

Cruise vacation or coral reef environmental sciences essay



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Sustainability in Hospitality Industry: HMD 376D Instructor: A. Prof. Dr

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Desktop: UNLV Sing. jpg Cruise Vacation or Coral Reef Sustainability in

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1. Executive Summary

The growing multi-billion industry of cruise lines is a great way for vacation away from the land. However, this industry has generated thousands of gallons of water pollutants that can be broken down into different categories and these wastewaters have contributed to the degrading of marine environment. There are growing concerns on the natural habitat as the industry grows. One of such concern is the damage caused to the coral reefs. Coral reefs play an important role in the marine ecosystem, and their degradation brings about a number of consequences. Human related activities, for instance the dumping of sewage water into the ocean by the vessel, are constantly putting stress on them. Such damages done to this marine rainforest may affect us socially, economically and environmentally. In order not to further destroy the coral reefs, as cruise companies come to realize that their business is also dependable on the health of the coral reefs, international organizations, governments and the cruise companies have been working together to develop ways to minimize the amount of wastewater generated. If the onboard wastewater management is better managed, cruise vacations may provide us with a mode to bring awareness and demonstrate to parts of the world that cruise vacations can in fact be

part of the helping hand with the protection and growth of healthy coral reefs.

2. Table of Content

3. Cruise Line

The creation of cruise ships is for passenger to have leisure through the voyages themselves, the numerous amenities provided on the cruise and the extraordinary destinations along the way. It is no longer just for the mature people but also the younger generations. The two main purposes to operate the cruise ship are for transportation business and leisure entertainment business that have developed throughout the years. Similarly to any full-service hotels or integrated resorts, cruise ships provides amenities onboard such as casino, restaurants, spa, clubs, bars, Broadway shows, rock climbing, ice-skating, pools and many more popular activities. With the economy downturn, more and more people are turning away from expensive overseas trip by air with luxury hotel stays to 'nowhere' cruise vacations, where the cruise will make a round trip with no ports of call for two to three days at sea. The multi-billion dollar cruise line industry have been evolving and growing ever since the discovery of it. " Cruising is about five percent of the overall vacation market and is the fastest growing segment of the travel industry" (Farley, 2009). " Industry forecasts for the cruise ship industry for 2010 indicate that the number of passengers will reach 22 million" (CIS). Cruise ships often operate in ocean worldwide with fresh coastal waters and sensitive marine ecosystem. Together with the expanding market and the expanding capacity on board the cruise ships, the volume of waste generated has the potential to escalate as much as the amount of waste

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generated by hotels. This may increase concerns regarding the impacts that cruise lines may have upon the environment. During the normal operation of a cruise vacation, a cruise ship may carry up to 5000 people including the employees on board. Full services that guests possibly need in a hotel stay, for example laundry and restaurants, are provided and this makes it equivalent to having a floating hotel in the sea. These services provided for the passengers create a way for them to spend their money that in turn generates profits for the cruise lines. Economically, this may be good as it creates cash flows but all these activities may also generate tonnes of waste, that most of the time, is not treated and ended up in the sea. According to the OCEANA Protecting the World ' s Oceans report, " it is calculated that a cruise ship with a capacity of some 2, 000-3, 000 passengers can generate some 1, 000 tonnes of waste per day which can be broken down as follows: 550, 000 - 800, 000 litres of greywater, 100, 000 - 115, 000 litres of blackwater, 13, 500 - 26, 000 litres of oily bilge water, 7, 000 - 10, 500 kilos of garbage and solid waste and 60 - 130 kilos of toxic waste. This means that the generation of waste per passenger per day comes to at least 300 litres of greywater, 40 of blackwater, 10 of bilge water, 2. 5 kilos of garbage and 30 grams of toxic waste." The data for the amount of waste generated by the number of passengers on each vessel can be viewed in the appendix A. Cruise ships generate five types of waste that can be broken down into greywater, blackwater, oily bilge water, solid waste and toxic waste.

3. 1 Greywater

Greywater, also known as sullage, is wastewater that derives from sinks, showers, bathing, dishwashing and laundry (see appendix B for different

definition). It is different from the wastewater generated in the toilet that may be categorized as blackwater or sewage. It is termed greywater because of its cloudy characteristic and it falls between fresh water and blackwater. Generally, it can be recycled for landscape irrigation, water features and constructed wetlands. On the cruise ships, greywater can be sent for treatment, discharged immediately or stored in the holding tanks for controlled discharge. For cruise ships using Advanced Wastewater Treatment systems (AWTs), some of the greywater will be treated together with sewage.

3. 2 Blackwater

Blackwater, also known as sewage, is usually generated from the toilets and human body wastes. It contains urine and fecal matters that make it different from greywater. Medical sinks and drainage may also be mix with blackwater in some cruise ships. Typically on a cruise ship, it will be treated and disinfected using marine sanitation device before it is discharged and most cruise ships usually install the AWTs which provide better biological treatment for both blackwater and greywater, compared to the traditional marine sanitation device.

3. 3 Oily Bilge water

Oily bilge water generally refers to wastewater that is collected in the bilge. The bilge is submerged below the sea waterline at the lowest part of the vessel. The wastewater is a mixture of water, oil, cleaning solutions, rough seawater and rainwater. The piping system, boiler and engine of the ship are usually the source of it. There are two ways that the oily bilge water can be managed. Firstly, it can be stored in a tank and discharged to a facility on <https://assignbuster.com/cruise-vacation-or-coral-reef-environmental-sciences-essay/>

shore. Secondly, it can be treated on board and discharged overboard according to standards and guidelines given.

3. 4 Solid waste

Solid waste is defined as garbage, rubbish, trash and materials that were being discarded or disposed. Disposal by individual or communities food and daily consumption of products in the everyday life are usually categorized as solid waste. Solid waste can be hazardous or non-hazardous, depending on the waste itself. They will be separated, as they will be treated differently and disposed separately. Onboard, it is managed through reducing, recycling and reusing to minimize the amount of solid waste generated.

3. 5 Toxic waste

Toxic waste is another name for hazardous waste, which is a subclass of solid waste. They are wastes that contain solid, liquid or gaseous hazardous toxic in it. Examples are items like paint, batteries and light bulbs. Most of the time onboard, such items will be stored on the ship until it can be disposed on shore and be recycled. Without the proper treatment to toxic waste by the cruise company, there is a risk of harming the environment and human health. In order to minimize the damage to human health and the environment, guidelines set by the authorities, which is different between countries and states, must be complied with in regards to the storing, treatment and disposal of such items.

4. Coral Reefs

" Coral reefs constitute only about 0. 1% of the sea floor (about 250K square miles, an area about twice the size of Colorado), they contain an estimated

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25% of all marine species " (Cundiff, 2013). Being the rainforest in the sea, the sensitive coral reefs have diverse effects on the marine ecosystem. Numerous stresses placed on them affect their healthy growth. " Reefs are easily damaged by pollution, ocean acidification and intensive fishing practices, while climate change and an increase in damaging nutrients in the water has seen an estimated 60 percent of the world's reefs under threat from human-related activities" (Knovel, 2012). Coral reefs damaged by the cruise industry are mainly due to the dropping of anchor, discharge of sewages and other wastes mentioned above. Wastewater that contains nutrients such as nitrogen and phosphorus will allow the growth of algae on reefs. However, the poor water quality environment due to the disposal of sewage, oil and toxic waste, will result in excessive nutrients being introduced. This will cause the algae to outgrow the coral and lead to degradation in the ecosystem. In order to have a healthy reef, there must be a balance between algae and coral as they are dependable on each other. Improper wastewater disposal may also introduce pathogens that are the main culprit for coral diseases like white pox. Water pollutions from ship discharge undermine the marine ecosystem health. Socially, we may lose a source of food and medicine as the coral reefs disappear. It was found that coral reefs might be the cure for many of human illness. For instance, scientists have developed medicine to treat asthma, arthritis, cancer and other diseases from these colorful coral reefs underwater. The loss of coral reefs could cause us to lose our future medicinal cures. " A devastating loss of biodiversity could mean that fewer species will be around for future medicinal research and biomedical studies." (Wear, 2011). By protecting this marine environment, people may benefit from the nature socially as we

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uncover more medical benefits that is within them. Environmentally, damage of coral reefs will have immense effects on the marine life that depends on them for habitat. " Coral reefs support more species per unit area than any other marine environment, including about 4, 000 species of fish, 800 species of hard corals and hundreds of other species. " (NOAA National Ocean Service Education, 2008). Extinction of species may happen due to degradation of coral reefs and function of the ecosystem being altered and hence loss of food source for the larger predator like sharks. Economically, the loss of healthy reefs may cause locals to spend more due to the loss of tourism arrivals and costal line protection. " Coral reefs provide coastlines with a buffer from storm surges and large waves. Damaged reefs may not be able to provide this valuable shorefront protection. In some areas this could create the need for building protective structures, such as seawalls and other expensive mitigation measures. " (Reefbase, 2013). " Coral reefs provide economic services — jobs, food and tourism — estimated to be worth as much as \$375 billion each year. " (National Oceanic and Atmospheric Administration, 2010). These entire problem regarding water pollutions was contributed is due to the factor of lacking in adequate disposal of pollutants, regulations that are not followed, as well as cost relating to proper disposal and treatment for these wastes.

5. Current trends

The cruise industry that depended on the healthy colorful coral reefs for tourism was considered to be the source for most of the negative impacts on the marine environment because of the wastewater pollutions and other pollutions contributed, is now playing its part in conserving the environment.

The cruise industry is working with the local governments and international organizations to come to agreement and raise awareness in protecting the coral reefs. For example, " the cruise ship industry, Mexican government, and Conservation International have announced a plan to try to protect coral reefs and other ecosystems in Cozumel, the world's most-visited cruise destination." (DeBarbieri, 2008). Meanwhile, local governments are enforcing stringent laws on the cruise industry in regards to disposal of wastes into the seas through setting of boundaries for sewage disposals, creating Acts to prevent pollution from ships and ensuring that they are followed. Daily operation of the cruise ship will be monitored and regulated by the International Convention for the Prevention of Pollution from Ships (MARPOL) set by the International Maritime Organization. Following the international standards of MARPOL, Cruise Lines International Association (CLIA) is committed to preserving the marine environment in its pristine condition, by ensuring that their vessels sail with onboard waste management technologies and adhere to procedures. Few of the examples that members of CLIA are committed to doing include exceeding the international standards for removing the oil from bilge prior to discharge for the oily bilged water. In terms of solid waste, they have agreed to minimize or eliminate the discharge of items like glass, cardboard, aluminum and steel cans into the marine environment unless it is processed in accordance to MARPOL standards prior to discharge. Cruise ships, similar to hotels on shore, are going towards the direction of going green. Green cruising is one of the initiatives that the cruise industry came out with by using enhanced technology to reduce, reuse and recycle. Instead of constructing new vessels, the cruise industry have been focusing on upgrading and improving <https://assignbuster.com/cruise-vacation-or-coral-reef-environmental-sciences-essay/>

their existing vessels, which translates to better management of waste as they improve the vessels' waste management technologies.

6. Recommendations

To ensure the cruise industry continue to prosper and to protect the coral reefs, governments have to continue to work with the cruise companies to amend the laws and Acts governing the disposal of wastes. Besides amending the laws, governments have to be willing to invest in the cruise industry to improve the infrastructure available to ease the costs and haste in the transferring of wastes from vessels to shore for processing.

Governments should set aside a portion of tourism receipt earned to contribute back into the community and society through research on technologies for better waste management systems to minimize the harm caused to the environment by human activities. Alternatively, subsidies can be given to encourage companies in developing of waste management systems. Governments should also be stringent on companies who do not follow the regulations. Cruise companies should also be involved by grooming their employees with courses and educating them on the importance of sustainability socially, environmentally and economically.

Everyone should be educated on the effects of depleting coral reefs and the tremendous impacts they have on the industry both locally and globally.

Companies should also set aside budget for not only ensuring their sewage treatment and waste management systems are up-to-date, but also improving them periodically. Awareness should be raised by the cruise companies to their guests on the issues of coral reefs and possible solutions through reducing, reusing and recycling of items as much as possible. For

example, guests can be proactive and choose not to change their linens daily, which will subsequently reduce the amount of laundry (greywater) produced.

7. Conclusion

In conclusion, the cruise industry has a crucial role in the preservation of coral reefs and everyone plays a part in protecting the coral reefs, from local governments all the way to guests going for cruise vacations. Guests have to be aware of how they may contribute to the environment and how they may help to minimize the subsequent impacts. Awareness have to be constantly raised and demonstrated to remind all parties that all have a role in conserving the marine environment as it is. Governments and companies have to constantly update themselves with new technologies to curb the problem on reducing the disposal of wastewaters. Vessels have to be closely monitored by governments, international organizations and the companies themselves to ensure their daily operations are in line with the standard operating procedures.