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HOTEL MANAGERS' VIEW OF SOLID WASTE MANAGEMENT: THE CASE OF BODRUM

Otel Yöneticilerinin Katı Atık Yönetimine Bakışı: Bodrum Örneği

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ABSTRACT

The increase in the human population in certain regions due to the increase in the human population, unplanned urbanization and concretion increases environmental pollution as well. Proper solid waste management is important to reduce or eliminate environmental pollution. Improper or inadequate solid waste management and waste disposal cause many pollution such as contamination of groundwater resources and surface. For these reasons, serious health and safety problems arise. Local administrations make investments and plans regarding solid waste management. Especially sectors that increase the population of the region periodically, such as tourism, increase the amount of domestic solid waste, pollution of water resources and cause environmental problems. Due to the increase in the amount of solid waste in the regions where tourism is developing, environmental degradation brings with it irreversible pollution. In this context, the main purpose of the study is to examine solid waste management in Bodrum, an important tourism center. In this theoretical study, firstly, information about solid waste and environmental problems were given and hotel managers in Bodrum were interviewed and municipal statistics were evaluated in order to reach the purpose of the study.

Keywords: Solid Waste Management, Tourism, Bodrum

ÖZET

İnsan nüfusunun artması, çarpık kentleşme, betonlaşma gibi sebeplerle insan nüfusunun belirli bölgelerde yoğunlaşması beraberinde çevre kirliliği de artırmaktadır. Çevre kirliliğini azaltmak ya da ortadan kaldırmak için doğru bir katı atık yönetimi önemli olmaktadır. Uygun olmayan ya da yetersiz kalan katı atık yönetimi ve atıkların bertarafı, yüzey ve yeraltı su kaynaklarının kirlenmesi gibi birçok kirliliğe neden olmaktadır. Bu nedenlerle ciddi sağlık ve güvenlik sorunları ortaya çıkmaktadır. Yerel yönetimler katı atık yönetimine ilişkin yatırımlar ve planlar yapmaktadır. Özellikle turizm gibi bölge nüfusunu dönemlik arttıran sektörlerin, katı atık miktarını yükselttiği ve çevre sorunlarına sebep olduğu görülmektedir. Turizmin gelişme gösterdiği bölgelerde katı atık miktarının artması dolayısı ile çevrenin bozulması geri dönülemez bir kirliliği beraberinde getirmektedir. Bu kapsamda çalışmanın temel amacı önemli bir turizm merkezi olan Bodrum ilinde katı atık yönetimini incelemektir. Teorik olarak ele alınan bu çalışmada öncelikle katı atık ve çevre sorunlarına ilişkin bilgiler verilmiş ve çalışmanın amacına ulaşabilmek için Bodrum'daki otel yöneticileri ile görüşülmüş ve belediye istatistikleri değerlendirilmiştir.

Anahtar Kelimeler: Katı Atık Yönetimi, Turizm, Bodrum

1. INTRODUCTION

Increasing solid wastes is seen among important environmental problems. Solid waste, which is generally perceived as garbage in our country, started to attract attention with the urbanization started after 1950. With the phenomenon of immigration to the city accelerating since the 1980s, the problem of solid waste in cities has become one of the priority policy issues of local governments. Depending on the population growth in cities, rapid construction and industrialization, the amount of solid waste reaches larger quantities. This problem leads to an increase continuously in investments for solid waste management.

Developing countries, as in countries with developed economies, should ensure that less solid waste is generated in the first place for solid waste management. It should then establish an Integrated Waste Management system in an environmental social and economic dimension. The amount and costs of solid waste must be estimated accurately in order to minimize environmental costs and to reduce economic costs (McDougall, at al., 2001: 29).

Solid waste consists of unsolicited or useless solids as a result of housing, industrialization and commercial activities. Solid waste, according to its origin (commercial, domestic, industrial, institutional or construction), according to its hazard (flammable, toxic, non-toxic, radioactive, infectious and so on) and according to its contents (glass, organic material, plastic paper, metal etc) it can be sorted in three ways. Appropriate solid waste management eliminates or minimizes the negative impacts on human health, in particular the physical environment, while at the same time supporting economic development and helping to improve the quality of life (Subramani, at al., 2004: 89; Sharma, at al: 2014: 50).

2. SOURCES AND TYPES OF SOLID WASTES

Solid waste generators are divided into 8 main classes: municipal services, industrial, institutional, commercial, residential, agricultural, process, construction and demolition (WHO, 1984; Oyelola & Babatunde, 2008: 430). It is very important for local administrations to know the types, amount and resources of solid waste generated in the region in terms of planning the most suitable and economical waste management. Typical solid waste generators and types of solid types are given in Table 1 (Hoorweg, at al., 1999:5).

It is very important to dispose of every waste produced without harming the environment. Environmental pollution of human activities causes environmental deterioration. Waste from human activities is removed from the environment by regular collection by local municipalities. Collecting, decomposing, transforming, eliminating, etc. Stages can only be achieved by solid waste management.

The share of organic wastes in domestic wastes is around 65%. Waste compositions in residential areas are mainly packaging wastes (paper, plastic, metal and glass) and organic waste. Accommodation establishments also included these waste compositions

Waste from hotels can be divided into two groups: wet (organic / biodegradable) and dry waste. Wet wastes are composed of food wastes. Therefore, the amount of food waste should first be reduced to the minimum level. Municipalities have an important role in the disposal and control of solid waste (Omidiani & HashemiHezaveh, 2016: 671).

Table 1: Sources and Types of Solid Wastes

Source	Typical waste generators	Types of solid wastes
Residential	Single and multifamily dwellings	Food wastes, paper, cardboard, plastics, textiles, leather, yard wastes, wood, glass, metals, ashes, special wastes (e.g., bulky items, consumer electronics, white goods, batteries, oil, tires), and household hazardous wastes
Industrial	Light and heavy manufacturing, fabrication, construction sites, power and chemical plants	Housekeeping wastes, packaging, food wastes, construction and demolition materials, hazardous wastes, ashes, special wastes
Commercial	Stores, hotels, restaurants, markets, office buildings, etc.	Paper, cardboard, plastics, wood, food wastes, glass, metals, special wastes, hazardous wastes
Institutional	Schools, hospitals, prisons, government centers.	Same as commercial.

Construction and demolition	New construction sites, road repair, renovation sites, demolition of buildings.	Wood, steel, concrete, dirt, etc.
Municipal services	Street cleaning, landscaping, parks, beaches, other recreational areas, water and wastewater treatment plants.	Street sweepings; landscape and tree trimmings; general wastes from parks, beaches, and other recreational areas; sludge.
Process	Heavy and light manufacturing, refineries, chemical plants, power plants, mineral extraction and processing	Industrial process wastes, scrap materials, off-specification products, slag, tailings
All of the above should be included as "municipal solid waste."		
Agriculture	Crops, orchards, vineyards, dairies, feedlots, farms.	Spoiled food wastes, agricultural wastes, hazardous wastes (e.g., pesticides).

Source: (Hornweg, et al., 1999:5)

3. PURPOSE AND SCOPE OF STUDY

Solid waste management requires a multidimensional, critical and complex struggle, especially for societies with high population density. Solid waste management in different societies may vary depending on different variables such as quality, investments, geographical conditions and economic activities. Prevention of environmental pollution is related to the disposal of waste. In countries around the world, one major environmental problem that confronts municipal management' is solid waste disposal (Baabereyir, 2009: 1).

In this study, definition of urban solid waste management, disposal of hotels solid wastes, environmental protection and economic gains have evaluated. Accommodation establishments improve recently their solid waste management systems which are new applications when they compared with other industries. This study is also considered within the solid waste management in touristic area.

4. STUDY AREA

At the first years of the Turkish Republic, with a population of the region is approximately 5000, where the local population provided livelihoods with fishing and sponge fishing. Especially after 1980's, the rapidly developing peninsula has become an important tourism and entertainment center. Bodrum Peninsula has preserved its cultural structure as a place that hosted different civilizations throughout history. Today, there is an important tourism center with its natural and cultural beauties (<http://www.bodto.org.tr>).

Since the demand for tourism in Bodrum is increasing rapidly in recent years, it is very important to evaluate the solid waste management in Bodrum. For this reason accommodation establishments are increasing quantitatively and qualitatively.

Especially the touristic activities that are concentrated in a certain time and in a certain region cause environmental pollution. Solid waste management is important for the development of tourism. The study; seeks to draw attention to waste types, waste management and recycling and focuses on Bodrum Municipality's waste projects. Municipalities have some authority on environmental issues. In this study, both the municipalities' work and the interviews with the business managers took place for solid waste management. Interview method was created for 22 five-star hotel managers in Bodrum. In these questionnaires, the management of the solid wastes are carried out by the hotel managers.

According to 2020 data, there are total with business certificate and investment certificate 222 accommodation establishments, 30.684 rooms and 57.700 beds in the Bodrum. There are 37 five-star

hotels in the Bodrum (<http://www.muglakulturturizm.gov.tr>). In Bodrum, the settled population of 250 thousand, the summer population reaches 1 million (<https://www.ensonhaber.com>).

Table 2: Number of Tourists Arriving from Bodrum Port by Year

Years	Tourists
2016	100.391
2017	119.008
2018	141.510
2019	179.804

Source: (<http://www.muglakulturturizm.gov.tr>)

Due to the arrival of local tourist (especially secondary houses) and foreign tourists, the population density of Bodrum district in July and August reaches four times of February. This situation increases the solid waste amount in certain periods. There are central facilities for solid waste disposal in Bodrum. There are also solid waste systems serving the hotels, secondary houses and marinas in the region. According to the provisions of the Regulation; it is the duty of the Municipality to carry out the collection and transportation of domestic solid waste within the boundaries of Bodrum. The regulation obliges solid waste administrations to use tariffs that are polluting at full cost when determining tariffs. According to the regulation polluter pays principle; to prevent environmental pollution and deterioration, and to ensure the improvement of the environment, the pollutants or those who cause degradation will cover the costs. The 'polluters pay' principle, also known as the 1992 Rio Declaration, is an application that recognizes that those producing pollution must bear the costs to manage this pollution. This principle underpins for regulation of pollution environmental.

Table 3: Housing and Non-Residential Waste Distribution

No	Group	%Rate
1	Houses	38,12
2	Non-Housing	61.88
2.1	Schools	0.61
2.2	Public buildings	0.34
2.3	Hotels	35.44
2.4	Hospitals	0.13
2.5	Restaurant, Food and Drink, Entertainment, Venues, Sports, Game Halls, Sports Facilities etc.	8.34
2.6	Buffet, Grocery, Wholesale and Retail Sellers, Offices, Offices, Tailor, Greengrocers, Butchers, Boutique	9.02
2.7	Warehouses, Logistics Stations, Cargo Distribution, Manufacturing	0.40
2.8	Banks	0.28
2.9	Supermarkets	0.75
2.10	Marinas	2.57
2.11	Marketplaces	3.58
2.12	Gas Stations	0.04
2.14	Private Health Institutions	0.04
2.15	Industry	0.13
2.16	Special Education Courses	0.07
2.17	Parking garages	0.15

Source: (<https://bodrum.bel.tr>)

The highest rate of waste is owned by hotels within the non-residential area (See Table 3). According to the guide published by the Ministry of Culture and Tourism, 19.7 tons / year of waste is generated from a hotel with 20 beds. According to this, 0.99 tons / year value is reached per bed. This value is calculated as 1 ton / year. According to the calculations of the municipality; the cost of 1 ton solid waste is 130.18 TL /ton (<https://bodrum.bel.tr>). The amount of waste is large enough to cause pollution. The waste amounts of facilities that are indirectly based on tourism are also included. (Hotels, Restaurant, Food and Drink, Entertainment Venues, Sports, Game Halls, Sports Facilities

etc., Buffet, Grocery, Wholesale and Retail Sellers, Offices, Offices, Tailors, Greengrocers, Butchers, Boutiques, Marinas have a rate of 55.37%).

Necessary measures should be taken for the disposal of solid wastes. Environmental cleaning is important because of the importance of tourism in the economic development of Bodrum.

5. RESULTS

As the value attached to sustainable tourism increases in the world, the number of projects related to solid waste management has also increased. One of them is T.C. It is a "Green Star" project launched in 2008 by the Ministry of Culture and Tourism (Dinçer & Gedik, 2010: 682). Within the scope of this project, there are five star hotel businesses in Bodrum with 33 green stars.

The results of the study are based on the interviews with hotel managers, taking into account the public statistics. In the study, 22 of 37 five-star hotel businesses in Bodrum were reached and 22 hotel managers were interviewed. The interview results are listed as follows:

-According to hotel managers, solid waste management is a major challenge in the hospitality industry. Generally, hotel guests can produce 0.5-1 kg of solid waste daily. Disposal of solid waste is an important cost for hotel businesses.

-Solid waste investments seem to be a serious cost in the short term, but it is an important prestige for hotels in the long term. Appropriate solid waste management enables sustainable tourism, environmental protection, tourism development in the region and hotel activities.

-Environmental protection and pollution prevention is obviously one of the main factors in the sustainability of Bodrum as a popular and preferred touristic town. This factor is also the basis of customer satisfaction so hotel managers a serious well-planned monitoring and control strategy regarding solid waste management and solid waste disposal are provide powerful projects.

- Hotel managements also develop their own solid waste reduction methods. These programs work in parallel with the practices of the Bodrum municipality. These can be exemplified as follows:

- providing trainings for hotel employees to protect the environment and reduce the amount of solid waste,

- informing customers,

-separation of wastes according to their sources,

- establishment of recycling systems,

- using renewable energy,

- Using environmentally resistant products instead of single-use products.

6. CONCLUSIONS

Tourism is an industry that protects and uses the environment. Ecotourism, rural tourism, sea tourism, bird watching, botanical tourism and many types of tourism can continue directly depending on the environment's sustainable protection balance. Otherwise, it is not possible to maintain tourism activities in a polluted environment. Solid wastes, in particular, are an economic and social element that affects not only the physical environment but also the quality of life of the region.

Bodrum is an important tourism destination with its natural beauties and tourism investments. According to the 2020 tourism data, 972.477 foreign tourists entered the Milas Bodrum Airport and 179.804 foreign tourists entered the country through the Bodrum Port. The number of foreign tourists entering the region from the borders of Bodrum has increased significantly over the last two years.

There are 37 five star accommodation establishments in the region. All these data reveal the tourism potential of Bodrum and can be considered as an indicator of the amount of solid waste from tourism

in the region. The interviews conducted with the managers of the accommodation facilities evaluated within the scope of the study show that these facilities are environmentally sensitive and are acting towards taking necessary measures for solid waste. Hotel managers must strictly use the accepted solid waste management and waste storage procedures, and prevent solid waste from damaging the environment and human health. In the region, solid waste management should be ensured for a sustainable tourism.

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