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# 9. Research on Hotel's Food Waste Reduction in regards to Sustainable National Development

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**Abstract**

Hotel industry is witnessing the tremendous growth these days in India, after pandemic. According to a report of World Travel and Tourism Council "Travel and Tourism Economic Impact 2017 India" India is contributing 6.9 % to the world GDP. As a result, a number of International Hoteliers have started their venture in Hospitality Sector in India. Apart from having a number of opportunities hotel industry is facing a several problems, wastage of food on mass level is one of them.

The levels of food waste from hotels and restaurants is a major concern and is not being handled or planned in a proper way which leads to additional environmental impacts and in some or the other way the National development of the Country. Present research is an attempt to make hoteliers and Citizens aware about the food waste management practices in hotel industry in India by bringing together the numbers & understanding of the Waste produce to considering proper waste management majors.

**Waste Reduction Introduction**

Waste Reduction, is the practice of using less material and energy to minimize waste generation and preserve natural resources. Waste reduction is broader in scope than recycling and incorporates ways to prevent materials from ending up as waste before they reach the recycling stage.

Waste reduction includes reusing products such as plastic and glass containers, purchasing more durable products, and using reusable products. Purchasing products that replace hazardous materials with biodegradable ingredients reduces pollution as well as waste. In general, waste reduction offers several environmental benefits. Greater efficiency in the production and use of products means less energy consumption, resulting in less pollution. More natural resources are preserved. Products using less hazardous materials are used. Finally, less solid waste ends up in landfills.

**Waste reduction also means economic savings.**

Food Waste produced by Hotel Industry

Considering the nature of their work, hotels and restaurants are bound to generate considerable amounts of food waste. This certainly becomes a major concern to the relevant authorities such as management and government. Somehow, control measures have to be put in place so as to ensure that the hotels and restaurants thrive in a pleasant environment.

Food waste can arise at various stages of hotel and restaurant operations. Activities relating to handling and preparation of food materials can cause food waste due to such reasons as unidentified demand, overstocking, inefficient production, poor communication, staff behavior, unskilled staff and food expiries are some of the causes of Food wastage.

After the food is consumed, waste may also arise due to large portion sizes ordered and inefficient service methods. The types of waste generated in hotels and restaurants vary according to the types of food materials used. Examples include egg shells, potato and fruit peelings, bones, food leftovers, and packaging materials.

As the Hospitality sector grows in size and importance, so does the issue of food waste! It is high on the national agenda - 40% of all food is wasted in India, costing the economy Rs 50,000 crore. The amount wasted could feed the state of Bihar for an entire year.

Despite adequate food production, the UN has reported that about 190 million Indians remain undernourished. It is further estimated in recent times, that the value of food wastage in India is around □92,000 crores per annum.

**Findings**

1. On an average, 9 kg of food was disposed off by one Pop Tate's outlet daily. This suggests that an estimated 207 kg of food is discarded daily across the 23 Pop Tate's outlets in Mumbai.
2. Approximately 79 % of the total food waste recorded was thrown in the bin, while the rest was either fed to the poor or some animals.
3. A significant portion of the food waste binned was still in edible condition.
4. If the edible food waste generated by Pop Tate's is diverted, we estimate that it could feed at least 175 people approx. daily across Mumbai.

**Literature Review**

Hotels are the massive producer of waste. So it is very important to work on the food waste management plan. As a result, the problem of food waste is also becoming more complex. So it is the need of the hour to work in the concern area.

Following are the discussions which have been made in this field-

**Cornell (1975),** states in their study that restaurants are one of the major waste producers in the field of commercial kitchen.

**Barton (2000),** Writes in his study that the cost of food waste is estimated to the 40 percent of a plated meal.

**Shankling (1998),** States in his paper that effective strategy and practices can reduce the amount of waste. There should be an effective kind of disposal method for waste food.

**MSW Manual (2000)** states that Composting of hotel food waste is one of the best way to manage it. Compost is a perfect soil conditioner.

**Curry (2012)** writes in his study that almost 50 percent of total waste of hotel industry comes from the food waste.

**Rohweder (2008)** Hotel industry is the primary cause of waste production, major part of waste generated are mostly from Hotel rooms, storing area, and kitchen areas. If the entire waste is managed positively this will affect social, economic and environmental issues of countries.

**J.A. Rudmi Chehanika Sandaruwani* and W.K. Athula C. Gnanapala (2016)** Finds that the majority of the hoteliers do not realize that one of the biggest resource efficiency opportunities lies in the kitchen.

**Vikas Mohan (2017)** stated that hotels do require commitment of the management and staff to manage their waste they need to spare time out to work and implement waste management strategies.

**Step Taken By Hotel In Waste Reduction**

- Hotel waste management practices

Hotel food waste management practices vary from one country to another and from one organization to another. Ordinarily, the priority order is from prevention, to reusing, to recycling, and then to landfills. For others, if prevention fails to work for them, they would prefer to optimize it. This means the waste is redirected for feeding people and animals. Otherwise, the waste can be composted or used for renewable energy generation.

Generally, hotel waste management practices include prevention and reduction, recycling, donating, composting, tracking, improving ingredient purchase and storage, menu design, employee training, customer engagement and portion control.

- Ways to reduce food waste in Restaurants.

Food handling and consumption activities in restaurants are bound to cause worrying amounts of food waste. Despite the fact that the food wastes reduce profitability of the restaurant business, there are various challenges that the Restaurant has to worry about. Such challenges include Foul odor in the restaurant environment and production of greenhouse gases.

**The priority for restaurant management is to reduce the food waste by use of such methods as**

**1. Conducting food waste audits**

This involves analyzing and tracking food waste from the point of their source to the point of their disposal. There are two key factors to be considered during the tracking: the amount of food being wasted and the number of people visiting the restaurant. This data helps management to understand about the main source of the food waste. The tracking of the food waste is done with the help of two methods. First, is a food log system which monitors what type of food is going to waste, why that particular type of food is going to waste, and how much of it is going to waste!

Second, is a traffic log system which takes into account the traffic received by the restaurant, weather changes and other information that can be used for future planning for visitors and the food to order. Food waste in restaurants can be considered under two major categories – the ones that occurred before serving customers and the ones that occurred after the guests finish with dining. The types of waste generated in restaurants during food preparation may include potato peels, roots from leafy vegetables, bones, improperly prepared food, and spilled food. It is estimated that 4 – 10% of raw food in restaurants falls in this category. Any foods that guests have not been able to finish together with any packaging materials contribute to the waste.

**2. Avoiding the habit of wasting ingredients before they are prepared**

An inventory evaluation exercise needs to be undertaken to enable restaurant management to understand the length of time taken by stored food materials before they can be used in the restaurant. In so doing, possibilities of over-ordering and loss of perishable food materials are reduced. There is also need to equip restaurant personnel with food waste management skills through relevant training.

**3. Creating a plan for leftovers**

Leftovers arise when waiters serve customers with food portions that they cannot afford to finish. This problem can be solved by improving on accuracy of customer orders. Managers

have to understand the popularity of each dish and plan to produce the food accordingly. The customers may be encouraged to take any leftover food home.

**4. Creating awareness and engaging relevant food teams**

Restaurant staff should work as a team while implementing food waste management strategies. The team should be well sensitized on the problems associated with poor food waste management in restaurants. Members should also be educated on methods of monitoring, storage, and recycling food waste. New staff should always be inducted on the food waste management policy of the restaurant before they are integrated into the teams. Persons chosen to form the teams should preferably be equipped with analytical skills. This would enable them have a better insight into the problem of food waste in the hotels and restaurants.

**5. Composting the food waste**

Hotels and restaurants can plan to compost any compostable food wastes that occur in their premises. For this purpose, they would need an appropriate restaurant composting equipment like the popular Kwik Composter machine.

**6. Identifying quantity of different types of food waste**

The following actions help in identifying different types of food waste in hotels and restaurants

Engaging staff in conversations

Setting aside specific containers for disposing different types of food waste

Maintaining a record of different types and quantities of food waste

Reviewing invoices and other relevant documents

Success in taking these actions depends mainly on staff goodwill. They need to understand the importance of every single action taken.

**7. Sorting and weighing food waste**

Food waste can easily be sorted using different containers, each for certain types of food waste. Those that can be recycled like food packages, glass, paper, plastic bottles can be collected separately from organic waste such as food leftovers and raw food materials that can be composted. These major categories can be sorted further as meat, fresh fruit, vegetables, plastics, glass, and others. Determining quantities of respective categories or subcategories also helps in planning for disposal.

**8. Other food waste reduction ideas applicable in hotels and restaurants include**

**Changing your menu**

Changing your food materials purchase strategy

Educating your staff on operating policies and procedures

Investing in high quality kitchen equipment

Changing your plates, in such a way as to reduce portions served

Proper storage of fruits and vegetables, in such a way as to reduce loss from perishability.

Using "first in first out" strategy of issuing raw food materials

Conducting regular stock taking of raw food materials so as to avoid overstocking.

**Restaurant food waste disposal**

Food waste disposal is a matter that has raised concern of stakeholders severally in the past. The issue has been about finding safe methods of waste disposal. Observing restaurant food waste disposal regulations is another important consideration of good corporate citizenship.

Some of the effective waste disposal methods in hotels can be sampled as follows:

**1. Restaurant food waste recycling**

You need to develop a system that will ensure that all recyclable types of food waste are always recycled. Organic food waste can be composted to get nutritious manure for crops and can also serve as a soil conditioner. Inorganic waste such as plastics and glass can be reused or recycled.

**2. Incineration**

This involves combustion of the food waste. This method is mainly used for disposal of hazardous and toxic food wastes. Ash, which comes out as a by-product can supply valuable nutrients to crops.

**3.Composting**

This involves decomposition of organic food wastes by microbes. It can be done by accumulating the food waste in a pit for a long period of time or by using a composting machine. The compost produced can be used as plant manure.

**4. Sanitary landfill**

This involves dumping of the food waste in a landfill with a protective lining at the base. The lining prevents toxic chemicals from filtering into underground water zone. This method is the least preferred because it is the source of harmful greenhouse gases such as methane.

**Conclusion**

Mass Production of food waste from hotel industry is such a big challenge, so there is a huge requirement to develop a holistic framework for waste management. In hotel industry most of the food wastes are compostable. The present study is an attempt to show that an effective waste management not only helps the organization to work for an eco-friendly environment but

also helps them to earn profit out of it. Waste management is such a serious issue which needs the attention of public as well government authorities. The present study not only helps the hotels to adopt an effective waste management but also helps the researchers to work in the concern field. If this waste is reduced it would directly reflect for National GDP gain, also pertaining sustainable National Development.

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