

The environmental effects of Tourism in Cancun, Mexico

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ABSTRACT

Coastal tourism is an integral part of the Mexican economy and one fourth of the total national tourism revenue is generated alone in Cancun, Mexico. Once the area was an underdeveloped, snake-infested jungle in one of the poorest region of the nation, however, by last couple of decades Cancun has undergone a major transformation and each year over two million visitors visited, justifying Cancun as the world-class tourism destination. Although coastal tourism in Cancun has been greatly successful in generating foreign revenue, it has severely impacted a range of environmental aspects. The article provides the historic perspective about the rise of tourism in Cancun. The environmental effects of tourism are discussed in details and preventive steps towards sustainable eco-tourism have also been proposed. The fundamental causes of environmental effects of tourism are described, including changes in land-usage, weak regulatory enforcement, and an overall inefficiency of tourism and environmental policies.

Keywords: Cancun, environmental effects, ecotourism, tourism.

1. Introduction

Tourism is one of the world's largest economic activities and the environment, on which much of it depends is an important economic asset. Tourism ranks as third most important industry in Mexico. Tourism has been used as a major tool for growth and development in Mexico and it has been mostly concentrated in coastal areas (Rivera-Arriaga & Villalobos, 2001). Cancun is located in Quintana Roo state, and contributes one fourth of all tourism revenue in the country (Juarez, 2002). Few decades ago, the area was an underdeveloped, snake-infested jungle in one of the poorest region of the nation. However, for last ten years over two million visitors arrived to Cancun each year justifying the place as a world-class tourism destination. The fascinating development of tourism in Cancun is the crown jewel of the state-planned tourism centers in Mexico and exemplary to both Caribbean/Latin American and the world (Azzoni, 2009).

Cancun, Mexico and many other developing nations continue to consider large-scale tourism as a source of generating foreign revenue despite growing concern about the social and environmental impacts (Cesar Dechary & Arnaiz Burne, 1998). The tourism industry highly relies on its natural resources and has significant environmental, cultural, social and economic impacts, mostly in an adverse manner (Mowforth & Munt, 2003). The current review provides several examples where tourism activities have threatened and undermined the integrity of natural resources and bio-diversity. The article examines the rise of Cancun as an example illustrating the complex, rather hazardous effects of large-scale coastal tourism. Additionally, we discussed the need of sustainable tourism that can generate substantial economic benefits without impacting the environment.

2. Geology of Cancun

Cancun lies on 20-mile-long barrier island in the state of Quintana Roo which is situated to east of Mexican states, Yucatan and Campeche. Cancun occupies 50,212 square kilometers of Mexico's Yucatan Peninsula (Figure 1). During Miocene and Pliocene eras, most part of the peninsula was a shallow sea that ultimately conferred the unique geology to Cancun distinct from the other areas of Mexico.



Figure 1: Geological map of Yucatan Peninsula-

The main types of rock in the peninsula include limestone, dolomite, and other evaporates. Because of the high rainfalls in northern regions, most of these evaporates have been chemically weathered to form an intense network of caverns. Karst Land (areas with high concentration of caves) is a key factor when considering the diverse Yucatan's environment. The diversity in the flora and fauna is significant that 10% of them are found nowhere else. The Northwestern area of the peninsula contains the most diversity, due to its rainforests and peculiar geology. As there are no rivers and lakes, species had to evolve by extending their roots to reach the underground river systems (Cabrera-Ramírez and Carranza-Edwards, 2002).

The hotel zone (Figure 2) is a tourist hub; located on L-shaped barrier island of Cancun facing the Caribbean Sea to the east and the Nicupté Lagoon to the west. With turquoise waters, sugar white sands, and an average year-round temperature of 82 degrees Fahrenheit, Cancun is an ideal setting for the sun-sand vacation, appealing to travelers around the world. Home to dazzling four- and five-star resorts, world renowned nightlife, and nearby cultural attractions such as the Mayan cities of Chichen Itza and Tulum, Cancun provides visitors “a little bit of everything” (Garcia, 2010; Hiernaux-Nicolas, 1999).



Figure 2: The hotel zone of Cancun

3. The creation of mass tourism in Cancun, Mexico

The creation of touristic Cancun is often dubbed as the brainchild of a group of bankers far away from Mexico City. As recently as mid-1960s, the area was known as one of the most backward, remote, unhealthy, uneducated and sparsely populated regions of Mexico. The life in this region has continued as it has been for centuries, with inadequate communications and no electrical or plumbing facilities. The territory was very sparsely connected with very few roads and did not have an airport (García de Fuentes, 1979).

However, Quintana Roo state is blessed with about 860 km of coastline, a beautiful stretch encompassing a wide variety of scenic features, including bays, inlets, freshwater springs, lagoons, mangroves, sand dunes, rocky areas and beautiful white sand beaches - the backbone of the tourism industry. These calcareous beaches have been marketed as air-conditioned, remain cool and pleasant to walk on, even under the most blazing of tropical suns. An additional attraction is the Mesoamerican Caribbean Reef (MACR), the second largest barrier reef system in the world. The MACR begins near Cancun, and continues southward until the Bay Islands of Honduras (Marti, 1985; Torres Maldonado, 2001).

Despite the abundant natural and cultural attractions, tourism did not begin in Cancun until last four decades. However, by 2000, over two million visitors arrived to the Cancun resort each year. The transition started during the 1960's economic crisis in Mexico as tourism represented an important opportunity to bring foreign currency into the country. The creation

of large touristic resorts in Cancun were considered as the ideal instrument to take advantage of natural resources, for instance pleasant weather, sun, sand and sea (Hiernaux-Nicolas, 1999; Macías y Pérez, 2009).

The actual development of Cancun started in the 1970's, when the Mexican government encouraged the large public construction and complementary measures to attract foreign and national investment with an idea that those megaprojects would bring modernization to rural areas through their insertion into the international market (GQR, 1993). Nevertheless, this proposal was questioned since its creation. It was argued that the proposed development would go along with severe deficiencies related to touristic urbanization, such as the overexploitation of natural resources, uncontrolled migration, irregular settlements, and marginalization of the native population, crime and prostitution amongst others (García de Fuentes, 1979; Jiménez, 2010).

Strikingly, the transition of a forest enclave on the wild far side of Mexico into a modern tourism destination happened in a span of just 30 years. The creation of touristic Cancun is indeed fascinating with its development largely determined by the planning of Mexican government.

4. Environmental impacts of tourism

The natural resource base is the fundamental fabric upon which the tourism industry of Cancun is based. Whether tourism is land-based, or via cruise ships, the tourism industry has highly relied on natural environment as the main attraction to the visitors. The tourism industry has been involved in direct and massive alteration of the coastal environment, especially, on a very narrow strip of the coastal zone running from the barrier reef inland no more than a few hundred meters away from the water. This large-scale growth of coastal tourism and vacation developments is putting increasing pressure on fragile ecosystems (Zarate Lomeli et al., 1999).

The fundamental natural resources of the Cancun are sun, sand, and sea; except for the sun, each of these resources, as well as supporting resources such as coral reefs have been subjected to damage and depletion. The nature of tourism industry in Cancun is significantly complex; being fragmented into several industries, and threats to environmental resources has aroused both within and outside the sector.

4.1 Water pollution

Water pollution has been one of the main impacts that the tourism industry has on environment. Hotel industry generates about 95% of total sewage water which is significantly beyond the capacity of handling by sewage treatment plants operating in the city. Due to sub-optimal operation of hotel waste water plants, the large portion of untreated sewage finally ends up in the sea and is one of the greatest sources of waste water pollution from the hotel zone. Additionally, insufficient drainage increases the volume of unprocessed sewer ending in septic tanks that further leaks through the subsoil into the water bodies. Recreational vehicles such as cruise ships also generate significant amount of water waste that get discharged into the nearby water bodies. Spills and discharges of petrol, oil and toxic chemicals are other impacts that recreational boats and the cruise industry have on water quality (Salazar Vallejo and Gonzalez, 1994).

A variety of local sources of hydrocarbons has significantly contributed to the contamination of the near-shore waters. The tourism industry has also impacted the water quality through its abuse to meet the increased demand of food, construction and maintenance of tourist infrastructure. The water quality is affected due to run off of fertilizers, herbicides and pesticides from landscaping, golf course management and agricultural malpractices. The increased percentage of concreted areas, roads and other impervious surfaces normally associated with hotel and resort development have contributed to the increased rainwater runoff from the coastal areas (Zarate Lomeli et al., 1999; INEGI, 2009).

4.2 Effects on aquatic ecosystem

The poor water quality resulting from different sectors of tourism has ultimately threatened the aquatic ecosystem in state of Quintana Roo. The aquatic environment of the Nichupte lagoon system has been already deteriorated so badly that tourism agency was forced to run several barges to clean the lagoon by collecting the algae and other wastes. The explosion of algal growth has severe implications on levels of dissolved oxygen and light penetration, which in turn govern fish numbers, species composition and growth rates as well as aquatic plant and other marine animal life (Zarate Lomeli et al., 1999). The commercially valuable fishing stocks, e.g. lobsters and conch, have been declined due to the intense fishing levels employed to meet the increasing sea food demand from tourists. Others species, such as sea turtles, have also been affected by the tourism and associated population growth. Marine species such as sea turtles and their eggs are used as a food source, despite the fact the Mexican government had declared a permanent ban on harvesting these animals in the Pacific, Caribbean, and Gulf of Mexico (Trejo, 2003). Now days, the turtles face a new threat i.e. continued construction of tourism facilities in sensitive egg laying areas on coast. In addition to turtles, more than ten species of sea birds are still hunted, along with four species of marine mammals (Juarez, 2002; Romero, 2009).

The discharge of inadequately treated waste water effluent has introduced hazardous pathogens into aquatic environment potentially affecting the coral growth. The introduction of nitrogen and phosphorus containing effluent expedites the process of eutrophication and abundant growth of algae. The tourist facilities and concreted areas increase the amount of impervious surfaces, causing more runoff of nutrients, suspended particles, and oil and gas into water bodies. It results in acceleration of the eutrophication process i.e. an over growth of algae. Further, the overgrowth of algae is accompanied by the depletion of oxygen resulting in extinction of fishes (Cesar Dechary & Arnaiz Burne, 1996). The overgrowth of algae is also a nuisance to swimmers. Furthermore, if masses of algae wash up on shore, they can create a foul-smelling area and a breeding ground for biting flies. The overgrown algae cover the filter-feeding corals, hampering their ability to get food. Additionally, the overgrowth of algae impedes the sunlight that normally reaches to the plant cells (zooxanthellae) living within the corals' tissue, hindering their ability to grow and provide the coral with needed nutrition, ultimately resulting in stressed and decreased growth (Romero, 2009).

Recreational boats and cruise vessels can also physically damage aquatic vegetation by cutting it with their propellers in shallower areas. Anchoring on the reef system itself can create a significant damage to the coral reef (Salazar Vallejo et al., 1993). The extraction from the coral reef system associated with the tourism industry has also increased. The levels of toxicity in waters has increased from the petrol used in recreational vehicles and coupled with the effects of detergents and trace elements from the decomposition of tins and bottles

are also harmful to aquatic plants and wildlife. Given the porous nature of the substrate, and untreated residual water discharge, there has been some bacteriological contamination of potable water bodies in Quintana Roo (Zarate Lomeli et al., 1999; INEGI, 2009). Needless to say when eutrophication, sedimentation and such matters are evident, coastal recreational waters are not aesthetically attractive and the resource is visually perceived as degraded.

4.3 Solid waste

The different sectors of tourism industry generate substantial amounts of solid waste that has numerous impacts on the environment. The increasing number of tourist and population growth of Cancun has transformed it into a city with high solid waste production. Waste disposal has become a serious problem in areas with high concentrations of tourist activities. The garbage has generally been sent to illegal garbage dumps and has become a constant worry for ecological groups. In 1993, there were 47,000 tons of solid waste remain uncollected and municipal administration had to appoint a private enterprise for garbage recollection from the hotel zone. Nowadays, 329, 000 tons of garbage is collected annually in city; a quarter of the total garbage is produced by the hotel zone (Romero, 2009).

The present attempts of large scale recycling, composting or incineration have been less efficient. Apart from land based tourism, recreational boats and cruise industry generate a considerable amount of solid waste, for instance, a cruise ship carrying 2,700 passengers can generate at least a ton of garbage per day. The Caribbean Sea along the state of Quintana Roo has high cruise and commercial ship traffic; solid waste generated from such vessels pose a potential threat of pollution to the sea and all of the coastal areas that it washes (Morán, 2011). One major type of solid waste generated is plastic; continuously posing a serious risk to the marine and coastal environments. The death of marine animals and shore birds due to improper disposal of plastic waste has also been recorded.

Similar to land based tourism the solid waste produced from sea based tourism also ends up in landfill facilities putting an additional burden on its limited functionality. Given the porous nature of soil, closed landfills and dumps used for waste disposal has created threats both to the quality of ground water and marine coastal water through generation of leachate. Leachate can not only impact the near-shore marine flora and fauna but also can affect human health through its ingestion if they get into potable ground water or surface water resources. Besides the issue related to leakage of landfills, solid waste pollution in coastal and inland areas have significant negative aesthetic impacts (Sarmiento, 2008).

Solid waste and littering has posed a threat to the physical appearance of the water and shoreline and can cause the death of marine animals. The improper disposal has spoiled the natural environment, rivers, scenic areas, and roadsides to some extent. There have been evidences of tourists getting injured from broken glass bottles and improperly disposed cans on the beaches. Additionally, the improper disposal of solid waste can provide breeding ground for mosquitoes that can spread diseases like dengue fever. Considering the limited of functionality of waste disposal plants in the city, it is obvious that solid waste produced by the tourism sector only adds to an overall waste disposal problem continuously threatening both the environment and human health (Miller and Auyong, 1991).

4.4 Air Pollution

Air pollution is the second most severe impact that the tourism sector has on the environment, after water pollution. The automobiles used for ground transportation has been principle source of the tourism-related air pollution. Automobiles have been known to emit by far the most carbon monoxide, nitrogen oxide, and volatile organic compounds in comparison to other transportation. It could be implied that the impact of automobiles (air and noise pollution, acreage for roads, gasoline stations) may be more significant than the impact of the visitors themselves. Tour buses have an impact on air quality as well. Another form of ground transportation that has grown since past decade is the recreational vehicle (RV) and off-road recreational vehicle (ORV) sector. Adverse impacts on vegetation in state parks have been attributed to automobile exhausts (Ruiz Sandoval, 1997).

Besides ground transportation, cruise industry has significant potential to affect air quality through engine emissions. Most marine fuels used in ships are residual fuels with higher concentrations of contaminants such as sulfur. Recent studies have suggested that ocean-going vessels have the potential to affect air quality in coastal regions, port areas, and heavily traveled trade routes where annual sulfur emissions from ships equals or exceeds land-based emissions (Zarate Lomeli et al., 1999).

Marine recreational vehicles do not emit carbon monoxide as much as automobiles, but they do emit significantly more of it than recreational land vehicles (such as off-road vehicles) and aircraft. Although aircraft contribute only a small amount to total air pollution, emissions from this source is increasing. Besides transportation, construction of tourism related infrastructure has numerous impacts on air quality. The dust and particulate matter generated from the construction of coastal tourism facilities and roads may cause stress in the marine environment and impact plants in sensitive ecological areas.

4.5 Sound Pollution

The large of portion (90%) tourists visiting Cancun are foreigners, especially from United States. The principle mode of transportation is air travel and over the last the decade, there is a significant increase in aviation industry offering cheap flights. In order to reduce the cost, airlines may not strictly follow the aviation policies including Airport Noise and Capacity Act that suggests the reduction of aircraft noise by replacement of louder aircraft with quieter one. Tourism-related travel represents a significant portion of air travel in state, and airplanes are one source of noise pollution (Castillo, 2005).

Apart from, aviation industry, cars, buses, as well as recreational vehicles such as sand mobiles and jet skis supporting local tourism could also significantly contribute to sound pollution. In addition, large construction project required in support of tourism infrastructure may create a significant noise. In addition to causing annoyance and even hearing loss for humans, it causes distress to wildlife, especially in sensitive areas (www.unepie.org/tourism).

4.6 Ecosystem alteration

The tourism in Cancun, Quintana Roo is fundamentally based upon the natural resources- sun, sand, and sea. In addition to these basic resources, coral reefs and cenote are important assets of local tourism industry. Except sun, almost all of them have a significant impact of tourism and are subject to depletion. Overcrowding and inefficient waste disposal on the beaches can result in pollution in from of solid and liquid waste, reducing the physical appeal of the place (Martinez, 2006). Additionally, beach overcrowding and excessive use of recreational

vehicles can cause sand compaction that can affect back-beach vegetation and can also impact turtle nesting sites. The hatchlings of turtles tend to move towards the lights and away from the ocean; hence, the bright lights used by tourism facilities on beaches affect the level of survival of turtle hatchlings (Trejo, 2003).

Rather the main impact of tourism on beaches, is its faster erosion due excessive crowding and improper management. There has been a substantial beach erosion in a hotel zone resulting in a significant modification in their content, further making it difficult to maintain just by sand deposition. During 2010, tons of cubic meter sand was poured onto the beaches of Cancun, brought from marine banks near Isla Mujeres and Cozumel, despite the opposition of environmental organizations (Varillas, 2010). The extensive sand-mining in support of large scale construction projects have also contributed to erosion of beaches. Furthermore, the extraction of building materials such as sand affects coral reefs, mangroves, and hinterland forests, leading to erosion and destruction of natural habitats (Pérez and Carrascal, 2000). Activities required to sustain tourism such as construction and maintenance of jetties, groins, piers and wharves, dredging and spoil disposal have a significant negative impact on coastlines. The construction activities can also result in changes in currents and deposition patterns of sand, ultimately leading to a disruption of land-sea connections (Hall, 2001).

The ecological impact of tourism in Cancun is complex in nature characterized by interrelationships between ecosystems. The construction of tourism infrastructure such as airports, roads, resorts, golf course etc., have been accompanied by extensive deforestation, destruction of mangroves and filling of wetland areas, despite having legal protection under Mexican law. Very little importance is being placed, mangrove forests were often cut down or dredged for the tourism development (Calderón and Aburto, 2009). The emphasis was not placed on the fact that these ecological systems are inter-dependent and the destruction of one would lead to significant ecological degradation of the others. For instance, wetland areas and mangroves remove nutrients and restrict the rapid flow of freshwater into the marine environment, creating the conditions that are ideal for the development of coral reefs.

Apart from affecting the coral reefs, the destruction of wetlands has also affected the nesting and feeding habitat of birds and marine species. It will collectively result into the loss of marine and aquatic species and a reduction of sand production, as it is produced from the physical erosion of coral (Salazar Vallejo et al., 1993). Coral reefs are an important tourism resource for diving and provides protection to the shoreline during storms. They contribute to the development of white sand beaches that the Cancun is so famous for. Being part of a fragile marine ecosystems coral reefs are suffering worldwide as result of reef-based tourism developments involving shoreline development, trampling by tourists and divers, ship groundings, pollution from sewage, and explosives that destroy the coral habitat. Overuse in an inappropriate manner can severely damage reefs and impair the benefits.

4.7 Global warming, depletion of ozone layer and potable water

The tourism infrastructure significantly contributes to the release of greenhouse gases in the atmosphere, that trap heat from the sun causing the steady increase in the Earth's surface temperatures in recent years known as global warming. One of the most significant of these gases is carbon dioxide (CO₂), which is generated from the use of non-conventional sources of energy, such as coal, oil and natural gas for many tourism related activities. The aviation industry is an essential element of Cancun's tourism and also a major contributor to the greenhouse effect. Moreover, the number of international travelers is expected to be increase

significantly in upcoming years. The abnormal changes in land use and deforestation can also contribute to the global warming. In a long run, global climate changes have posed a significant threat to the existence of the life on the planet earth (Castillo, 2005).

The maintenance of tourism infrastructure involves extensive use of refrigerators, air conditioners; responsible for the emission of ozone depleting substances (ODSs) such as CFCs (chlorofluorocarbon) further causing the depletion of protective ozone layer. The considerable amount of potable water is being consumed by tourism industry. The state of Quintana Roo depends almost entirely upon ground water for its potable water supply (Pérez and Carrascal, 2000). The heavy use of this resource will lead to the saline intrusion of aquifers which will render them virtually useless as a source for potable fresh water. Further, the decreased amount of water being available for the use of natural ecosystems will result in ecological imbalance.

4.8 Self-destruction theory of tourism

The impacts of tourism on environment and the need of environmentally sound tourism is well documented almost four decades ago, known as the self-destruction theory of tourism. According to this theory, tourism in a given situation develops and declines in a cyclic manner with four phases (Hall 2006). In first phase, a remote and exotic place provides a peaceful rest and relaxation, and offers an escape for the rich who would like to live in isolation from the resident population. In second phase, tourism begins to develop in a way that a middle class would get attracted for their visit. Tourism facilities are developed to accommodate the influx of upper and middle class visitors. Further, the urban development accompanied with tourism development transforms the original character of the place from escape paradise into just another city visiting moderate number of tourists. With the opportunity of earning more than ever before the local residents become tourism employees, in many cases leaving agriculture and traditional work culture. The inevitable interactions between the residents and increasing number of tourists, leads a variety of social consequences, often inferred as negative. Moreover, the excess supply over demand due to increased tourist accommodation capacity leads to deterioration in product and price and as a consequence rich tourists divert elsewhere.

In third phase, mass tourism development occurs, attracting a crowd of lower standards of social behavior and economic power, causing socio-environmental problems and further degradation of the tourist destination. While in fourth phase, all tourists exit as the place sinks under the weight of social friction and solid waste, leaving behind neglected tourism facilities such as, littered beaches, and a resident population that cannot return to its old way of life. Cancun has already reached close to the point of Phase III of this theory. A recent survey revealed that only 20% of the visitors intend to return (Simon, 1997). Only recently both the government and developers have considered the problems of large-scale tourism and started to take the efforts to minimize and avoid further impacts on environment (Hall 2006).

4.9 Preventive steps towards sustainable eco-tourism

The government of Quintana Roo state has clearly recognized the need to address the impacts of the tourism industry. As the environmental impacts of tourism are becoming more obvious, initiatives have been started within the tourism industry to minimize impacts and foster the more sustainable tourism at the same time. The Mexican government has decided to limit projects along the coast to prevent further damage to the islands. One of the first steps

towards conservation of biodiversity is to ban the deforestation in sensitive areas. The regulation of carrying capacity have also been made. It is the threshold of tourist activity beyond which facilities are saturated (physical capacity), the environment is degraded (environmental capacity), or visitor enjoyment is diminished (perceptual or psychological capacity). The government has also established the local and regional zoning laws that restrict and ban construction in conservation zones of the Cancun-Tulum corridor, located in the states of Yucatan and Quintana Roo. Additionally, for efficient infrastructure laws regarding the land usage have been made to limit the number of floors of hotels and preserve the five-mile area separating the tourist zone from the City of Cancun in the mainland (Dixon, 2001).

The recovery of tourism sites has been given a priority in efforts towards conservation. A significant planning has been made towards the rescue of beaches, ecological rescue and lagoon maintenance, restoring and rehabilitation of the central zone of Cancun city. The tourist facilities will be subjected to the rehabilitation and remodeling with special emphasis on eco-friendliness and sustainability. The government has been taking cautious steps towards new tourism projects principally other than the sun and sea niche. The awareness about the environmental problems can be raised by bringing both the people and tourists in a close contact with nature and the environment; it could be enhanced by implementing sustainable ecotourism. Incorporation of the principles and practices of sustainable consumption can promote the conscious behavior and activities to preserve the environment. By implementing this approach, tourism can generate substantial economic benefits, without creating any serious environmental or social problems. Also, natural resources on which the tourism is based on will be conserved for continuous use in the future.

5. Conclusion

The mass tourism in Cancun has been clearly a grand success by some measures and there has been a clear sense of pride associated with this success. The original goal of revenue generation has been met, moreover the revenue has surpassed the expectation. Ever since its conception, this mass tourism project had less intentions other than that of generating foreign currency based on the mobility of high consumption tourists. The development was intended towards the creation of jobs and increase the income, ultimately improving the life condition of the population. However, the perspective of overall development was at the high cost of natural resources and it clearly brought negative ecological and social consequences. There is rising sense of ambivalence about Cancun, and even about tourism in general, throughout Quintana Roo.

The environmental impacts of the tourism sector are well documented at the national and international level. The current approach of tourism development activities manifests that the improvements towards the environmental aspects are less optimistic. A strict enforcement of environmental regulation for all new tourism developments is must before it gets too late. Planning strategies such as an appropriate building set back from high water marks, the conservation of wetlands and the elimination of structures that disturb coastal water flow must be encouraged. Also, a stringent system of zoning and land use planning has to be enforced, particularly in coastal areas. Changing the emphasis of policies from mass tourism to ecotourism, and from megaprojects to the projects that are oriented towards natural protection and the generation of community benefits has become crucial. However, this shift is becoming even harder as it requires political will, expertise, and a willingness on the part of tourism policymakers to go well outside the range of their traditional concerns. Lack of integrated strategy for management of coastal zone is an additional challenge. The analysis of

tourism model of Cancun can greatly help the development of future coastal destinations throughout the world, in harmony with ecosystem.

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