

CHAPTER ONE

OVERVIEW

1.0. INTRODUCTION

In recent decades, tourism has become a major worldwide industry, and has made an important contribution to the economy of many countries. It has stimulated employment and investment, and made positive contributions to the balance of payments. Tourism stakeholders¹, however, often fail to take into account how the industry itself fundamentally changes the natural environment and the social and economic order. Rapid growth of tourism has resulted in pronounced positive and negative economic, social, and environmental impacts, depending upon the environment's ability to bear development growth and environmental change. Uncontrolled growth of tourism development in many destinations has come into direct conflict with the protection of unique local environments, since it promotes modernization, cultural change, urbanization, and the exploitation of natural and cultural resources; resulting in the overall deterioration of the tourism product, killing the goose that laid the golden egg. This is particularly true for coastal environments, often ideal locations for recreational resorts, that are more sensitive to change because of their fragile ecosystems. A basic understanding of the natural behavior of an ecosystem is required before designing facilities to function sustainability within it.

The increasing demand for coastal tourism development has brought substantial changes in the health and vitality of coastal environments globally. Developers have insufficiently understood the complexity of coastal ecosystems, resulting in tourism development that has negative impacts on the natural beauty and function of coastal environments. Potential negative impacts include the depletion of natural resources; destruction of natural habitats; reduction of air and water quality; and an eventual decline in the recreational coastal tourism.

¹ Stakeholders are the individual participants in this study who are involved in beach resort development. They are classified into three groups: 1) professionals in the field of architecture, planning, construction, landscape, and interior design are called "designers;" 2) professionals who work in operation and management, developers, owners, and investors are called "managers;" and 3) nonprofessional public includes international and domestic tourists and local community are called "visitors."

Today, strong evidence exists that suggests a global environmental crisis and the urgent need to replace the current overall pattern of shoddy tourism development with more sustainable approaches. This need was echoed by the 1992 Earth Summit that was held to create an international action plan for balancing the human need for development and environmental conservation. Therefore, sustainability implementation within coastal environments has become essential to the tourism industry in which sustainable tourism development involves careful control of site planning, building design, construction technique, and tourism management and operation systems that minimize waste, enhance resource conservation, respect local traditions, and integrate tourism development with other economic sectors (El-Halafawy, 1991).

Meanwhile, many developing countries look to coastal tourism as a promise for substantial economic benefits to the local and national economy, creating new jobs and improving people's incomes, while at the same time satisfying leisure needs for both locals and international visitors. For example, the Egyptian coastline possesses the potential to become an intensively developed and desirable tourism destination in the Middle East. Over the past two decades, coastal zones in Egypt have been increasingly developed for recreational tourism; existing beach resorts have been expanded; new sites have been developed; and ambitious plans for beach resort developments have been announced. Until recently, attention has been focused on the more obvious economic benefits, with comparatively little consideration being given to the social issues and environmental losses (El-Halafawy, 1991).

Sustainable development has become an important guide to many communities that have found conventional approaches to design, planning, and overall tourism development are creating, rather than solving, societal and environmental problems such as congestion, sprawl, pollution, and resource over-consumption. The United Nation's World Commission on Environment and Development (WCED, 1987) defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainable development provides a framework under which communities can use resources efficiently, improve built-environment, enhance quality of life, and create tourism businesses that strengthen the economy and conserve the natural and

cultural uniqueness of local environments. Sustainable Design² is created from the concept of sustainable development that helps stakeholders understand and assess environmental risks and opportunities so informed decisions about facilities design and planning can be made in a proactive manner.

Many efforts have been made to escape from the traditional pattern of development and to provide an sustainable alternative that addresses environmental impact concerns including: 1) the environmental approach in which ecotourism³ is provided as an environmental alternative to traditional mass tourism; 2) the economic approach that applies the concept of product lifecycle⁴ to tourism development to prevent tourism decline; and 3) the social/cultural approach that focuses on developing models and providing guidelines for improvement based on the interactions between tourists and host communities⁵ at tourism destinations. These three approaches will be discussed in more detail in chapter 3.

1.1. THE RESEARCH PROBLEM

Sustainable coastal tourism development, specifically beach resort development, both in developed countries such as the USA and developing countries such as Egypt, faces many problems due to an apparent inability on the part of stakeholders to make sound decisions about sustainable design due to the complexity of the sustainability issues and the lack of a comprehensive decision-making tool to assist them. Issues with development stakeholders include: a) Planners with narrow visions who apply traditional rules and regulations to development that only consider the physical densities and capacities of a site; b) Designers who often determine the maximum use of spaces as a priority rather than optimizing its functions with

² Sustainable Design, as used in this research, refers to any intentional human intervention in natural and/or cultural systems concerning building design, site planning, landscape design, construction techniques and materials, and facilities and services management and operation within the context of sustainability principles.

³ Ecotourism refers to tourism that is environmentally and economically compatible that is based on minimal tourist infrastructure and relies mainly on local resources.

⁴ Butler (1980) views the Product Life Cycle (PLC) as a hypothetical evolutionary pattern for tourist destinations that shows the interrelationship between the development stages and possible environmental impacts associated with such development.

⁵ Local communities' responses toward tourists and tourism depend on how they perceive tourism impacts [see Doxey (1975); Butler (1980); and Dogan (1989)].

efficient use of resources; c) Builders who use global construction techniques and building materials rather than determining the availability of the local resources and using indigenous materials and techniques; d) Managers engaged in the operation that fail to respond to the current need of environmentally-sensitive facilities, services, and activities; e) Users of coastal resorts from visitors or the local community who lack basic knowledge on challenging environmental issues; and f) Local, regional, and national officials that fail to incorporate sustainability trends into their development standards and regulations.

While the concept of sustainability has been adopted worldwide as an approach for development, the application of sustainability practices to the design and planning of overall coastal development and beach resorts design and planning has not occurred in a substantial way. This is particularly true in some developed sites in Egypt where poor planning, inadequate building design, and shoddy development have lead to significant environmental, social, and economic problems. The future success of the Egyptian coastal development, beach resorts planning and design, and the overall quality of the built environment are brought into question. “Should the existing pattern continue?” Meaningful improvement would require that all stakeholders understand sustainable design issues, constraints, and opportunities in order to actually integrate long-range environmental considerations into their proactive design and planning processes.

1.2. RESEARCH GOALS AND OBJECTIVES

The goals of this research are to: a) explore differences in the perceived environmental and sustainability concerns between American and Egyptian designers, managers, and visitors; b) develop a “Sustainable Design Model” (SDM) for supporting designers/planners, as well as other decision-makers, in the planning and design process of coastal resorts, and 3) provide government officials with a procedural framework (decision model) to assist in the establishment of better guiding principles, building regulations, and planning rules for tourism development in coastal zone destinations.

This research has seven objectives:

- 1) To conduct a comprehensive review of the literature on sustainability in order to: a) identify a set of sustainable development indicators, criteria, and measures that are relevant to coastal settings for use in evaluating the extent to which a coastal resort is sustainable; and b) determine how experts evaluate and correlate sustainability indicators and carrying capacity acceptability for measuring sustainability.
- 2) To categorize carrying capacity thresholds (ecological, social, psychological, physical, economical, and managerial) that can be linked to sustainability indicators based on the quantitative and the qualitative values derived from a proposed development (volume of visitors as well as of the built environment quality) and the existing resources and characteristics of the site.
- 3) To identify the attitudes of stakeholders (visitors, designers/planners, and managers/owners) related to the importance of environmental issues and sustainability potentials.
- 4) To identify the relationship between the physical characteristics of development (carrying capacity: number of rooms, number of visitors) and the levels of sustainability (the cross point of ecological, social, psychological, physical, economic, social, and managerial aspects of sustainability and the carrying capacity of the environment).
- 5) To develop a conceptual “Sustainable Design Model” (decision model) for coastal resorts that a) promotes sustainability principals in beach resort design; b) links capacity controls and sustainability indicators; and c) replaces the traditional building regulations and rules. This conceptual model will be developed from the information gathered in objectives one and two.
- 6) To demonstrate the applicability of the conceptual “Sustainable Design Model” by evaluating the extent to which selected beach resort developments in the United States and Egypt are perceived to be sustainable. To determine how the conceptual model differs from real development at selected sites in both countries, Egypt and the United States.

- 7) To identify relevant differences between American and Egyptian beach resort development that may be applied to future Egyptian development.

1.3. RESEARCH QUESTIONS

The objectives of the research will be addressed by answering the following main questions:

- 1) How does the current resort design/management respond to environmental factors? a) What more could be done to improve the current resort situation environmentally? b) What are the major obstacles in preparing plans and management programs that better respond to environmental factors?
- 2) To what extent are individuals and groups (resort designers/planners, resort managers, owners/developers, local residents, resort users, local government officials, regional/state government officials, and national government officials) concerned about: a) environmentally sensitive coastal resort development, and b) sustainable coastal resort development?
- 3) What is the perceived importance of the design/management teams' response to aspects of the natural environment in developing an environmentally sensitive coastal resort?
- 4) What is the perceived importance of the design/management teams' response to aspects of the social and cultural environment in developing an environmentally sensitive coastal resort?
- 5) What is the perceived importance of sustainability principles in achieving sustainable coastal resort development in developing an environmentally sensitive coastal resort?
- 6) What is the perceived effectiveness of regional/national laws and regulations governing coastal resort development in protecting the natural and cultural environment? a) To what extent do these laws and regulations restrict designers/managers' ability to design and manage successful coastal resorts?

- 7) Are designers, managers, and visitors aware of the concepts of sustainable development and carrying capacity?
- 8) To what extent are designers/managers familiar with product life cycling, carry capacity, and ecotourism as approaches to sustainability? a) How do they apply these approaches in their current resort? b) How valuable are these concepts as tools for achieving sustainable design?
- 9) What are the important factors that affect on visitors selection of a coastal resort for their vacation? a) What satisfies visitors and attracts them to a specific coastal resort? b) What are visitors' least and most favorable aspects of a coastal resort?
- 10) How important is it to visitors that coastal resorts be developed in a manner that is sensitive to the natural and cultural environment? a) What do visitors believe about the environmental sensitivity of most current coastal resort developments? b) What things do visitors believe could make the resort better environmentally?
- 11) How are the demographic variables related to the attitudes of visitors toward environmental problems and sustainability ideas and concepts?
- 12) Based on the sustainable design model developed as part of this research, to what extent do selected coastal resort projects in the United States and Egypt meet these sustainability criteria? a) How does this vary between the two countries?
- 13) What is the mathematical relationship between the carrying capacity threshold decisions made by designers and planners, and the level of sustainability implementation within the selected coastal resort developments?

1.4. RESEARCH DESIGN

In order to answer the questions above, and to further develop the conceptual “Sustainable Design Model”, the research intends to: 1) collect a series of sustainability indicators from diverse sources; 2) define and categorize indicators into natural, cultural, and socio-economic themes; 3) assemble and categorize capacity thresholds relating to the

sustainability indicators defined; and 4) use this data to measure the acceptable levels of the ecological, physical, social, psychological, economic, managerial capacities. The following 10 steps will be taken to address the research questions:

Step 1: Conduct Literature Review and Synthesize Information

Conduct a comprehensive literature review of existing research to develop the study's theoretical model, identify sustainability approaches, sustainability indicators, and identify carrying capacities. Sustainability indicators related to coastal developments will be synthesized from the literature and classified into six main categories: ecological, physical, social, psychological, economical, and managerial. Carrying capacities, which are synthesized from the literature, will also be categorized into these six main categories.

Step 2: Implement Modified Delphi Procedure

Use a panel of professionals and experts to determine: 1) the most common and important sustainability indicators; 2) which of these indicators are related to coastal setting environments; and 3) a weighted value to the relative importance of each carrying capacity category. Categorize the criteria identified by the expert panel into general indicator themes based on carrying capacity aspects.

Step 3: Develop Stakeholder Survey Instruments

Surveys will be developed for three stakeholder groups: Designers/Planners, Managers/Owners, and Visitors/Host Communities. The surveys will be developed in two formats: a written (paper and pencil) format and an on-line Web format. The written survey will be provided in both English and Arabic. The three surveys will each include some core questions purposely common to the three response groups in order to analyze how these different groups perceive the same issues. Additional questions will be written specifically for each stakeholder group. The survey is designed to achieve two objectives: 1) to reduce non-response, and 2) to reduce or avoid measurement error.

Step 4: Test Validity and Reliability of Instruments

The content validity of the instrument evaluated by 10 representatives of 5 resort management companies and 5 design firms in the US and Egypt representing professionals in the field of resort management and design. A small pilot survey will then be administered to a representative group of respondents in order to emulate the procedures proposed for the study, and to identify the need to add, omit, or modify any questions. The reliability of the instrument will be tested with a test-retest procedure.

Step 5: Selection of Sample Sites and Participants

Two countries, the US and Egypt, are selected for study. This selection provides the opportunity for comparison between a developed and developing country. Within each country 5 major coastal zones will be selected for a total of ten coastal zones. These zones are selected to represent the variety of coastal destinations in each country. Information will be gathered from three groups that have experience with resort development, operation, and use and that can provide valuable input on sustainable resort planning and design: designers/planners, managers/owners, and visitors.

Step 6: Survey Stakeholder Groups

Conduct surveys to measure the difference in attitudes of 3 stakeholder groups (Designers/Planners, Managers/Owners, and Tourists) at 10 beach resort destinations (5 American, 5 Egyptian) relating to the importance of environmentally sensitive and sustainable beach resort development, as measured by a Likert scale (1-5) and open-ended questions. Both the on-line survey⁶ and written survey will be used with both formats available in English and Arabic. Prior to distribution, the instruments determined valid and reliable using a test/retest procedure. Three survey instruments (one for each stakeholder group) will be developed and disseminated.

⁶ The on-line survey was developed by the researcher in 1999 in order to expand the number of participants. This survey tool is located at <http://filebox.vt.edu/users/alyahmed> under the research work section.

Step 7: Conduct Field Studies

Conduct site visits on a select number of beach resort projects in the United States and Egypt to observe, collect complementary data, and interview some experts in the field. The site visits will determine their application of sustainable practices, and to identify some successful aspects of the sites that could be applied to future development.

Step 8: Develop a Conceptual Sustainable Design Model

A conceptual sustainable design model will be developed that links sustainability indicators and carrying capacity thresholds. The model will serve as a decision-making tool that can guide stakeholders to achieve their part of sustainability implementation.

Step 9: Analyze Field Study and Survey Data

Analyze collected data to determine the perceptions of the three participant groups concerning the need for sustainability efforts and the use of sustainability practices in coastal resorts. Analysis will investigate the relationships among variables using a carefully drawn sample to make inferences to a larger population. The analysis of the data will take two forms: 1) testing the degree and the form of the relationship between the proposed conceptual model for six dependent variables (carrying capacity thresholds) with 34 independent variables (sustainability indicators) of American and Egyptian beach resort developments, as measured by the perception of the stakeholders on environmental and sustainability issues. Multiple regression analysis will be used to test how the conceptual link between sustainability indicators and carrying capacity of the conceptual model differ from the perceived data collected on the real sites; and 2) testing the differences between responses for the three stakeholder groups. Statistical analyses including frequency distribution, t-tests, analysis of variance (ANOVA), and factor analysis will be used. Sample demographic information will also be collected.

Step 10: Apply Findings to Stakeholders Groups

The goal will be to measure the perception of the aforementioned stakeholders to the applicability of these concepts, so that future policy may be better informed of the gap between

the theoretical concepts of sustainability and the real world of implementation, and to recognize the role of the carrying capacity in controlling and monitoring sustainability levels.

1.5. STUDY PREMISES

Nine premises define the structure of this study:

- 1) The research concentrates strictly on tourism development within coastal zones, particularly on beach resort developments that depend upon natural features and the quality of the coastal environment as an important part of the tourism experience.
- 2) Sustainable design is proposed worldwide as a desirable tool for development. Sustainable design will provide better long-term results for environmentally sound development everywhere.
- 3) Sustainable design indicators contain attributes that make it possible to identify carrying capacity limit thresholds that then control development toward sustainability.
- 4) A conceptual “Sustainable Design Model” can define links between sustainability indicators and carrying capacity to enhanced decision-making tool based on the broad concept of the ecological, social, psychological, physical, economic, and managerial capacity thresholds of the local environment that will increase the applicability of sustainability principles.
- 5) The concept of “Sustainable Carrying Capacity” is defined as a collection of the aforementioned six capacities to be used as the base for the model. Any carrying capacity used will be prudent in nature and acceptable for all practical purposes within the study. Sustainable design will be determined based on measurable criteria and indicators derived from the literature and the availability of information collected from the actual site within a geographic zone.
- 6) Indicators applied to this study are limited to those related to coastal settings. The study included only a group of coastal resorts from the USA and Egypt within ten coastal tourism destinations, five from each country. Due to limited time and resources, the

selected survey sites are limited to five major coastal zones in Egypt: the North Western Coast on the Mediterranean Sea, the Sharm El Sheikh coastal zone in South Sinai, Hurghada coastal zone on the Red Sea, Ras Sedr Beach Zone on the Suiz Gulf, and Al Ein Al Sokhna within the Great Cairo Zone; and to five coastal zones (coastal tourism states) in America: Florida, California, Hawaii, North/South Carolina, and other coastal States. One hundred coastal resorts sites were surveyed using approximately 50 resorts from each country with a total of 276 individual participants (154 from the United States and 122 from Egypt).

- 7) The research focuses only on the perceptions of designers/planners, managers/owners, and visitors who are mainly involved in developing, operating, and using the tourism destination.
- 8) Selection of sustainability indicators is limited to the contexts of the ecological, social, psychological, physical, economic, and managerial aspects of the environment that have implicit direct impacts on the quality of the environment and sustainability achievement.
- 9) This study is concerned with sustainability indicators associated with coastal resort developments in general and not specific coastal resorts. The findings of this study can be generalized only to those resorts in the USA and Egypt with similar characteristics and to similar stakeholder groups.

1.6. RESEARCH ORGANIZATION

The paradigm of “sustainable indicators/carrying capacity thresholds” will be addressed in the “Sustainable Design Model” and discussed in terms of analyzing what the indicators are, and how the carrying capacity aspect is linked to those indicators. Certain questions are raised including: the assessment and validation of the tools measuring sustainability indicators, the determination of what exactly is meant by “Sustainable Carrying Capacity,” the aspect of the environment bearing capacity, and the potential for sustainable design model implementation.

Chapter One presents the overview of the study, explaining the need to conduct research that links the perceived values of sustainability indicators and the conceptual aspects of tourism

destination capacity thresholds. Chapter Two provides a review of the existing literature on: 1) tourism development on a global scale and in the USA and Egypt; 2) coastal environment including the major economic, social and environmental impacts in relevant to tourism; 3) beach resort development along coastal zones illustrating the current major design and planning patterns. Chapter Three discusses the concepts of sustainability and the economic, social, and environmental approaches to sustainable tourism development and how these approaches are linked to local environments carrying capacity. Chapter Four describes the methodology for the study including the instrumentation, sample projects selection, and data collection procedures. In Chapter Five provides the analysis of the data and presents the questionnaire results using charts and tables to describe how the stakeholders perceived the environmental issues and sustainability trends in resort destinations. Chapter Six is an extension of the literature review and presents the field study and Delphi technique outcomes, identifying the individual sustainability indicators and carrying capacity categories to be used to develop and test the conceptual “Sustainable Design Model” that describes the relationships between the theories of sustainability indicators and the elements of carrying capacity in typical beach resort destinations. Chapter Seven summarizes the results with conclusions and recommendations derived from the study and intended to transcend the hard data and address those things that appear to show promise for future efforts in this area.