concerns that may hold in common include: issues of access to destinations, cultural impact or common use of infrastructure and land use issues [17].

According to the World Tourism Organization, three fundamental concepts underpin current approaches to sustainable tourism [4]:

1. Tourism should be more sustainable in the way that it is developed and operated.
2. Sustainable tourism strategies and policies should reflect a two-way relationship: Impacts on tourism and Impact of tourism.
3. Sustainability and competitiveness are interdependent.

Tourism is a quite complex sector, it involves many actors and it is linked to many other sectors (such as environment, culture, transport), it relies on public-private partnerships, it strongly impacts on host communities, and it includes intangible aspects. The main tourism products are "destinations" which offer to visitors the opportunity to experiment a variety of experiences.

A. Principles of the Sustainable Tourism Development

The principles of sustainable tourism development are based upon recognizing change in the nature of tourism destination, scale, and rate of development, the assumption of management to attain long-term goals and responsibility for avoiding or minimizing impacts on the environment [18].

The sustainable tourism development comprises the following major principles:

- Establishing ecological limits and more equitable standards,
- Reducing over consumption and waste.
- Avoiding the costs of restoring long-term environmental damage and contributes to the quality of tourism.
- Supporting wide range of local economic activities and avoids environmental damage by taking environmental costs/values into account.
- Redistribution of economic activity and reallocation of resources to meet essential needs depending on achieving full growth potential and sustainable development.
- Controlling population and distribution of resources to ensure that the demographic developments are in harmony with the changing potential of the ecosystem.
- Sustainable use of basic resources natural, social and cultural and makes long term business sense by using new future options and non-renewable resources as possible.
- Involving local communities. The full involvement of local communities in the tourism sector not only benefits

them and the environment in general but also improves the quality of the tourism experience.

- Consulting stakeholders. Consultation between the tourism industry and local communities, organizations and institutions is essential if they are to work alongside each other and resolve potential conflicts of interest.
- Ensuring equitable access to the constrained resource and effectively use of technological effort through reorienting of technological efforts to relieve the pressure on basic resources.
- Controlling of carrying capacity.
- Maintaining and promoting natural, social and cultural diversity for long term sustainable tourism, and creating a resilience base for the industry.
- Integrating tourism into planning. Tourism development which is integrated into a national and local strategic planning framework, and which undertakes EIAs, increases the long term viability of tourism.
- Training of staff members. Integrate sustainable tourism into work practices, along with recruitment of local personnel at all levels, improves the quality of the tourism product.
- Marketing tourism responsibly. Marketing provides tourists with full and responsible information increases respect for the natural, social and cultural environments of destination areas and enhances customer satisfaction.
- Minimizing adverse impacts on basic resources.
- Involving environmental policy in management process to ensure environmental quality.
- Using an effective environmental audit system.

B. Sustainable Tourism Development Instruments

The sustainable tourism development comprises the following instruments as techniques employed to apply sustainable tourism development:

- 1) Area Protection: Various categories of the status of protected areas includes: national parks, wildlife refuges/reserves, biosphere reserves, country parks, biological reserves, areas of natural beauty and sites of special scientific interest.
- 2) Industry Regulation: Government legislations, professional association regulations, international regulations, control regulations, and self-regulation.
- 3) Visitors Management Techniques: Zoning, honey pots, visitors dispersion, channeled visitor flows, restricted entry, and vehicle restriction.
- 4) Environmental Impact Assessment: Overlays, matrices, mathematical models, cost benefit analysis, the material balance model, the planning balance, the planning balance sheet, rapid rural appraisal, GIS and environmental auditing.
- 5) Carrying Capacity Calculations: Physical carrying capacity, ecological carrying capacity, social carrying capacity, environmental carrying capacity, effective or permissible carrying, limits of acceptable change.

- 6) Consultation / Participation Techniques: Meetings, public attitude surveys, stated preference surveys and contingent valuation method.
- 7) Codes of Conduct: Codes for the tourists, the industry, the host governments, and host communities.
- 8) Sustainability Indicators: Resource use, waste, pollution, local production, access to basic human needs and facilities, freedom from violence, access to the decision making process, diversity of natural and cultural lives.

The tools of sustainability such as carrying capacity calculations, environmental impact assessment, and sustainability indicators, can be used to minimize the effects of tourism development to a point at which they can be excused. Accordingly, assessing elements for sustainability shall in a way reduce the significance or level of acceptance or tolerance of all other conditions [18].

Throughout all stages of tourism development and operations, a careful assessment, monitoring and mediation program should be conducted in order to allow local people and others to take advantage of opportunities or to respond to changes.

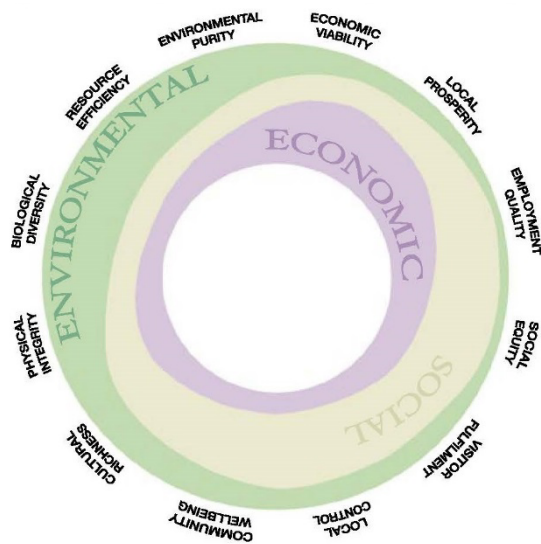


Fig. 2 Sustainable development tourism diagram [19]

C. The Sustainable Tourism Development Aims

The sustainable tourism development integrates three main goals of the sustainability: environmental preservation, economic profitability, and social equity. Sustainable tourism development aims to [19]:

- 1) Economic Viability: To ensure the viability and competitiveness of tourism destinations and enterprises, so they are able to continue to prosper and deliver benefits in the long term.
- 2) Local Prosperity: To maximize the contribution of tourism to the economic prosperity of the host destination, including the proportion of visitor spending that is retained locally.
- 3) Employment Quality: To strengthen the number and quality of local jobs created and supported by tourism, including the level of pay, conditions of service and availability to all without discrimination by gender, race, disability or in other ways.
- 4) Social Equity: To seek a widespread and fair distribution of economic and social benefits to the recipient community, including improving opportunities, income, and services.
- 5) Visitor Fulfillment: To provide a safe, satisfying and fulfilling experience for visitors, available to all without discrimination by gender, race, and disability or in other ways.
- 6) Local Control: To engage and empower local communities in planning and decision making about the management and future development of tourism in their area, in consultation with other stakeholders.
- 7) Community Wellbeing: To maintain and strengthen the quality of life in local communities, including social structures and access to resources, amenities and life support systems, avoiding any form of social degradation or exploitation.
- 8) Cultural Richness: To respect and enhance the historic heritage sites, authentic culture, traditions and distinctiveness of host communities.
- 9) Physical Integrity: To maintain and enhance the quality of landscapes, both urban and rural, and avoid the physical and visual degradation of the environment.
- 10) Biological Diversity: To support the conservation of natural areas, habitats, wildlife, and decrease the deterioration of the environment.
- 11) Resource Efficiency: To minimize the use of the non-renewable resources that utilized in the development and the operations of tourism facilities and services.
- 12) Environmental Purity: To decrease the pollution of air, water, land, and the generation of waste caused by tourism enterprises and visitors.

The order in which these twelve aims are listed does not imply any order of priority. Each one is equally important.

Many of the aims relate to a combination of environmental, economic and social issues and impacts, as illustrated by Fig. 2 and by the examples below:

- Economic viability of tourism depends strongly on maintaining the quality of the local environment.
- Visitor fulfilment is about meeting visitors' needs and providing opportunities (a social aim), but is also very important for economic sustainability.
- Cultural richness is often considered to be in the social sphere of sustainability, but it has a strong bearing on environmental aspects in terms of the built environment and cultural dimensions of society's interaction with nature.
- Community wellbeing, which can be seen mainly as a social aim, is strongly related to environmental resource management, for example with respect to access to fresh water.

- Employment quality and social equity issues, such as poverty alleviation, relate closely to both economic and social sustainability issues.

D.Roles of Stakeholders in Supporting the Sustainable Tourism Development

Achieving sustainable tourism development goals requires the collaboration support of all stakeholders involved. Since all partners in tourism development gets substantial benefits from it. Interaction between them in sustainability process is essential for successful implementation from it.

Sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building. Achieving sustainable tourism is a continuous process and it requires constant monitoring of impacts, introducing the necessary preventive and/or corrective measures whenever necessary [20].

Sustainable tourism should also maintain a high level of tourist satisfaction and ensure a meaningful experience to the tourists, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them.

There are 4 main types of stakeholders who are part of the tourism economy, and whose collaboration is a key point to deliver successful initiatives [4]:

- The Public Sector: which includes local, regional and national authorities; tourist boards; public attractions (national and regional parks, archaeological sites, museums), transports, local development agencies.
- The Business Sector (the tourism industry), which includes tour operators and the travel agencies, the hotel and catering sectors, private attractions, trade associations, chambers of commerce.
- The Knowledge Community, which includes International Organizations, Academies, Training Organizations, Research Centers, Media.
- The Host Community which includes local citizens.

Each tourism product as well as each tourism initiative is the result of the above stakeholders' interaction. A good coordination among all these actors contributes to make destinations sustainable, to maintain a high level of tourist satisfaction ensuring a meaningful experience.

The sustainable development of tourism requires a sound planning and management process, which needs to be knowledge based, to include the management of key sustainability principles, and to put in action sustainable policies, guidelines and recommendations [4].

IV. CRITERIA OF SUCCESSFUL SUSTAINABLE TOURISM DEVELOPMENT

Sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments. Sustainability principles refer to the environmental, economic, and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its

long-term sustainability [20]. Thus, sustainable tourism should:

- 1) Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.
- 2) Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance.
- 3) Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation.

To achieve a successful sustainable tourism development it is necessary to the sustainability pillars. Based on the review of the previous approaches, the following four criteria and their principles are proposed to be used to evaluate the sustainable tourism development of resorts.

A. Environmental Sustainability

Environmental sustainable development that is compatible with the maintenance of essential ecological processes, biological diversity, and biological resources.

- Ensure that the design, planning, development and operation of facilities incorporate sustainability principles
- Avoid or minimize the impact of tourist activities on the environment.
- Determine the carrying capacities for assessing the environment impact and sustainability. Its calculations are dependent on chosen assumptions such as the ideal management capacity. It has a substantial effect on the final carrying capacity and the limits of acceptable change or degree of deterioration in the character and quality of the resource.
- Establish codes of practice for tourism at all levels, guidelines for tourism operations, impact assessment, and monitoring of cumulative impacts.
- Formulate national, regional, and local tourism policies and development strategies that are consistent with overall objectives of sustainable development.
- Institute baseline environmental impact assessment studies.
- Ensure tourism in protected areas is incorporated into and subject to sound management plans.
- Identify acceptable behavior among tourists and promote responsible tourism behavior.

B. Cultural Sustainability

Cultural sustainable development increases people's control over their lives and it is compatible with the culture and values of those affected and it strengthens the community identity.

- Conserve cultural diversity.
- Respect land and property rights of traditional inhabitants.

- Guarantee the protection of nature, local and the indigenous cultures and especially traditional knowledge.
- Work actively with indigenous leaders and minority groups to insure that indigenous cultures and communities are depicted accurately and with respect.
- Strengthen, nurture, and encourage the community's ability to maintain and use traditional skills.
- Initiate tourism with the help of broad based community input.
- Provide education and training programs to improve and manage heritage and natural resources should be established.
- Educate tourists about desirable and acceptable behavior.

C. Social Sustainability

Social sustainable development that is designed to benefit local communities and generate/retain income in those communities:

- Encourage the community to maintain control over tourism development.
- Provide quality employment to community residents.
- Encourage businesses to minimize negative effects on local communities and contribute positively to them.
- Ensure an equitable distribution of financial benefits throughout the entire supply chain.
- Provide financial incentives for local businesses to enter tourism.
- Improve local human resource capacity.

D. Economical Sustainability

Economical sustainable development is profitable in both the immediate and long term.

- Generate greater economic benefits for local people and enhance the well-being of host communities.
- Form partnerships throughout the entire supply chain from micro-sized local businesses to multinational organizations.
- Use internationally approved and reviewed guidelines for training and certification.
- Provide the cost of any special measures taken to cater the tourists, mitigate the negative effects of the tourist's presence and cover the maintenance of the project.
- Promote among tourists an ethically and environmentally conscious behavior.
- Diversify the products by developing a wide range of tourist activities.
- Contribute some of the income generated to assist in training, ethical marketing and product development.
- Provide financial incentives for businesses to adopt sustainability principles.

V. SUSTAINABLE RESORTS

Egypt was known throughout its history as a destination for tourists and travelers. Egypt maintained this image throughout the middle and modern history. However, the discovery of the Pharaonic antiquities long time ago has added a special charm to Egypt, besides its unique religious and cultural monuments.

On the other hand, Egypt enjoys a geographical location, and a moderate climate all the year-round, along with its smooth vast coastlines, and beaches with its unique treasures of coral reefs, providing Egypt with advantages of a competitive edge.

Besides cultural and archaeological tourism, many tourism attraction types have come into existence and addressed broader segments of tourists across the world, including recreational tourism, beaches tourism, religious tourism, therapeutic tourism, eco-tourism, sports tourism, golf tourism, safari tourism, desert tourism, yacht tourism, and maritime tourism in addition to festivals tourism, and cultural events and finally conferences and exhibitions tourism [21].

Many resorts in Egypt respect the sustainable development approaches to reduce the impacts of tourism in the environment and to give their guests new experiences. The research chooses some resorts with different natural characteristics and care to use sustainable techniques to preserve the cultural, protect ecological features and respect the local community.

The following explains each resort.

A. Sahl Hasheesh Bay Resort

Sahl Hasheesh is a luxury resort located along red sea coast, 18 kilometers south of the city of Hurgada. It extends over an area about 8000 acres. The Master Plan for Sahl Hasheesh is designed to create a vibrant resort of lasting value, setting a new benchmark for sustainable development and 'resort style' living in Egypt. This vision and associated design guidelines are intended to guide the future development of Sahl Hasheesh, setting out a clear and responsive strategy in respect of land use, built form and urban design, open space, access and circulation, transportation, sustainability and infrastructure delivery.



Fig. 3 Sahl Hasheesh Resort [22]

Building upon the existing foundation, the Master Plan for Sahl Hasheesh is set to introduce a range of further premium hotel and residential products, retail, leisure based activities and attractions, open space, cultural and entertainment venues, medical and educational institutions, utilities and a multitude of community services. [23].

Egyptian Resorts Company (ERC) has set about redefining much of Egypt's luxury development market and brings a

fresh new approach to sustainable communities. ERC has built its success on a unique business model exclusive utilities supplier and community manager of fully-integrated resort cities

Recognizing the beauty and significance of this landscape, the Master Plan is highly responsive to the site's attributes. In everyday practice, ERC employ a range of best practice environmental protection measures to preserve the state of this unspoiled landscape. To develop the Master Plan, ERC commissioned a multi-disciplinary team of local and international specialists, led by one of the world's leading master planners Wimberly, Allison, Tong and Goo (WATG). As trusted custodian of the sea's natural heritage, ERC prides itself on ensuring that the marine environment and life is preserved.

B. El Gouna Resort

This resort is located in Elgouna, 25 kilometers north of Hurghada city. El Gouna has two main hubs of activity. The first is the Abu Tig Marina and its new extension, the New Marina. The second is Downtown, which includes Kafr El Gouna and Tamr Henna. The resort is comprises a total land area of 36.9 million sqm. El Gouna boasts 16 hotels, for a total capacity of 2,707 rooms. The resort offers a wide range of international-standard facilities such as a landing strip, a European-standard hospital, a nursing institute, 18-hole championship golf course, three marinas, four international schools, child daycare facilities, a library linked to Bibliotheca Alexandrina, a branch of the American University in Cairo (AUC), and TUB Berlin University that opened in October 2012. Besides, it offers restaurants, bars, shops, cafés, spas, a football team and sporting club, certified diving centers, nurseries and as well as mosques and churches and one small museum , a private airport and various services [25].



Fig. 4 Elgouna Resort [24]

El Gouna specializes in watersports, including scuba diving, windsurfing, kitesurfing, waterskiing, parasailing, and snorkeling. There are two main beaches: Zeytuna Beach located on its own island and Mangroovy Beach. A network of canals allows many houses to have their own strip of beach, even hundreds of meters inland. Most of these canals are crossed by small stone bridges.

Great lengths have been taken to ensure that the town and its buildings conform to the highest architectural standards. The town's unique blend of traditional and modern elements is

the result of the dedication and it works with an impressive list of prestigious architects. American Michael Graves, the winner of many of the architectural world's highest awards, designed several of El Gouna's hotels, Golf Club, and Golf Villas. The earth tones and sea-color splashes which characterize these projects helped to set the tone of the resort

Italian architect Alfredo Freda designed El Gouna's attractive Marina town, the first of its kind on the Red Sea, as well as the popular and exclusive Tuscany-style Hill Villas. Shahab Mazhar, a prominent Egyptian architect, was inspired by Mediterranean influences in his creation of the beachfront White Villas. And the beautiful Nubian Villas are the work of the award-winning architects Ramy El-Dahan and Ahmad Hamdy, who also hail from Egypt.

El Gouna management has worked hard in cooperation with local hotels, businesses, residents and visitors to maintain, protect, and preserve its unique environment.

C. Adrère Amellal Resort

The resort is on a 60-hectare site at the foot of the Adrère Amellal Mountain, 18 kilometers from Siwa. It has been developed with the full cooperation of the local community. The Hotel Adrere Amellal is a luxurious eco lodge radically different from traditional luxury and it is designed by the architect Ramez Azmy. There's no electricity or telephone in these dwellings made of kershef, a mixture of earth, stone and salt water. The food comes exclusively from the hotel's organic garden. The building is a veritable labyrinth of corridors leading to terraces or sumptuous and elegant covered areas [27].



Fig. 5 Adrere Amellal Resort [26]

The resort consists of 40 non-similar units simple and chic approximately carrying traditional characteristics of Siwain houses. Niches in walls are used as shelves, while ornaments on walls and furniture belong to ancient local art. Walls are built from blocks of sandy stones coated with a layer of clay from neighboring lakes. The furniture and sofas are made of earth covered with white cushions, and each detail is carved and enhanced with white limestone. For relaxation, the hotel has a spa and a spring water pool designed as ancient roman springs with small modifications. In the heart of the desert, the Adrère Amellal is proof that luxury can be simple, ecological, and exclusive. It also supports the local community by

providing employment and purchasing local craft accessories such as candleholders, linen tablecloths, and furniture.

D. Basata Resort



Fig. 6 Basata Resort [28]

Basata is the first unique eco-lodge built in Egypt in 1986. The resort is located in South Sinai between Taba and Nuweiba, possessing one of best five beaches in the world. Basata means “simplicity” in Arabic, which personifies the philosophy behind this environmentally conscious tourist project.

Basata offers a serene escape from the concrete city life and the pressures of modern living. TV’s, video games, cell phones, computers blaring radios, and air-conditioning are not a part of the Basata way of life. However, snorkeling at sunrise, interacting with the eclectic clientele, and admiring the moonrise or stargazing are very interesting. It is managed to create harmony between people, the environment, and tourism. This translates into an environmentally conscious process that, conserves water, recycles, and reduces waste to a minimum. Thus, travelers who come to Basata enjoy the natural environment in a simple and ecologically-friendly atmosphere. Every aspect of life in Basata takes into account Sinai’s delicate landscape. Accommodations are comfortable bamboo huts on the beach, mud brick chalets or tent. The visitor is immediately integrated into this simple lifestyle and he can prepare his own meals in the fully stocked kitchen [29].

VI. ANALYSIS OF SUSTAINABLE TOURISM DEVELOPMENT

The previous resorts will be analyzed based on the set of principles of sustainability criteria which strives to weave the principles of sustainable tourism development into criteria of design.

A. Sahl Hasheesh Bay Resort

Analysis of the sustainable performance of the resort:

- The resort creates diverse dense walkable communities offering schools, parks, shopping and tourism facilities.
- It provides development opportunities which encourage rich, diverse social environment which benefits and improvements of the quality of life for its inhabitants.
- It creates a destination which respects and enhances local and cultural traditions, art, and music.
- It create regionally appropriate architecture capitalizing on the contextual urban form which is relevant to Egypt
- The design of the resort is articulated by the well-considered integration of the mountains, the sea, and the landscape.

- The open space amenities are created with a series of interconnected pedestrian/cycle paths and trails to encourage walking hiking biking.
- The resort creates opportunities for job creation and growth.
- It provides programmatic elements based up on to date market research, designed to meet local market needs and demands which is carefully staged and released for development opportunities over many year.
- The electric or hybrid vehicles are used within resort properties mobility on demand.
- The resort respects preservation and enhancement of the natural environment.
- The use onsite renewable energy farms to supplement energy demands within the development.
- It creates opportunities for sustainable farming and desert agriculture, reducing reliance on offsite imports.
- It encourages dense development clusters to reduce wind exposure.
- The use of solar panels at large expanses of parking structures on building rooftops which would help to offset power demands.
- The integration and use of local building materials for all construction.
- The Utilization of native drought tolerant plant species conserving water demands
- Promote implement best practice waste management strategies and onsite recycling programs.



Fig. 7 Sahl Hasheesh Resort [22]

B. El Gouna Resort

Analysis of the sustainable performance of the resort:

- The resort respects the natural elements of the local environment while making good use of the topography, taking full advantage of site and providing comfortable conditions to tourists.
- The designer use some eco features such as minimizing direct exposure to the sun through the shades for outdoor spaces, solar hot water heaters to reduce energy usage, utilizing prevailing wind and provide natural ventilation to the units.
- The units are planned to enjoy the nature and to take full advantage of the shoreline and the landscape views.



Fig. 8 Elgouna Resort [24]

- It attempts to decrease environmental pollution, protect natural resources, use natural building materials, ensure energy conservation, and manage water recycling.
- The resort respects privacy and personality of visitors by offering public and private spaces which respect the social fabric of the local community.
- The resort is designed using traditional architectural elements and respecting the Egyptian traditions.
- The architect adds spatial identity to the place by using traditional vernacular forms- domes, vaults, and arcades-with color, form and geometric order.
- The resort provides source of income to local community based upon the skills and traditional crafts.
- Local residents were trained to work as tourist guides while the skills of the local residents are invested in making traditional products such as hand-textiles.
- The design developed a self-sustained integrated resort which provides various requirements for the tourists.
- The resort developed a management system to sustain permanent tourism all over the year through diversifying tourist products and facilities and arrangement of accommodation units to meet various choices of tourists to serve the long term visitor.

C. Adrère Amellal Resort

Analysis of the sustainable performance of the resort

- The design of the resort is integrated with local environment like an extension of the neighboring mountain.
- The resort aims to protect the natural environment and revitalize the cultural heritage.
- Design a distinctive local architecture to attract tourism using available local cultural components.
- The resort takes full advantage of the site to provide comfortable conditions to visitors.
- The natural building materials are used in the site like sandy stones and clay for construction of walls, while palm trees were used as beams for roofs and plates of

doors. In addition, local olive trees were used for making bars and frames of door and some tables.



Fig. 9 Adrère Amellal Resort [26]

- The thick walls are used as reservoirs for heat and source of warming in the winter.
- Natural ventilation system depends on cross ventilation through directing windows towards north and south direction to decrease temperature by 10 degrees
- Diversity in choosing accommodation room is based upon social needs of visitors.
- The local handcrafts are used to decor interior and exterior spaces.
- The complex is lit by oil lamps, candles and torches, eliminating the need for electricity
- The architect designed a resort to match the environmental and cultural conditions
- The local community have built this hotel by using traditional Siwan building technology
- About 120 local people are staffed in the resort.
- The resort provides local knowledge and technology in a sensitive economic way to decrease consumption of energy, climatic control and economical cost during construction, operation and in maintenance works

D. Basata Resort

Analysis of the sustainable performance of the resort

- It attempts to create a unique form of tourism that has a relatively low impact on the surrounding environment and the native inhabitants, the Bedouins. Neither the eco-lodge nor the underlying philosophy is static, both are organic and continue to evolve and develop according to the requirements of the guests and the environment.
- The distinctive environmental issues facing Basata and the entire coastal region of the Sinai include but are not limited to preserving the abundant marine life and the beauty of the desert from environmental impact and both protecting and supporting the culture of the Bedouins. Therefore, Basata's concept and philosophy focuses on

- architecture, waste, recycling, and responsible tourism.
- Guests are requested to adhere to the recycling system practiced there. Bins are marked separating refuse into categories, glass, plastic, food waste, and metal. These materials are then sent to a recycling plant or fed to the animals. This open system puts responsibility back into the hands of the guests and makes them feel at home, thus increasing awareness of the effects of their actions on nature and on other people while leaving the area unspoiled for future generations.
- Construction of buildings and huts in Basata is conducted in harmony with the Sinai landscape. Each of these buildings is uniquely designed and constructed using only natural materials endemic to the region by Egyptian architects and workers using traditional methods reflected traditional Egyptian architecture. This unique architecture affords guests a feel for the local culture. In addition, through optimal use of natural wind patterns, there is no need for air-conditioning or any other form of artificial cooling.
- The use of indigenous building materials significantly benefits the building process. Only materials that are biodegradable (i.e. bamboo, clay, and natural stones) are utilized and Substances that pollute or damage the environment are avoided. The use of only organic materials promotes a healthy climate of living for all inhabitants and visitors.
- The amount of space between both, chalets and huts, allows for privacy, even during the high tourist season.
- Construction can proceed at any time, unhindered, as the traditional forms of building do not include the use of any heavy construction equipment and there is no noise disturbance.
- There is no artificial planting and landscaping of flora not endemic to the region. Moreover, such greenery requires huge amounts of valuable water and polluting fertilizers and ultimately destroys the land. Through the use of traditional architecture, the special character of the desert is preserved and enhanced.
- Fresh water is made, on the premises, in their own desalination plant. The desalination plant produces both fresh water and brine water. Fresh water is used, as conservatively as possible, in the kitchen and in the bathrooms. Brine water is used for as many purposes as possible; wash the dishes, to flush the toilets and for construction work. Wastewater is divided into grey water and black water. Grey water is used in irrigating non-edible, endemic palm trees and plants. The salty black water goes into sealed septic tanks and then it is transferred to Nuweiba's, water treatment plant.
- They explain this water-cycle and their efforts towards water conservation to all of the guests and the staff to help reducing the water consumption.
- They use Good Lighting that is properly shielded and is limited to certain areas only and emits no direct light upwards towards the sky to enjoy the amazing view of the desert stars.



Fig. 10 Basata Resort [28]

TABLE I
ASSESSMENT OF THE EGYPTIAN RESORTS

Criteria	Principles	El Gouna	Sahl Hshesh	Adrère Amelal	Basata
Environmental	Protect & conserve the biodiversity.	3	2	3	4
	Use traditional techniques and natural materials.	3	2	4	4
	Use renewable energy	3	4	3	2
	Provide environmental friendly architectural design & planning	4	4	4	2
Cultural	Reduce negative impacts to the environment.	3	3	4	4
	Conserve local physical features	2	3	4	4
	Built cultural awareness and respect	3	2	4	4
	Conserve cultural diversity	2	2	4	4
Social	Revitalize traditional arts & handicrafts	3	2	4	4
	Respect the cultural aspects in design	4	4	4	4
	Enhance heritage resources	3	3	4	3
	Encourage respect between tourists & hosts	4	3	4	4
Economical	Minimizing social impacts	3	3	3	3
	Provide enjoyable experiences for tourists & local people	2	2	4	4
	Meet social needs	3	3	4	3
	Maximize economic benefits for the local community	3	2	4	3
	Economic cost of building & construction	4	4	4	3
	Provide sources of income to local community	2	2	4	3
	Use appropriate economic cost of services & maintenance	4	4	3	4
	Serve meals containing fresh food produced locally within the community	2	2	4	4
Total Assessment of resort sustainability performance (Maximum points 80)		60	56	76	72
Percentage %		75%	70%	95%	90%
Rating (Points)		Poor (2)	Good (3)	Very Good (4)	Excellent (5)

VII. CONCLUSION

The Sustainable resorts attract a great number of tourists Egypt. It is important to apply the sustainable tourism criteria to preserve the natural beauty and local cultural traditions in order to enjoy the tourism benefits. Table I summarizes the main criteria and the principles implemented in these examples to achieve a successful sustainable resorts. This former checklist acts as base line study for assessing projects of tourism development. It assesses the experiences of tourism development in the resorts according to whether or not they satisfy a set of sustainable criteria.

[29] Basata resort official website, http://www.basata.com/localhost_8080/basata/index.html, 2015.

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