MANAGEMENT OF HOTEL WASTE:
A CASE STUDY OF SMALL HOTELS OF HARYANA STATE

DR. SANDEEP MALIK*; DR. SANjeev KUMAR**

*Assistant Professors,
Institute of Hotel & Tourism Management,
Maharshi Dayanand University,
Rohtak.
**Assistant Professors,
Institute of Hotel & Tourism Management,
Maharshi Dayanand University,
Rohtak.

ABSTRACT

Hotel industry, in recent years, has been a major consistent force behind the tremendous growth in Indian GDP. It has also fueled the increase in number of hotels around the country. Haryana was among the first states that identified the potential of this sector in overall development. Hotels are the major consumers of resources and contribute heavily toward the waste generation, as compared to others. The study aims to know the current status of use of energy resources; the amount and type of waste generated; the waste management practices followed by sampled small hotels in district headquarters (except Gurgaon and Faridabad) of Haryana state; and to suggest practical remedies to ensure lower waste generation and better waste management.

KEYWORDS: Hotel, Waste, Front Office, Food and Beverage, Housekeeping.

INTRODUCTION

Indian hospitality and tourism sector is the third largest foreign exchange earner, worth US$ 15 billion, after gems and jewellery and readymade garments (Mukherjee, 2012). It’s contribution in Indian GDP is 6.4%, with an annual increment of 7.8% per annum. Whereas, in world’s GDP, it is 9.1%, and rising with a rate of 4.3% per annum (World Travel and Tourism Council (WTTC), 2012). Its significance also increases in the context that this industry is the world’s largest employer, generating 254,941,000 jobs which mean that nearly one out of every 12 jobs is from this sector (WTTC, 2012). In India, every million invested in tourism creates 47.5 jobs directly and 85-90 jobs indirectly which higher than employment opportunities generated by agriculture (44.6) and manufacturing (12.6) sector (Mukherjee, 2012). This clearly indicates the economic importance of the sector, and maximum of the country’s tourism potential is still untapped.

As per the report of Ministry of Tourism (Govt of India, 2012), India received 6,290,319 international tourists. Whereas, Haryana received 130,423 foreign and 6,825,459 domestic tourists. Though, geographically, Haryana is accounting for only 1.3 percent of the total area of the country, but has very significant contribution in the National Gross Domestic Product i.e. 3.4 percent; with per capita income of rupees 94,680 which is 2nd to Goa (Economic Survey of
Haryana, The Department of Economic and Statistical Analysis, Haryana {DE&SA,H}, 2011-12. State economy has experienced a significant structural transformation as the share of Agriculture & Allied Sectors has come down to 16.3 percent, whereas maximum contribution (54.6 percent) is done by Services Sector followed by Industry sector (29.1 percent) in State GDP (DE&SA, H, 2011-12). The state is among the first states to recognize the importance of this sector in its growth with launching of first highway hotels in 1967 at Pinjore.

From figures it is clear that tourism industry has experienced a large growth in the recent decade. This has fueled demand for hotels; which means that the waste amount from the hotels will grow more rapidly. Due to their nature, hotels are massive consumer of resources and produce more waste. But, existing guidelines do not ask for efficient use and management of these resources and waste. However, in the long run managing use of these will not only have a major effect in increasing the profit of the hotel industry, but also will contribute to the long-term sustainability of this sector (Alamoudi, 2009). Hence it becomes necessary to focus on the hotel waste management. It must be managed from production to till disposal. This strategy should consist of engineering solution, education, and compliance by everyone who deals with the hotel waste (Sridang, Chevagidagarn, Sawatasuk, Vanapruk, Kongnakhon and Danteravanich, 2005).

REVIEW OF LITERATURE

In the context of solid waste, Treeger expressed his concern, as early as, in 1970 and propounded that we must find effective means of recycling a significant portion of the 350 million tons of waste materials produced in the United States. As the cost of disposing off it was, over $4.5 billion annually, this can add to their savings.

After studying nutrient waste in an urban population, researchers at the anthropology department (University of Arizona) concluded that approximately 0.9 ounces of food which represents nine to fifteen percent of food purchased were wasted per person per meal prepared at home (Harrison, Rathje and Hughes, 1974). Whereas eight to ten percent of all food served was left by university students as waste (Huff & Smith, 1975); Gaunt and Kouba (1975) found it to be more than 10 percent; and 15 to 20 percent range for waste in school lunch programme, with greater waste in the lower grades (United States Department of Agriculture, 1976).

A research team at Cornell's School of Hotel Administration initiated a study in the spring of 1975 to examine the wastes of commercial kitchens considering the fact that restaurants are major waste producers, and little or no data on the quantity or character of their wastes were previously available. The results of the statistical analysis indicated that the amount of fluid wastes generated has both a fixed and a variable component; and the per-meal waste dropped as the number of meals served increased. It further established that the amount of water used per meal also dropped as the number of meals rose, perhaps as a result of more efficient loading of the dishwashing machine and the spreading of fixed water usages over a larger number of meals (Nusbaum and White, 1977).

Nusbaum (1977) studied solid waste generated from commercial kitchens. He classified it in three categories i.e. packaging, paper and food. He determined that average packaging waste per meal produced from dinner is highest (2.66 ounces) followed by breakfast (2.45 ounces) and lowest in
case of lunch (2.07 ounces). Though average paper waste generated from dinner (1.34 ounces) is highest but followed by lunch (1.06 ounces) and least in case of breakfast (1.02 ounces). Surprisingly, there was no food waste in case of breakfast but here also dinner took the lead with an average of 2.84 ounces per meal followed by lunch (1.37 ounces).

Wastage is inevitable. Therefore, Edwards and Hartwell (2003) suggested that the question should perhaps be: is there such a thing as a ‘reasonable’ or acceptable level of food wastage beyond which quality, choice and nutritional intake are not compromised? They described food wastage as an important issue for any food service setting. It not only has moral implications for the environment, but also is a measure of acceptance and has important financial ramifications. They further added that public sector food service operations such as hospitals, prisons, homes and day care centers for older people may have budgetary constraints. But still, food wastage is a very sensitive issue as it is seen as a sign of poor management and a waste of taxpayers' money.

A report released by The Comptroller and Auditor General for National Health Service, England, (1994) estimated that the annual cost of food wastage was £1.44 million, whereas for a plated meal service in one hospital it was found to be as high as 40% of food (Barton et al. 2000).

Ferris (1995) studied factors affecting decisions regarding a disposal method are the availability of alternatives, state and local regulations, environmental issues, mission of the institution, position in the community, storage space, labor, cost for diversions, cost for utilities and supplies, and sanitation. This was further strengthened by Lee, Shanklin and Wie (2001) and Su, Mason and Shanklin (1997).

Glenn (1998) explored the state of garbage in America and found that the average tipping fee at landfills has increased above $10 per ton and still going up. This was further supported by findings of the study ‘Solid waste price index’ (Anon, 2000) where prices has risen to more than $37 per ton.

Shanklin (1998) in his paper “the role of dietitians in environmental protection” expressed that shaping the most cost effective disposal option and reviewing operational policies and practices that affect the generation of production and service wastes are serious components of solid waste management plans. As the disposal method used in a foodservice operation will have an impact on the cost and selling price of the meal. Therefore, it becomes necessary that cost analyses of various disposal methods should be conducted before choosing the optimal disposal method.

In a study of environmental issues impacting foodservice and lodging operations, Mason, Shanklin, Wie and Wolfe (1999) instituted that commercial operations produce an average waste of 0.89 lb and 0.86 gal by weight and volume, respectively, per meal. Though, it is lower than the per capita municipal solid waste (4.46 lb per day) (Environmental Protection Agency, 2000).

National Restaurant Association (2000) predicted that the expenditures on food away from home is going to increase to 53% by 2010. This means that more waste will be generated which will put extra liability on the foodservice industry to make ecologically sound decisions regarding waste. So these have to plan for effective and efficient waste management that include source reduction, resource recovery, and waste disposal will be needed for all foodservice operations to

Deng and Burnett (2000); Lai and Yik (2008) and Priyadarsini, Wu and Lee (2009) were quoted by Joseph, Francis, Yik and Man (2012) in their study on carbon emissions from hotels that Singapore and Hong Kong hotels are among the energy-intensive building categories. So the expected carbon emission due to energy use in the hotel industry is significant (Chan and Lam, 2002). But the actual extents to which they have contributed to such emissions remain unknown due to lack of empirical investigations into the hotels. It means that management could hardly determine if the carbon emissions from their facilities are within acceptable limits or not.

Florida Energy Extension Service (………..) conducted hotel waste audit and articulated that each guest room contributes from ½ pound to 28½ pounds of waste per day; majority of which is produced in the Food and Beverage Department and not from the rooms. A large property can generate as much as 8 tons of waste per day out of which 60% is recyclable. Hotels can further reduce waste through eco-purchasing. It further added that if a hotel’s waste isn’t reduced or recycled, it contributes to the state’s environmental problems.

RESEARCH METHODOLOGY

OBJECTIVES OF STUDY

The study has following objectives:

A. To know the current status of use of energy resources by sampled small hotels in district headquarters (except Gurgaon and Faridabad) of Haryana state.

B. To explore the amount and type of waste generated by the studied hotels.

C. To identify the waste management practices followed by these hotels.

D. To suggest practical remedies to ensure lower waste generation and better waste management without adding much to the cost side.

SAMPLE

All hotels, whether registered and graded or not, operating in the district headquarters and important towns (except Gurgaon and Faridabad) of Haryana state constituted the universe of the study. Out of these a total of 48 hotels were selected as sample as these agreed to cooperate.

DATA COLLECTION

Primary data was collected through a self-administered questionnaire and observation method. It was designed to get quantitative data about the use of electricity, water and wastes generated; and information about practices followed by the hotels department-wise. Whereas journals, books, articles, websites etc. will constitute the sources for secondary data useful for the research.
RESULTS DISCUSSION AND SUGGESTIONS

A. TO KNOW THE CURRENT STATUS OF ENERGY RESOURCES USED BY SAMPLED SMALL HOTELS IN DISTRICT HEADQUARTERS (EXCEPT GURGAON AND FARIDABAD) OF HARYANA STATE

Electricity is the main sources of energy for small hotels supplying 57% of the total energy requirements, mainly used for air conditioning, lighting, running other appliances, heating water etc. Diesel oil is the second main energy resource (37%) mainly used for running generators to produce electricity. With an average of 5%, Gas is at third position used mainly in hotel kitchens. Other fuels such as coal, wood etc contribute hardly 1% to the total energy resource.

B. TO EXPLORE THE AMOUNT AND TYPE OF WASTE GENERATED BY THE STUDIED HOTELS

Liquid waste is most prominent type of waste generated out of the hotels. It was found to be 60% of the total waste, as opined by the respondents. Most of which arose from guestrooms and cleaning of guest areas, followed by kitchen and least from employee areas. Solid waste was at the second place with around 30% produced mainly from kitchen closely followed by guest areas and least from other areas; and rest 10% was attributed to gaseous waste supposed to be generated from generators and other sources. But still, it is necessary to mention here that studied hotels have deployed no mechanism to precisely measure the amount and type of waste generated by them. The figures supplied are only crude estimates base on respondents’ hunch.
C. TO IDENTIFY THE WASTE MANAGEMENT PRACTICES FOLLOWED BY THESE HOTELS

The waste management practices of the sampled hotels were studied with the help of nineteen questions in the questionnaire. None of the hotels measure various types of waste generated; have set any benchmarks for waste generation; follow waste management policy; uses bio-degradable waste as manure; have put signs to reduce waste; uses centralized water heating system; asks their guests to follow environment friendly practices; purchases environment friendly products; organise training programme for staff to make them aware about waste management; check water fittings regularly for any leakage; have a team to control and monitor waste produced from the hotel; and have a waste water treatment plant.

Only three hotels have separate bins for collecting different types of solid wastes. Most of the hotels, 44, don’t segregate their waste in different categories. Less than 10 percent of hotels i.e. 3 have installed solar water heater but only 2 are in working conditions. Disposables are being used by all of the hotels, mainly due to rise in the cost of crockery and cutlery, which is very unhealthy for environment. All the sampled hotels have installed water overflow restricting valves to reduce waste of water. All the hotels are dependent on municipal authorities to dispose of their waste. But they show willingness to adopt an environment friendly practice provided it doesn’t cost too much.
D. TO SUGGEST PRACTICAL REMEDIES TO ENSURE LOWER WASTE GENERATION AND BETTER WASTE MANAGEMENT WITHOUT ADDING MUCH TO THE COST SIDE

Setting benchmarks are pre-requisites for any control system. To achieve these benchmarks, hotels have to device strategies which can be called as best practices. Though, these may vary from hotel to hotel depending upon their requirements and resources. But one precondition remains same i.e. first, we have to stress on better use of available energy resources, including water, and second, the produced waste must be reduced, reused and recycled fully before being disposed of through proper method.

WASTE MANAGEMENT GUIDELINES

These should be adopted for each department and waste generating section after analyzing the results of Waste Audit. These will help in:

- reducing amount and type of waste generated
- identifying major wastes
- short and long-term planning to reduce waste

Waste management practices involve avoiding, reducing, reusing and recycling wastes. Hotels have to device any such policy keeping in mind these. Some of these suggested are given in coming section of the paper.

GENERAL GUIDELINES

a) Inform your guests about your hotel’s commitment toward waste reduction and environment friendliness. Ask your guests to help in contributing toward minimising waste. This will not only help him in adjusting as per your hotel’s strategies but will also create a personal bond with your hotel.

b) Select vendors who take back reusable containers, pallets and other waste packaging.

c) Request that manufacturers package products in returnable and/or reusable boxes and crates.

d) Reuse plastic drums and buckets for recycling or trash collection containers in back of the house service areas.

e) Choose vendors who supply in reusable packaging and follow environment friendly practices.
GUIDELINES FOR HOUSEKEEPING DEPARTMENT

This department is responsible for maintaining hygiene and cleanliness in the hotel. Some of the practices, they can adopt, are:

AVOIDING

a) As the hotels (small hotels) are of not very luxurious in nature, we can afford to position newspapers in centrally located news stands at places such as lobby or restaurant, so that paper waste can be minimized.

b) Don’t use plastic bags.

c) Eliminate the use of plastic liners in garbage bins.

d) Go for natural fiber mattress. And if not possible, ask mattress manufactures to repair damaged mattresses rather than disposing these as they are made up of synthetic material. Mattress manufacturers will rebuild to the hotel’s specifications.

e) Avoid purchasing diluted cleaning and laundry solutions, by concentrated products.

f) Don’t buy vacuum cleaners with disposables bags.

g) Purchase cloth material of a high thread count for longer life.

h) Instead of disposables, supply reusable glasses and cups for guests.

i) Always use pump-style sprays in-place of aerosol cans.

REDUCING

a) Replace supplies in guest room when they are almost empty or ask your guests if they want fresh supplies or not.

b) Supply guest amenities which are not used very often on request.

c) Reduce concentration of cleaning solutions to prescribed level.

d) Use environment friendly washing solutions

e) Decrease the use of pesticides in the hotel.

REUSING

a) Use refillable soap, shampoo and other toiletry dispensers in guest rooms. By this way we can eradicate waste soap pieces, wrappers and plastic bottles.
b) Opt for refinishing and reupholstering of damaged and outdated furniture, rather than buying new.

RECYCLING

a) If possible, use damaged bath towels as hand or face towels or cleaning cloths.

b) Use recycled paper fibers made tissue and paper products.

c) Recycled plastics made Housekeeping carts, waste containers, caddies, and mop buckets should be used.

d) If possible recycled material furniture should be used.

GUIDELINES FOR FOOD AND BEVERAGE DEPARTMENT

Food and Beverage department provides food and beverage items to guests. Hence it is also one of the main waste producing sections of hotels.

AVOIDING

a) Don’t buy disposables.

b) Avoid items such as water, sauces and gravies in small packing. Ask your suppliers to provide these in returnable and refillable packaging.

c) Use refillable dispensers instead of single or small packets.

d) Always use reusable presentation material as a replacement for food presentations.

j) Food and Beverage linen must have a high thread count for longer life.

REDUCING

a) Reduce use of small plastic bottles for water; rather install a centralized water purifier.

b) Decrease energy consumption of cooking equipment by installing efficient equipment.

c) Install a washing system that uses minimum water and energy.

d) Maintain food and beverage area temperature between 25-27°C.

REUSING

a) Use reusable coasters in place of paper coasters.

b) Reuse the leftovers to make suitable dishes or donate them to needy people.
RECYCLING

a) Recycle the food waste and supply other type of waste for suitable recycling.

b) Use damaged linen for wiping crockery and cutlery.

GUIDELINES FOR OTHER AREAS

Other offices such as front office, accounts and finance, human resource etc. also contribute significantly to the solid waste material.

AVOIDING

a) Don’t buy unnecessary packaged products.

b) Avoid using disposable batteries, use rechargeable ones.

c) Never use waste bin bags in bins which are meant for collecting paper waste.

d) As far as possible avoid use of paper for notices or other purposes, use e-mails.

REDUCING

a) Reduce font size by one and spacing between lines, this can save a lot.

b) Keep the office AC temperature between 25-27°C.

c) Install CFLs or LEDs.

d) Use maximum sunlight in day.

REUSING

a) Use paper from both sides, for printing.

b) Ask for refillable cartridges.

RECYCLING

a) Donate unusable printer cartridges, paper, plastic and other waste material for recycling.

CONCLUSION

In the changing scenario of increase in environmental issues, government rules, ecological awareness amongst consumers and competitive market situation has forced other industries to focus on better waste management. Same is in the pipeline for hotel industry. Haryana being a fast growing state can set high standards for this purpose, which will, in long run, benefit the organizations. For this, the researchers have tried to establish the current status of energy
resources used; the amount and type of waste generated; the waste management practices followed by small hotels. Though, almost all of the hoteliers have agreed that they should use resources in a better way to minimize waste. But the only factor that limits them is availability of adequate finance, as these hotels are mostly run by families or small scale businessmen. They not only lack in funds but also in expertise to manage waste. For this purpose, Govt should provide some subsidy or incentives or tax rebates and necessary expertise for hotels who are willing to adopt environment friendly waste management practices. This study rings warning bells not only to the policymakers but also for the hoteliers to warn them about the issue; so that they can draw strategies, together, before it is too late. Though, it brings dark area under light but still the results are confined only to the state; so generalization of findings is very difficult. But it opens a novel avenue for future research.

REFERENCES


Ministry of Tourism (Govt of India) accessed at www.tourism.gov.in.

Mukherjee, D. May, 2012 Rural Tourism - Path to Economic and Regional development in India, Kurukshetra. 60(7): 3-6.


training needs of school food service directors in Kansas. School Food Serv. Res. Rev. 21, 88-91.


