

Tourism and the Environment: Issues of Concern and Sustainability of Southern Part of the Caspian Sea Coastal Areas

Farzaneh Mola (Corresponding author)

School of Housing, Building, Planning, University Sains Malaysia

PO box 11800, Penang, Malaysia

E-mail: Farzaneh_mola@yahoo.com

Fatemeh Shafaei

School of Housing, Building, Planning, University Sains Malaysia

PO box 11800, Penang, Malaysia

E-mail: Shabnam.shafaei@gmail.com

Badaruddin Mohamed

School of Housing, Building, Planning, University Sains Malaysia

PO box 11800, Penang, Malaysia

E-mail: bada@usm.my

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Abstract

Caspian Sea coastlines in Iran have been opened to tourists for 'sun-sea-sand' holiday purpose and have created dynamic ecological sources for many economic activities in the region. However, these coastal areas have been exposed to critical situation of losing their attractiveness due to lack of balance between tourism activities and natural environment operations. Development of sustainable tourism can be a suitable way to solve the problem. Accordingly, having public awareness about existing unfavorable environmental consequences of tourism activities in the region is the first step toward sustainability in the area. As such, the need for further contribution to and reflection of adverse environmental impacts which have been partially derived from tourism activities seems to be considered. Consequently, this paper explores negative environmental impacts of tourism in Caspian Sea Coasts in Iran. The study, subsequently, evaluates the existed regulations and policies regarding the issues in southern part of Caspian Sea coastal areas.

Keywords: Sustainability, Coastal tourism, Environment, Negative environmental impacts, Caspian sea

1. Introduction

Coastal tourism - a common type of nature-based tourism - is considered as the fastest growing industry in the world. This is mostly due to the fact that 20% of the earth's surface contains coastlines and more than 70% of the world's megacities (greater than 50 percent of the world population) are located in coastal areas which benefited from the coastal zones (Ocean Info Pack, 2009). In this regard, offering numerous unique resources which are a mixture of land and sea activities, make the areas more attractive to travelers and this leads to more development in terms of tourism capacities and other supportive infrastructure. Moreover, it has been noted that the growth of tourism in coastal areas is considered as a valuable source of income and employment for nations. It is estimated that coastal tourism contributes to 25% of total export earnings in the Pacific and 35% in the Caribbean islands (Ocean Info Pack, 2009).

Besides, nations who promoted tourism in their communities understand that coastal areas are such fragile and vulnerable environments, thus, the needs for protecting coastal zones has been increased in order to preserve their natural beauty and consequently to ensure them about long-term viability and profitability as a tourism destination. However, uncontrolled and unplanned tourism development and human activities make coastal

environments imbalance and lead to several negative environmental consequences. The statistics of Ocean Info Pack (2009) shows that 1/3 of coastal regions run at the high risk of degradation, especially from tourism infrastructure development and pollution. The most threatened regions are Europe with 86% and Asia with 69% of their coastal ecosystems at risk.

As stated by Wong (1993), tourism industry is highly dependent on natural environments. The unique nature of coastal areas leads to various type of tourism expansion in the globe. Indeed, creating a balance between various activities and the coastal environment seems to be a crucial scheme which will be achieved just through establishing management practices which are compatible with sustainable development objectives (Ritchie & Crouch, 2000; Mason, 2003). Certainly, the act of sustainable development is impossible without environmental protection and sustainable utilization of natural resources at micro and macro planning levels (Simon et al., 2004). Besides, considering sustainable development in the process of coastal tourism planning and management is extremely fundamental because long-term survival of tourism industry and its various stakeholders are highly rely on sustainability of coastal areas and built environment (McCool, 1996).

1.1 Sustainability Issues in the Southern Coasts of Caspian Sea

Development of tourism activities along Caspian Sea coastal areas in north part of Iran is not a new phenomenon. Over three decades, it has been opened to both international and especially domestic tourists for 'sun-sea-sand' holiday purpose. Accordingly, a dramatic increase in demand for various types of holiday lodging including hotels, blocks of apartments, large houses complexes of villas, and different sorts of tourism infrastructure. However, the influx of tourists (mainly domestic tourists) to the coastal zones, especially in the form of mass tourism emerge concerns about current and potential environmental changes due to tourism expansion. In the other word, coastal tourism development is considered as a leading factor in the transformation of the coastal environments and provision of frequent examples of negative environmental impacts to Caspian Sea coastline in north of Iran (Karimi, 2008; Gharkhalou et al., 2009; Daryabari, 2008). The researchers believe that the effective environmental monitoring and management has been largely neglected in the region. Inappropriate utilization of these valuable resources; lack of environmental standards in the development and construction activities; and lack of balance between the tourism activities and natural environment has exposed these areas at the risk of destruction and losing their attractiveness. In other word, one of the main problems facing to this coastline is associated with negative environmental impacts of tourism development and related coastal activities which cause to make sustainable development questionable in northern part of Iran.

Accordingly, it is clear that there is a need for further critical contribution to and reflection of adverse environmental impacts of human activities in the region and tourism development consequences in Caspian Sea coastline in north of Iran. Contributing to study about the negative environmental impacts of tourism and human activities locally and regionally, evaluate coastal tourism in Caspian Sea region in northern Iran in relation to sustainable development. Sustainable development is a significant concept, and it is also becoming a key aspect of discourses on future of society, environment and economies in the region.

1.2 Objectives of the Study

This study, therefore, intends to concentrate attention on sustainable tourism development in the case of Caspian Sea coastlines in north of Iran. The main objective is to investigate adverse environmental impacts of tourism development in Caspian Sea coastal areas in the southern zone. Identifying the negative impacts of coastal tourism has an effective role in balancing between economic growth and environmental preservation and also moving toward sustainable development of the region. Thus, in order to reach the aim of this study, the present status of tourism development and growth of tourism in the region is reviewed and then negative environmental consequences of tourism are outlined. Moreover, existed policy instruments and planning techniques used to reduce the effects of adverse effects as well as their effectiveness are evaluated. Finally, a commentary on how the implementation of policies in regard to coastal environment preservation that are affecting tourism and sustainability in the region are provided as well as strategies for eliminating or reducing these impacts.

2. Background

Tourism industry is highly relied on a healthy and quality environment (Honey & Krantz, 2007). Since travelers by nature search for appealing places in order to spend their leisure time, natural resources are subjected to somehow change for further tourism development. Similarly, coastal areas as natural resources and precious landscape have high potential to be introduced as a tourism destination and to be exposed to changes. This is because there is a notable demand by tourists who search for warm weather, sunshine, pristine nature, clear air, and clean water (Honey & Krantz, 2007). In general, Coastal areas consist of beaches, mangroves, salt marshes, mud flats and rock pools that attract many people who engage in a variety of activities ranging from the typical

“beach holiday” through to more natural history centered activities such as searching rock pools and bird watching (Newsome et al., 2006).

Coastal zones are the most fragile and sensitive natural districts on the earth. Particular concern has been similarly displayed by several sorts of tourism activities in coastal zones and neighboring to the body of water (Weaver & Oppermann, 2000). The scholars argued tourism development and construction of tourism facilities and infrastructures regularly happens as close as to water resources and this exactly copes with the market demand. However, if the related development is not well-managed, there can be extremely adverse impacts on and consequently often severe threat to the most vulnerable of the earth’s natural environment (French, 1997; Honey & Krantz, 2007; Viles & Spencer, 1995).

Coastal tourism has subjected to both positive and negative environmental impacts; however in most of current literatures in coastal tourism impacts have been related as being negative (Newsome et al., 2006; Sawkar et al., 1998; Holden, 2000). In existed literatures, a wide range of negative environmental impacts of tourism development have been pointed out by scholars including: loss of mangroves, reduced fish catch and species, erosion, accretion or siltation, loss of sand dunes, endangered species, tidal ingress, sewage generation, garbage production, traffic congestion, different range of pollutions (Sawkar et al., 1998; Lea, 1988; Somerville, 1994; Viles & Spencer, 1995; Wells & Price, 1992; Honey & Krantz, 2007).

2.1 Coastal Tourism Impacts

In a general perspective, a number of researchers have attempted to categorize the environmental impacts of tourism. As such, early strives was done by Organization for Economic Cooperation and Development (OECD, 1980) that leads to formulate a model of ‘environmental impact sequence’ to the coastal zones associated with tourism development. The model suggested four phases including: (1) stressor activities, that is related to the initial acts of adverse environmental impacts such as permanent environmental restructuring, generation of waste residuals, tourists activities, and induced and indirect activities, (2) environmental stresses, that is concerns with the deliberate activities made some changes, (3) environmental responses, that is associated with the ability of environment to respond to those changes ranging from long-term or short-term, and direct or indirect, e.g. reduce native biodiversity, soil erosion, and mass wastage, and finally, (4) human responses, that is linked to how various stakeholders and participants react to the environmental changes (OECD, 1980). Later on, a researcher namely Saenger (1990) divided negative environmental impacts of tourism development into two categories including: tourist facilities development (e.g resorts, hotels, infrastructure) and tourists activities (such as fishing, trampling). Saenger (1990) believed that the consequences of tourism facilities development should be largely addressed in the planning stages of a project, whilst the effects of tourists’ activities can be controlled by the day-to-day management of the tourists’ activities.

More recently, Holden (2000) discusses about a broad range of negative environmental impacts of tourism development, which can be categorized into three major parts including: resource usage, human behavior, and pollution. (1) In the ‘resource usage’ section it can be explained that the development of tourism requires physical resources to facilitate its expansion. Therefore, tourism competes with other forms of development and human activity for natural resources, especially land and water. The usage of natural resources subsequently leads to the transformation of ecological habitats and loss of flora and fauna. (2) As Holden claims, ‘human behavior’ towards the environment is another environmental impact of coastal tourism. Tourists and local people are integral parts of tourism industry. The behavior of both groups will be highly influential in determining the range of tourism’s negative impacts on environment. The adverse impacts happen when local people are stimulated by the revenue to be gained from tourism while tourists may behave inappropriately. (3) Finally, a range of different ‘pollution’ can result from tourism in terms of water, noise, air and aesthetic pollutions. These can have impact on different special scales from local to global. Holden argues that pollutions are often associated with the level of tourism development and the degree of planning of implementation and environmental management controls (Holden, 2000).

2.2 Sustainability and the Environment

Sustainable development is a concept that ‘represents a compromise’ (Overton & Scheyvens, 1999). The concept adopts by environmentalists to provide a proper response to environmental concerns and vital needs to preserve the resources and subsequently minimize the negative environmental impacts to the areas. In this regard, some scholars have recently emphasized on sustainability concept as an essential instrument in reducing the negative effects of tourism and providing environmental quality for visitors (Ritchie & Crouch, 2000; Simon et al., 2004). Sustainable development means a development which is coordinated and consistent with the nature in such a way that meets current needs, without compromising the ability of future generations to meet their needs (Ahn et

al., 2002). Also, sustainable development has traditionally been defined as development which involves the use of renewable natural resources in such a way that not to degrade them (WCED, 1987). As a result, this type of development is not only preserving environmental quality for long-time, but also cause to increase productivity in an area (Elliott, 1994). In other word, in a sustainable development, all environmental constraints should be considered in such a way that limits growth and thereby identify alternative ways to represent the growing attention on training aspect of “sustainable development” in a destination.

3. Methodology

In order to achieve the objective of current study, a qualitative case study is set to identify and describe the negative environmental impacts of tourism development in Caspian Sea region in the southern part. Qualitative research is an appropriate method when researchers are trying to explore the evaluative and interpretive facts and data and also it is suitable when studying phenomena is not highly developed and is still unknown to others (Hair et al., 2003). Moreover, a case study method has been adopted for this research to identify the existing adverse environmental consequences of tourism expansion which are counted as a barrier for success of sustainable tourism development in Caspian Sea Coasts of Iran. Ying (2003) believes that a case study approach is practical when knowledge and facts stem from direct observation and secondary data with related people. Besides, current research is mainly on the basis of secondary data and the researchers' direct observations. The major sources of secondary data for this study were journal articles, printed documents, online news, and blogs of researchers.

4. Case Study

4.1 Caspian Sea Region and the Natural Environment

Caspian Sea with an area of about 6 thousand and 805 square kilometres is considered as the world largest enclosed body of water. It also encompasses 44% of the whole surrounded water in the ground (Iran Gazette, 2010). With fluctuated surface of more than 370,000 square kilometres, it has also more breadth in compare to the great American lakes or Great Lake Victoria in east Africa (ESA, 2010). The Caspian Sea is surrounded by five countries, including: Republic of Azerbaijan, Islamic Republic of Iran, Republic of Kazakhstan, Russian Federation, and Turkmenistan surround. Figure 1 represents Caspian Sea region and five neighboring countries and Table 1 contains some general information about these five countries.

The enclosed nature of Caspian Sea made it as a habitat to some unique animals and plants. The Sea is a home of huge amount of sturgeon with commercial value whose eggs are used to produce black caviar. It is estimated 80% of the world's sturgeon stock is provided through Caspian Sea at its peak (Caspian Sea Environment Programme, 2011). Also, the sea is rich in marine fishes such as tuna fish, Caspian white fish, Caspian salmon and zebra mussel. A few seal species and birds such as Caspian gull and Caspian tern are the special habitats of this Sea. However, some of them are endangered species (Iran-Daily, 2010). Also, possessing rich resources of gas and oil made the strict more politically and geographically important.

Up to now, Iran possesses as little as 11 percent of the whole Caspian Sea resources, and this is when Iranian officials persist to upgrade it to 20 percent (Middle East News, 2010). According to the represented statistics in Table 1, Iran covers 1,000 kilometers of total Caspian Sea coastal area, and approximately 38.8 million population densities per square kilometer. Caspian Sea coastal zones in northern Iran are connected with three provinces in Iran namely the province of Gilan in west, province of Mazandaran in the middle, and province of Golestan in East part of the Sea. The provinces encompass a total area of about 465.61 sq km which is estimated about 2.83 percent of total areas in Iran (Figure 2).

4.2 Tourism in the Caspian Sea Coastlines in Iran

Tourism industry in north part of Iran along Caspian Sea Coastline is not a new phenomenon. It has far back to few decades before Islamic Revolution of Iran when attention was paid to the areas by individuals for spending their holidays due to the fabulous natural attractions and diversity of landscape, mild climate and numerous cultural resources. Because of the proximity to Tehran, the capital of Iran, most of wealthy people were gradually tended to purchase properties such as large-scale villas near the Sea to stay in for their holidays far from the urban life. However, in recent decade, general public from all over the country has motivated to possess properties in these areas. In accordance, constructions of more infrastructure, small-scale and low-cost villas, and improvement of transportation systems have brought tourism boom for the Caspian Sea coastlines in north of Iran and have attracted tourists from all over the country. Hence, it is obvious that domestic tourists formed the majority of travelers to these coastal zones where most of them owned individual properties (Tourism Organization of Iran, 2010). Caspian Sea coastal areas in north part of Iran has recently created the best platform to attract tourists and has provided tourism boom and is considered as one of the important tourist spots in Iran,

especially in holidays. Rich ecosystem biodiversity, unique wetlands, rivers, vast plains and pastures, the beautiful coastline and the river mouths, miles of sandy beaches, and historic landscapes can be pleasant in a potential tourist destination.

It is estimated that the region has received approximately 11 million international and mainly domestic tourists in the Iranian New Year 2009, which is one of the peak seasons for tourism in Iran (Shomal News, 2010). The large amount of tourists in this region with the lowest cost of advertising clearly represents the capabilities of the region that provides a valuable resource of GDP and employment for the local residents in the region (Shomal News, 2010). Thus, there is no surprise that the number of tourist arrival to this region can be enhanced through more investment in developing tourism facilities and infrastructures (Tourism News, 2010). Proximity to the metropolis of Tehran province is one of the reasons for the increase in domestic travel and spending leisure time in this region. Obviously, the needs for full amount of investment in service sectors, facilities and equipment in tourism industry in these areas seem to be vital (Tourism Organization of Iran, 2010). Accordingly, the government of Iran has provided incentives for more tourism development in Caspian Sea coastal zones.

It has been reported that the origin of tourism capital and investment in tourism properties and infrastructures is combination of public and private sources, include: the government of Iran with 64 percent share, and private section with 36 percent of the whole construction along the shore (Fars News Agency, 2007).

4.3 Environmental Impacts of Tourism Development in the Region

Recently, environmental issues have been the core of planning and development in Coastal areas in Iran, while many projects have been done without taking into account their environmental consequences. Poor planning and managing of tourism projects in north part of Iran, will lead to undesirable effects on the areas. The adverse impacts have been intensified with the dramatic increase and interest in coastal tourism in Caspian Sea coastline in north part of Iran since past three decades accompanied with the emphasis of the officials and the government for more tourism development in the region over the past years. Since the trend of tourist arrival in the region is ascending, it is necessary to predict and manage tourism activities related disturbance in this area in order to have a sustainable tourism development in the region.

According to a study done by Caspian Environment Programme (CEP), several existing environmental issues and impacts were pointed out which are partially due to tourism development in the region. The issues are including: degradation of coastal landscapes and damages to coastal habitats; threats to biodiversity; and overall decline in environmental quality. The adverse environmental impacts cause the natural beauty of coastlines exposed at risk and this lead to loss of tourism market domestically and internationally. The environmental impacts and their causes as a consequence of tourism development in the region are listed as below:

4.3.1 Resource Usage and Environmental Alteration

Environmental changes and land transformations for tourism development in Caspian Sea region can directly and indirectly destroy ecological habitats and somehow cause degradations in the coastal zones. Also, the alterations are mainly tended to be permanent environmental damages. In fact, the use of resources for tourism involves an "opportunity cost" as they are denied to other sectors of economic development in a destination (Holden, 2000). The extensive coastline along Caspian Sea region in north part of Iran is developed for tourists either domestic or international. Typically, tourism development in the region is characterized by investment on building and constructing of tourism infrastructure including: hotels, resorts, villas, roads. However, the unplanned construction along the shore causes adverse impacts on these areas through losing of the appealing and aesthetic landscape and soil degradation and loss of sand dune issues as well as leading to ecological damages, argues Daryabari (2008).

- *Tourism Construction*

In general, the negative environmental consequences of tourism development in these areas are stem from the illegal constructions along the shore (see Figure 3). Although it has been legally approved that 60 meters of the sea should be free space from constructions, 96% of the Caspian Sea privacy has been occupied through illegal constructions (Hamshahri Online, 2005). It means that only 4% of 1000 km of long coast of Caspian Sea in north of Iran is free from illegal constructions. The free zones including mainly Miankaleh areas and Sysangan Forest Park have remained immune as they are being monitored by EPA (Environmental Protection Agency) and being regarded as protected areas. In general, invasion in the Sea privacy as central adverse environmental impacts of coastal areas is often related to activities that oppose to normal geographical process. The illegal construction in the southern part of Caspian Sea coastline has included several negative environmental impacts to these vulnerable resources:

1) It causes to enter a considerable amount of waste produced by welfare unite services and other types of tourists' accommodations, pouring into the critical and more sensitive part of the Sea and river mouth in the region and this leads to destruction and degradation of the vulnerable division of the coast. Destruction of these parts of the Sea and rivers is the most important factor in reducing fish and Caviar stock of the Caspian Sea because the river mouths are considered ecologically vital for fish and Caviar spawning special for specific types of fishes such as tuna fish, white fish and open sea fishes. Thus, the ecology of marine section in Caspian Sea is situated to crisis, as it is shown in Figure 4, because of illegal constructions along the shore (Hamshahri Online, 2005).

2) Beach erosion is another problem cause by tourism development along the shore in north of Iran. It is reported that beach erosion in north of Iran is five times more than the global average (Soil of Iran, 2011). The stability of coastal zones is kept under normal condition if everything has been well managed. Although, beach erosion in Caspian Sea Coastline has started since the vegetations near the shore removed for more constructions. The act of vegetation removal lead to a special type of erosion near the Sea which causes the areas looses their 'buffering capacity', thus this leads for further movement of sand inward the land part (Newsome et al., 2006). As many of these areas are major spawning of critical marine habitats in the Sea specially caviar fishes, beach erosion exposes their act of breeding at the risk of declining and somehow extinction. This is considered as a main concern of officials in Iran as a result of environmental impacts which tourism sector include as a sort of damage to the Sea and its ecologies.

- *Land Transformation*

Another existing issue related to tourism development in the region is change of land usage, so that, many orchards, farms, and agricultural lands near the shore change into resorts, restaurants, hotels and other tourism facilities, reported by Gharkhalou, Lasbouei and Sharif (2009). According to the results of a recent study associated with evaluation of land usage transformation in southern Caspian Sea Coastlines within recent 13 years, changes have been extremely severe in this region. It has been reported that forest and natural land coverage have been decreased from 13.5 hectares to 3.3 hectares in that period. Besides, it has been estimated that 107 hectares of coastal areas were exposed to changes and the constructions along the shore have been increased around 35 hectares. The outcomes of the study represents that the rate of human changes for more development in different sectors especially tourism industry are more intense, therefore, it needs for further reorganization of tourism development in Caspian Sea coastline in northern Iran in order to prevent long-term economic looses and additional environmental protection (Shataei & Malek, 2005).

4.3.2 Human Behavior

Caspian Sea region consists of a diverse range of ecosystem including caviar, wide ranges of unique Caspian fishes, mangrove swamp, specific types of birds and turtles. However, the tourism development and related activities in this region has placed the habitats of these special species under threat of extinction from sewage pollution from any kinds of accommodation (e.g. hotels, resorts, villas). Moreover, tourist and local activities often cause environmental consequences in Caspian Sea areas.

- *Tourists Coastal Activities*

The demand for coastal recreational activities have been extremely increased by tourists in Iran, especially in peak seasons and public holidays, and subsequently it has been intensified the environmental crises in three provinces (Gilan, Mazandaran & Golestan) in Caspian Sea, frequently, some events up to the capacity of the natural environment in these vulnerable areas (See Figure 5). The water activities including water sports, beach driving, and boating which are mostly take place in shallow coastal waters in Caspian Sea zones. This affected on the marine habitats such as killing fishes live in shallow water or breaking corals off. Mangrove swamps which form the basis of another vital ecological chain are also exposed in an unsustainable fashion through coastal activities by tourists.

The variety of coastal land activities by tourists such as horse riding, walking along the shore, car entering without control, and hardening of the natural areas along roads and through the camping and setting on fire especially in sensitive parts of the beaches in Caspian Sea coastline resulted in damage dunes and rocks, erosion, and pollution which all together create unpleasant sights and expose the coastal habitat into danger.

Moreover to above points, many tourists in Caspian Sea coastlines are interested to use tent as a sort of shelter due to its cheaper price. The tendency of travelers for this action, hence lead to generation of huge amounts of rubbish and garbage along the shore regardless of the negative consequences to the natural environment. The garbage is ranging from skin of fruits to bottle of water and food residues which major of them involve

non-recycle rubbishes that directly injure vulnerable natural resources (see Figure 6). Distribution of waste and garbage in the coastline by tourists is damage the marine wildlife, spoil vegetations, and cause erosion and degradation in some parts of the Sea (Tabnak News, 2009).

- *Local People Activities*

Local people play a dispensable role in negative environmental impacts of coastal tourism in Caspian Sea coastal zones in compare to other source of adverse impacts, typically by breaking corals off and utilize them for making handicrafts in order to supply souvenirs and provide a response to the demand of travelers to the region. In other cases, the illegal and unscientific fishing for the purpose of creating aquaculture farms in order to attract more tourists and generate income and employment by local communities is lead to harm aquatic ecology in Caspian Sea waters. As a result of the demand by tourists for caviar and various sorts of fishes, there has been over fishing in the region.

4.3.3 Pollution

Pollution of the physical environments in Caspian Sea region partially stem from tourism development occur on different spatial levels, including tourism generating, destination areas, and local communities. The pollution associated with tourism categorized into three main types: water, air, and aesthetic pollution (Holden, 2000).

- *Water pollution*

Water pollution is a major and somehow a serious problem in Caspian Sea. Water pollution and increased of the amount of carbon in Caspian Sea is a serious threats to marine wildlife and its adverse ecological impacts in this region. Hence, it exposes environmental sustainability in this vicinity to challenges (Tabnak News, 2009). Main resources of water pollution in the Sea as a result of tourism activities include:

- 1) Improper sewage system for hotels and tourist sites which leads to groundwater pollution through the waste near the shoreline and this impose some special species of fished and marine habitats into danger of being extinction. A specific example is “true seals” that are being exposed to the danger of extinction due to water pollution of the Sea (see Figure 7).
- 2) Tourism activities and coastal recreational facilities such as motor boats bring pollution of surface water by spilled their fuel into the sea (Karimi, 2008). Therefore, the water quality is decreased and degraded by such coastal activities when the oil and grease of motor boats and other tourist vehicles discharge into coastal waters in Caspian Sea. The Director of Marine Environmental Protection Agency in Iran is warning about severe pollution of the Caspian Sea, and said this pollution is partially due to human sewage of tourism facilities which entering the Caspian Sea. The pollution in the Sea in some areas is somehow up to 100 times the limit appears.

- *Air pollution*

A major source of air pollution in Caspian Sea coastline in the context of tourism is associated with transportation system. A very common pattern of travel in peak seasons and public holidays throughout the year in Iran, for tourists from all over the country especially Tehran (the capital of Iran) is to drive up to the Caspian Sea costal zones in north part of Iran for their vocation (see Figure 8). When it has been emphasized on domestic tourism, the effects of motor cars become even more prominent, as the majority of domestic trips in Iran are undertaken by its use. The release of carbon dioxide (CO₂) by transportation system accompanied by the emission of sculpture dioxide (SO₂), contributes to problems of increase air pollution. This type of air pollution is not only reducing ozone concentrations in the stratosphere, but also disappointed those who just come for fresh air near the sea. Besides, as a result of air pollution associated with increased amount of CO₂ and SO₂ and other greenhouse gases, the area has faced with the issue of acid rains. The acid rains have directly influenced the coastline vegetations, marine ecosystem, and the historical and heritage rocks and landscapes which are considered as motivations for attracting visitors to the region.

- *Aesthetic pollution*

The unplanned and poor-managed development of tourism facilities in Caspian Sea coastal zones lead to decline in the aesthetic quality of environment, (Mirjalili, 2010). Many coastal areas in this region are being transformed by irregular growth and construction of tourism physical facilities (Karimi, 2008). Also, the buildup areas by the seaside are not aesthetically attractive due to diversity of architectural style. Rural style of traditional accommodations and homes is disappeared in favor of huge wave of hotels, resorts, and villas construction near the sea. In other word, coastal tourism development in Caspian Sea region is developed in order to maximize the profits whilst ignoring the rural context and architectural styles. The combination of local architecture

accompanied by modern tourism facilities spoils aesthetic aspects of coastlines and increase concerns about aesthetic pollutions.

5. Discussion and Conclusion

Sustainable tourism development provides the needs of present tourists while preserving and protecting the resources for future generations. Sustainable tourism development is considered as a guideline for management of all resources. Therefore, development of tourism without proper planning and separated from sustainable usage of natural resources is insufficient and it should contribute to sustainable tourism development concept and needed integrated planning and centralized management in such a way that all types of development are determined. The purpose of this study has been to evaluate the negative environmental impacts of tourism activities and recreation in the Caspian Sea coastal areas in northern part of Iran. Since the region is still have potential for further tourism development, meaning that the area is still in the growth phase, thus the contribution in the unfavorable impacts of tourism expansion is needed. Understanding these changes will be the first step toward sustainability paradigm which helps related authorities to employ effective management and planning approaches to make natural environments available for current and future generations to experience and enjoy.

Within reviewing the environmental issues in the Caspian Sea region as a result of tourism and recreational activities, several principal problems and their causes were identified based on the viewpoints of experts and scholars. There was consensus among the researchers and authorities that the adverse effects on the environment of these coastlines are much higher than the environmental outcomes. A wide range of negative environmental impacts has brought to the region by tourism development including: beach erosion, damage to sand dunes, marine habitat extinction, decline breeding rate of special coastal habitats, and different range of pollutions.

In general perspective, the sustainability of coastal tourism in Caspian Sea region in future lies in its effective planning and management. Planning for tourism in coastal zones enables developers and managers to foster tourism in these areas in such a way as to not only protect the natural environment but also to bring about a greater understanding of it (Newsome et al., 2006). The key point lies in the activity of planning for Caspian Sea coastal areas rather than solely planning in them. In addition, planning should be flexible so as to allow objectives and strategies to be achieved while still providing a means for consistent management. Management is the strategies and actions taken to protect or enhance natural areas in the face of impacts from tourism activities. Strategies are defined as general approaches to management (McCool, 1996). Planning and management need to reflect a balanced approach to how natural resources are used and include local communities in the development process (Smit & Spalding, 1995).

In Iran, a wide variety of activities has been done in favour of natural environmental protection under a board national commitment (National Committee on Sustainable Development, 1998). According to the laws and regulations of Environmental Protection and Improvement in Iran, any action that may lead to environmental pollution is prohibited. This law regards pollutions ranging from the mixing of air or foreign material into the soil or ground water or air, to physical or chemical or biological quality to the extent that it is so harmful to humans or other living creatures or plants or works and (National Committee on Sustainable Development, 1998). However, the law is neglected in most of the time, as it is obvious in the case of Caspian Sea coastal zones, and long-term possessing the valuable and vulnerable coastal environments sacrifices for short-term economic outcomes.

Since the main source of environmental impacts in the region stem from illegal construction along the shore and mass tourism especially in peak seasons in Iran, two main projects are proposed by government with specific regards to the areas which are in the process of legislation. These projects are: "Release of Coastal Boundaries" in order to monitor construction and tourism development in the region and "Building of Healthy Sea Privacy" for controlling the coastal tourism activities as well as utilizing the concept of carrying capacity in the region.

Regarding the unsystematic and disintegrated construction as a result of development in Caspian Sea coastal zones in north of Iran, the government proposed an action plan for the "Release of Coastal Boundaries" from illegal constructions and enthusiastically follows it up. Deputy Minister of Housing and Urban of Iran asserts this plan will be only achieved by implementing the integrated management of coastal zones (98ia News, 2010). Also, the official goes on to say that this project involves prohibiting of any development and construction which destroy and damage beaches and seize to coastal boundaries in Caspian Sea vicinity. Implementing of Release of Coastal Boundaries enable local communities and authorities to prevent the pollutions of beaches and other issues associated with tourism development and tourism constructions in the region. This will provide the sustainable coastal tourism in Caspian Sea coastal zones in north of Iran. Another project which is associated with coastal tourism activities and carrying capacity problem along the shore is Building of Healthy Sea Privacy.

This plan which is mostly emphasis on coastal tourism activities such as swimming, boating and etc, is not only provides the safety and security of travelers, but also minimize the negative impacts of tourism activities in marine ecology of Caspian Sea coastline. However, the existence and legislation of laws and regulations for abolishing the adverse impacts in favor of increase the positive ones is not enough.

In addition to the regulations, management in both aspects of site management and visitor management is necessary actions. The approaches also had taken by Hammitt and Cole (1998). Applying site management for control visitors through actions at the sites where the use occurs. These sites include roads and walk trails, hotels and resorts and lodges, campgrounds and individual campsites, picnic areas, water bodies and coastlines. Site management relies on locating use in more durable parts of the coastline in the region and managing the zones and associate facilities to minimize visitor adverse impacts. Likewise, focus on visitor managing in Caspian Sea region is consider as a vital aspects while equipped visitors through regulating use, communication with them and providing education and increase the tourists' awareness about environmental consequences.

In general, Caspian Environment Programme (CEP) has mentioned the environmental impacts in the coast of Caspian Sea in Iran stem from legislative and institutional problems (Caspian Sea Environmental Programme, 2011). From legislative perspective, it has pointed out to shortage of a cooperative international legal framework to preserve and sustainable usage of natural resources in the coasts of Caspian Sea in Iran. On the other hand, the institutional problems comprise: a weak administrative and procedural capabilities for environmental management in the areas; not utilizing the process of the Environmental Impact Assessment or other equivalent planning frameworks by the region; existence of a weak linkage between science and planners or developers in Iran. The issued were considered as main features of negative environmental impacts in coasts of Caspian Sea in Iran with specific regard to tourism activities in the areas.

Finally, the discussion part of this study will be closed up with a numbers of recommendations of some researchers, academics and official in Iran with specific attention on the Caspian Sea coastal zones. The recommendations are including:

- Developing coastal tourism and investment in the regions attractions should take place with priority of the environmental impacts.
- The sources of environmental pollution in coastal areas must be identified.
- The criteria of preventing damage to coastal environments should be determined.
- The types and the amounts of pollutants must be determined and the measures needed to reduce them.
- The waste waters and sewage of tourism facilities and accommodations must be collected through waste water treatment systems based on the accepted and specific standards.
- The development and constructions of tourism facilities need to be monitored by authorities in such a way that preventing adverse effects on the coastal environments.
- Planning and managing the coastal environments by considering the carrying capacity concept.
- More participation of private sector in coastal tourism development in the region.
- And finally, coastal environmental impacts associated with proposed solutions to problems are continually assessed.

References

- Ahn, B. Y., Lee, B. K., & Shafer, C. S. (2002). Operationalizing sustainability in regional planning: an application of the LAC framework. *Journal of Tourism Management*, 23, 1-15. [http://dx.doi.org/10.1016/S0261-5177\(01\)00059-0](http://dx.doi.org/10.1016/S0261-5177(01)00059-0)
- Babaei, G. (2010). Death of fishes along Caspian sea coastline. [Online] Available: <http://anzalnews.blogfa.com/8910.aspx?p=2>
- Bakhtiari, M. (2010). Preserve the earth. [Online] Available: <http://www.azadgreeners.blogfa.com/cat-2.aspx>
- Caspian Sea Environmental Programme, Environmental issues in Caspian Sea. (2009). CasPEco Project Management and Coordination Unit. [Online] Available: <http://www.caspianenvironment.org/newsite/Caspian-EnvironmentalIssues.htm>
- Daryabari, S. (2008). The environmental impacts of coastal tourism on sustainable development. [Online] Available: <http://engdaryabari.blogfa.com/>

- Darvish, M. (2011). Concerns in the coasts of Caspian Sea. [Online] Available: <http://darvish100.blogfa.com/post-2148.aspx>
- Elliott, M. (1994). The analysis of macrobenthic community data. *Marine Pollution Bulletin*, 28, 62-64. [http://dx.doi.org/10.1016/0025-326X\(94\)90528-2](http://dx.doi.org/10.1016/0025-326X(94)90528-2)
- ESA. (2010). Observing the Earth - Earth from Space: The southern Caspian Sea. [Online] Available: <http://www.esa.int/>
- French, P. (1997). *Coastal and estuarine management* (Chapter 2). London: Routledge.
- Gharkhalou, M., Lasbouei, M. R., & sharif, J. G. (2009). Environmental impacts of coastal tourism in Ramsar city beaches. *Achieve of SID, Journal of Human Geography Research*, 1 (3).
- Hamshahri Online. (2005). Only 4% of Caspian Sea coastlines are free from constructions. [Online] Available: <http://www.hamshahri.org/> (July, 2005)
- Hammitt, W. E., & Cole, D. N. (1998). *Wildland recreation: ecology and management*. New York: John Wiley & Sons.
- Holden, A. (2000). *Environment and tourism*. Routledge: Taylor & Francis Group Publication. London & New York.
- Honey, M., & Krantz, D. M. A. (2007). Global trend in coastal tourism. *Centre on Ecotourism and Sustainable Development, A non-profit research organization*. Stanford University & Washington DC.
- Iran-Daily News. (2010). Caspian Sea: Potentials for Conflict. [Online] Available: <http://www.iran-daily.com/> (June 12, 2010)
- Iran Gazette. (2010). Caspian Sea. [Online] Available: <http://www.irangazette.com/> (May 17, 2010)
- Karimi, T. (2008). Geographical and environmental effects of coastal tourism and sustainable development. Abhar- Education and Training Administration - Geographical Education Group. [Online] Available: <http://kubk.blogfa.com/post-15.aspx>
- Lea, J. (1998). *Tourism and Development in the Third World*. London: Routledge.
- Mardomak. (2011). Severe condition in Caspian Sea Coasts. [Online] Available: http://www.mardomak.org/mobile/story/khazar_warn_orumieh_lake
- Mason, P. (2003). *Tourism impacts, planning and management*. Butterworth Heinemann. London.
- McCool, S. F. (1996). Limits of Acceptable Change: A framework for managing national protected area, experience from united state. A paper presented at the *Workshop in Impact Management in Marine Parks*, Kuala Lumpur, Malaysia. August 13-14.
- Middle East News. (2010). Iran Prepares for Conflict Over the Caspian Sea Issue. [Online] Available: <http://www.crethiplethi.com/> (November 23, 2010)
- Mirjalili, J. (2010). The Effects of tourism industry in the rural areas of Mazandaran province: the history and tourism in exhaustive perspective. [Online] Available: <http://mirjalilismj.blogfa.com/>
- Newsome, D., Moore, S. A., & Dowling, R. K. (2006). *Natural area tourism*. Viva Publication: New Delhi.
- Ocean Info Pack. (2009). Coastal Management Facts and Figures. [Online] Available: <http://www.worldoceannetwork.org/>
- OECD. (1980). The impact of tourism on development. Paris: Organization for Economic Cooperation and Development. [Online] Available: <http://www.oecd.org/dataoecd/5/47/1825413.pdf>
- Overton, J., & Scheyvens, R. (1999). Strategies for sustainable development: experiences from the Pacific Zed, London & New York. <http://dx.doi.org/10.1353/cp.2001.0002>
- Rahimi, F. (2007). Photos. In: Payvand Iran News. [Online] Available: <http://www.payvand.com/> (November, 2009).
- Ritchie, J. R. B., & Crouch, G. I. (2000). The competitive destination: A sustainability perspective. *Tourism Management*. 21 (1), 1-7.
- Rowe, G. T. (1996). Azerbaijan, oil and sustainable development in Azerbaijan. *Quarterdeck*, 4 (3). [Online] Available: <http://ocean.tamu.edu/Quarterdeck/QD4.3/rowe-4.3.html>
- Sahraei, S. (2009). Traffic in the roads. [Online] Available: <http://lamhe.parsiblog.com/Posts/>

- Sawkar, K., Noronha, L., Mascarenhas, A., Chauhan, O. S., & Saeed, S. (1998). Tourism and the Environment; Case Study on Goa, India, and the Maldives. *The Economic Development Institute of the World Bank*. Washington DC, USA. [Online] Available: <http://drs.nio.org/drs/handle/2264/1322>
- Sawkar, K., Noronha, L., Mascarenhas, A., & Chauhan, O. S. (1998). Tourism and the Environment; issues of concern in the coastal zone of Goa. *The Economic Development Institute of the World Bank*. Washington DC, USA. [Online] Available: <http://drs.nio.org/drs/bitstream/2264/1322/3>
- Saenger, P. (1990). Environmental Impacts of Coastal Tourism: an Overview and Guide to Relevant Literature, in IM Dutton & P Saenger (eds). *Environmental management of tourism in coastal areas: proceedings training workshop held in Bogor and Bali, Indonesia*, 4-24 July 1989, SEAMEO-BIOTROP, Bogor, Indonesia, 1, 18-45. [Online] Available: http://works.bepress.com/peter_saenger/188/
- Shataei, J. S., & Malek, J. (2005). Evaluation of changes in natural perspective and land usage in southern Caspian Sea region. *Geographical Studies*, 51 (37), 95-105.
- Shirmohamadi, T. (2011). Tourism activities in Caspian Sea region. [Online] Available: <http://www.dw-world.de/dw/article/0,,15533236,00.html>
- Shomal News. (2010). Tourism Economy. [Online] Available: <http://www.shomalnews.com/> (March, 2010)
- Simon, F. J. G., Narangajavana, Y., & Marques, D. P. (2004). Carrying capacity in the tourism industry: a case study of Hengistbury Head. *Tourism Management*, 25 (2), 275-283. [http://dx.doi.org/10.1016/S0261-5177\(03\)00089-X](http://dx.doi.org/10.1016/S0261-5177(03)00089-X)
- Somerville, H. (1994). Airlines, Tourism and Environment. *British Airways Environment Report*, 32. [http://dx.doi.org/10.1016/0261-5177\(91\)90066-3](http://dx.doi.org/10.1016/0261-5177(91)90066-3)
- Soil of Iran. (2011). Iran's Soil Erosion is Five Time more than the World's Average! [Online] Available: <http://soils.blogfa.com/>
- Tabnak News. (2009). Warning about pollution in the Caspian Sea. [Online] Available: <http://www.tabnak.ir/>
- Tourism News. (2010). The importance of paying attention to tourism industry. [Online] Available: <http://www.shomalnews.com/> (March, 2010)
- Tourism Organization of Iran. (2010). The importance of tourism industry in Iran. [Online] Available: <http://www.ichto.ir/>
- Viles, H., & Spencer, T. (1995). *Coastal Problems: Geomorphology, Echology and Society at the Coast*. London: Edward Arnold.
- Weaver, D., & Oppermann, M. (2000). *Tourism Management*. Singapore: Wiley Publication.
- WCED. (1987). *Our Common Future*. Oxford University Press: Oxford.
- Wong, P. P. (1993). *Tourism versus Environment: the case for coastal areas*. Dordrecht, Boston: Kluwer Publishers.
- 98ia News. (2010). Northern provinces are serious intent in releasing sea boundary. [Online] Available: <http://www.98ia.com/>

Table 1. Demographic characteristics of the five Caspian Litoral States

	Population (in millions)	Area (in sq. km)	Population Density per sq. km	Caspian Coastline km
Republic of Azerbaijan	8.26	86,600	92.2	825
Islamic Republic of Iran	69	1,648,000	38.8	1,000
Republic of Kazakhstan	15.1	2,717,300	5.6	2,320
Russian Federation	143.8	17,075,400	-	1,460
Turkmenistan	-	9	3	1,200

Source: Final National Statistics



Figure 1. Map of Caspian Sea region and its Neighbours

Source: Rowe (1996)

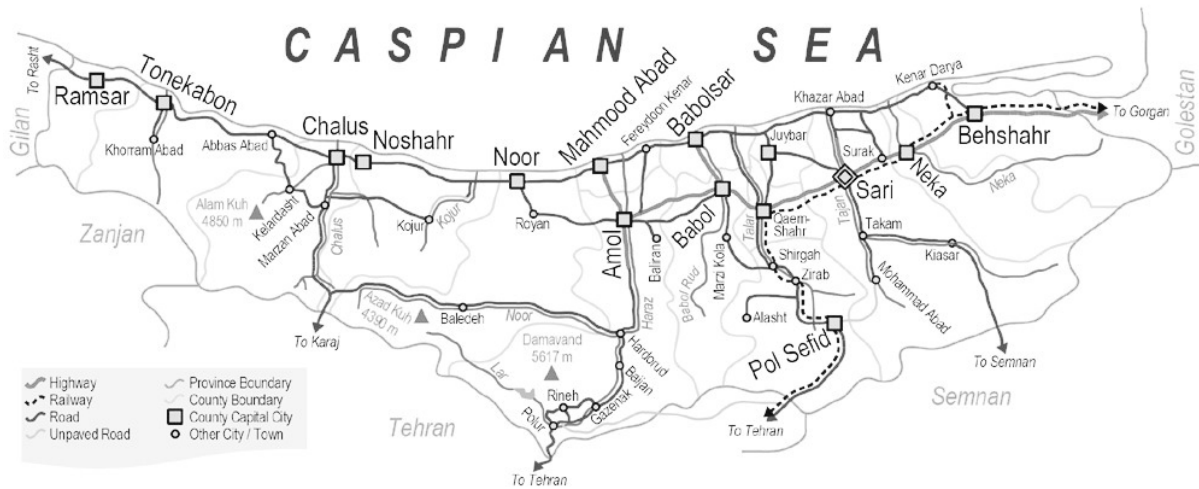


Figure 2. The coasts of Caspian Sea in North of Iran

Source: Rahimi (2007)



Figure 3. Illegal construction along Caspian Sea coastline

Source: Bakhtiari (2010)



Figure 4. Dead of marine habitats due to sewage produced by constructing unplanned tourist accommodation along Caspian Sea coasts

Source: Babaei (2010)



Figure 5. Mass tourism in Caspian Sea coastline in Iran

Source: www.mardomak.org



Figure 6. Spread of garbage by tourists in Caspian Sea coasts

Source: Darvish (2011)



Figure 7. Death of Caspian Sea seals due to water pollution

Source: Shirmohamadi (2011)



Figure 8. High amount of traffic in holidays in north of Iran

Source: Sahraei (2009)