EVALUATION OF TOOLS FOR

SUSTAINABLITY ASSESSMENT

IN TOURISM

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Chapter I

Introduction

Everything seems to be advancing at top speed, as improvements in technology heighten the pace at which lives are lived. Business, residency, and leisure are becoming transient concepts in which one can be managing stockholdings for multiple clients from the beach of a summer home in Mexico. Living standards in nations traditionally known as third world countries are challenging that of the United States and other developed nations. Travel is occurring at greater speeds and at longer distances more now than ever before. As a result the impact of human activity upon the environment and even each other is now coming under greater scrutiny.

Global tourism tops the list of major industries in the world. Importantly, 85% of tourism arrivals originate in wealthy nations (Honey, 2002). While the wealthiest nations are still earning the highest income from tourism it should be noted tremendous growth is also occurring in developing nations. Tourism is increasing throughout Asia, Africa and the Americas, and it "already plays a major role in the economies of 125 of the world's 170 countries, and tourism is the most important foreign exchange earner in a number of developing countries, including Kenya and Tanzania, Nepal, Costa Rica, Belize, and many Caribbean island nations" (Honey, 2002).

There are currently two conflicting trends within the tourism industry. One involves the consolidation of large tourism operations by owners from wealthy countries predominantly in North America and Europe and geared at mass tourism. The other

trend is driven by a proliferation of tourism operations which are smaller and more decentralized that tend to focus on environmentally and socially responsible tourism (Honey, 2002). The latter trend is in line with earlier conservation efforts and now the modern day concept of sustainable development.

Sustainable tourism is quickly being recognized as a solution for economic development and a way to reduce negative environmental and social impacts. This higher calling comes with some doubt as grumblings over authenticity are sure to become louder. There is now a move toward regulations and the setting of standards in sustainable tourism.

Problem

The problem arises in ensuring the sustainability of tourism. There is a great deal of debate concerning the best way to achieve and maintain sustainable tourism. The variety of frameworks, tools, and models all purporting to provide information about the sustainability of an industry creates a confusing dialogue.

There is little consensus over which tools or frameworks is best for assessing sustainability. Traditional measurements and methods fail to fully assess all the aspects of sustainable tourism. Furthermore current practices in the tourism industry are lacking and necessitate a more holistic approach (Butler, 1998; Wight, 1998). Ultimately the lack of consensus and credible practices is threatening the sustainability of the tourism industry (Hunter 2002).

Objective

Theoretical frameworks, tools in use by leisure professionals, and programs developed for the ecotourism industry are reviewed to gain a better understanding of the process of measuring sustainable tourism. The objective is to provide clarity and guidance for interested stakeholders including local residents, policy-makers, and tourism managers through a review of the main approaches for measuring sustainability in tourism. The main focus is identifying which tool(s) is/are best for measuring sustainability and will be answered by reviewing existing approaches, providing case studies of tools in use, and finally offering direction for the development of future tools to measure sustainability. Due to the dubious nature of sustainability it is important to identify those methods which are most apt at measuring the sustainability of tourism operations.

Research Questions

The objective of this research is to answer the following questions.

1. How is sustainability measured in tourism?
2. What is the best method for measuring sustainability in tourism?

Limitations

It is difficult to review all methods available; however, through diligent research it is possible to review the most prominent methods. Another limitation arises from the lack of studies conducted upon tourism operations in which these methods are actually implemented. There has been a great deal of theoretical work completed in the area but quantitative data is difficult to obtain.

Delimitations

The theoretical foundations of sustainable tourism are described; however the central concern will be upon evaluating methods to measure the sustainability of a tourism operation. The most important aspect of sustainable tourism involves the tools to measure the validity of that system. Approaches include any tool of analysis, framework, or model designed to predict, assess, monitor, and/or evaluate a given set of parameters. The main focus of this review is upon tourism operations and the steps taken to assess their level of sustainability.

Due to the youthfulness of this topic it is not difficult to provide an insightful overview of the major concepts in the field although they may be brief. The focus on sustainable tourism however means that methods or approaches used in other areas of sustainable development geared at ensuring sustainability are not necessarily covered. Therefore the approaches selected for review remain most relevant to sustainable development in the context of tourism.

This review is intended to be instructional by presenting research both theoretical and those including case studies to best inform the reader about various methods to gauge sustainability in the tourism industry. This review is not intended to be inclusive but comprehensive enough so as to provide an overview of the most important and prominent approaches under discussion and in use. While there have been significant developments in the study of sustainable tourism, it is believed this review will provide much needed clarification and direction for improvement.

Assumptions

This research project is based on the following assumptions.

- Sustainable tourism can be applied to all types of tourism including attractions, accommodations, and products (Honey, 2002).

- Sustainable tourism should be the goal for the entire tourism industry, rather than just providing an alternative (Honey, 2002).

Method

Various research methods lend themselves to the assessment of data in an attempt to develop solutions for specific problems. The problem of sustainable tourism is in large part due to the complexity of defining sustainability itself. The phenomena necessitating concern are not easily expressed numerically. Importantly, a qualitative approach involves the analysis of information which cannot be quantified. This approach provides the best framework for better understanding tools of analysis for sustainable tourism. The literature review supplies an overview of the research thus far and provides insights into the state of the literature. An instrumental review is used since the goal is to provide information to stakeholders about tools of analysis for sustainable tourism.

Materials are selected according to the following criteria: they are listed in World Tourism Organization book, *Sustainable Tourism an Annotated Bibliography*; they are relevant peer reviewed articles, written by credible authors, and contribute to the study of sustainable tourism; or they are credible texts developed by the industry, government, or non-governmental organizations.

In addition the case study method is used to aid in answering the research questions at hand. Case studies are helpful for providing insights into a particular concept or in this case method for measuring sustainability. Through selection of three tourism operations which strive to implement, manage, and evaluate sustainable practices, a comparison is provided to better understand assessment of sustainability in

tourism. The case studies are completed through a review of operational documents, government policies, and research articles. These instrumental case studies will provide insight into sustainability assessment in practice.

Terms

An overview of environmental movements is provided to contribute to the theoretical notions of sustainable tourism. Importantly tourism is defined by the World Tourism Organization (2005) as "Traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited." Early conservation efforts are helpful for understanding perceptions of the human-environmental relationship and the resulting tourism developments. In the West, nature was viewed as separate and something to be dominated by humans (Pepper, 1984). Nonetheless a limit to growth was recognized and conservation efforts led to the establishment of a National Parks System in the United States first illustrating the notion of preserving natural resources but making use of it indirectly through tourism (Hall, 1998). The modern environmental movement recognizes limited resources as well as social injustice caused by economic development policies. Environmental and social values are the driving force behind sustainable development and have resulted in a reconsideration of the tourism industry as well.

The concepts of sustainability, sustainable development, and sustainable tourism are difficult to define, nonetheless similar patterns can be found throughout the definitions providing a sufficient foundation. For instance, sustainability is often defined by the recognition of limited resources and the need to conserve for future use through

wise use today. Furthermore, sustainable development can be understood as an approach to economic development in combination with conservation efforts based on principles of fairness and inter-generational equity. Sustainable tourism is a concept geared at creating a balance between tourism development, and natural resource use through reducing negative environmental and social impacts while increasing the benefits.

Based upon the readings the following distinction can be made between sustainable tourism and ecotourism:

1. Sustainable tourism is a theoretically based concept that can apply to all forms of tourism which adhere to principles of sustainability (UNWTO, 2004).
2. Ecotourism is a form of sustainable tourism which is characterized by a drive to reduce the negative impacts upon the environment and host communities as well as encouraging environmental awareness through its focus on natural areas (TIES, 1991).

While some theorists such as Martha Honey believe that ecotourism should be applied to all forms of tourism, this author believes a difference arises due to the natural area focus of ecotourism.

With this understanding in mind, this review looks at tools developed for sustainable tourism in general and ecotourism specifically. Tools of analysis are necessary to provide data and make decisions about whether a standard has been met. Indicators provide the standards through their reference points or parameters and are increasingly considered a necessity for monitoring sustainable tourism.

Many theoretical frameworks are presently being put forth for sustainable tourism although research into the actual practice is lacking. Importantly frameworks developed for leisure studies are already geared at managing the impact of humans upon the environment although motivations may be different than those professed in sustainable tourism. Nonetheless, tools such as Limits of Acceptable Change and Visitor Experience

and Resource Protection are helpful examples when developing similar tools for sustainable tourism and are reviewed. Moreover, recent developments in the ecotourism industry offer an insightful look into tools for sustainability analysis in practice. Overall, it is necessary to examine the various tools of analysis that exist and review tourism operations implementing these tools to understand how to best measure sustainability in tourism.

Chapter II

Qualitative Research Methods

Qualitative research methods are generally used when there are difficulties collecting quantifiable data. While this motivation is pragmatic there are theoretical reasons for using qualitative methods as well (Veal, 2006). Research in the social sciences is often better suited for qualitative methods.

Only recently has qualitative research been recognized as a beneficial and legitimate method in the field of leisure and tourism studies (Veal, 2006). Previously academics felt the only significant form of research was through quantitative methods (Kraus and Allen, 1987). However a shift in attitudes occurred as many began to realize the benefits of personal expressions for instance. In Ritchie and Goeldner's (1994) *Travel, Tourism and Hospitality Research,* the authors recognize the need for both methods and include a chapter on qualitative research. Now qualitative research is routine in leisure and tourism studies.

The merits of qualitative research are described by Kelly (1980) emphasizing its ability to describe real people and real experiences. Moreover, the results of qualitative research are better understood by a wider audience since statistical training is not required to make sense of the research. Kelly (1980) points out the benefits of explaining personal interactions which are prominent in leisure studies but not well suited for

quantitative methods. Finally, qualitative research may provide a better understanding of the needs and aspirations of the subjects it studies (Kelly, 1980).

Veal (2006) explains the process of qualitative research as recursive. Unlike the sequential nature of quantitative research, steps such as hypothesizing, collecting data, analyzing data, and writing up the results may occur along side each other in the qualitative process. Nonetheless each method may involve aspects of both a recursive and sequential process depending upon the situation (Veal, 2006).

Another important aspect of qualitative research involves the concept of *grounded theory* (Glaser and Strauss, 1967). Rather than setting out to test theories through research, *grounded theory* seeks to establish theory from data. This process requires leaving preconceptions behind and exploring the data extensively to develop commonalities and contradictions (Veal, 2006).

There are various methods for collecting data using the qualitative process. Theses include: in-depth interviews; group interviews or focus groups; participant observation; textual analysis; biographical methods; and ethnography (Veal, 2006). Each has varying differences in data collection while analysis is similar for all.

The in-depth interview is more involved than a questionnaire style interview. Typically, an in-depth interview is longer and may require multiple interviews with the same person. This style seeks to gain insight by encouraging subjects to talk and by asking probing questions. During group interviews and focus groups there is the added element of interaction between subjects which may provide rich insights (Veal, 2006).

Participant observation requires the researcher take part in the experience being studied, acting as a participant to gather data. A researcher conducts textual analysis by

analyzing the content of various media forms. Biographical research involves studying personal histories via oral histories, memory work, and personal domain histories. Ethnographies often engage several of the other techniques and have the added benefit of allowing the subjects to express their world view (Veal, 2006).

Analysis of qualitative data is now conducted with the aid of computer software although manual analysis is still in use. When conducting qualitative research it is most important to ensure the confidentiality and security of materials collected (Veal, 2006). Information obtained during research is then evaluated and organized based upon concepts identified in the initial conceptualization of research questions or hypothesis. The scope of the definitions of concepts will dictate how influential they are over the analysis. More general terms become refined by analysis, while more narrow terms influence it (Veal, 2006).

The major steps of analysis include reading the material and developing *emergent themes* which are the equivalent of variables in quantitative research. These themes help to develop the conceptual framework. The mechanics of developing the conceptual framework are methodical and often parallel quantitative techniques such as cross-tabulation and correlation (Veal, 2006).

The debate between qualitative versus quantitative is often dramatized but most agree that both are helpful depending upon what is being studied. Bruce L. Berg (2007) suggests that, "Qualitative research thus refers to the meanings, concepts, definitions, characteristics, metaphors, symbols, and description of things. In contrast, quantitative research refers to counts and measures of things." Importantly certain situations and

experiences cannot be explained by numbers. Certain aspects of life are best described by words, pictures, oral traditions, and texts (Berg, 2007; Veal 2006).

Literature Reviews as a Form of Qualitative Research

For any research project it is essential to review research previously conducted and reported on the topic. Reviewing the literature is especially important for a relatively new field of study such as leisure. The review of literature may be the entire basis of a research project, or it may be a source of ideas and questions for research. It may also provide a pool of knowledge about research already conducted on the topic. Literature reviews are helpful for obtaining methodological or theoretical ideas as well as for providing background information on a particular element of the topic. Literature reviews also allow comparison of one's research with others (Veal, 2006).

Literature reviews may serve as a chapter of a thesis or dissertation, a term paper, or an independent body of work. Independent works have a variety of foci including research outcomes, research methods, theories, and applications (Cooper, 1998). Additionally a literature review might seek to integrate research, to provide a bridge between different studies, to criticize the work done previously, and/or to identify key issues (Cooper, 1998). The two major goals of writing a literature review include providing a comprehensive review of the topic and establishing legitimacy for studying the field (Galvan, 1999).

Literature reviews also serve to clarify where a piece of literature stands in relation to the topic under consideration. They may describe the relationship of various works within the topic, and highlight new methods or provide insight into previous research. Furthermore, if contradictions exist between previous studies then a literature

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review may seek to resolve the conflict. Literature reviews also provide information about previous studies to avoid research duplication as well as direction for future research (Cooper, 1998).

Types of Literature Reviews

There are different styles of literature reviews including inclusive bibliography, inclusive/evaluation, exploratory, instrumental, and content analysis/hermeneutics. An inclusive bibliography seeks to list everything written on the topic and does not necessarily amount to a review. The evaluative form goes a step further through inclusion of commentary. A literature analysis is a derivative of this style involving the use of quantitative methods to understand temporal trends. Exploratory reviews contribute to the subject by providing insight on research already conducted. An instrumental review is focused on providing information for a management issue such as useful models for a specific project. Finally content analysis and hermeneutics are useful techniques for providing more detailed analysis of specific literature or texts (Veal, 2006).

Within the sciences, literature reviews often combine two focus areas or goals. This type of work is generally referred to as a research synthesis or an integrated research review. Research syntheses are geared at empirical studies and seek to highlight the findings so far and provide direction for future research (Cooper, 1998).

Another type of literature review focuses on theoretical findings. Cooper (1998) states, "theoretical reviews will typically contain descriptions of critical experiments already conducted or suggested, assessments of which theory is most powerful and consistent with known relations, and sometimes reformulations or integrations or both of

abstract notions from different theories." There are many different reasons and ways to write a literature review providing for a great deal of flexibility when deciding upon the structure.

The Process

The process of a literature review involves first problem formulation in which the topic of study is decided and the major issues identified. The next step requires a literature search to obtain relevant materials. Data evaluation follows in which the material that contributes significantly to the field is selected. The final step involves analysis and interpretation in order to present relevant findings (UCSC Library, 2007).

There are different ways to organize a literature review based upon chronology, publications, trends, themes, or methods (The Writing Center: University of North Carolina, 2007). Deciding which way to organize will depend upon the topics being studied and the materials selected for review.

Selection of Materials

There are a variety of ways to obtain material for literature reviews including bibliographies either published or generated through indexes and databases. Library catalogues provide a wealth of knowledge and are primary search methods. Websites and on-line documents are becoming important sources of information as well (Veal, 2006).

When selecting literature for review it is important to consider several factors including provenance, objectivity, persuasiveness, and value (UCSC Library, 2007). Additionally, the author's credentials and evidence must be supported by outside sources and the author's point of view must be taken into consideration to ensure objectivity.

How persuasive the author's theses are must also be noted. Finally, whether or not the author's conclusions add value to the overall field of study should be a deciding criterion (UCSC Library, 2007).

There are three main issues that a reviewer should be aware of when selecting articles in which quantitative research has taken place. First, if the sample is not chosen properly, then a bias may exist skewing the results (Galvan, 1999). Second, when selecting instruments for measurement flaws may exists which decrease the accuracy thus it is necessary to consider errors in measurement when conducting a review. Finally, identifying the problem can be difficult since research is often focused on one part of the problem and each researcher conceives of the problem differently. To combat this fragmentation the reviewer must synthesize the reports and seek to develop patterns (Galvan, 1999).

Other types of articles that may be reviewed include theoretical ones. Galvan (1999) defines a theory as, "a general explanation of why variables work together, how they are related to each other, and especially, how they influence each other." Theoretically-based articles are helpful for making sense of empirical data as well as contributing to the overall field of study (Galvan, 1999). Furthermore anecdotal reports can be included in literature reviews and are based on personal experiences, often found in journals related to practicing professionals (Galvan, 1999).

Research may be conducted in a variety of ways. The task at hand and the scope of the study will determine the research method. The social sciences and leisure studies are often more amenable to qualitative research methods. Literature reviews may be part

of a research project or the entirety of the project. Either way they serve to provide greater understanding to the overall field of study.

Case Study Method

The case study method is a systematic investigation to explain an event or related events. Berg (2007) defines it "as a method involving systematically gathering enough information about a particular person, social setting, event, or group to permit the researcher to effectively understand how the subject operates or functions." This allows for a variety of avenues to collect data in a qualitative manner and organize it so as to understand a theory in a real life situation (Berg, 2007).

Due to the flexibility of the case study method it may be very specific such as investigating the life of a medical student or it may be much broader in scope focusing on the medical school community including aspects such as time, culture, space, and history (Berg, 2007). The case study is a method routinely used in the medical field as well as for educational reasons in the field of business and law. It is a method characterized by a "focus on holistic description and explanation; and, as a general statement, any phenomenon can be studied by case study methods" (Gall, Borg, & Gall, 1995; 1998; Berg, 2007).

Case studies are now popularly being used to understand the role of theory in fields such as business, information systems, and marketing (Yin, 2003). The benefits of using case studies both to develop as well as test theory are also becoming recognized (Berg, 2007). While Yin (2003) promotes deciding upon theory before researching in order to aid in decision-making concerning cases, others prefer to use case studies as a way to generate theories through the *grounded theory* model (Berg, 2007).

Furthermore, case studies are appealing due to their ability to provide as Geertz (1973) would state a "thick description." Berg (2007) describes a sort of "sensemaking" that occurs with case studies. Specifically Berg (2007) states,

> Sensemaking is the manner by which people, groups, and organizations make sense of stimuli with which they are confronted how they frame what they see and hear, how they perceive and interpret this information, and how they interpret their own actions and go about solving problems and interacting with others (p.285).

Data Collection for Case Studies

Depending on the type of case study, various methods of data collection may be implemented. An individual case study requires the scope be decided upon as the researcher may want to focus on a single behavior of an individual, yet it is necessary to understand the subject's history and environment (Berg, 2007). To collect data a single interview may be sufficient or a serious of interviews within the subject's community may be desirable (Berg, 2007).

While interviews and observations are often the main forms of data collection, using documents sources are also helpful. For instance personal documents such as journals, diaries, letters, autobiographies and even visual media like photos and videos can provide a wealth of information (Berg, 2007).

Case Study Classifications

According to Stake (1994, 1995) there are three classifications of case studies: *intrinsic*, *instrumental*, and *collective*. *Intrinsic case studies* describe those which are meant to better understand a particular situation, not because of a

particular trait or problem but because of the uniqueness or commonality of a case (Berg, 2007).

Instrumental case studies are used to further a primary research concern (Berg, 2007). They are helpful due to their ability to generalize through insights and refining of theoretical explanations. Instrumental case studies provide data about all aspects of a situation and therefore help the researcher to better understand the primary question or issue (Berg, 2007).

Collective case studies are those which combine several instrumental cases to provide greater insight and theorize on a broader scale. These studies are also known as multiple-case studies, cross-case studies, comparative case studies, and contrasting case studies (Merriam, 2001).

Case Study Designs

There are several different case study designs including: exploratory, explanatory, and descriptive. Exploratory case studies are useful for collecting data before a research question is decided upon. They are also useful for providing the researcher with background information prior to the undertaking of a larger study (Berg, 2007). Explanatory case studies are used for casual studies, "particularly in complex studies of organizations or communities, one might desire to employ multivariate cases to examine a plurality of influences" (Berg, 2007). Finally, descriptive case studies provide a theoretical framework through use of a theory to decide the direction of research and research questions (Berg, 2007).

When designing a case study framework Yin (1994, p.20) points out five necessary aspects:

1. Study questions
2. Study propositions (if any are being used)
3. Identification of the unit(s) of analysis
4. The logical linking of the data to the propositions (or theory)
5. The criteria for interpreting the findings

Case studies are useful for their ability to provide insights and foster hypotheses. However, to ensure the validity of their contributions it is necessary to have a degree of objectivity and ensure that the findings have generalizability (Berg, 2007).

Berg (2007) further describes, "Case studies of organizations may be defined as the systematic gathering of enough information about a particular organization to allow the investigator insight into the life of that organization." Different aspects of an organization may be reviewed and all given the same weight or a particular area may garner the most interest (Berg, 2007).

Case studies offer researchers an opportunity to systematically investigate an individual, organization, event or place. In so doing, a research problem may have light shed upon it or the case study may provide a pool of ideas for theory development. Case studies also allow theories to be tested. Overall case studies are a useful method for collecting data and interpreting the findings to provide insight (Berg, 2007).

Roots of Environmentalism

A brief overview of the environmental movement provides a theoretical background for sustainable tourism. Understanding the early movements which are characterized by conservation efforts and the establishment of protected areas is a helpful beginning. Moreover, it is necessary to explain the modern environmental movement and the rise of sustainability.

Concern over the health of the environment existed long before the modern environmental movement. Discussing conservation is a favorite topic of writing for many nature enthusiasts and policy-makers including Thomas Jefferson, William Bartram, Ralph Waldo Emerson, George Catlin, George Perkins Marsh, John Muir, and Aldo Leopold. Often natural resource use and an increasing population are a central concern.

Sustainability has been a source of debate for over one hundred years, beginning in the 1870s with the economic conservationist and romantic conservationists. The puritan view toward nature was one of fear for the unknown and a belief that the wilderness was immoral and barbarous (Hall, 1998). Important leaders such as Thomas Jefferson, for instance, felt the wilderness should be dominated and turned into the ideal family farm.

Moreover, during the Enlightenment nature was seen as an object to be dominated and organized. The romantic period ushered in a more dynamic, organic, and spiritual view toward nature. According to David Pepper (1984), "The romantics maintained that science was inadequate to explain all the phenomena with which man is confronted. They regarded these phenomena- understandable through intuitional, instinctive, and

emotionally based knowledge- as the most noble aspects of being human." For the romantics, the relationship between indigenous groups and the land was an intimate and ideal situation. Similarly the transcendentalists, Emerson and Thoreau, embolden the wild with a spiritual quality equating to wholeness and wellness (Hall, 1998).

The ideals brought forth by transcendentalist and romantics initiated the wilderness preservation movement. Rather than viewing nature as something to be dominated, Thoreau promoted the view that humans were part of nature and not superior to it (Hall, 1998). Thoreau stressed, "Wildness and refinement were not fatal extremes but equally beneficent influences America would do well to blend" (Hall, 1998). This laid down the intellectual foundation for the development of national parks legislation in the United States (Hall, 1998).

The progressive era of conservation was marked largely by George Perkins Marsh's *Man and Nature; or Physical Geography as Modified by Human Action* in 1864. Marsh advocated a balance between human actions and the environment, believing that nature left alone was in a state of harmony (Hall, 1998). This view is exalted in the following statement from Marsh, "Not all the winds, and storms, and earthquakes, and seas, and seasons of the world, have done so much to revolutionize the earth as MAN, the power of an endless life, has done since the day he came forth upon it, and received domain over it." Furthermore, Marsh's theses presented the view that the economic success of America depended upon the preservation and wise use of natural resources (Hall, 1998).

For the conservation movement the major focus was upon wise use of resources according to economic justifications (Hall, 1998). During this time three agencies were

created as a result of the movement including: the Bureau of Reclamation, the National

Park Service and the United States Forest Service. Gifford Pinchot was a significant

actor in the conservation movement of the time and was behind the authorizing of the

United States Forest Service in 1905 (Hall, 1998). Pinchot viewed conservation as

essential to the economic well-being of the United States lamenting the following in

1910:

> The first great fact about conservation is that it stands for development.
> There has been a fundamental misconception that conservation means
> nothing but the husbanding of resources for future generations. There
> could be no more serious mistake. Conservation does mean provision for
> the future, but it means also and first of all the recognition of the right of
> the present generation to the fullest necessary use of all the resources with
> which this country is so abundantly blessed. Conservation demands the
> welfare of the country first, and afterward the welfare for the generations
> to follow (Hall, 1998, p.19).

Other prominent figures during this time include John Muir, a romantic ecologist

who sought to preserve wilderness at all costs. Muir's beliefs that, "government

protection should be thrown around every wild grove and forest on the mountains" was

inconsistent with productive forestry management and therefore less adhered to than that

of Pinchot (Hall, 1998). Pinchot promoted an academic forestry stating, "the scientific

management of the timber resource according to the principles of wise use and sustained

yield" (Hall, 1998). The beliefs of these theorists were highly influential upon the

American perspective toward nature and conservation.

Michael Frome (1997) is another classic figure whose views toward wilderness

also influenced the environmental movement. Through his experiences he came to focus

on the essence of the earth and the laws which guide it. Human activity was criticized by

Frome (1997) as he attempted to explain the dire situation of the environment.

Specifically, Frome (1997) pointed out the use of science and technology to manipulate the earth and its resources is limited by its own laws. The second law of thermodynamics dictated that the earth will die based on continual extraction of resources some part of which can never be rejuvenated. Frome (1997) felt humans should be mindful of the laws of nature and live by the imperative that humans are only trustees of the earth and can never completely dominate it.

To highlight the immenseness of values provided by the wilderness, Frome (1997) eloquently described what is wilderness. The concept of wilderness is anointed by the ambiguity and variability of forms wilderness can be found. It can be an idea in one's mind but must be based on a real experience. Frome (1997) outlined the characteristics of wilderness stating,

> Wilderness is where man's sounds, chemicals, and other byproducts of civilized life are not dominant. It can be any area where nature prevails or might prevail given the passage of time. It can be any place of any size, so long as active ecological succession, structural diversity, and naturalness are permitted (p.13).

Wilderness is valued for the many benefits it provides humanity along with its inherent characteristics. Frome (1997), extensively and poetically described the attributes of wilderness stating such things as, "wilderness is the chorus of thrushes, the thunder of waterfalls, the mist rising from a mountain meadow at twilight, the ancient voices riding the breezes of night enveloping the dark air."

The passage and implementation of the Wilderness Act of 1964 is discussed by Michael Frome (1997) in the *Battle for the Wilderness*. The act defined wilderness in law and established a National Wilderness Preservation System. Section 2(c) of the act states, "A wilderness, in contrast with those areas where man and his own works

dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." It was the first time any nation defined wilderness as part of one's way of life and culture (Frome, 1997).

The natural environment is part of the American identity according to Frome (1997). Wilderness and vast landscapes characterized the Old World's view of America upon their arrival and subsequent settlement of the area. Central Park was established in 1857 based on the belief that city areas should have green spaces (Frome, 1997). In turn this perception toward nature drove the establishment of National Parks, State Parks, and protected areas throughout the United States.

Additionally, the establishment of National Parks was partially due to the belief that the selected areas were not valuable for any other type of economic exploitation besides the possibility of tourism. This sentiment was embraced across the Western world as evident with the establishment of New Zealand's Tongariro National Park in 1894 as well as subsequent actions taken by the Canadian government (Hall, 1998).

Environmentalism and a drive for conservation has long been a concern of policy-makers, theorists, and scientists. In the Western world this movement has focused on the wise use of resources to ensure economic success. Most conservation efforts were driven by this notion and lead to improved natural resource management. It was recognized that preserving natural areas could achieve wise resource use as well as provide an economic outlet through tourism. The foundations of sustainable tourism can be seen in these earlier conservation efforts.

Modern Environmental Movement

The modern environmental movement is characterized by recognition of the impact of technological advancements upon the environment and a desire to preserve the environment for future generations. Thinkers of this time emerged out of an era of modernism and began embracing the altruistic notions of human behavior. Feeling secure in one's own destiny, many in the developed world took the opportunity to consider the plight of humans and the environment across the globe. The result has been an increasing awareness of environmental and social justice issues and a proliferation of organizations, governments, and individuals aspiring to make a change.

Great thinkers such as Rachel Carson began coming forward, alerting society of the degraded state of the environment. Carson's *Silent Spring* (1962) provided startling insight into dangers facing human health and the environment. Her essay, "The Obligation to Endure," speaks of the threats created by man-made chemicals being released into the environment with little knowledge of the consequences (Carson, 1962). While nature and humanity have long interacted and found a balance, the relationship has changed according to Carson (1962), as humanity gained the technology which has the potential to destroy it.

The fight against nature intensified with the introduction of "biocides" that became common place in homes and on farms across the United States (Carson, 1962). Carson (1962, p.8) states,

> Along with the possibility of the extinction of mankind by nuclear war, the
> central problem of our age has therefore become the contamination of
> man's total environment with such substances of incredible potential for
> harm- substances that accumulate in the tissues of plants and animals and
> even penetrates the germ cells to shatter or alter the very material of
> heredity upon which the shape of the future depends.

This alarming statement portrays the evolving concerns of the modern environmental movement.

David Pepper (1996) provides an extensive review of the modern environmental movement. His description of the main proponents in the environmental movement he terms "green" shows sharp contrasts to the dominant Western view of nature, humanity, technology, economics, and politics. An overriding theme is the inherent value of nature and interconnectedness of humans with nature, rather than the dualist notions traditionally promoted by Western capitalist societies (Pepper, 1996).

The root problem according to the "greens" is the values held in the Western world toward nature. These values are based upon superiority and domination which creates an imbalance between human interactions and the environment. Pepper (1996) explains, "Greens often say that at the heart of the world's problems of pollutions, resource depletion and environmental deterioration are domineering and exploitative attitudes to nature."

Originating from science and technology developed during the 17th century, those in the West have come to view themselves as separate from nature. As a result humans use nature in an aggressive and ignoble way (Pepper, 1996). According to the greens, society is driven by a false desire to develop ever more complex technology and an insatiable desire to consume (Pepper, 1996).

Eco-centrism is the core value of greens, which is the belief that the non-human environment and entire ecosystem should be the first concern rather than humanist concerns (Pepper, 1996). Bioethics are promoted in which nature is viewed as having

intrinsic worth aside from whatever value it may have to humans. Pepper (1996)

suggests, "This ethic may be linked to the notion of Gaia: the whole earth behaving like a

living, self-regulating organism." Those adhering to the notion of Gaia believe the world

can repair and go on without the existence of humans and that currently there is an

environmental crisis that threatens humanity. Due to this, humans must be respectful

toward nature and seek to create a more harmonious relationship (Pepper, 1996).

Another important aspect of the modern environmental movement is the concept

of deep ecology. Arne Naess is well-known for his contribution to the movement and

made the first distinction between 'deep' and 'shallow' ecology. Deep ecologists hold

the health of the environment as the most crucial value, rejecting the dualistic view of

humans and nature. Rather, "It holds that humans are intimately *a part* of the natural

environment: they and nature are *one*" (Pepper, 1996).

The writings of Rachel Carson marked a significant rise in concern over the

human impact upon the environment and the dangers created by advanced technology.

The brief description of the main concepts of modern environmentalism by David

Pepper, reflect the concern highlighted by Carson. As a result of this rising awareness

and a desire to revamp the relationship between humans and the environment, the concept

of sustainability began to take center stage in discussions of economic development.

Roots of Sustainability

While there are a variety of concepts and theories behind the development of

sustainability it can best be understood according to two main schools of thought (Bell

and Morse, 1999). The first school, ecological/carrying capacity, refers to the ability

of an ecosystem to provide resources under specific conditions. Bell and Morse (1999)

explain further, "carrying capacity is the notion that an ecological system (ecosystem) can only sustain a certain density (the carrying capacity) of individuals because each individual utilizes resources in that system." This idea is similar to maximum sustainable yield (MSY) which holds that if the MSY is exceeded the system may collapse (Bell and Morse, 1999).

The other school of thought is the critique of technology. This school focuses on the level of risk introduced by technological innovations to human health and the environment. Schumacher's *Small is Beautiful: Economics as if People Mattered* (1973) is a prominent example of works adhering to the critique of technology. This book describes the unstableness of the economy and the need to view natural resources as capital. A great deal of discussion within this school focuses on sustainable agriculture since it requires large parcels of land and is a necessity for human life (Bell and Morse, 1999). Both of these schools have branched out and facilitated the growth of sustainability discourse.

Sustainability Defined

There are a multitude of definitions concerning sustainability; some are more complex then others but none are ultimately definitive. Some authors believe that sustainability need not be defined, such as Gibbons et al (as quoted by Bell and Morse, 1999) who state,

> Many would argue that it is important to define what sustainability is, or might be before any actions can be taken toward setting up more sustainable agricultural practices. We do not necessarily subscribe to the need to define sustainability in order to practice it, but the exercise of definitions is one useful way to examine several perspectives and to understand competing views.

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Others however, see this as illogical responding, "While one can sympathize with the view that a simple, concise definition may not be possible, surely some ides of where one is trying to go is an absolute necessity" (Bell and Morse, 1999). The flexibility of the definition may have contributed to its popular use, as well as to its ability to be used across diverse fields. A more cynical viewpoint would argue that this flexibility has allowed it to be exploited by market professionals seeking to jump on the green band-wagon (Bell and Morse, 1999).

In addition, system quality is an important component of sustainability. For instance if the system quality remains constant or increases, then the system is said to be sustainable (Bell and Morse, 1999). Another way to understand sustainability is based on the cost of obtaining those goals with a distinction between strong and weak sustainability. Strong sustainability means goals are achieved regardless of the costs and focuses upon the environment. Under strong sustainability, system quality is understood by physical measurements such as water and air quality. Weak sustainability considers the trade-offs largely through cost-benefit analysis. Under weak sustainability, system quality is defined according to financial values (Bell and Morse, 1999).

Two other important considerations when discussing sustainability are the concepts of time and space. It is necessary to state the duration of time in which the level of sustainability is being measured as well as the physical scale of an area. At first these concepts seem simple, but due to their interrelatedness and the difficulty of establishing boundaries in operation, they are more complex (Bell and Morse, 1999). Bell and Morse (1999) state, "spatial and time scales are key components of achieving sustainability; as

has already been stressed, they are problematic in the sense that careful selection of scale or reference point can be used to prove anything."

Sustainability is a difficult concept to define but is largely concerned with ensuring the viability of a system over a certain period of time. Understanding sustainability involves aspects of time and spatial scales along with system quality. Sustainability in regards to tourism is better understood after the concept of sustainable development is defined.

Sustainable Development

During the 1970s concern over the human impact upon the environment became a prominent agenda item for organizations and governments. Realizing the strain on the environment as well as the uneven development occurring across the globe, many began to discuss sustainable development. The most well known discussion of sustainable development originated from the Brundtland Commission and the resulting Brundtland Report of 1987. The Brundtland Commission (1987) stated, "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Currently the debate surrounding sustainable development focuses on issues such as reliance upon economic growth to improve overall well-being, substitution of non-renewable resources, use of technologies to overcome dwindling natural resources, environmental management practices to overcome negative impacts of economic growth, and the value of non-human world (Hunter, 2002). Four main approaches to sustainable development provide an overview of the scope of the debate. These include *very weak* to

very strong and are based on such things as degree of anthropocentrism, utilitarianism, resource preservationist, and eco-centrism (Hunter, 2002).

Milne joins the crowd of academics and policy-makers trying to make sense of sustainable development (SD). Like others, he laments the difficulty of defining sustainability as well as the contradictions of sustainability talk. Specifically, Milne (1998) along with Redclift (1987), point out the contradictory stances between those who see ecological conservation as most important and those who see economic progress as the driving force. Milne (1998) speaks optimistically stating, "Although the contradictory goals of continued economic growth and ecological and societal stability/sustainability may never be met, the concept of SD has provided a focal point around which different stakeholders can air their concerns and attempt to find some sort of consensus."

Sustainable development is the result of a rising concern over environmental and social justice issues resulting from economic aims. There is a great deal of discussion concerning the proper definition of sustainable development and ways to implement it. While a consensus is lacking, there is no doubt that sustainable development will continue to be a dominant topic at economic roundtables and an important aspect of policy outcomes. SD now has significant influence in the tourism literature creating a drive to make sustainability a foundational principle for the entire industry.

Sustainable Tourism

Tourism is defined by the United Nations World Tourism Organization (UNWTO) (2005) as: "Traveling to and staying in places outside their usual

environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited." Previously international tourist was defined by the International Union of Official Travel Organizations as "temporary visitors staying at least twenty-four hours in the country visited and the purpose of whose journey can be classified under one of the following headings: (a) leisure (recreation, holiday, health, study, religion and sport); (b) business (family mission, meeting)" (IUOTO, 1963).

Other academics question the true meaning of tourism versus travel. According to Caneday (1991) instances in which persons are traveling for reasons other than pleasure should not be considered tourism. He points toward the example of Kuwaiti residents being forced out of their homes due to war which were considered refugees rather than tourists. While travel is involved it is clearly not motivated by pleasure, yet a group of adventure seekers traveling the same route may be considered tourists (Caneday, 1991). Caneday (1991) states, "Neither the action nor the activity of participants dictates whether the event is classed as travel or as tourism, but the attitude, purpose or will of the participant does." While all travel should strive to be sustainable, sustainable tourism can be understood as geared at travelers doing so for pleasure.

To combat the negative impacts of mass tourism, the concepts of sustainable tourism and ecotourism have been introduced. Sustainable tourism is as complicated to define as sustainable development. There are a great number of competing versions and pseudo-definitions. Moreover there is confusion over the difference between sustainable tourism and other alternative forms of tourism such as ecotourism.

Sustainable tourism is often defined theoretically while ecotourism describes a type of tourism. The United Nations World Tourism Organization (UNWTO) (2004) for instance states,

> Sustainable tourism is 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.

Ko (2005) provides further insight into the concept of sustainable tourism. While Ko (2005) discusses the contentiousness of defining sustainability, the author notes that sustainability is a dynamic term and can be understood as the ability to survive. The goal of development is to improve the quality of a system; tourism is a form of development and sustainable tourism should be geared toward improving the survivability of a system (Ko, 2005). The author puts forth the following concept to understand the definition of sustainable tourism.

> The sustainability of a system is the ability of the system to maintain a state of health necessary for survival. Sustainable development is development that enables the system to maintain a state of health necessary for survival at a higher level of quality. STD is tourism development that enables the system in which it is located to maintain a state of health that is necessary for survival at a higher level of quality (Ko, 2005, p.5).

Michelle Mycoo (2006) refers to B. Lane's research into sustainable tourism in Hawaii to provide a better understanding,

> Sustainable tourism is a concept designed not to stop tourism but to manage in the interests of all three parties involved- the host habitats and communities, the tourists, and the industry itself. It seeks a balance between development and conservation. It seeks to find the best form of tourism for an area taking into account its ecology and its culture. It may mean limits to growth or in some cases no growth at all. It seeks not just to plan for tourism, but also to integrate tourism into a balance relationship

with broader economic development and with conservation goals. A well thought out long term vision is essential. That vision should be thought out with the people, not just for the people.

Other definitions of sustainable tourism are often based on one of three scales: sectoral, spatial, or temporal (Miller and Twining-Ward, 2005). Miller and Twining-Ward (2005) describe the positive and negative aspects of these three scales. A sectoral scale relates to sustaining tourism from a business perspective which may create a conflict with sustainability and other industries. A spatial scale understands sustainable tourism from a place-based perspective, which may privilege the local at the cost of the global or vice versa and creates a narrow understanding. A temporal scale defines sustainable tourism according to a static timeline in which the sustainability of an area at a certain period of time is focused upon. The temporal scale, however, fails to realize the dynamic nature of sustainability and the need to review sustainability according to an evolutionary process (Miller and Twining-Ward, 2005).

The spatial and temporal scales are also important concepts for measuring sustainability, according to Ko (2005). So is system quality, which is defined as "the state of health in a tourist destination, sustaining the benefits of the local community, satisfaction of tourist experience, and conservation of natural resources (Ko, 2005)." Just as the yolk and the white must be healthy for an egg to be healthy so too must these concepts be considered when devising a model to measure sustainability (Ko, 2005).

Sustainable tourism is a similarly dubious term as sustainable development. The overall goals are the same though: finding ways to improve economic well-being while ensuring environmental and social values are adhered to. The previous discussion

provides a theoretically understanding of sustainable tourism, now a description of

ecotourism will provide an understanding of sustainable tourism in action.

Ecotourism: A Form of Sustainable Tourism

The UNWTO distinguishes between sustainable tourism and ecotourism, stating

that sustainable tourism applies to all types of tourist destinations while ecotourism

focuses on nature-based forms of tourism (Honey, 2002). However, Martha Honey

(2002) believes ecotourism should be applied to all forms of tourism stating,

> The rise of ecotourism over the past two decades, with its roots in social
> movements for environmentally, economically, and culturally responsible
> travel, for improved protection of fragile and pristine ecosystems, for
> indigenous rights, and for community-based, locally driven and
> sustainable development strategies, has offered a clear alternative to mass
> or conventional tourism (p.8).

Clearly, there are many ways to view alternative forms of tourism. While Honey believes

it should be applied to all forms of tourism, due to the natural areas distinction found in

ecotourism, this review will consider ecotourism as a form, albeit the dominant form, of

sustainable tourism.

Ecotourism is defined by The International Ecotourism Society (1991) as,

"responsible travel to natural areas, which conserves the environment and improves the

welfare of the local people." Nature tourism is often confused with ecotourism; however,

the concepts are very different. Nature tourism refers to types of tourism in which

pristine natural areas are the focus. Similarly adventure tourism is described by Martha

Honey (2002), "as nature tourism with a kick-with a degree of risk taking and physical

endurance." Both types of tourism are labeled based on what the traveler desires to do.

Ecotourism however refers to the impact of visitors upon the environment and host

communities (Honey, 2002). Honey (2002, p.7) provides the following Elements of

Authentic Ecotourism:

1. Involves travel to natural areas.
2. Minimizes impact.
3. Builds environmental awareness.
4. Provides direct financial benefits for conservation.
5. Provides financial benefits and empowerment for local communities.
6. Respects local culture.
7. Is sensitive to the host country's political environment and social climate.
8. Supports human rights and international labor agreements.

Martha Honey (2002) explains the development of ecotourism and its roots along

side the environmental movement of the 1970s. Ecotourism emerged as citizens and

governments in third-world countries began questioning the benefits of mass tourism and

sought to reduce the economic leakages and environmental impacts resulting from

tourism as such (Honey, 2002). In addition, various scientific and non-governmental

organizations grew concerned over habitat loss for vulnerable species throughout Asia

and Africa. As mass tourism was proving to be a poor development strategy

organizations like the World Bank and Inter-American Development Bank began closing

tourism departments and ceasing loans for tourism development (Honey, 2002).

Tourists as well began changing their preferences as they tired of overcrowded

package deals and sought more pristine areas (Honey, 2002). The trend became known

as ecotourism with Hector Ceballos-Lascurain (who claims to have coined the term)

declaring in 1999, "Ecotourism has become a global reality... There seem to be very few

countries in the world in which some type of ecotourism development or discussion is not

presently taking place (Honey, 2002)."

As Martha Honey (2002) describes, the traditional mass tourism model is characterized by companies with North American or European ownership. Developing countries in the south do not benefit as widely thought by tourism since ownership often originates in the north, creating a great deal of economic leakage.

Economic leakage occurs when wages, taxes, and profits are paid to individuals and/or organizations outside of the country. This happens often as a result of all inclusive or enclave tourism in which the resorts and cruises are owned by foreign interests and tourists have little need to make purchases outside of the resort. Strikingly, out of every 100$ spent by on a vacation tour by a tourists from a developed country on $5 actually goes to the developing country in which the tour is located (http://www.uneptie.org/pc/tourism/sust-tourism/economic.htm, November 25, 2007).

Sustainable tourism as a model for sustainable development seeks to overcome economic leakage through promotion of domestic ownership and partnerships with other locally owned businesses. Tourism operations described as ecotourism must strive to purchase local services and products so that tourism dollars benefit the local community and do not leak out (Honey, 2002).

Ecotourism is part and parcel to sustainable tourism. Again sustainable tourism is a theoretical concept that can apply to all different types of tourism, while Ecotourism represents a form of tourism. Importantly, ecotourism and sustainable tourism are both evolving concepts that have roots in the environmental and social awareness movements. While there is disagreement over definitions, there is no doubt that the sustainable tourism provides an alternative and end goal to conventional mass tourism.

Tools for Sustainability Analysis

Various tools have been developed to asses, everything from visitor impact to availability of natural resources. Many approaches derived from the leisure studies through Government departments seeking to counter signs of environmental degradation while improving the visitor experience at various protected areas. As technology improves, and social values change, tools to assess sustainability evolve.

Carrying Capacity

Carrying capacity is a concept borrowed from wildlife ecology which focuses on the ability of an area to sustain a given species (Wight, 1998). Carrying capacity is defined by the Alberta Tourism Education Council (1993) as the, "maximum amount of fish, wildlife and people that can be sustained by the area over a specific time period without negatively impacting local culture, residents, environment, fish and wildlife populations and experience of clients." While it has proven successful for wildlife management, it has been less successful in the field of tourism due to the required objectivity and precision (Wight, 1998).

Difficulties arise in assigning a single number to certain phenomenon as well as use levels that are easy to manipulate. Wight (1998) argues carrying capacity is not a useful tool for sustainability analysis. The value of carrying capacity is in the concept itself, "As a way of thinking about planning, carrying capacity is useful. It focuses attention on the ability of the natural environment to support growth. It suggests that development should respect the functioning of the natural processes and man-made systems can have positive or negative effects, or both" (Schneider et al, 1978). Carrying

capacity is now commonly agreed upon as a management system geared at maintenance or restoration rather than as a tool to manipulate use levels (Wight, 1998).

Environmental Impact Assessment

Another planning tool is the Environmental impact assessment (EIA) which, is now also being used as a management tool (Wight, 1998). The EIA came into being in the United States with the creation of the National Environmental Policy Act of 1969. With this act it became mandatory to provide an Environmental Impact Statement for implementing impact assessments of development or management policies and practices (Smith, 1993). Section 102:2:C of the NEPA required all federal agencies to provide information concerning environmental impacts of proposed projects along with alternative actions, adverse environmental effects, consideration of short term and long term impacts, and use of resources that maybe irreversible or irretrievable (Smith, 1993). This meant that the EIS became the focus of impact assessments, "and under NEPA, a model for EIA emerged that was product driven, with scientific data collection preceding positivistic analysis and the production of technical reports" (Smith, 1993).

EIAs focus mainly on single-project developments to assess and manage the impacts upon environmental and social systems. However the EIA is now expanding to include:

1. Social, economic, cultural and other non-biophysical concerns;
2. Programs and policies, as well as specific projects;
3. Not just single projects, but also concurrent projects in an area; or
4. Similar projects occurring sequentially in an area; and
5. Cumulative effects.
Source: Wight (1998, p.80).

The EIA is a helpful management tool but it does not result in sustainable

development on its own. Importantly, Wight (1998) suggests one drawback of the EIA is

the lack of sustainability as a criterion. Sustainability, as a criterion, would be geared at

preserving the natural resource base to ensure it is productive and fully-functioning

(Wight, 1998). This way, "All natural resource depletion and unabated environmental

impacts would be charged as a social costs, while any increase in renewable resources

would be added to the social benefits" (Wight, 1998).

The importance of including social values is now considered a necessary part of

improving the EIA process. The Canadian Environmental Assessment Research Council

(CEARC) promotes the use of a cumulative environmental assessment which includes

analysis of a combination of impacts over a period of time (Wight, 1998). In this way a

more comprehensive analysis takes place which better reflects the entirety of the

situation. Furthermore the CEARC (1988) emphasizes, "Values and expectations with

respect to the environment, economy, and social systems, differ substantially around the

world. Each particular society must define its own set of values and each government

must make policy choices based on these social ethics." This suggests it is also necessary

to consider a diversity of values due to diverse societies.

Limits of Acceptable Change

Limits of acceptable change (LAC) is another approach to managing ecosystems

and human interactions in recreational areas which provides both front-end and

monitoring procedures. Developed by the U.S. Forest Service to manage the impact of

recreational activities, the LAC is useful for deciding upon the right amount of resource

use and appropriate social conditions and then provides a process to achieve those

conditions (Nilsen and Tayler, 1997). Importantly, "The LAC also represents a reformulation of the recreational carrying capacity concept, with the primary emphasis now on the conditions desired in the area rather than on how much use an area can tolerate" (Stankey, Cole, Lucas, Petersen, Frissell, 1985).

Stankey et al. (1985) explains, the LAC "process requires deciding what kind of wilderness conditions are acceptable, then prescribing actions to protect or achieve those conditions." The LAC also entails the consideration of diverse wilderness conditions and identifying where and how much change is acceptable (Stankey et al, 1985).

Indicators are developed for resources and social conditions, then the necessary steps to attain the acceptable standards are identified and routine evaluations occur to ensure those standards are being met (Wight, 1998) LAC is also dependent upon subjective personal values and therefore requires a great deal of participation by stakeholders. Furthermore LAC is a forward thinking framework which provides an objective process to aid development and management of a tourist destination (Wight, 1998).

Wight (1998, p.83) explains the four main steps of a LAC approach include:

1. Identify acceptable and achievable social and resources characteristics of the area being managed;
2. Analyze the relationship between the existing conditions and those desired;
3. Identify a series of possible management actions that will achieve the desired conditions; and
4. Develop an environmental monitoring and evaluation procedure to measure the effectiveness of the management actions undertaken.

Wight (1998) explains some of the limitations of LAC include arbitrary standards resulting from insufficient environmental data. Additionally, LAC standards may be manipulated by policy makers, and LAC does not seem to consider the impacts to

surrounding areas or industries. Finally, LAC does not do a comparative analysis to identify what the best use of natural resources may be for a specific area (Wight, 1998).

Visitor Impact Management

Like the LAC approach the Visitor Impact Management (VIM) approach is a supplement to the Recreational Opportunities Spectrum (ROS). The VIM approach is geared at identifying management strategies that ensure the best visitor experience with the least amount of negative impact upon a recreation area. The eight steps of the VIM process can be broken down into two main categories: description and evaluation. The description aspect identifies the connection between conditions of use and the impact created by that use. The evaluation part focuses on the acceptability of impacts (Wight, 1998). According to Vaske, Doctor and Petruzzi (1994) the VIM is geared at three management goals:

1. Identification of problem conditions of unacceptable visitor impacts (e.g. conflicts between recreationists using a resource);
2. Determination of potential causal factors affecting the occurrence and severity of unacceptable impacts; and
3. Selection of potential management strategies to address the unacceptable conditions.

A benefit of the VIM is the balance between scientific and judgmental concerns. The major focus upon casual factors for developing management strategies is useful for assessing current conditions. However, the VIM without the use of the ROS, fails to consider potential impacts (Nilsen and Tayler, 1997).

Visitor Experience and Resource Protection

As part of the management policy for the National Parks Service (NPS) in the U.S., NPS planners have developed a tool to gauge 'carrying capacity' called Visitor

Experience and Resource Protection (VERP) (Wight, 1994). Rather than focusing on the

maximum load a resource base can handle the VERP focuses on environmental and

social values to decide upon the appropriate conditions (Wight, 1998).

Unlike the LAC or the VIM approaches the VERP may be used throughout the

park in both the front and back country (Wight, 1998). The VERP contains a similar

process for the planning stage and also includes the use of standards or indicators like the

LAC and the VIM. There is a great deal of public involvement in the planning stage and

the final steps of the process are geared at evaluation and improvement. While the VERP

has proven useful for measuring the impact of visitors upon the environment it fails to

measure the impact of visitors upon local populations (Wight, 1998).

Pamela Wight (1998, p.91) provides a succinct summary about the main tools in

use for sustainability assessment stating,

> When different sectors have an equal or greater interest in the land, there
> is a need to incorporate their values; LAC assists this. VIM and VERP
> focus more on the causes underlying visitor impacts in a wider variety of
> contexts than LAC. LAC, VIM, and VERP are better at incorporating
> human (social and economic dimensions) than ecological perspectives.

Monitoring

Monitoring is essential for ensuring the effectiveness of management plans for

sustainability. Monitoring provides for management of unexpected changes and to show

the level of progress which has been achieved or not achieved. Monitoring is a necessary

process for all the tools currently used to aid sustainability analysis.

Monitoring requires the use of indicators by which to evaluate progress.

Indicators are useful for evaluation of programs and making decisions about future

directions. As Hart (1999) explains, "an indicator is something that helps you to

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understand where you are, which way you are going and how far you are from where you want to be." Indicators are important for problem solving and provide guidelines for acceptability.

Indicators

Indicators came into popular use during the 1960s with the development of the Gross Domestic Product and Gross National Product. Soon after however, the need for social indicators in addition to these economic indicators became obvious. During the 1980s the world began discussing the need for indicators of sustainability (Miller and Twining-Ward, 2005). The OECD (2003) defines an indicator as "a parameter, or a value derived from parameters, which points to, provides information about, describes the state of a phenomenon/environment/area, with a significance extending beyond that directly associated with a parameter value." Furthermore the OECD (2003) points out the following functions of indicators:

1. To reduce the number of measurements and parameters that normally would be required to give an exact presentation of a situation;

2. To simplify the communication process by which the results of measurement are provided to the user.

Indicators are also described as designating a problem or condition and are useful to demonstrate the adequacy of a system (Miller and Twining-Ward, 2005).

Additionally, the United Nations Commission on Sustainable Development (UNCSD) emphasizes the need for monitoring with the use of indicators. Accordingly indicators provide a framework for evaluation and decision-making at local, national, and global levels. Furthermore the UNCSD bulletin emphasizes, "Indicators are important

tools to reduce complexity of information on sustainable development and to support national decision-making" (Miller and Twining-Ward, 2005). Moreover, the Bellagio Principles of Sustainability promote the use of indicators to gauge sustainability.

Hart (1999) suggests the characteristics of effective indicators of sustainability involve relevancy, ease of understanding, reliability, and accessibility of data. Due to the complexity of sustainability and the lack of a direct measurement indicators are helpful for deciding if a problem exists and what the next appropriate steps may be (Miller and Twining-Ward, 2005).

Indicators are already used by biologists to gauge ecosystem health (Bell and Morse, 1999). Top-down approaches are the most popular approaches for development of indicators to measure ecosystem health. One framework developed by biologist uses indicator species to identify changes in the environment. The other method measures biodiversity with indices such as the Shannon-Wiener Index to gauge system health (Bell and Morse, 1999). These frameworks, however, use simple and a limited number of indicators, while sustainability requires the use of multiple and sometimes complex indicators (Bell and Morse, 1999).

Sustainability indicators (SIs) are currently being recognized as a necessary development to accurately gauge sustainability. Bell and Morse (1999) breakdown SIs into two main categories: state and control. State SIs describe the state of a variable such as life expectancy, birthrate, and more physical variables such as level of pollutants in a body of water (Bell and Morse, 1999). Control SIs refer to a process which influences the state of a variable. For example, this might be the rate of leeching of a chemical into a soil (Bell and Morse, 1999).

While most agree that SIs are necessary for achieving sustainable development, deciding upon which SIs to include is less definitive. Bell and Morse (1999) provide an overview of various SI frameworks in existence.

In 1992 the UN held a conference on the environment and development in Rio de Janeiro to reaffirm the Declaration of the United Nations Conference on the Human Environment held in Stockholm in 1972, and commit to the goal of improving the state of the environment across the globe through sustainable development (United Nations Rio Declaration on Environment and Development, 1992). As part of the Rio conference in 1992 the UN began developing indicators of sustainable development (ISDs). The UN employs a third type of indicator called a response indicator which monitors the progress of governments in responding to ISDs (Bell and Morse, 1999). Additionally, the UN prefers the term "driving force" rather than control to emphasize the positive or negative impacts of sustainable development. The UN developed ISDs by organizing the framework according to the chapters of the Rio Conference. These are broken down into four areas focusing on social, economic, environmental, and institutional aspects of sustainable development (Bell and Morse, 1999).

Another framework presented by Harger and Meyer (1996) was a result of a UN interagency working group for south and south-east Asia. The categories are very similar to UN ISDs; however this framework also includes military aspects. Harger and Meyer (1996) provide a list of necessary characteristics of SIs including the following:

1. Simplicity;
2. Scope: the SIs should cover the diversity of issues mentioned above (environmental, social, and economic) and overlap as little as possible;
3. Quantification: the SIs should be measurable;
4. Assessment: the SIs should allow trends with time to be determined
5. Sensitivity: the SIs should be sensitive to change;

6. Timeliness: the SIs should allow timely identification of the trends.
Source: Bell and Morse (1999).

A framework developed from the definition of sustainable development according to the World Commission on Economic Development (1987) has been put forth by Niu et al (1993). Importantly this framework employs a spatial systems approach and divides each spatial system into five sub-systems:

1. Richness of resources;
2. Strength of the economy;
3. Stability of society;
4. Tolerability of the environment;
5. Soundness of decision.
Source: Bell and Morse (1999).

The SIs are then developed from these sub-systems (Bell and Morse, 1999).

The third example was developed by Rennings and Wiggering (1997) who suggest that SIs should be based on three management rules that amount to sustainable use of resources. These three rules include:

1. Harvest rates of renewable resources should not exceed regeneration rates.
2. Waste emissions should not exceed the relevant assimilative capacities of ecosystems.
3. Nonrenewable resources should be exploited in a quasi-sustainable manner by limiting their rate of depletion to the rate of creating renewable substitutes.
Source: Bell and Morse (1999).

Isac and Swift (1994) developed a fourth framework for small-scale agriculture in sub-Saharan Africa. The two scales of the resulting matrix are concerned with spatial scales and various categories of products. Production is a major focus and the issues with spatial scales are overcome by limiting the largest unit to a village.

Interestingly, Bell and Morse (1999) point out that all of these frameworks were developed by politicians, policy-makers, or scientist with little input from those most

affected by the development. Mitchell et al (1995) took notice of this and stated that the first principle for development of SIs should be that: "stakeholders [should] reach a consensus on the principles and definitions of sustainable development that are used and the objectives of the sustainability indicators programme." In reality this does not occur often; more often than not SIs are decided upon by outsiders. The approach for development of SIs is most commonly top-down with a Western emphasis which is surprising considering all of the literature geared at promoting stakeholder participation in the context of sustainable development (Bell and Morse, 1999).

How to Use Indicators

Upon agreement of which indicators to use, it is necessary to measure the indicators. Much of this is reliant upon data already available. When new data is required, the method for collecting it is dependent upon the variable (Bell and Morse, 1999). SIs may be difficult to interpret based on the need for clear reference points and when there are a suite of SIs this is even more difficult. One approach to calculate SIs is the total factor productivity index (TFP) which is an economic approach where inputs and outputs are given a monetary value (Bell and Morse, 1999). While those approaches that simplify SIs and provide numerical values may be appealing, they might not be adequate for the diverse values of sustainability. Methods which embrace the spatial and time scales, such as those using GIS, may be more suitable (Bell and Morse, 1999).

Realizing the difficulties involved Bell and Morse (1999) emphasize, "As one may construe from all of the foregoing, the selection and measurement of SIs is hardly a fine art and is subject to many pressures, agendas, and biases. Governments often wish to portray themselves in the best possible light, and it is certainly not hard to imagine that

'reference' conditions may be set with a political agenda in mind (Bell and Morse, 1999)."

While some argue the complexities of SI development and measurement make it impossible to gauge sustainability others argue that it is possible just as quantifying complex biological systems is possible. While reductionist approaches rule the science world, it is questionable whether those same approaches can be applied to sustainability (Bell and Morse, 1999).

A Conceptual Approach

Many different organizations are developing strategies to evaluate sustainable development, yet very little practical models exist for sustainable tourism. Most models currently focus on subjective judgments rather than standards developed through measurement (Ko, 2005). Ko (2005) sets out to develop a practical methodology for measuring sustainable development in terms of tourism.

Ko (2005) seeks to contribute to the research by including environmental impact studies, and other political, economic, and socio-cultural impact studies. Also Ko provides quantitative data on the tourism sustainability assessment process. Finally Ko provides the framework for a conceptual approach to assessment of sustainable tourism.

Ko (2005) begins the study by reviewing twelve other case studies to determine whether criteria specific for tourism sustainability were selected to use with an assessment model. The twelve studies concluded by labeling the destination either sustainable or unsustainable. Through solid selection criteria aimed at being representative of the studies being conducted during that time the author chose the twelve.

Based on elements adapted from Bell and Morse (1999) the studies were assessed. These elements include assessment participants, assessment components, indicator selection procedure, data gathering methods, and data-analysis methods (Ko, 2005). Interestingly, selection of indicators varied across destinations, most judgments were decided upon by the authors without participation of stakeholders, often very few indicators are used to make assessments, little clarity exists for data gathering methods and analysis, and authors had only two scales: sustainable or unsustainable (Ko, 2005). Ultimately Ko found that no other researcher was making use of a systemic sustainability assessment method. Ko developed the Barometer of Tourism Sustainability (BTS) model in 2001 but has since noted that this model fails to explain the level of sustainability for individual indicators.

There are a variety of issues concerning sustainability assessment. Cocklin (1989) outlined four methodological problems: boundary complications; the difficulty of quantification; integrated evaluation vs. single resource analysis; and conflict of the sustainability goals with other goals. A great deal of skepticism exists concerning the ability to measure sustainability. However, quantitative indicators can be helpful tools of analysis (Ko, 2005).

Ko (2005) recommends the discussion turn toward operational issues and focus on sustainability assessment models which seek to maintain the quality of life of residents and the natural environment. Ko (2005) emphasizes, "the key is to develop a protocol for assessing sustainability and to follow it consistently to ensure a comprehensive, careful, and deliberate decision-making process."

Models developed in an attempt to overcome issues with sustainability assessment include, "The Bellagio Principles for Assessment." In addition the International Institute for Sustainable Development put forth ten principles to guide model design, implementation, and evaluation. These principles include: guiding vision and goals; holistic perspective; essential elements such as equity and disparity; ecological conditions, and human/social well-being; adequate scope in time and space; practical focus; openness; efficient communication; broad participation; on-going assessment; and institutional managing capacity (Ko, 2005).

Similar to the complexity in defining sustainability devising a plan for assessing sustainability is also complex and contentious (Ko, 2005). There are two main approaches to assessment: reductionist and holistic. The reductionist approach is in line with the scientific paradigm of Western thinking but is not well suited for assessing sustainability due to its single component analysis. The holistic approach has many attributes but has failed to provide a coherent method for measuring sustainability. Ko (2005) believes that both approaches must be combined to develop an adequate model for assessment.

Building on work completed in 2001 Ko presents eight steps for a sustainability assessment procedure including: identify the systems; identify dimensions; identify indicators; scale the indicators; determine gradations of sustainability; develop sustainability assessment maps (SAMs); extend sustainability over time; and evaluate the outcome (Ko, 2005).

The systems under consideration for sustainable tourism include the human and ecosystem. While traditional Western dualism understands the two as separate and the

human system as superior, it is becoming clear that the understanding is false thus alternative understandings are being embraced (Ko, 2005). Now all major organizations are recognizing the need to view humans as part of the natural system and therefore responsible for ensuring its viability as well. In turn tourism destinations should seek to improve the quality of humans as well as the natural environment. Any tool to measure progress must examine both the human system and ecosystem (Ko, 2005).

In addition eight dimensions for the human system and ecosystem are identified and are necessary for ensuring sustainability at the local, regional, and national levels. The dimensions for the human system include: the political; economic; socio-cultural aspects; and production structure (the quality of services and products for tourists). The dimensions for ecosystem assessment include general environmental impacts; ecosystem quality of water, land and air; biodiversity of flora and fauna; and environmental policy and management (Ko, 2005).

Based on identification of systems and dimensions, sustainability indicators (SI) can be developed. Additionally, various studies conducted upon the impacts of tourism are helpful for developing indicators. Since tourist destinations are greatly variable, not all indicators or dimensions may be applicable, thus a group of dimensions and indicators might be chosen (Ko, 2005). Each dimension gives light to various indicators making it necessary to create a hierarchy for assessment, "the assessment process builds from specific measures from bottom to top, drawing on the best available knowledge (Ko, 2005)."

Identifying the correct scale is essential for proper comparison and evaluation. It is necessary to take indicators as decided upon by stakeholders and put them into a form

which can be measured (Ko, 2005). According to Lee-Smith (1997) when measuring sustainability both ordinal and interval scales are typically used. Ko (2005) believes a numerical based assessment model is best and that the scale should be developed from a study of the perceptions of main stakeholders. A ten point scale is then easily used to rate individual indicators and a survey style questionnaire can be adapted to the tourism sustainability assessment maps (TSAMs) (Ko, 2005). Ko (2005) provides five arguments to justify using this approach. The main argument is that, where there is a lack of technical data available, a study conducted to decipher perceptions is desirable (Ko, 2005).

The next step is to determine gradations or sectors of scale for sustainability (Ko, 2005). To improve communication, graded scales are beneficial rather than just a two sector division of sustainable and unsustainable. Thus a more detailed scale may be able to convey the complexities easier to stakeholders. Four different models are described by Ko and range from a five-point scale to a two-point scale. Depending upon the goals of the assessment process different scales will be more suitable (Ko, 2005).

The scales are then used to develop tourism sustainability assessment maps (TSAMs). Ko (2005) explains, "TSAMs are a graphic tool for displaying the system quality of a tourist destination." These maps are useful for identifying the current situation within a community, for developing future scenarios, for explaining trade-offs and impacts, in aiding stakeholders to make decisions and develop goals, and in making the assessment process transparent (Ko, 2005).

Ko introduces two types of TSAMs for use in the model presented in his study. The BTS is useful as a comprehensive approach while the AMOEBA of Tourism

Sustainability Indicators (ATSI) is more applicable to measuring individual SI (Ko, 2005). The BTS is an easily understandable graphic tool that "provides a systemic way of organizing and combining indicators so that users can draw conclusions about the conditions of people and the ecosystem, and the effects of people-ecosystem interactions (Ko, 2005)." The resulting matrix allows a destination to be assessed according to different combinations of sustainability levels.

The ATSI is useful for overcoming the downfalls of the BTS model in which individual indicators are not assessed. Through the ATSI model indicators may be broken down and evaluated independently as well as comprehensively (Ko, 2005). Since different combinations of dimensions and indicators are used for each tourism destination it is difficult to compare them. However if uniform sets of indicators are identified these models are helpful for comparison (Ko, 2005).

Sustainability cannot be assessed at a single point but must be done over a period of time. Thus it is necessary to use the ATSI and BTS models to collect data at various points in time to monitor progress. The final step involves evaluation, which may be done for purposes of informing stakeholders and making-decisions or to decide upon the effectiveness of the data collection process.

Overall Ko concludes that it is necessary to measure the progress toward sustainable tourism development. To properly measure the system quality a standard of assessment must be developed. Either qualitative or quantitative data is useful for developing a standard but quantitative may have more advantages for assessing sustainability. To obtain the quantitative data a perception study is recommended, especially where technical data is not available. A ten point rating scale is suggested to

analyze a perception study as this allows for the development of TSAMs. It is also recommended to choose between four gradation scales depending upon the level of sophistication of measurement. Overall the BTS and ATSI models are helpful for understanding the level of sustainability for a tourist destination.

Ecotourism and Certification

The UN declared 2002 the Year of International Ecotourism, at a time when concerns began surfacing over the authenticity of ecotourism. There is now a movement to codify ecotourism through establishing tools, standards and criteria. Martha Honey (2002) emphasizes, "Although ecotourism seeks to provide tangible benefits for both conservation and local communities, certification that includes socioeconomic and environmental criteria seeks to set standards and measure the benefits to host countries, local communities, and the environment."

With the rising concern over global environmental issues many governments began setting standards regarding air and water quality throughout the 1970s. Environmental impact assessments soon came into use as a primary method to predict ecological effects for a project or specific company prior to development. Certification programs are also being used to aid in sustainable development (Honey, 2002).

After the Rio Earth Summit of 1992 and the Agenda 21, a great many certification programs sprouted up intending to fulfill the charges of the Summit and measure environmentally and socially sound practices. Throughout the globe there are, "260 voluntary initiatives including tourism codes of conduct, labels, awards, benchmarking, and 'best practices.' Of these, 104 are ecolabeling and certification

programs offering logos, seals of approval, or awards designed to signify socially and/or environmentally superior tourism practices" (Honey, 2002).

Certification is defined as, "a procedure that audits and gives written assurance that a facility, product, process, service, or management system meets specific standards. It awards a logo or seal to those that meet or exceed baseline criteria or standards that are prescribed by the program" (Honey, 2002). Certification programs often look at visitor satisfaction as a key indicator of success and therefore a three-legged stool model has been developed focusing on the following: quality and price, health and safety, environmental and socioeconomic sustainability (Honey, 2002).

Certification programs are divided into two main approaches: process-based and performance-based. There are also certification programs with a mixture of the two approaches (Honey, 2002). The performance-based approach uses predetermined criteria from an outside source applied across the industry. The process-based approach focuses on improving procedures and practices through self-selected management systems and monitoring (Honey, 2002). The process-based approach breaks down tourism into three areas: conventional, sustainable, and ecotourism (Honey, 2002). Notably, Canada, Australia, New Zealand, and Fiji all refer to certification as accreditation, whereas most assume accreditation refers to an authoritative body which certifies the certifiers (Honey, 2002).

Certification programs for the tourism industry have traditionally focused on such things as quality, cost, and employee qualifications. Martha Honey (2002) describes a change in which, "in the 1990s, the global environmental movement and rapid expansion of ecotourism stimulated the development of scores of new certification programs that

incorporated environmental and increasingly socioeconomic criteria." The traditional certification programs included such organizations as Michelin, American Automobile Association, and Qualmark. Professional certification programs include the Certified Travel Counselor began in 1966 by the Institute of Certified Travel Agents (Honey, 2002).

Realizing the need for a greener industry many have sought to introduce initiatives and programs promoting environmental and social values. Honey (2002) informs, "these efforts have included a range of government regulations and legislation; international forums and covenants; creation of new national and international business forums, such as the World Travel and Tourism Council (WTTC), and the founding in 1991 of The International Ecotourism Society (TIES) and, subsequently, a score of national ecotourism societies." Industry associations promote many of these initiatives preferring voluntary practices over government regulation (Honey, 2002).

Governments nonetheless call for compliance with standards and Environmental Impact Assessments are often required. This front end approach is used for assessing potential environmental impacts to a proposed company or project but due to poor implementation does not always correctly assess the impacts (Honey, 2002). Another popular tool used by corporations voluntarily is the environmental management system (EMS). Accordingly, "this voluntary procedure helps management conduct baseline studies, put together a program plan, conduct staff training, and set up systems for ongoing monitoring and attainment of environmental targets, such as pollution and water and electricity use reduction" (Honey, 2002). The most well known EMS standard

setting organization is the International Organization for Standardization (ISO) which has produced the ISO 14000 series in response to demands for EMSs.

Certification is increasingly being seen as a solution to the problems created by current trends in governance. With the onslaught of the Washington Consensus, governments have reduced their services and promoted deregulation (Honey, 2002). This trend led many groups to coalesce around the charge to bring about environmental and social justice. Throughout the 1990s certification and eco-labeling initiatives sprouted up in major industries such as coffee, timber, chemicals, bananas, and transportation.

Many academics argue, "While certification will never replace the state, it is quickly becoming a powerful tool for promoting worker [host country, and local community] rights and protecting the environment in an era of free trade" (Honey, 2002). Certification programs are able to bring together a diverse array of stakeholders unlike others tools such as EIA which are usually only dependent upon discussion between state and developer (Honey, 2002).

Concerns in the Literature

Many theorists and experts in the field have put forth concerns and recommendations for the future direction of sustainable tourism. Importantly many of the authors point toward a lack of collaboration and a need for a better decision-making concerning sustainable tourism.

Miller and Twining-Ward (2005) attempt to better organize the meaning of sustainable tourism by introducing a comprehensive framework. Specifically they seek to improve the framework by including a complex adaptive systems approach along with non-linear science (Miller and Twining-Ward, 2005). For example, a systems approach

understands tourism as part of a broader complex system that is non-linear, and small inputs may have great unpredictable outcomes (Miller and Twining-Ward, 2005).

According to Miller and Twining-Ward tourism is a complex system in which, "the full human and biophysical fabric of tourism is wide and deep, including such subsystems as transportation, water supply, food production, the availability of labor, community and life support systems" (Miller and Twining-Ward, 2005). The authors also suggest that sustainable tourism must be stakeholder-driven, which argues the greater the participation the better decision-making. They also encourage the use of the principles of adaptive management (Miller and Twining-Ward, 2005).

Colin Hunter (2002) describes the narrow-mindedness of current tourism literature, seeking to encourage a better understanding. Accordingly, there is a lack of theoretical discussion in the literature creating a disjuncture between tourism policies and the policies of other industries. Hunter (2002) believes a more collaborative discussion should be taking place to overcome conflicts in the industry.

The differing perspective toward sustainable tourism and between industries creates hurdles for ensuring satisfactory methods for measuring sustainability in tourism. One conflicting perspective described by Hunter (2002) understands sustainable tourism as creating policies and programs which ensure that tourism flourishes over time. This view toward sustainable development is similar to the sectoral scale described by Miller and Twining-Ward (2002) and stands in sharp contrast to those views which hold environmental and social values as key. Butler (1998) responds to these conflicting perspectives by stating, "The key problem, in my mind, is the current inability to define

to the satisfaction of all, or even most, of the stakeholders in tourism, exactly what is meant by 'sustainable tourism.'"

Butler (1998) describes the need for a holistic approach, suggesting that tourism cannot be sustainable if it is not global in scale and collaborative with other sectors. He stresses the need to improve existing tourism destinations and operations rather than just focusing on future developments stating, "We cannot be selective about sustainable development, thinking globally and acting locally will work only if local actions are part of an integrated holistic approach and include solutions to past problems" (Butler, 1998).

Milne (1998) further describes the need for coordinated action suggesting that policy makers who simply distinguish between tourism and alternative tourism allowing the former to continue with its negative impacts would be counter-productive. He states, "We cannot make any particular form of tourism more sustainable unless we understand the ways in which it dovetails with all forms of the industry" (Milne, 1998). Milne's main argument focuses on improving the global-local nexus for sustainable tourism. Accordingly Milne argues, "Tourism must be viewed as a transaction process incorporating the exogenous forces of global markets and multinational corporations as well as the endogenous powers of local residents and entrepreneurs."

Pamela Wight (1998) describes the failure of decision-making in sustainable tourism. It is important to find a harmonizing balance between visitors, host community and environment. While the visitor impact is an important consideration it must be noted that, "whereas some erosion and pollution of resources is caused by great numbers of visitors, most environmental damage is caused by lack of plans, policies, and action to

prepare for any economic growth...Tourism cannot be blamed for environmental

deterioration caused by bad decisions rather than real visitor impacts" (Wight, 1998).

After reviewing the major approaches to aid in sustainability assessment, Pamela

Wight (1998) provides an overview of the key requirements for sustainability tools. First

is ensuring ecological integrity be apart of sustainable development. Any approach in

sustainable development must understand the interrelatedness of environmental and

social indicators. This concept is referred to as Ecologically Sustainable Development

(ESD) and holds the following characteristics as summarized by Australia's National

Strategy for Ecologically Sustainable Development (1992):

1. Decision making should integrate long- and short term economic,
   environmental, social and equity considerations;
2. Where serious or irreversible environmental damage is possible, lack of
   full information should not postpone preventive measures;
3. The global dimension of impact by actions and policies should be
   recognized and considered;
4. Need to develop economic strength and diversification, which can enhance
   environmental protection;
5. Need to maintain and enhance international competitiveness in an
   environmental sound manner;
6. Cost-effective and flexible policy instruments should be adopted; and
7. Community involvement is required on decisions and actions that affect
   them.

Wight (1998) goes on to detail other components she sees as essential for tools for

sustainability analysis. For instance, public involvement is a concept promoted by most

everyone in the sustainability literature, yet in practice has not been widespread.

Nonetheless it is recognized that tourism planners and developers must take into

consideration the needs and values of those affected. Wight (1998) stresses,

"Participation by residents in tourism planning is fundamental. It prevents narrow

special-interest groups from dictating the development process. Thus a transparent,

consensus-oriented approach, with public participation throughout and continuing after development; is required."

Another aspect which must be overcome involves sectoral and inter-sectoral conflict. Groups who share values tend to lose sight of the ultimate goal and instead become bullheaded over decisive values (Wight, 1998). A more productive response would be to use the values as bargaining points instead of deal breakers. Conflict is an important aspect of decision-making in society yet means to mediate the conflict are necessary (Wight, 1998).

Integrated resource management is a fundamental component of sustainable development. This allows resource use to be considered based on priority rather than just multiple use scenarios. Furthermore it encourages the collaboration of industries, governments and communities in decision-making regarding resource management (Wight, 1998).

Social and environmental values must be incorporated into any tool for analysis. A society must first decide upon an environmental ethic and then it must be acknowledged that those values will vary across time and space. Only through defining an environmental ethic, can the development of indicators take place (Wight, 1998).

Clearly this is an important topic filled with many loaded concepts, which are nonetheless worthy of consideration. Following along with earlier conservation movements and now environmental and social justice movements (which today seem to be one in the same) sustainable tourism is striving to replace traditional mass tourism. Its ability to survive and remain a valid concept is dependent upon tools of analysis which assess the entire complex system of sustainable tourism improving the way decisions are

made. Having discussed the theoretical foundations and dominant tools of analysis for sustainable tourism the review will now focus upon case studies of tourism operations attempting to measure sustainability.

In order to better assess the research questions case studies will be included. The case studies will provide three examples of tourism operations carrying out sustainable practices and will focus upon their methods of sustainability assessment. The operations include: the Vilamoura Resort in Algrave, Portugal; the Punta Islita Hotel in Guanacaste, Costa Rica, and the Jemby-Rinjah Lodge in New South Wales, Australia. The case studies will present information on regional sustainable tourism policies as well as sustainability policies for each operation.

The operations selected were done so because of a documented commitment to sustainable practices, recognition of best practices through environmental awards, certifications, or the World Tourism Organization, and use of an assessment tool to evaluate sustainability. In addition, the case studies have been selected due to their successful sustainability programs and for their differences in approaches. These differences exist mainly in regards to the governmental levels effecting tourism policy for each operation and contrasting social, political, and economic contexts.

For each case study a background regarding the regional sustainable tourism policies as well as the specific policies for each operation will be offered. Each case study will describe the operation and its sustainability practices. The main focus will be upon the method of sustainability assessment for each operation.

The various approaches for sustainability assessment described in the literature review provide a theoretical background to better understand the methods of

sustainability assessment found in practice. The case studies provide real life examples of tools to measure sustainability. A comparison of theory and practice shows discrepancies in addition to highlighting best practices. Through presentation of the literature review and case studies this research assesses the best method for measuring sustainability in tourism.

Chapter III

Case Study: Punta Islita Hotel

Costa Rica is renowned for its luscious landscape and mystifying skies. The province of Guanacaste is traditionally known for the cattle industry, but is quickly becoming a center for tourism. Found in the northwestern section of Costa Rica, Guanacaste has 1022 km of coastline. (http://www.costa-rica-guanacaste.com/, October 7, 2007). Located in Guanacaste, the Punta Islita Hotel is leading the way in luxury accommodations and sustainable tourism for Costa Rica. The hotel is owned by Henry Zurcher, a local attorney and native born Costa Rican and the vice president, Eduardo Villafranca oversees management.

The Punta Islita Hotel, situated on the Nicoya Peninsula, began business operations in 1990 but changed its focus to ecotourism in 1995. "Soft adventure" tourism was added to the mission of Punta Islita Hotel in 1998. The hotel was established through collaboration between local entrepreneurs, the Municipality of Nandayure, the inhabitants of Punta Islita, the Costa Rica Tourism Institute and the Costa Rican Ministry for the Environment and Energy (WTO, 2003).

Services provided by the Punta Islita Hotel include: thirty-four separate lodging accommodations, spa service, beach club with swimming pool, quads, tennis courts, and gymnasium, "canopy" walks, mountain bikes, fishing, horseback riding, and climbing. Funding for the operation was provided by 100% private Costa Rican capital (WTO,

2003). A great deal of investment went into the infrastructure for the surrounding area including access roads, bridges, a landing strip, and telecommunications towers. Additionally, a hostel was built to provide housing for employees along with transportation (WTO, 2003).

The luxury accommodations and various activities provided by the hotel draw a customer base from the medium to high income strata. On average 3,600 tourists visit the hotel each year and arrive mainly from the United States, Costa Rica, and Europe (WTO, 2003).

Sustainability Policy

A driving management principle of the hotel is the "We Care" program which encourages responsible tourism and promotes local cultures and rational use of natural resources (http://www.hotelpuntaislita.com/social_responsability.html, October 15, 2007). One innovative feature of this program is the emphasis on art as exemplified in the Islita Contemporary Art Museum. In addition, the Punta Islita Hotel has taken on several initiatives geared at sustainable tourism and as a result has won several awards. Importantly the hotel holds the Tourism Sustainability Certificate awarded by the Costa Rican Tourism Institute and the Ecological Blue Flag Certificate (http://www.hotelpuntaislita.com/social_responsability.html, October 15, 2007).

The Punta Islita Hotel has also undertaken a sea turtle conservation program with the aid of the Costa Rican Ministry of Environment. The program is held at the nearby beach of Camaronal and provides resources to ensure safe space for the reproductive processes of the turtles. Also the hotel has set aside a fifty acre area of tropical dry

forests as a private reserve. The reserve promotes the conservation of local species including the Scarlet Macaw, the Toledo bird, and the Pochote Tree (WTO, 2003).

A major goal of the hotel is to provide education and training opportunities to both guests and local residents. Opportunities to engage and learn about the natural environment are made available to guests, while local residents are provided training to identify potential tourism projects (WTO, 2003).

The hotel implemented many sustainable practices including evaluation of waste, water, and energy usage and the provision of facilities to manage these systems. A recycling program is in use along with a program to reduce waste in the surrounding areas. Additionally, building supplies for the accommodations were taken mainly from traditional materials. The hotel also provides drinking water to the people of Punta Islita (WTO, 2003).

Community involvement is important for the "We care" program at Hotel Punta Islita (http://www.fascinationcostarica.com/entry.cfm?nEntrada=4188, October 7, 2007). This is evident in their commitment to employing local residents, who before the hotel opened, had little employment opportunities outside of stockbreeding and day laboring. Now the hotel is one of the largest job creators in the region, directly employing sixty-four persons and indirectly employing twenty-eight others. Moreover, capacity building programs are provided for employees and other interested stakeholders (WTO, 2003).

Other capacity building programs of the Hotel Islita include a partnership with the University of Las Palmas de Gran Canaria, in the Canary Islands concerning their tourism Master's degree (WTO, 2003). The hotel also describes the many micro-entrepreneurs which have been created as a result of the hotel development. This has resulted in an

improved quality of life for local residents benefiting from new sources of income and housing development spin-offs from the tourism industry (WTO, 2003). Accordingly a shift is taking place in the mindset of local resident who are beginning to realize the benefits of a healthy environment (WTO, 2003).

Some of the outcomes from this development include an improved quality of life for local residents, a commitment to preserving the environment and conserving natural resources, and involvement of community members wherever possible. To ensure sustainable practices are carried out and standards are being met monthly meetings are held to evaluate and develop solutions. Groups formed by the collaborators monitor projects and provide information to stakeholders including the Catholic Church Committee and the Punta Islita Board of Education. By ensuring a clear line of communication with stakeholders the hotel seeks to develop appropriate solutions to the problems at hand. Furthermore, transparency is achieved through the ethical operations basis which is confirmed each time a guest visits (WTO, 2003).

Assessment

The Ecological Blue Flag Certificate was founded to ensure clean and safe beaches. As part of the requirements there must be signs to properly inform visitors, and encouragement of community involvement in maintaining the beaches. The program is a joint venture of Costa Rican authorities including the National Water Service (AyA), the Costa Rican Tourism Institute (ICT), the Ministry of Health, the Ministry of the Environment (MINAE), and the National Tourism Chamber (CANATUR) along with interested members from the community (http://www.fascinationcostarica.com/entry.cfm?nEntrada=4188, October, 2007).

In order to obtain the Blue Flag certification, beaches are evaluated according to quality of ocean water, quality of drinking water, waste disposal, availability of sanitary facilities, the existence of signs with safety instructions, and involvement of local community. There are strict evaluation criteria and beaches continue to be monitored on a monthly basis (http://www.fascinationcostarica.com/entry.cfm?nEntrada=4188, October, 2007).

The Certificate for Sustainable Tourism (CST) is a well-developed certification program, which is striving to become the standard for all of Latin America. In the mid-too late-1990s industry leaders in Central America came to together to develop a scheme for certification that would ensure the validity of their tourism businesses. The CST was designed with Costa Rica in mind, but also has ambitions of becoming a regional and international certification program (Honey, 2002).

The idea was first proposed by the Costa Rican Tourist Board (ICT) and its officials Marco Picado and Rodolfo Lizano. Lizano spent a year working closely with the Central American Institute for Business Administration (INCAE) to develop the theoretical framework (Honey, 2002). Importantly the goal was to make the program applicable to all tourism business types and therefore make a distinction between ecotourism and sustainable tourism. This feeling was later addressed by the Mohonk Agreement in November 2000, which set out guiding principles for environmental certification systems. The agreement stated that businesses must first comply with sustainability criteria before it can seek to meet ecotourism criteria. This was done in an attempt to provide all tourism business the opportunity to comply with sustainability criteria (Honey, 2002).

In 1997 the first edition of the CST was released for hotels with an addition for tourism operators released in 2001. After the development phase several stakeholder workshops were held to receive feedback and field testing occurred prior to the final release (Honey, 2002). The criterion follows along three axles: environment, economic, and social and was developed by group of technical advisors. Four fundamental aspects are evaluated including: physical-biological parameters, infrastructure and services, external clients and socio-economic environment. There are five different sustainability levels which are assigned to each applicant based on a self-evaluation and on-site audit (http://www.turismo-sostenible.co.cr, October, 2007).

Applicants are asked to complete a self-evaluation in which questions are weighted by importance and fall within one of the four aspects described above. An on-site evaluation occurs by a team of auditors deemed qualified by the CST, and the findings are then sent to the multidisciplinary certification and accreditation board. A minimum score of twenty-percent must be achieved in each of the four areas to meet the minimum requirements for certification (Honey, 2002).

Case Study: Jemby-Rinjah Lodge

The Jemby-Rinjah Lodge (JRL), adjacent to the Blue Mountains National Park of New South Wales, was established in 1985 as an ecologically sustainable tourism operation. The operation is made up of ten cabins, three ecolodges, a restaurant, environmental training centre and conference facilities. According to the National Ecotourism Accreditation Program, the JRL has an Advanced Ecotourism status. The JRL has won many environmental awards including the 1996 Banksia Environmental Foundation Award for the Built Environment. A guiding vision of the owners, Peter and

Margret Quirk of Australia, is to bring together the natural environment and people in a mutually beneficial manner.

As stated on its website, "The owners developed JRL with a vision to facilitate appropriate National Park visitation, to encourage environmental studies and education and to establish a facility which would integrate the buildings with minimal impact and engage guests directly with the surrounding flora and fauna." (http://www.jembyrinjahlodge.com.au/, October, 2007). The majority of visitors, seventy percent, originate in NSW, while twenty-three percent are interstate visitors. The remaining seven percent originate mainly in Europe and North America.

The key objectives of the JRL include the following:

1. Imprint on the natural vegetation only at the minimal level necessary;
2. Use renewable and recycled products through construction and operation;
3. Compost and recycle human and kitchen wastes to the maximum;
4. Make minimal draw on off-site energy and resource services;
5. Support regional and local conservation initiatives;
6. Provide local employment opportunities and be inclusive of community activities and members.

Source: (http://twinshare.crctourism.com.au/CaseStudies/Cs8.htm, October, 2007).

The lodge has optimum occupancy of seventy-five beds, with the total number of 100 beds spread across the ten cabins and three ecolodges. The majority of revenue is obtained via accommodations in addition to supplementary revenue garnered from private day functions such as luncheons and dinners. Typical stays are between two-three days and the eco-lodges are often used for weddings, corporate training, family, and special interest groups (http://twinshare.crctourism.com.au/CaseStudies/Cs8.htm, October, 2007).

Sustainability Policy

Twenty-seven full-time and part-time staff members are employed by the JRL. The majority of employees are from the surrounding area. All employees are given opportunities for on-going training and skill enhancement programs. Another important feature of the lodge is its purchasing policy which strives to procure biodegradable and environmental sound cleaning products in bulk. Additionally, the JRL does not use any harmful chemicals such as herbicides or pesticides as part of its grounds maintenance (http://twinshare.crctourism.com.au/CaseStudies/Cs8.htm, October, 2007).

During the planning process the owners had to meet certain requirements established by the neighboring Blue Mountains Council including assessments of endangered species in the area and cultural heritage prospects. Furthermore the lodge had to comply with certain water regulations to ensure no pollution occurred outside of the property boundaries (http://twinshare.crctourism.com.au/CaseStudies/Cs8.htm, October, 2007).

The building design and construction process was a highly complex endeavor aided by the well known architect Nigel Bell. The project was guided by principles such as cultural appropriateness and appreciation for the natural environment. Minimum impact and maximum utilization of energy resources further augmented the sustainable design. Materials were selected for their proximity in origin and energy efficiency. Even construction staff was hired based on their commitment to use specific techniques enhancing the sustainability of the project (http://twinshare.crctourism.com.au/CaseStudies/Cs8.htm, October, 2007).

Many components of the lodge serve to provide top energy efficiency and resource conservation. This includes the implementation of such things as dry composting toilets, low energy cooking appliances, trash composting, and recycling. Importantly guests are frequently provided information and educated about the sustainable practices of the lodge.

The JRL utilizes innovative monitoring systems to ensure the most efficient use of resources and provide feedback concerning environmental performance. The most recently built cabin is state of the art and contains a control and metering system which monitors energy usage. If the project is successful the system will be expanded to other parts of the lodge. Additionally, the JRL must undergo periodic audits and self-assessments to maintain its Ecotourism Australia Certification. According to one review, "Annual energy and site impact audits are conducted and the most recent energy audit showed that electricity usage was less than 50% of what could be expected in a 'normal installation'" (http://twinshare.crctourism.com.au/CaseStudies/Cs8.htm, October , 2007).

The JRL makes a concerted effort to involve the local community whenever possible promoting community activities and various charitable programs. In addition the JRL seeks to purchase products from within the region as well as pulling from that same employment force. Education is another important goal of the lodge and does so through formal programs along with "showing by example" through the various sustainable practices used by the lodge (http://twinshare.crctourism.com.au/CaseStudies/Cs8.htm, October, 2007).

Assessment

The Advance Ecotourism status is awarded by Ecotourism Australia which began its life as part of the National Ecotourism Accreditation Programs (NEAP). Australia abounds with natural wonders and has long promoted its tourism industry. With the rising popularity of ecotourism, interested groups soon recognized the need for an organized association and the Ecotourism Association of Australia (EAA) was formed in 1991 (Honey, 2002). In order to distinguish authentic ecotourism products the association set forth to form an accreditation scheme and soon established the NEAP. The EAA worked with the Australian Tour Operators Association (ATON) to develop a certification program and in October of 1996 the program was officially launched.

A pilot study was conducted with forty tourism operators from various business sizes to garner feedback and support from the industry. The study also provided essential information for the development of benchmarks and the setting of criteria for the different certification levels. As promised, after three years the criteria was reevaluated and in 2000 NEAP II was launched. Recognizable improvements included the introduction of a third category (Nature Tourism); emphasis increased upon interpretation criteria, all of the certification criteria was reviewed and redrafted stiffening the criteria for Advanced Ecotourism status; and an expanded appendix section to provide more comprehensive information for operators such as a glossary, information about innovative and best practices, and a list of industry contacts (Honey, 2002).

The Australian brand of certification has developed world renowned standards for ecotourism and claims to be created by industry for industry. The organization does not certify companies but rather looks specifically at three different products: tours,

accommodations, and attractions. This program involves three levels of certification: nature tourism, ecotourism, and advanced ecotourism (Ecotourism Australia, 2007). Through ten different standards a level of sustainability is decided and a logo provided. These standards include business management and operational planning, business ethics, responsible marketing, customer satisfaction, natural area focus, environmental sustainability, interpretation and education, contribution to conservation, working with local communities, and cultural respect and sensitivity (Ecotourism Australia, 2007). Depending on how many standards the product meets it will receive one of the three logos.

Importantly this certification program combines a mixture of process and performance based criteria. For instance, the criteria include performance based indicators such as sewage treatments meeting certain standards and process based such as a system for assessing and enhancing training of interpretative guides. As Martha Honey (2002) points out, "A major concern was to ensure that NEAP did not become too technical but still set measurable and practical performance indicators."

The process of certification (also known as accreditation in Australia) begins with paying a fee and receiving an application. The application contains a detailed self-assessment based on criteria decided upon by the Management Committee who also provide assistance to applicants and/or members as needed. The self-assessment is then sent to an independent assessment panel that provides a score based on the review of the self-assessment. On-side audits also take place throughout the accreditation process (Ecotourism Australia, 2007).

Ecotourism Australia maintains its credibility through practices such as ensuring the assessment panel is chaired by a person independent of the organization under review. Furthermore, the programs' standards are reevaluated every three years with input from industry leaders, customers, and local managers (Ecotourism Australia, 2007). Another important aspect of the program is its drive to be self-sustaining through revenue from the application process and annual fees required of the certified products. In order for ecotourism to remain viable in the industry this is an essential component (Honey, 2001).

Case Study: The Vilamoura Resort

The Vilamoura Resort is an outstanding example of mass tourism turned into a proactive sustainable tourism endeavor. What was initially an over-developed residential and tourism resort, was transformed by second-generation property developer, André Jordan. Through his dedication to high-quality development and sound environmental practices, Jordan initiated many reforms that created an environmentally proactive tourist destination and community (Partidário, 2003).

The André Jordan Group, via its management arm Lusotur, took over ownership in 1996 and initiated the transformation of Vilamoura into an environmentally integrated and distinct operation. Vilamoura has approximately 6,000 permanent residents and generates over 600,000 visitors per year. The resort contains almost 4,050 acres of prime Algrave beachfront property and the resort provides 6,500 direct jobs (Partidário, 2003).

Vilamoura is one of the largest single tourism complex that contains both residential and hotel accommodations. The resort offers a vast array of recreational activities including five golf courses, a lawn bowling club, a tennis center, horse stables, a large marina, and just as many entertainment options such as a casino and self-catering

villas. The complex also contains a preserved Roman site in the center and the Museum of *Cerro da Vila* (Partidário, 2003).

Sustainability Policy

The management of Vilamoura is carried out by Lusotur which adheres to a strict environmental program based on the analysis, execution, and control of corporate activities to ensure environmental quality. The policy of Lusotur is premised on:

1. Incorporating environmental consideration into product design;
2. Using resources efficiently;
3. Raising environmental awareness;
4. Minimizing waste;
5. Protecting the natural and cultural heritage.

Source: Partidário (2003, p. 2).

The environmental soundness of the resort can be attributed to the sustainable master plan known as the Vilamoura XXI and is described as "an innovative program to harmonize holiday, residential, sport, leisure, and recreational goals while respecting the capacities of the environment and nature (Partidário, 2003)." The plan details strict building controls for the community and amenities along with reduced construction densities. The plan also calls for green space which preserves over ninety percent of the land area. Moreover, environmental guidelines and incentives for property owners, construction companies, small business, and hotels are provided in the plan (Partidário, 2003).

Sustainable practices defined the re-creation of Vilamoura providing for a world-class sustainable destination. The environmental policy of Vilamoura was established in 1996 and ensures the involvement of top-management in environmental leadership. Environmental soundness was codified through the implementation of the *Vilamoura XXI*

master plan. Furthermore the resort adheres to research based application of and compliance with environmental law (Partidário, 2003).

Additional practices of the resort include the integration of environmental planning into all building designs, the creation of new habitats, and the enhancement of existing ecosystems. In 1997 the resort began using an environmental management system to plan, manage, and control various operations including the golf courses and marina (Partidário, 2003). The golf courses and marina area are also certified by the ISO 14001 program and the resort is part of the *Green Globe Destination* program. The resort additionally received the *Committed to Green Award for Environmental Excellence*. Finally, the Vilamoura Resort is dedicated to cultivating partnerships with key stakeholders and involves the community in educational, sports, and leisure activities (Partidário, 2003).

The responsibility for Vilamoura's environmental program is attributed to the Lusotur board of directors, chaired by André Jordan. The resort also has a permanent environmental staff comprising a team of four environmental engineers, one biologist, one landscape architect, and consultants for the environmental management system (Partidário, 2003).

The environmental management system provides feedback on impacts caused by daily processes at the resort and seeks to improve overall environmental performance for its golf, marina, and beach operations. Importantly, the resort is a leader in sustainable golf course management. The use of fertilizers and chemicals was reduced and an aerator installed to enhance the oxygenation of water. Nearly 4,000 trees and shrubs were planted to prevent dehydration caused by wind. Moreover, bird and bat species are

encouraged through specially placed nests. These animals also help to keep down pests (Partidário, 2003).

Beach and marina conservation programs are also an important part of environmental management at Vilamoura Resort. Systems to pump-out boat wastewater are used, and the water is then processed at the municipal wastewater treatment plant. Costal water controls manage the inflow of upstream materials and the marina is cleaned regularly (Partidário, 2003). Monthly water monitoring takes place to check water quality parameters and is overseen by a certified laboratory. Furthermore, Vilamoura conducts checks to ensure the use of prevention plans for oil/fuel spills and fuel management. Finally the Vilamoura staff takes part in environmental training sessions improving the success of its environmental policies (Partidário, 2003).

The resort also includes a 495 acre Environmental Park geared at protecting, rehabilitating, and conserving local flora and fauna and their habitats. This park covers twelve percent of the total area at Vilamoura and sets the pace for environmental management throughout the resort. The park contains important fragile habitats such as wetlands and hosts an abundance of bird species both endangered and not. A variety of other species are preserved in the park including a rare breed of otters. Additionally, the park provides recreational, leisure, and educational opportunities (Partidário, 2003).

Cultural heritage initiatives include the preserved *Cerro da Vila* which is the only private Roman ruin in Portugal. A museum was built in 1998 to provide interpretation of the site and employs an archaeologist. A farming estate from the 2nd century, along with an original *Quinta* manor house, is also preserved at Vilamoura.

To promote sound environmental practices by small businesses and suppliers of the resort, environmental awareness campaigns are undertaken. This includes the display of informative posters provided to restaurants and shops, and the communication of environmental activities. Semi-annual newsletters, reports, brochures, and magazines also promote environmental awareness (Partidário, 2003).

Interestingly the resort also includes a 600 student international school, a soccer school and rugby team, a free golf school for children, and a sailing school. Since 1997, environmental initiatives including beach management through educational programs and child tree planting programs have been apart of Vilamoura. Finally, the Centre for Environmental and Nature Studies (CENA) provides a welcoming center, information on nature conservation, a library, and exhibiting room. CENA with the financial assistance of Lusotur also endows four research internships for university graduates (Partidário, 2003).

Assessment

The Vilamoura Resort has maintained the Green Globe Destination status since 2000, which is an environmental performance benchmarking and certification program (Partidário, 2003). Green Globe is an international leader in ecotourism certification. Having already undergone two major redevelopment stages, Green Globe was first established in 1994.

Following the Rio de Janeiro Earth Summit, *Agenda 21 for the Travel and Tourism Industry: toward Environmentally Sustainable Development* was released in 1995 (Honey, 2002). The action plan of Agenda 21 suggested the following areas be addressed by tourism operations including:

1. Waste minimization, reuse, and recycling
2. Energy efficiency, conservation, and management
3. Management of freshwater resources
4. Wastewater management
5. Hazardous substances
6. Transport
7. Land-use planning and management
8. Involvement of staff, customers, and communities in environmental issues
9. Design for sustainability
10. Partnerships for sustainable development
Source: Honey (2002, p. 301).

Agenda 21 provided the foundation for development of the Green Globe program. First initiated by the London-based organization, WTTC, the goal was to provide guidance for implementation of sustainable practices by tourism companies who could then seek recognition of their commitment to sustainable practices through Green Globe certification (Honey, 2002).

The original certification scheme was process based and simply required companies to pay a membership and state their commitment to improving environmental performance. As soon as the fee was paid companies could begin using the logo indicating their certification status (Honey, 2002). No outside auditing was required nor was a uniform set of standards dictated. This soon led to the criticism of Green Globe as just a form of "green-washing" in which products are presented as being more environmental friendly than they really are. The program was additionally criticized for its failure to consider factors such scale, capital, type, location, and sector (Honey, 2002).

The United Nations Commission on Sustainable Development (UNCSD-7) in April of 1999 facilitated the revamping of Green Globe into the Green Globe 21 program. The summit offered a recommendation for improving the industry including voluntary mechanisms to regulate sustainable tourism, integrated planning; development and

transfer of technology, and improved benefits for local and indigenous communities through assessment of economic leakages (Honey, 2002).

The Green Globe program underwent a reorganization to improve its certification program according to the UN recommendations and use of ISO standards. The Green Globe took further steps for improvement by joining forces with the Cooperative Research Center for Sustainable Tourism (CRC) in Australia and the Caribbean Alliance for Sustainable Tourism (CAST) in Puerto Rico. The CRC provided an academic setting to develop standards and greatly enhanced the criteria for the Green Globe 21 program (Honey, 2002).

The improvements to the program included an independent assessment of achievements requirement. The program also introduced a two-logo process, distinguishing with a check mark those who had been certified by an independent third party from those who had only made a statement of intent. Benchmarks, quantifying performance and continuous improvement requirements were also introduced (Honey, 2002).

Nonetheless pressure remained from the international community to improve the rigor of the process and in 2000 another revised model was introduced. This model targeted nine environmental and social focus areas and uses an outcome approach, based upon performance criteria. As a result Green Globe is a complex organization built upon partnerships, creating independence and non-biases via the separation of its functions such as sales and research (Honey, 2002).

The Green Globe 21 version as of April 2001 is known as *The ABC of Green Globe* based on the three different levels affiliate, benchmarking, and certification.

Affiliate status signifies a willingness to learn about sustainable practices and begin the

process of implementation. Benchmarking is the initial level of the certification scheme

and requires participants to gauge their environmental performance via criteria

established by Green Globe. Criteria are developed so as to be applicable to various

scopes of tourism operations including hotels and tourism operations, communities, and

protected areas (Honey, 2002).

Currently Green Globe is using the Earthcheck Benchmarking system which is a

unique automatic online assessment tool. According to the website, "Earthcheck is an

internationally-trusted system of indicators that allows individuals, enterprises, and

destinations to systematically measure, report, and manage their performance

(www.ec3global.com, accessed October, 2007)."

The process for participants is as follows:

1. Participants enter data relevant to key environmental indicators including
   energy consumption, water consumption and waste sent to landfill;
2. Earthcheck validates this data and calculates meaningful values that reflect
   performance:
3. Earthcheck formulates a report which allows the participant to compare their
   results against typical best-practice levels of performance.

Source: (http://www.ec3global.com, October, 2007)

The system allows participants to monitor their environmental performance and

learn how to improve it. The performance areas focus upon:

1. Greenhouse gas emissions
2. Energy conservation and management
3. Freshwater resource use
4. Ambient air quality protection
5. Wastewater management
6. Waste minimization, reuse, recycling (including of hazardous substances)
7. Ecosystem conservation and management (including biodiversity impact,
   particularly on habitats)
8. Environmental and land-use planning, particularly in areas of high social and
   environmental value

9. Local social, cultural, and economic impact, in particular, respecting local culture and generating maximum local employment.
Source: Honey (2002, p. 311).

Interestingly, Green Globe has established a base line along with a best-performance line so that operations can see where they fit within the wider industry (Honey, 2002). In order to receive the benchmark certificate, operations must be above the base level and adopt an environmental policy. The environmental policy must be developed and signed off on by top management to ensure commitment at all levels of the operation. Additionally, this policy must include a commitment to the special consideration of employing local persons and local products or services (Honey, 2002).

Honey (2002, p. 317) explains,

A key long-term objective of Green Globe is to stimulate initiatives for tackling noncompliance in meeting emissions targets, in particular, capacity building in developing countries (such as transfer of climate-friendly technologies) and establishing the Kyoto Protocol's market-based mechanisms- emissions trading, carbon trading, joint implementation and clean development.

The "C" of Green Globe 21 is the final step of certification. Due to the foundation of Green Globe upon the Agenda 21 an ISO-style environmental management system is used. Companies applying for certification must address the following:

1. Develop a sustainability policy.
2. Benchmark environmental performance.
3. Involve stakeholders.
4. Be independently audited prior to certification.
Source: Honey (2002, p. 317).

All companies registering for certification must have met base levels prior to registration. Upon registering companies are sent a CD-ROM and user's guide to help with preparations for assessment. Companies also have access to the Green-Globe directory of EMS professionals and approved assessor companies. When the company is

ready for the official assessment Green Globe organizes the certification process and sends out an accredited certification firm (Honey, 2002).

A great deal of training goes into the Green Globe process to ensure that all assessors and third parties meet the standards. Additionally, Green Globe has a built in dispute resolution process garnered from the ISO certification guides. If a company is in non-compliance than the right to use the Green Globe logo can be revoked (Honey, 2002).

All of the resorts presented in the case studies measured their sustainability via a certification program. Each resort achieved a degree of sustainability through implementing environmental policies, adhering to defined standards, and evaluating their processes for validation. The three resorts provided an overview of the variety in sustainable tourism operations. A great deal of the resulting sustainability and understanding of it was due to the certification programs in use. Based on the results presented in the case studies, certification programs are well suited to measure sustainability.

Chapter IV

Discussion

Across the world, academics, political figures, business leaders, community leaders, and communities are pushing to increase the sustainability of tourism. As various tangible and intangible initiatives are unveiled the need to validate them becomes a necessity. Much discussion abounds over the proper methods for measuring sustainability in tourism; however, not enough attention is paid to the more prominent certification programs in ecotourism already in use.

From the literature review and case studies it is apparent that sustainable tourism involves three main focus areas: environment, economic, and social. Environmental factors include water quality, air quality, waste management, energy consumption, greenhouse gas emissions, impact upon wildlife, and biodiversity conservation. Economic aspects of sustainable tourism are based upon business ethics in operations, management, and marketing. Additionally, contributions to the local economy through direct and indirect economic transactions, as well as, employment are important economic considerations. The social aspect of sustainable tourism requires the integrity of local cultures be guaranteed, in addition to being highly involved with decisions for sustainable tourism developments. Various indicators are associated with each area and are weighted according to their contribution to the overall level of sustainability.

Tools for sustainability assessment often focus upon visitor satisfaction, which while a noble business pursuit, may impede protection of the environment. Other tools

only focus upon environmental impacts and pay little attention to social concerns. Many of the tools in use also fail to measure indictors from a global perspective. Moreover, due to the variety of contexts in which tourism operations find themselves, it is necessary for time scales to be dynamic unlike the static nature of many traditional tools. Additionally, problems arise when assessment methods do not consider differences in size and scope as well. As a result few tools of assessment are comprehensive enough to sufficiently measure sustainability in tourism.

The certification programs described in the case studies are able to address some of the failures of previous tools for sustainability assessment. Importantly, certification programs in all three case studies, developed standards for minimal impact upon communities, provided guidelines for cultural respect, and recognized the need for stakeholder involvement. Additionally, indicators selected for certification programs often provide for differences in contexts and scope of tourism operations.

The Punta Islita Hotel has achieved standards focused upon benefits to the local communities as outlined by the CST program. First the capital investment was 100% Costa Rican providing ownership and management by Costa Rican nationals. Second, the hotel has invested in local infrastructure for the surrounding communities and proven to be a major job creator for those same communities. Finally, the hotel provides educational opportunities for employees and local residents focused upon conservation and tourism.

Ecotourism Australia includes standards for economic benefits, community involvement, and cultural integrity; even providing information on how to be culturally sensitive and respectful. The JRL achieved these standards through employing residents

of the surrounding area, implementing a regional procurement policy, and providing both employees and guests with educational opportunities.

Vilamoura Resort in accordance with Green Globe 21 has achieved or surpassed benchmarks measuring benefits to the local community through forming partnerships with community organizations, raising environmental awareness via its environmental center and academic programs, and preserving cultural heritage in its museum and protected historical sites.

Notably, certification programs may falter when indicators are either not comprehensive enough or not dynamic enough. Assessment of the environmental impact of tourism operations requires many indicators be considered and is an area which necessitates a scientific understanding and quantitative system to be accurate. Consensus over ecologically sustainable indicators exists; problems arise when operations do not have appropriate monitoring systems, often due to a lack of funding. Furthermore some certification programs and indicators used disadvantage small operations.

The Certificate for Sustainable Tourism (CST) found in Costa Rica addresses many of the issues but does present difficulties for smaller operations. Martha Honey (2002) offers a few criticisms of the CST system including the lack of applicability to small hotels. Accordingly the ISO-like criteria defined by the CST creates a disproportionate load upon small business that may not need to meet such high requirements. Furthermore, water and energy conservation are not measured by absolute consumption and therefore disadvantages small hotels that do not require the use of highly technical systems to ensure sustainable usage. Finally, the CST doe not recognize the value of historical or archeological sites, cultures, and habitats found outside of Costa

Rica and therefore fail to take into account these fragile habitats (Honey, 2002). Reconsideration of the CST criteria should begin with introduction of more dynamic indicators which can be more proportional for small hotels. The inclusion of protection for fragile habitats and recognition of their value by the CST would improve its comprehensiveness.

Nonetheless, certification programs allow tourism operations to improve upon performance at whatever development stage the operation is in. This is achieved through designating graduated levels of sustainability such as the nature, ecotourism, and advanced ecotourism labels used by Ecotourism Australia. Ecotourism Australia also has bonus criteria for operations using sustainable construction materials and methods (Ecotourism Australia, 2007).

The JRL in Australia achieves ecological sustainability through use of monitoring systems and onsite audits in accordance with Ecotourism Australia. Extensive planning from the construction stage to the fully operational stage aided the overall level of sustainability for the lodge. The intense sustainability practices adhered to by the JRL eased the process of certification and illustrates the high level of sustainability that is possible in tourism.

The Vilamoura Resort provides a shining example of a sustainable tourism operation able to accurately measure and monitor itself through the Green Globe program. Through use of the Earthcheck system the Vilamoura Resort is able to measure itself and compare its operations to that of others.

All of the certification programs described in the case studies have similar frameworks for assessing tourism. For instance each program has developed a list of

criteria for the three main areas of sustainability: environment, economic, and social. Each program is designed with a governing board and a technical advisory group along with independent third party audits. The process is voluntary in all three cases and begins with a self assessment style questionnaire. Through a third-party assessment a level of sustainability is then decided for participants. While traditional methods are still useful for initial planning stages like the EIA, certification programs provide a thorough framework of indicators that together provide a comprehensive assessment of sustainability.

Differences arise between the three certification programs according to how each area of the program is developed and executed. For instance, both Ecotourism Australia and Green Globe have been redeveloped based upon international conventions and agreed upon research. As a result criteria has undergone extensive evaluation and changed to reflect the views of interested stakeholders including industry experts and community leaders. While the Certificate for Sustainable Tourism is reflective of both experts and leaders in the area there has been less reevaluation of criteria.

All of the certification programs offer good models for the development of a similar scheme for sustainable tourism. The Costa Rican case is admirable for its local community involvement efforts, nonetheless it's monitoring and evaluative components are less concrete providing an opportunity for misuse. Ecotourism Australia stands out as a comprehensive framework which addresses all the necessary components of sustainability and provides clear indicators by which to measure sustainability. Interestingly, Ecotourism Australia is joining forces with Green Globe and its partners to

develop a global ecotourism standard (Ecotourism Australia, 2007). Based on this Green Globe stands out as providing the best framework for assessing tourism sustainability.

Not surprisingly the Green Globe program is gaining a great deal of influence within the tourism certification industry. Importantly, a globally applicable certification system requires a high amount of collaboration which Green Globe has achieved. This system has built in indicators based on rigorous criteria thoroughly developed through research, field tests, industry and customer feedback, and international expert collaboration.

Green Globe offers many of the attributes described as necessary by experts in the field such as well-rounded criteria developed from input by many sources. This means standards are agreed upon by a majority of stakeholders. Benchmarks are essential for creating an assessment tool. It is also important that the benchmarks are designed in such a way as to be applicable to many types of destinations. The Green Globe 21 program offers flexibility through its ability to certify hotels, destinations, and protected areas. Moreover, the Earthcheck system is appealing for its ease of use and ability to assess complex parameters. Other beneficial features of Green Globe include the built-in dispute resolution process and procedures for managing delinquent members. Additionally, Green Globe ensures high standards through its in-depth and strict training and employment policies.

Due to the large support and rich resource base of Green Globe it is believed by this author that Green Globe offers the best method of sustainability assessment in tourism. However, a few modifications are necessary to ensure it is a comprehensive certification program and covers sustainable tourism as well as ecotourism.

The inclusion of the ecological footprint (EF) would provide a global scale indicator to counter the locally developed ones (Hunter and Shaw, 2007). The EF can be understood as ''an accounting tool that enables us to estimate the resource consumption and waste assimilation requirements of a defined human population or economy in terms of a corresponding productive land area''

Hunter and Shaw state (2007, p. 55),

The use of EF analysis as an indicator of environmental sustainability allows quantitative comparison between different impact components (e.g. the transit zone and destination area footprints), and can provide an indication of the overall ecological impact of tourism products on global biological resources.

Thus through inclusion of an ecological footprint indicator, the certification program can ensure a global scale is considered as well.

Many of the variables described by Ko (2005) that are necessary for providing a comprehensive appraisal are already provided for in the certification programs. However, Ko's use of tourism sustainability assessment maps is another beneficial concept that could improve the accuracy of the certification system and aid in decision-making. The TSAMs help to overcome difficulties which arise from variations in size and scope of tourism operations (Ko, 2005). Inclusion of a graphic tool such as the ASTI would enhance the understanding of the sustainability of an area.

A modified Green Globe certification program would allow tourism operations to seek certification without necessarily having a natural area focus and provide a complex assessment of sustainability through inclusion of an ecological footprint indicator and tourism sustainability assessment maps. So long as the criteria covering sustainability is covered by the tourism operation then it may also be certified. The recommendations

developed from the case studies and literature review should be considered by stakeholders and decision-makers of certification programs and especially Green Globe as it stages itself for becoming a global certification program.

Conclusion

Sustainable tourism is transforming the way people travel outside of their homes and cities in pursuits of pleasure, business, and quite frequently a little of both. While sustainable practices in the tourism industry only recently caught fire as an important concept, a drive long existed to conserve natural resources due impart to their role in leisure activities.

Humanity has seen technology advance exponentially. As the need to conserve natural resources became recognized, technology was introduced with the ability to destroy those natural resources at rates never before seen. The most enduring conflict results from the difficulty in achieving harmony between conservation and progress. Just as the roar of machines has grown louder so has the rage against it.

The waves of globalization introduced an awareness of the environment and humanity around us. Entering this new era of heightened awareness comes with a changing view of the relationship between humans and the environment. A movement to restructure economic means in a manner respectful to the environment and societies encountered is taking place at rate as fast as technology will allow it. As with any movement there are many who only wear the masks of sustainability but there also many with sincere efforts geared at providing solutions to global issues.

Sustainability is often viewed as a nebulous cloud; however, with further investigation the concept of sustainability becomes understandable and desirable.

Interested stakeholders have commenced through global venues such as the United

Nations and the World Conservation Union resulting in a useful framework with

underlying principles to guide sustainable development of tourism. The need for

sustainable practices is agreed upon, as are many goals for sustainability. Furthermore,

over the last thirty years the often intense discussions over the parameters and scales of

sustainability provides a clear framework for indicators. Now the focus must turn toward

protocols for ensuring sustainability.

Incentives for sustainable tourism lie in the very nature of the certification

program. Through use of various labels which identify the level of sustainability

achieved, companies are aware of where they stand compared to others, as are potential

customers. A graduated system of sustainability identification, promotes participants to

improve practices and seek a more advanced level.

The certification program serves as a mechanism of self-regulation for the

industry. Companies benefit from the promotional aspect of ecotourism certification

programs. Furthermore, the benchmarking and certification aspects of Green Globe offer

companies a competitive advantage and reduce costs through use of fewer resources.

Green Globe seeks to promote economic benefits to local communities through

criteria geared at reducing economic leakage. Operators for instance must provide data

concerning their purchases, investors, and employment policies to ensure local economic

benefits (Honey, 2002).

Sustainable tourism seeks to provide economic alternatives by way of resource

conservation and improve living conditions of disadvantaged groups through social

initiatives. To ensure tourism truly is sustainable it is necessary for tourism operations to

use the appropriate tools for assessment. Certification programs provide tools for assessment through a comprehensive compilation of sustainability indicators and protocols for evaluation. The conceptual approach of the Green Globe program in particular is able to overcome the difficulties of sustainability assessment discussed previously. Overall the Green Globe program, with slight modifications offers the most promise for measuring sustainability in tourism.

Implications

In the world of academics there is a drive to develop the next most cutting edge concept or model. While this often results in innovative designs and ground-breaking discoveries it can also result in unnecessary and repetitive conceptual frameworks. Be sure the necessity of invention is well understood by this author, but it is also believed that there are times when the entire wheel does not need to be reinvented. This is the case for a tool of sustainability assessment in tourism.

I believe an instrumental review was sufficient as there is already much work being done concerning sustainability indicators. It was my goal to provide a review of the research and evaluate the various methods for sustainability assessment and then provide recommendations for areas of improvement. I feel this was effectively done and hope others interested in sustainable tourism will find it helpful.

Additionally, I with the advice of my committee members feel it will be important for future research to be conducted regarding the benefits of social capital and its relation to sustainability. For decades the appropriate indicators for sustainability have been debated extensively so that all can agree on the need to focus on environment, economic, and social. Social capital is a relatively new concept and has yet to become fully

appreciated by all social science disciplines. Little discussion exists of social capital in the sustainable tourism literature, thus there is a need to consider the impact of social capital and develop indicators for measuring it.

Finally, one controversial point requiring further research is concerned with the responsibility of infrastructure improvements. Currently, many companies push local governments to improve roads, airports, and other infrastructure.   This results in the use of tax-payer money and other government expenditures, which may reduce funding to other areas like health and education (http://www.uneptie.org/pc/tourism/sust-tourism/economic.htm, November 25, 2007). As of now there is little consensus over who should pay, however, it is clear that this must be addressed to further the sustainability of tourism.

References

Alberta Tourism Education Council (1993). *Freshwater Angling Guide Certification Standards*, Edmonton.

Allen, L. & Kraus, R. (1987). *Research and Evaluation in Recreation, Parks, and Leisure Studies.* Columbus, Horizons.

Bell, S. & Morse, S. (1999). *Sustainability Indicators: Measuring the Immeasurable?* London, Earthscan Publications Ltd.

Berg, B. L. (2007). *Qualitative Research Methods for the Social Sciences*. Boston: Pearson Education, Inc.

Butler, R. (1998). Sustainable tourism - looking backwards in order to progress? In Michael C. Hall and Alan A. Lew (Eds.), *Sustainable Tourism: A Geographical Perspective (*pp. 25 - 34). New York: Longman Limited.

Carson, Rachel. (1962) *Silent Spring*. Boston: Houghton Mifflin.

Cocklin, C. R. (1989). Methodological Problems in Evaluating Sustainability. *Environmental Conservation* **16**(4): 9.

Cooper, H. (1998). *Synthesizing Research: A Guide for Literature Reviews*. Thousand Oaks: Sage

Ecological Blue Flag Certificate. (1999). *www.fascinationcostarica.com/entry.cfm?nEntrada=4188*. accessed October, 2007.

Ecotourism Australia. (2007). *http://www.ecotourism.org.au/*. accessed October 2007.

Fennell, David A. & Dowling, Ross K. (Eds.). (2003). *Ecotourism: Policy and Planning.* Cambridge, MA: CABI Publishing.

Frome, M. (1997). *Battle for the Wilderness*. Salt Lake City: University of Utah Press.

Gall, M. G., Borg, W. R., & J. P. Gall (1995). *Educational Research: an Introduction*. New York: Longman Publishing Group.

Gall, M. G., Borg, W. R., and J. P. Gall (1998). *Applying Educational Research*. New York: Longman Publishing Group.

Galvan, J. L. (1999). *Writing Literature Reviews*. Los Angeles: Pyrczak Publishing.

Geertz, C. (1973). *The Interpretation of Culture*. New York: Basic Books.

Glaser, B. G. & Strauss, A. L. (1967) *The discovery of grounded theory; strategies for qualitative research.* Chicago: Aldine.

Goeldner, C. R. & Ritchie, B. (1994). *Travel, Tourism, and Hospitality Research: a Handbook for Managers and Researchers.* New York: Wiley.

Goodall, Brian &. Stabler, Mike. (2000). Environmental standards and performance measurement in tourism destination development. In Greg Richards & Derek Hall. (Eds.), *Tourism and Sustainable Community Development.* New York: Routledge.

Hall, Michael C. (1998). Historical antecedents of sustainable development and ecotourism: new labels on old bottles? In Michael C. Hall and Alan A. Lew (Eds.), *Sustainable Tourism: A Geographical Perspective* (pp.13 - 24). New York: Longman Limited**.**

Hall, Michael C. & Lew, Alan A. (Eds.). (1998). Sustainable Tourism: A Geographical Perspective. New York: Addison Wesley Longman Limited.

Harris, R., Griffin, T., and Peter Williams (Eds.). (2002). *Sustainable Tourism: A Global Perspective*. Burlington, MA: Butterworth - Heinemann.

Hart, M. (1999). *Guide to Sustainability Community Indicators.* North Andover: Hart Environmental Data.

Honey, M. (Eds.). (2002). *Ecotourism and Certification: Setting Standards in Practice.* Washington D.C.: Island Press.

Hunter, C. (2002). Sustainable Tourism and the Touristic Ecological Footprint. Environment, Development and Sustainability. **4**(1): 7 - 20.

Hunter, C. & Shaw, J. (2007). The ecological footprint as a key indicator of sustainable tourism. *Tourism Management* **28**: 46 - 57.

IUOTO. 1963: The United Nations Conference on International Travel and Tourism. Geneva: IUOTO

Isac, M.N. & Swift M.J. (1994). On agricultural sustainability and its measurement in small-scale farming in sub-Saharan Africa. Ecological Economics **11**(2): 105 - 126.

Jemby-Rinjah Lodge. (2007). *twinshare.crctourism.com.au/CaseStudies/Cs8.htm.* accessed October, 2007.

Ko, T. G. (2005). Development of a tourism sustainability assessment procedure: a conceptual approach. *Tourism Management* **26**: 15.

Lee-Smith, D. (1997). *Community-based indicators: A guide for field workers carrying out monitoring and assessment at the community level*. Gland: IUCN.

Merriam, S. B. (2001). *Qualitative Research and Case Study Applications in Education*. San Francisco: Jossey-Bass.

Miller, G. & Twining-Ward, L. (2005). *Monitoring for a Sustainable Tourism Transition: The Challenge of Developing and Using Indicators.* Cambridge: CABI Pub.

Milne, S. S. (1998). Tourism and sustainable development: the global - local nexus. In Michael C. Hall and Alan A. Lew (Eds.), *Sustainable Tourism: A Geographical Perspective* (pp. 35 - 48). New York: Longman Limited**.**

Mitchell, G., May, A. & McDonald, A. (1995). PICABUE: a methodological framework for the development of indicators of sustainable development. *International Journal of Sustainable Development* **2**: 19.

Mycoo, M. (2006) Sustainable Tourism Using Regulations, Market Mechanisms and Green Certification: A Case Study of Barbados. *Journal of Sustainable Tourism*. **14**(5): 489 - 511.

Nilsen, P. & Tayler, G. (1997). United States Department of Agriculture, Forest Service.

Niu, Wen-Yuan, Lu, Jonathan J. & Khan, Abdullah A. (1993). *Spatial Systems Approach to Sustainable Development: A conceptual framework.* New York: Springer.

OECD. (2003). "Environmental Indicators: Development, Measurement, and Use." Retrieved May 16, 2007, from www.oecd.org/env.

Oklahoma Tourism and Recreation Department (2001). *Oklahoma Statewide Comprehensive Outdoor Recreation Plan: The Public Recreation Estate*. Oklahoma City: Caneday, L.

Partidǻrio, M. (2003). Business Enterprises for Sustainable Tourism. In *Best: Business Profile* **4**(2). Accessed October 2007, from http://www.sustainabletravel.org/docs/businessProfile_Vilamoura.pdf.

Pepper, D. (1984). *Modern Environmentalism*. London: Croom Helm.

Redclift, M. R. (1987). *Sustainable Development: exploring the contradictions*. New York: Methuen.

Rennings, K & Wiggering, H. (1997). Sustainability Indicators - Geology Meets Economy. *Environmental Geology* **32**(1): 71 - 78.

Schneider, D. M., Godschalk, D.R. and Axler, N. (1978). *The Carrying Capacity Concept as a Planning Tool*. Planning Advisory Service Report Chicago, American Planning Association.

Schumacher, E. F. (1973). *Small is beautiful; economics as if people mattered*. New York: Harper & Row.

Smith, G. L.(1993) *Impact Assessment and Sustainable Resource Management.* New York: Wiley.

Stake, R. E. (1994). Case studies. In N.K. Denzin & Y.S. Lincoln (Eds.). Handbook of Qualitative Research. Thousand Oaks: CA, Sage.

Stake, R. E. (2000). Case studies. In N.K. Denzin & Y.S. Lincoln (Eds.). Handbook of Qualitative Research. Thousand Oaks: CA, Sage.

The International Ecotourism Society. (1991) http://www.ecotourism.org/webmodules/webarticlesnet/templates/eco_template.aspx?a=12&z=25. accessed October 2007.

Twining-Ward, L. & Miller, L. (2005). *Monitoring for Sustainable Tourism Transition: The Challenge of Developing and Using Indicators*. Cambridge: CABI Publishing.

United Nations Environmental Programme. (2002) *Economic Impacts of Tourism.* http://www.uneptie.org/pc/tourism/sust-tourism/economic.htm. accessed November 2007.

United States Department of Agriculture. (1985). *The Limits of Acceptable Change System for Wilderness Planning*. (General technical report INT ; 176) Odgen, Utah: Stankey, George H.

University of California, S. C. (2007). *How to Write a Literature Review.* http://library.ucsc.edu/ref/howto/literaturereview.html. accessed June 2007.

University of North Carolina. (2007). *The Writing Center: Literature Reviews.* http://www.unc.edu/depts/wcweb/handouts/literature_review.html. accessed June 2007.

Vaske J.J., D., M.P, Doctor, R.M. and Petruzzi, J.P. (1994). *Social Carrying Capacity at the Columbia Icefield: Applying the Visitor Impact Management Framework.* Calgary: Canadian Heritage Parks Canada.

Veal, A. J. (2006). *Research Methods for Leisure and Tourism: A Practical Guide*. Essex: Prentice Hall.

Wight, P. (1998). Tools for sustainability analysis in planning and managing tourism and recreation in the destination. In Michael C. Hall and Alan A. Lew (Eds.), *Sustainable Tourism: A Geographical Perspective* (pp. 35 - 48). New York: Longman Limited**.**

World Commission on Economic Development. (1987). *The Brundtland Report*: *Our Common Future*. Oxford and New York, Oxford University Press.

World Tourism Organization. (1999). *Sustainable Development of Tourism: An Annotated Bibliography*. Madrid: World Tourism Organization.

World Tourism Organization (2003). *Sustainable Development of Ecotourism: A Compilation of Good Practices in SMEs.* Madrid: World Tourism Organization.

World Tourism Organization. (2004). E-Bulletin. (*http://www.world-tourism.org/frameset/frame_sustainable.html*, accessed October 2007).

World Tourism Organization. (2005). *Yearbook of Tourism Statistics.* Madrid: World Tourism Organization.

Yin, R. K. (2003). Case Study Research. Thousand Oaks: CA, Sage.

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