

# Sustainable dive tourism in the red sea



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**Abstract**

Research has shown that the marine and coral habitats within the Red Sea are being subjected to levels of damage from the effects of diving activities in the areas that cannot be sustained in the long term. With this area of tourism set to increase dramatically within the next decade, there is an urgent need for the industry stakeholders and environment organisations to work together to develop and implement sustainable diving tourism policies that will allow the marine eco-system to recover, or at least halt the current pace of degradation.

The research findings from this study show that there is a general willingness on the part of the diving consumer to accept the need for such protection policies. At present, this is not a position that is shared by all of the industry shareholders. This study highlights the fact that there is an urgent need for dive tourism stakeholders, irrespective of this individual goal, to work together in partnership in order to develop systems and policies that will preserve and protect the fascinating marine and coral life that exists beneath the Red Sea for the enjoyment of future generations.

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# Chapter 1 – Introduction

## 1. 1 Introduction

As most academics acknowledge, including Brown (2000), Ryan and Page (2000) and Mowforth and Munt (2003), since the liberalisation of transport in the middle part of the last century, tourism has become the world's fastest growing and largest industry. This is evidenced by the fact that over the past two and a half decades international tourist arrivals have grown by nearly threefold (Weaver 2005, p. 2) and by 2020 this figure is expected to exceed 1.6 billion. As El-Adli and Bashandy (2003) rightly observe, globalisation and technological advances, which allowed international travel to become accessible to the masses, has been partially responsible for fuelling this growth pattern.

Initially, this expansion of tourism took the form of mass excursions, such as package tours with travellers flocking to the areas of beach, sea and sun, usually for a two week summer vacation. However, more recently an increasing number of tourists have become more discerning. Encouraged by media attention on exotic locations, the mass tourist sector has given way to the traveller seeking a new and more fulfilling experience, wanting to explore natural habitats that are foreign to their domestic experiences. As a result, due to the uniqueness of their climate and geographical position, the world's developing countries have become the focus for those travellers who want to experience firsthand the wonders of nature and its exotic species of fauna and wildlife (Mowforth and Munt (2003, p. 1).

One area of nature that has particularly attracted the attention of this new breed of tourist is the growing interest in experiencing the beauty of marine life in its natural setting. This has led to an explosion of diving tourism throughout many areas of the world, particularly the marine reef regions off the coasts of countries like Australia, the Caribbean and the Middle East, which boast some of the worlds most unusual and exotic species of underwater plants, fishes and marine life. For many thousands of people, diving in exotic locations throughout the world is a tourism experience that cannot be equalled by any other water sport or leisure activity, hence its increasing popularity.

Perhaps understandably, considering the recent increase in concerns about the damage that human activity is causing to the planet and its natural environment, it was not surprising that the explosion of marine tourism attracted the attention of environmentalists, concerned about whether the natural environment could survive the impact of this growth. This has led to a plethora of research studies during the past two decades seeking to assess the level of damage marine tourism is causing to the inhabitants of these natural environments. The consensus is that the present growth rate poses a real threat to marine life and that measures need to be adopted within the tourist industry that will reduce and reverse these risks (Weaver 2005). In other words diving tourism must move to adopt and implement a more sustainable policy.

In defining what is meant by sustainable tourism, McKercher (quoted in Ryan and Page 2000, p. 157) provided the following explanation: –

*“ Sustainable tourism is defined as when tourism is sustainable, the natural and cultural resources and the environmental, social and economic well-being of an area are maintained forever .”*

However, with the international tourism industry having effectively been given a “ *free reign to develop throughout the world* ” (El-Adli and Bashandy 2003, p. 1), the difficulties being faced is how to resolve the conflicting demands of all the stakeholders within the marine destinations in order to reach agreement upon policies that will address the conflicts of over-use and environmental damage. As some academics remark, there are those who argue that the term sustainable cannot be applied to an industry that is seeing almost unparalleled growth and which, by its very nature, demands environmental damage as infrastructure is created to house these tourists (Wahab and Pigrim 1997, p. 2). Others believe that it is imperative that new sustainable tourism products are designed to limit the environment damage being caused to marine destinations (Buhalis and Costa 2006, p. 4).

However, as these authors admit (ibid, p. 230), the problem is how to resolve the dichotomy of creating products that meet tourists goals and ensure sustainable growth.

It is the issue of balancing the needs of the marine environment with those of the tourism industry, particularly as it relates to diving, that has prompted this research study. To provide a focus for this research it is intended to use the Red Sea area of the Middle East as a case study. The reason for this choice can be found in Sarha et al’s (2004, p. 1) overview of the area, which can be summarised as follows: –

1. The Red Sea is one of the most important repositories
2. It has attracted a significant increase in tourist activity, particularly diving
3. Tourism accounts for 10% of Egypt's GDP and 4% of employment

## **1. 2 Aims and Objectives**

With the concentration of this research being related to the Red Sea, the aim of the study is to identify the level of damage being caused to the marine environment within this destination and to evaluate the current level of sustainable measure that are being introduced to address these issues. From this evaluation the research will provide an assessment of the effectiveness of sustainable diving tourism in the region.

To assist in focusing upon and achieving the aims outlined above, the following objectives have been set for the research being conducted: –

- Marine environment

To provide an overview of the marine environment, which will include an examination of the types and causes of the damage that is being done to this environment and the programmes designed to address this problem.

- Diving Tourism

To provide a greater understanding of the attractions and component factors related to diving tourism, specifically its relationship to exotic locations. This will include an overview of the current standards that are applicable within this sector of the tourism industry

- Sustainable tourism for the diving industry

To assess and evaluate the current sustainable programmes that are being recommended and introduced into diving tourism. The assessment will consider measures being considered by all stakeholders, including the diving industry, tour operators, destination managers and the international community.

In all of the above objectives particularly attention will be paid to their relationship to the Red Sea marine environment in the Middle East.

### **1.3 Overview**

In chapter two a critical literature is undertaken, which is intended to focus upon the main issues that arise from the aims and objectives of the research question, namely the environmental impact of marine and coastal tourism. This review will also focus upon the contribution that diving has upon this situation and an examination of the diving tourism in the Red Sea area together with an overview of some of the actions that are being taken to address this problem. Chapter three provides an overview of the methodology used for this research, which includes an explanation of the reasons for this choice and the process by which secondary and primary data was collected, analysed and evaluated. Following on from the methodology outline, the findings from the analysis of both the secondary and primary researches are presented in chapter four and these are discussed in detail in the following chapter (5). The research is then brought to a conclusion in chapter six, where appropriate observations and recommendations are made. Attached to the main body of this research is a bibliography of the resources relied upon for the study together with appendices containing



other information that is considered of value. This includes copies of the primary questionnaires and interview transcripts.

## **Chapter 2 – Literature Review**

### **2.1 Introduction**

As previously mentioned, sustaining the natural habit of the marine environment in the face of its increasing attractiveness to tourists, particularly divers, has become a contentious issue. There are many stakeholders to consider when looking at the process of sustainable tourism and, achieving a balance between financial reliance and environmental protection, especially if the resort has no prior knowledge in dealing with these issues, has proved to be fraught with difficulty (Weaver 2005, p. 26 and 61).

This critical literature review is intended to consider the currently published arguments and discussions that address these various issues and provide a deeper understanding of the problems that need to be resolved with all the wide variety of stakeholders.

### **2.2 Marine tourism environmental issue**

The marine environment forms an important part of the world's eco-systems. It not only provides a source of food and other natural resources for some of the world's population, but also is in itself a living environment that is home to wide range of underwater plants and living creatures. Each of these relies upon the other for their continued life (Cote and Reynolds 2006, Carleton Ray and McCormick-Ray 2004 and Roberts 2007). Furthermore, it also influences the CO<sub>2</sub> levels within the atmosphere. The bio-diversity that exists beneath the oceans can therefore be seen to be important to the <https://assignbuster.com/sustainable-dive-tourism-in-the-red-sea/>

natural balance of the planet and any issue or activity that upsets this balance is likely to have serious consequences to the long-term health of the world and its population.

Of particular importance to this research is the area of the marine environment that includes the coral reef eco-system, as this is the area that attracts the highest level of tourist involvement, attracting millions of visitors each year. As can be seen in from tableTable 2included in appendix 1, there are a number of coral reefs world wide, covering a total area of just under 285, 000 km<sup>2</sup>.

The eco-system of the coral reef is unique in the diverse level of services these regions perform within the biodiversity systems and the range of products it contains (see table 1).

There have been countless studies over recent years that have recorded the levels of damage that can be caused to coral reef and the manner in which this affects the ability of the reefs to sustain their eco-systems in the longer term. The studies of Jameson et al (2007), Cesar (2003), and Agarwal and Shaw (2007) are amongst recent academics who warn that ignoring these issues will have serious adverse consequences. Although causes of damage have been highlighted to include such factors as increases in carbon emissions, the consequence of air and sea travel and marine farming and fishing, diving tourism has also been shown to have a direct impact on the reef in this respect. Consequently it has generated its own expanding area of research attention (Ryan and Page 2000, p. 275). In general it is considered

that damage from diving tourism manifests itself in the activities of several industry stakeholders: –

### 1. The diving fraternity

Numerous academic studies have been conducted to assess the level of damage caused to the coral reef by divers (Cesar 2003, Barker and Roberts 2004 amongst others). Most have concluded that inexperience within this marine environment is one of the root causes of this damage (Barker and Roberts 2004, p. 482).

Hawkins and Roberts (quoted in Cesar 2003), attributed 95% of all diver coral damage being the result of misuse of fins and hands, for example by kicking or brushing against the coral or using hands to grab onto coral and propel the diver through the water. In addition, lack of care with equipment is another contributory factor. Lack of buoyancy training or knowledge will often result in a situation where a diver's scuba equipment will knock or fall against the coral, causing breakages. These results are confirmed by other studies carried out by Barker and Roberts (2004), who recorded 261 incidences of contact being made with the coral whilst observing 353 active divers, in other words incidences were occurring in approach 74% of dives. However, they also found that when accompanied by guides, this level of accident fell by around 80% (Barker and Roberts 2004, pp. 485 and 488). This proved to the authors that guided dives were an important element of marine protection policies.

### 2. The destination resort

Increased levels of diving tourism have had an impact upon the local infrastructure of the resorts. To meet the demands of these tourists, in some cases sand is being taken from the beaches in order to fulfil construction requirements for projects such as hotels (Gladstone 2000, p. 1023). In other words, through these and other actions, “ *resort hotels and other service providers and retailers are damaging the reefs to provide their businesses with better opportunities* ” (Mowforth and Munt 2003, 282).

Furthermore, the continual expansion of tourism resorts in coastal areas is creating more “ *sewage and other rubbish than local infrastructures can handle* ” (Brown 2000, p. 48), which means that some of this effluence is finding its way into the seas surrounding the coral reefs. The level of waste that is being produced increases the incidence of damage caused to the fragile eco-system of the coral reefs.

### 3. Tour operators

Tour operators, whether these are international tour companies or local tour operators such as diving clubs are also criticised by the environment community, mainly because of the damage their methods of operations cause to marine sites. This criticism relates generally to two main issues. The first is the lack of knowledge and training that they provide to the diving tourist and indeed the lack of supervision (Agarwal and Shaw 2007).

Research like that undertaken by Gladstone (2000) and Wilkinson (2006) indicates that when divers are being instructed and supervised in groups, the level of damage reduces significantly.

The other criticism levelled at tour operators is aimed at those who use boats as platforms from which to commence diving excursions. As Weaver (2005, p. 83) and Prior et al (1995) point out, the dropping and dragging of anchors can and does damage corals. This area of activity has increased recently because beaches have become more exclusive in some exotic areas, Restricted from beach access, independent operators have had no choice but to move their operations to sea (Hess and El-bakry2007).

#### 4. National and local authorities

The other stakeholder whose actions, or inactions, have an impact upon the marine coral reef environment are the local and national governments and authorities. The problem in this respect is often related to the condition of the national economy and that country's position in terms of economic growth compared with other nations (Cote and Reynolds 2006). Many coral reefs are situated close to developing countries. Many governments in developing countries, either due to lack of resources and the need for the revenue produced from marine tourism, lack the “ *political will*” or inclination to take steps to protect the marine environment, irrespective of the consequences (Wilkinson 2006 and Roberts 2007).

As can be seen, the actions of all of the above contributing causes of damage are leading to the “ *depletion of coral reefs at sea* ” (Brown 2000, p. 69). It is against the difficulties outlined above that marine environmentalists have needed to develop marine protection deemed acceptable by all industry stakeholders.

## **2. 3 Marine environment protection**

As Cote and Reynolds (2006), Carlton-Ray and McCormick-Ray (2004) and Orams (1999) research reveals, there have been a number of proposals put forward by various interested parties that are designed to reduce the impact of diving tourism on the marine coral reef environment. Some of these measures, including more supervision, charging fees to allow tourists to take part in dives in specific areas and closer control of resort planning regulations had been directly aimed at improving other stakeholders' behaviour.

Some of these, including floating and submerged walkways (El-Adli and Bashandy 2003), are designed to improve environment use and enjoyment. However, other protection measures have been more restrictive. For example, a method of zoning is being implemented in a number of marine areas, which are seen as a means of prohibiting diving in areas that are considered particularly sensitive. Similarly, the use of mooring buoys for boats, whilst reducing the damage caused by anchors, can also be used in conjunction with zoning to direct divers away from certain marine areas (El-Adli and Bashandy 2003).

## **2. 4 Sustainable diving tourism**

Tourist destinations and tour operators have all be quick to exploit the expansion of recreational diving activities in areas of marine beauty (Wahab and Pigrim 1995, p. 284) and that includes enjoying their hobby in the more exotic areas of the world that include the coral reefs eco-systems (Mowforth and Munt 2003, 147). Most observers and academics and observers are of the opinion that if they wish to continue with this pleasure activity, divers

and their organisations need to change their practices to a more sustainable form (Mowforth and Munt 2003, p. 4). As organisations such as the Coral Reef Alliance (2008) advice suggests, many of these conservation measures are based largely on common sense.

For example, perhaps the most basic aspect of advice is that which promotes the learning of skills such as buoyancy and avoiding physical contact with the reef (Kenally 2006). These skills will eliminate damage being caused either by physical or equipment contact. Another aspect of good diving is to stay clear of the sea bed and learn body control that avoids accidental contact (Coral Reef Alliance (2008).

In addition to this advice for diving activities whilst in the water, the Coral Reef Alliance (2008), also provides the following recommendations for divers when they are shore-side, which consists of the following: –

- *Support coral parks and other conservation projects by:*
  - *Paying user fees in recognized coral parks and conservation areas that are actively supporting coral reef conservation.*
  - *Encouraging and supporting the use of dive moorings.*
  - *Participating in cleanups*
  - *Volunteering your skills*
- *Donating used equipment such as cameras, dive gear or reef ID books.*
- *Avoid purchasing souvenirs made from coral, turtles or other marine life -often this is illegal, and it's never environmentally wise.*
- *Speak up; make sure your dive buddies understand these simple but important conservation practices.*

*Source: Coral Reef Alliance (2008)*

## **2. 5The Red Sea and diving tourism**

As stated previously, the increase in diving tourism is rising exponentially and there is little sign of this rate decreasing in the near future (Gladstone 2000, p. 1016). Although this endangers coral reefs throughout the world, as Prior et al (2007) and Harriott (2002), suggest, one of the most vulnerable sites has to be the Red Sea (see figure 2). As Hess (2007), also explains, because of its location in relation to Europe and other world nations, the coral reefs in the Red Sea act like a magnet in terms of attracting diving tourists, which places an additional burden upon the marine environment.

Although, at least up to 2004, the condition and status of the “ *coral reefs bordering the Red Sea and Gulf of Aden is generally good, with live hard coral cover averaging 20-50%* ” (Hassan et al 2002), research carried out since that comment was made indicates that there potential issues in terms of diving damage to be addressed in the area.

Egypt is planning to continue the expansion of its tourism industry, for which it has set a target of receiving “ *16 million tourists by 2017* ” (Shalan 2005). A segment of this increased tourist population will be attracted by diving activities, continuing a trend that has been evidenced since the turn of the century (see table 2).

Already, with in excess of 250, 000 dives per annum along part of the Red Sea coast, other research has revealed disturbing evidence of coral reef damage from diving activities. For example, in a survey conducted by Zakai



and Chadwick-Furman (2002, p. 179), significant evidence of diver damage was reported. This survey reported the following conclusions: –

- *Around 10 incidents of coral damage per dive, ranging from sediment to contact damage.*
- *Damage levels were related directly to the frequency of diving activities, and were not affected by the geographical design of the area.*

Similarly, contrary to Hassan et al's (2002) research, a similarly study carried out by Cesar (2003, p. 7), refuted claims that the coral reef remained unaffected, reporting in this case that “ *40% of dive sites have less than 30% coral cover, with one third having significant levels of broken and damaged corals.*”

The consensus of opinion amongst academics who have studied this specific location, which includes Gladstone (2000), Cesar (2003), Zakir and Chadwick-Furman (2002) and Shaalan (2005), is that without the introduction of serious levels of marine protection and diving control policies, the current levels of damage to the marine eco-system in the area will be exacerbated. This might lead to irreparable damage to this environment.

As Shaalan (2005) also comment, all of the stakeholders, including the government, tour operators and resort managers and the divers themselves, have a role to play in introducing a range of policies and practices to ensure a level of sustainable tourism will be achieved and halt the current degradation to the coral environment that is taking place.

These concerns are aptly summarised by Jameson et al (2007, p. 309) who state that “ *From a historical perspective, at the Small Giftun site from 1987 to 1996, percentage hard coral cover decreased by 43% and algal cover increased over fourfold. If the diving tourism industry is to sustain itself in the Egyptian Red Sea, every management effort must be made to minimise controllable sources of stress on the coral reef system .*”

## **2. 6 Summary**

From the analysis and examination of the literature identified within this chapter, it is apparent that the marine environment is being subjected to environmental damage. Furthermore, whilst there might be some justification for those within the diving community to say that they and their activities are not solely responsible for this damage, the majority of research studied indicates that there are sufficient levels of damage being caused by this sector of the tourism industry to warrant the need for protective action.

In addition, current decisions being made regarding the future of tourism in Egypt, which suggests that 55% of the future growth is anticipated to occur within coastal regions along the Red Sea (Hawkins and Roberts 1994), confirm that the urgency of need to implement sustainable practices and policies to protect the marine and coral reef environment in the region. Furthermore, it suggests that the timescale of this introduction is limited.

The results of the primary research conducted for this study, which also concentrates upon the Red Sea area (see chapters 4 and 5), will provide an indication of the levels of responsibility felt by stakeholders in the diving sector and the level of their commitment to change.

## **Chapter 3 – Methodology**

### **3.1 Introduction**

The research question chosen for this research, namely to study the impact of diving upon the marine and coral reef environment was motivated by two main situations. Firstly, it is intended to examine this issue in an area that has indicated a preparedness to increase the current levels of diving tourism within the next decade by significant numbers. Secondly, the complexities of stakeholder demands within the region suggest that the creation of marine environmental protection policies that will satisfy the needs and of all those involved. Bearing in mind these limitations, the aim of the research therefore is to evaluate the effectiveness and efficiency of current and future sustainable tourism policies in the region, specifically those related to the diving sector.

There has been a considerable amount of research conducted into the environmental damage being caused to the marine environment and ecosystems of the coral reefs in the Red Sea. However, despite these advances, it is the author's view that, although the plans and policies for sustainability suggested by various environmental academics are to be applauded, their successful implementation is dependent upon the views of others. Unless agreement is reached between all the stakeholders to take action any new initiative is doomed to failure. Therefore, a major part of the focus of this research project is to assess how and if the views of commercial stakeholders and diving service users, in other words the divers themselves, coincide with those of the policy makers.

### **3. 2 Choice of research method**

Any study relating to issues of a commercial or economic nature can be conducted through the choice of a number of methods. The options available consists of research study using secondary data collection processes, which can combine a case study investigation with pre-existing literature of sufficient expertise to provide an extensive overview of the subject matter. Alternatively, the research can choose the more focused route of conducting questionnaire and interviews with representatives from the sector being studied. In the case of this specific research into diving in the Red Sea, it was decided that, in isolation, the independent use of one of the above would not provide sufficient depth the research project embarked upon. It was therefore the author's decision to use a combination of both methods as this was deemed to enable the achievement of a more valued resolution to the research question (Denscombe 1998).

In reaching this decision, the author also considered the limitations that can apply to these research methods. For example, one area that is often of concern with the collection of primary data is the achievement of an appropriate sampling that would serve as a sufficient representation for the industry as a whole. The issue to be aware of in this case is to ensure that, whilst the primary process can result in the revelation of data and information that might be difficult to obtain through other methods, its analysis should be kept free from personal or organisational bias. One method of ensuring the lack of bias, which contributed to the author's choice of research method, is to use the secondary data collected for the process of cross-referencing and comparison with primary findings. This ensures that

the research retains a balanced and accurate approach to the issues and results being studied.

### **3.3 The questionnaires and interviews**

In view of the issue of diving and marine conservation being studied for this project, the process of primary data collection in this case