FOOD WASTE MANAGEMENT IN HOTELS

A Pilot Study in the Philippines

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It must a lot af effort and resources to get your food here. Reduce food warste.

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Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

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EXECUTIVE SUMMARY

Food waste is an economic, social, and environmental problem. It is ironic how easy it seems to waste food and how challenging it is to produce them. This case study was conducted to assess the effectiveness of the localized food waste management toolkit in reducing the food waste in identified properties of SMHCC, gauge employees' insight on establishing this food waste management system and map out interventions based on the results of food waste monitoring. Food service establishment employees are frontliners in fighting food waste. Survey results showed that employees are willing to take part in addressing the food waste problem in their establishments. Comparison of the baseline food waste monitoring data and two (2) months after showed an average of 10% decrease in food waste per cover. These results show that initiating a food waste management system in food service establishments is a win-win solution to address this problem affecting businesses, people, and ultimately, the planet.



INTRODUCTION

Food is inarguably one of the most important natural resources on earth.

Food is linked to our cultures and traditions. Moreover, it is our basic need for survival, thus constituting food as a fundamental human right. Yet, despite the fact that food is an integral part of life, the way we harvest, package, transport, cook, consume, and dispose of food contributes to the global climate crisis.

SDG 12 or Responsible Consumption and Production specifically mentions a target of halving per capita global food waste at the retail and consumer levels by 2030 and reducing food losses along production and supply chains, including post-harvest losses (1). Food waste presents both a challenge and an opportunity for the hospitality sector particularly the food service sector. According to the 2018 census of PSA (2), restaurants and accommodation services comprise 75.2% and 13.4% of the food service industry, respectively. Initial information from actual observation on the volumes of food waste of establishments involved in this study are wanting to design more appropriate food waste diversion and reduction strategies. In the Philippines, 86.2% of biodegradable waste are food waste (3). These can be addressed if mitigation measures are in place.

These measures can contribute to reducing the amount of food that needs to be disposed of through holistic pre- and post-service approaches, and providing options for food waste diversion and recovery.

Given these challenges, WWF is working to transform sectors such as the food service industry where we see potential to make the biggest impact. It is estimated that 40% of food waste happens in customer-facing businesses like restaurants, hotels, supermarkets and other food service-related businesses (4).

OBJECTIVES

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This pilot case study specifically aims to:



Assess how effective the localized food waste management toolkit is in reducing the food waste of the two (2) identified properties;



Outline employees' view on food waste and the creation of a food waste management system within their establishments;



Measure baseline food waste information of properties identified by SMHCC; and



Identify strategies to improve the food waste management system.

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METHODOLOGY

WWF Philippines, with the aid of the toolkit developed by WWF-US in collaboration with the American Hotel and Lodging Association (AHLA) through the generous support of The Rockefeller Foundation, provided capacity development to private businesses to begin their tracking system with regards to food waste. The 66- pager toolkit was localized by WWF- Philippines to further provide technical support for project partners. In addition, TSD team developed an <u>MS Excel food</u> <u>waste reporting template</u> and analyzed the data for the two (2) hotels.

The Sustainable Diner (TSD) team, along with champions from SM Hotels and Conventions Corp. (SMHCC), engaged food service establishments within two (2) properties identified by SMHCC to establish their own food waste management system (Annex A). The team conducted employee surveys to gauge their views on food waste and the creation of a food waste management system (Annex B). TSD team also conducted trainings and workshops to improve capacities of employees on specific processes within the food waste management system namely, food waste mapping, manual separation, measurement, recording, and data analysis. Data gathering for the survey, capacity development training, and participatory activities were conducted from July 2018 to August 2019.

The case study also involved food waste monitoring. Initial collection of food waste information was done for 10 weeks as part of the baseline data. For Taal Vista Hotel, baseline data collection was from July to September 2018 and August to September 2018 for Pico de Loro. Upon gathering and processing the baseline data, WWF recommendations and employee-identified interventions to reduce food waste were gathered and communicated through various training and workshops. Some of these interventions identified were applied and food waste was measured again for another 10 weeks, from November 2018 to February 2019 for Taal Vista Hotel and November to January for Pico de Loro to assess if the interventions reduced the facility's overall food waste and food waste per cover.

SCOPE AND LIMITATIONS

This pilot study which implemented the localized food waste management toolkit in order to assess its effectivity in food waste reduction, engage the employees in this system, measure baseline food waste data, and identify recommendations for its improvement was successfully carried out through the food waste champions in SMHCC and in the two (2) properties. However, the study met several challenges.



The first challenge constituting part of the limitations of this study involved the adjustment of the employees in this new system and their inconsistency in properly implementing it especially during peak season when they prioritize fast and quality customer service over the extra tasks necessary to ensure compliance with this food waste toolkit. Food waste was measured usually by the kitchen staff for pre-service and stewards for post-service, and validated by the security department. Because of these factors, there were a few days when area-specific data were unavailable or inaccurate. However, most of the time, the validation system they implemented was effective in preventing these instances. There was also high staff turnover which prompted TSD to conduct more training and do more monitoring visits.

Another set of limitations are intrinsic in the toolkit. One is the use of the dual stream type of measurement which only measures pre- and post-service food waste. Although this is more cost-effective than other types such as measuring per ingredient or per phase, this dual stream type could only show where food waste is coming from (i.e. kitchen area where food waste is usually thrown or buffet and dining area where post-service waste is usually found). It provides limited information on the most common ingredients thrown or the phase when most food is wasted. Another limitation of the toolkit is that it measures only solid food wastes.

Lastly, measurement was done only for 20 weeks or around four (4) months between 2018 to 2019 and the information gathered were limited to the following:

Key Indicator	Parameters				
Overall Food Waste	 Total food waste at end of 8-week period Amount of food waste per week Number of covers per week Average number of covers per day of the week Total of food waste per area Contribution of each area to overall food waste 				
Pre-Service Food Waste	 Total pre-service food waste at end of 8-week period Total pre-service waste per week Total pre-service waste per week per area Average pre-service waste per area Average contribution of each area to pre-service waste 				
Post Service Food Waste	 Total post-service food waste at end of 8-week period Total post-service waste per week Total post-service waste per week per area Average post-service waste per area Average contribution of each area to post-service waste 				

RESULTS

EMPLOYEE SURVEY

An employee survey was conducted to gauge the level of potential involvement of employees in having a food waste management system in their properties. Survey results showed that employees have slightly positive and neutral perceptions on their facilities' existing food waste interventions (Figure 1). Interviews showed that food waste reduction mechanisms are found mainly on kitchen protocols like general waste segregation of non- and biodegradable waste (not specifying food waste), and simple food waste reduction planning initiatives. During the training session, it was validated that these efforts are not part of a systematized approach.





Despite having only minimal mitigation measures to fight food waste, the majority of the employees surveyed shared a positive response when asked about their interest in contributing to reducing food waste (Figure 2). The employees showed strong agreement when asked about their willingness to reduce food waste in their own homes. More so, 94.35% of the employees expressed willingness to help address the issue of food waste in their respective properties. They show neutrality and only slightly agree when asked about their existing knowledge on some food waste reduction measures. This was an area that was addressed and tried to improve in this case study. Overall, this shows that the awareness of food waste as a prevailing issue is evident in these properties and acting on this matter has been one of the concerns of employees.





FOOD WASTE MEASUREMENT

For the four (4) -month demonstration in the two (2) properties, there was an average reduction in the total food waste per guest served, and individually, Taal Vista Hotel exhibited an increase in food waste per cover while Pico de Loro showed substantial improvement(Table 1 and Table 2 and Figure 3 and 4). This information was gathered after intervention workshops aimed to improve food waste reduction efforts were done (Annex C).



FIGURE 3. Hotel property staff weighing food waste taken for data collection.

4%↑

Taal Vista Hotel- 4% increase in food waste per cover

Factors that may have affected this increase despite the identification of possible interventions by WWF, and TVH management and staff include: (1) inadequate time and human resources to fully implement the suggested reduction practices; (2) peak season; (3) high turnover of staffs assigned; and (4) higher number of covers in the baseline study.

14%↓

Pico de Loro- 14% decrease in food waste per cover

It is a proof of the underlying potential of having a food waste management system. It was estimated that PHP 360,000 savings was reported due to this decrease in food waste.

10%

An average reduction of 10% in the total food waste per guest served

Overall food waste weight of hospitality properties can be affected by several factors like total number of guests, the season of the year, employees assigned per shift, menu items available, and many other factors. This pilot study shows a lot of room for improvement but this average reduction is already a good starting point considering its short baseline gathering duration. This positive result was seen to have motivated the management and employees to continue the food waste management program.



FIGURE 3. Table toppers placed in different strategic areas to inform dining customers of food donation efforts of the property and how they can participate in the food waste reduction efforts through their dining behavior.

GUEST AWARENESS

Guest awareness campaign was initiated through communication in various forms with the help of WWF and the marketing units of the respective properties. Information materials are placed in strategic areas like buffet and dining tables to remind consumers of different sustainable dining habits (Figure 3). It is important to communicate food waste reduction efforts to guests so they can participate in the initiative and contribute to the 'front-of-the-house' part of the operation.

ADOPTION OF THE FOOD WASTE MANAGEMENT SYSTEM

The food waste management system was adopted and data was gradually included in the monthly reports of the SMHCC properties. SMHCC has been diligently monitoring their food waste as part of their sustainability initiatives and environmental reporting.

TIMEFRAME

The pilot study saw measurable results in as little as 20 weeks, but these achievements took leadership, commitment and sustained efforts both from the SMHCC properties and from WWF. Applying a successful food waste management strategy requires about five (5) to 10 hours of total staff time per week to get the program started, aside from reinforcement by leadership, staff meetings, and regular monitoring visits. A truly successful strategy requires a culture shift in the way food is valued and managed by staff, which evolves over time with daily reinforcement of better habits.

TABLE 1. Comparison of baseline and after invention food waste information in the two (2) participating properties through the 4 month pilot program.

		Pre-service (kg)	Post Service (kg)	Total Food Waste (kg)	Number of Covers	Total Food Waste/Cover
faal Vista Hotel	Baseline	15,278	14,969	29,281	68,773	441
	After intervention	14,138	14,294	28,432	61,971	459
Pico de Loro Beach and Country Club	Baseline	9,996	6,841	16,837	39,076	430
	After intervention	14,777	7,775	22,803	61,617	370
fotal	Baseline	25,274	21,810	47,084	107,849	437
	After intervention	28,915	22,069	51,235	123,588	415

OVERALL FOOD WASTE PER COVER

It is interesting to note that the total food waste of Taal Vista Hotel decreased after implementing a number of interventions but despite this, its total food waste per cover climbed up. A list of possible explanations for this was provided in the section above. From 68,773 covers in the baseline, it dropped to 61,971 in the end line measurement. In contrast, Pico de Loro recorded a higher total food waste but lower food waste per cover value in the end line. From 39,076 covers in the baseline, it soared to 61,617 in the end line. It is recommended that the relationship among these variables be explored for further studies with a larger sample size.



TABLE 1. Comparison of baseline and after invention food waste information in the two (2) participating properties through the 4 month pilot program.



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CONCLUSION

The 20-week pilot implementation of the food waste management system and interventions is considered a success. Initiating programs for food waste reduction are positively welcomed by the employees. At the end of the food waste monitoring, varying trends were observed regarding the food waste per cover of each facility. But the takeaway is, when a monitoring system is in place, establishments will know if there is an increasing or decreasing trend in their food waste. Knowing an establishment's food waste profile leads to identification of pain points for reduction, implementation of corrective actions, and overall improvement of the food waste management program.



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Food service establishments have an economic imperative in solving the food waste problem. Establishing a food waste management system is a process that can be retrofitted in each unique operation of food businesses. Based on the initial survey of this case study, employees are willing to be part of the solution in addressing the food waste problem. As much as you can, involve employees from all departments in developing your food waste reduction strategies.

A key ingredient for the successful implementation of food waste management is having the owners and management onboard. As mentioned, its implementation requires behavioral changes especially in how food is valued. Having a top-down approach supported by food waste champions per property and per department would make the system more effective. In this case study, the hygienists served as the point person per property since they had the capacity to enforce and monitor the system. The hygienists also ensured strict compliance to food safety guidelines, which was also part of identified food waste reduction mechanisms.

Ideally, reporting is done by the end of the day and food waste data is compiled per week. A food waste measurement template is available to make reporting easier and faster. A filled out form with sample data could also be used for reference. Analysis of the reported data should feed the succeeding food waste reduction strategies. Since data is limited by the preand post-service methodology, visual observation by the staff could be employed to know the types of dishes and ingredients usually wasted. Consumers should also be engaged by using creative materials. Based on staff feedback, their guests appreciated educational materials they could read while waiting for their order.

In terms of timeframe, the food waste monitoring of this study was limited to twenty weeks. It is recommended that food waste monitoring systems must be implemented all year round. Having food waste information for an entire year will help establishments strategize better. Upon completion of an annual food waste information, establishments will be able to see trends in food waste depending on the season of the year and traffic of customers.



A KEY INGREDIENT FOR THE SUCCESSFUL IMPLEMENTATION OF FOOD WASTE MANAGEMENT IS HAVING THE OWNERS AND MANAGEMENT ONBOARD.

In terms of data processing, if establishments want to learn about the economic value of food waste prevented or diverted, TSD project also launched a <u>cost-benefit monitoring tool</u> with food waste monitoring component.

This study was conducted prepandemic. The pandemic has affected the behavior of consumers and the direction of policy of governing bodies in order to ensure safety of both employees and consumers (5). A food waste monitoring system will still be valuable for a food establishment operating with limited operational capacity and with takeout and delivery services. Implementing the system while restrictions are still in place might help in easing into and familiarizing the process. Once the restaurant enters the post-pandemic economy, the practice is already ingrained in employees' habits. This might also be an opportune time to introduce the food waste management system since most businesses are strategizing as they are getting ready for the reopening of the economy.

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A Key Ingredient For Sustainable Tourism

Content Contributors and Editors:

The Sustainable Diner and SoilMate Project Team:

Melody Melo-Rijk, Alexa Jeanne Lasch, Iris Joy Abrigo, Lorayne Therese Roque, Liezl Stuart del Rosario, Jonna Ellaine Jordan, Kristan Gabriel Villalon, Jenette Callada, and Monique Mahusay

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ANNEX A - PILOT HOTEL PROFILE

TAAL VISTA HOTEL

Before Taal Vista Hotel became modern and pristine, the hotel had its share of historical growth that made its name which is formerly known as Taal Vista Lodge. After their renovation in 2004, Taal Vista Hotel, Tagaytay City welcomed its guests and visitors. It remains a landmark in their historical chapter of Tagaytay City. In 2002, Taal Vista Hotel reconstructed into the style of the original lodge with more extensions. This resulted in more facilities and amenities that are suitable for both business and leisure activities.

In 2002, Taal Vista Hotel was reconstructed in the style of the original lodge. Extensions were added to the complex to provide more conference facilities and amenities for business and leisure activities. In 2004, after its renovation, the Hotel welcomed back its guests and visitors. Today, Taal Vista Hotel remains a landmark deeply entrenched in the history and heritage of Tagaytay City.

Taal Vista is considered a 4-star hotel with more than 300 rooms and several function and meeting rooms.

Taal Vista has two (2) restaurants- Veranda Restaurant (with a bar at the lounge area) and Taza Fresh Table. They also have a small cake shop.

There is also the main kitchen that can cater to the banquets and events depending on the needs of their clients.

ANNEX A - PILOT HOTEL PROFILE

TAAL VISTA HOTEL FOOD WASTE MAP

Pre-service Waste Sources:

Veranda Kitchen- serves Veranda restaurant Veranda Bar Preparation Area- serves Veranda Bar Taza Kitchen- serves Taza Fresh Table Main Kitchen- serves Banquet and Events Cold Kitchen- serves Veranda, Taza Fresh Table and Banquet and Events Pastry- serves Veranda, Taza Fresh Table, Cake Shop and Banquet and Events. Butchery- serves Veranda, Taza Fresh table and Banquet and Events

Post Service Waste Sources:

Taza Fresh Table Cake Shop Central Garbage Area- serves Veranda Restaurant, Veranda Bar, Banquet and Events

PICO DE LORO BEACH AND COUNTRY CLUB

Pico de Loro Cove is a 40-hectare "Residential Resort Village" and is the first development in the "Premier Sustainable Coastal Resort Town" of Hamilo Coast. It has several facilities namely: Beach Club- A beachfront recreational facility that is exclusive to members and their guests, the Beach Club promotes a healthy lifestyle.

Country Club- The country club completes the distinctive leisure experience at Pico de Loro. Members and guests can opt for a more active and recharging experience with various sports facilities and indoor recreational amenities at the Country Club.

Pico Sands Hotel- Nestled within the tropical paradise of Pico de Loro Cove is Pico Sands Hotel. This Batangas beach resort is a seven (7) storey, 154-room hotel offering spacious rooms equipped with modern amenities and captivating views of the lush mountains and tranquil lagoon. Furnished with natural materials in a soothing palette of seashell white and sandy creams, the rooms offer a relaxing retreat from the hustle and bustle of city life.

As a whole, the entire facility houses four (4) different food service establishments namely, Pico Restaurant and Bar, Reef Bar, Lagoa Restaurant and Bar, and Sun Coral. There is also the main kitchen that can cater to the banquets and events depending on the needs of their clients.

ANNEX A - PILOT HOTEL PROFILE

PICO DE LORO BEACH AND COUNTRY CLUB FOOD WASTE MAP

Pre service Waste Sources:

Butchery- serves all establishments and the Banquet and Events Pastry- serves all establishments and the banquet and events Main Kitchen- serves Lagoa and Banquet and Events Cold Kitchen- serves the Banquet and events Lagoa Bar Kitchen- serves Lagoa (Bar only) Pico Kitchen- serves Pico Restaurant and Bar Sun Coral Kitchen- serves Sun Coral Reef Bar Kitchen- serves Reef Bar

For Post Service Waste Sources:

Pico Restaurant and Bar Lagoa Restaurant Sun Coral Restaurant Reef Bar Garbage Area for Banquets and Events

ANNEX B - SAMPLE SURVEY

The following questions are designed to monitor and evaluate our staff's level of awareness in food waste prevention at our property. Thank you for your time!



- 10. Our property has a process to donate surplus food that is safe for human consumption.
- 11. To your knowledge, is there any legal or reputational risk associated with donating food that has been prepared and stored according to the local safety regulations?
- 12. I am aware of our property using the following technologies to manage food waste: (choose all applicable options)
- 13. I am aware of the concept of pre & post-service food waste generation.
- 14. I am aware of activities I can perform that prevent pre & post-service food waste generation.
- 15. I am aware of the environmental impact of food waste.
- 16. I am willing to help reduce food waste at our property, regardless of a formal policy or requirement.
- 17. I try and reduce the amount of food waste generated at my home.

To help us understand, which departments are already teaching food waste prevention strategies, please answers the following questions:

Which of the following best describes your role at the property?

- Food and beverage Stewarding Staff director
- General manager
- Chef •
- Apprentice chef
- - Waiter/waitress

How long have you been working in the hospitality industry?

Don't Know Anaerobic

-

Disagree |

No Risk

High Risk

Minimal Risk

Strongly Disagree

•

•

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Digestion Sending it to a Composting landfill offsite Other – please Composting specify _____ -. Strongly Disagree Disagree | Neutral/Don't Know Strongly Agree Agree -. Strongly Disagree Disagree | Neutral/Don't Know Strongly Agree Agree •

•

Agree

Dehydration/

Weight reduction

Strongly Agree

•

Neutral/Don't Know





Culinary Staff

• -. Strongly Disagree Disagree | Neutral/Don't Know Agree Strongly Agree

Please Specify_____

Please indicate your gender.

- Male
- Female
- Nonbinary
- Prefer not to answer

Have ideas? Please share any feedback/comments.

ANNEX C - INTERVENTIONS ADOPTED BY THE PROPERTIES

Pre-service

- 1. Review and revision of their menu and portion sizes
- 2. Strict implementation of purchasing and receiving protocols of the properties
- 3. Composting
- 4. Strict maintenance of storage facilities and equipment

Post Service

1. Provision of consumption cues for guest awareness in buffet tables (tent cards/ table cards)

- 2. Servers are trained to ask guests right before hand
- 3. Removal of garnishes that are not being eaten
- 4. Review of portion sizes
- 5. Minimal refilling of food in the buffet