African Journal of Hospitality, Tourism and Leisure
ISSN: 2223-814X
2025, Vol. 14 No. 1 pp. 127-134

Food Waste Mitigation Strategies in Hotel Restaurants

Bakotile Dineo MABILU
School of Tourism and Hospitality,
College of Business and Economics,
University of Johannesburg,
South Africa, Email,
dineomabilu0@gmail.com
Corresponding Author

Cynthia MABASO
School of Tourism and Hospitality,
College of Business and Economics,
University of Johannesburg, South Africa,
Email, cmabaso@uj.ac.za

Daryl HEWSON
School of Tourism and Hospitality,
College of Business and Economics,
University of Johannesburg, South Africa,
Email, darylh@uj.ac.za

Abstract

This study addresses the challenge of ineffective management of restaurant food waste, which remains a global issue. As such, it investigates strategies for mitigating food waste in hotel restaurants. It is crucial for food service industries to be well-informed about food recovery methods and ways to repurpose food waste. Despite the global importance of this topic and the various studies that have been conducted, restaurant food waste mitigation remains under-researched. Therefore, this paper aims to contribute to the literature by exploring and critically analysing the issue of food waste in restaurants and outlining strategies for mitigation from the perspective of hospitality industry management. The study employed a qualitative research method for data collection and analysis. Interviews were conducted at a hotel restaurant in Gauteng. The objectives of the study are to determine how food waste is measured, explore how management repurposes food waste, and analyse management strategies for mitigating food waste. To achieve these objectives, primary data collection was used to gather detailed information about hotel management's experiences with food waste. The study identified the causes of food waste and its effects in restaurants. Restaurant managers emphasized effective strategies that could be applied in other establishments as well.

Keywords: Food waste; restaurants; management; mitigation strategies

How to cite this article: Mabilu, B.D., Mabaso, C. & Hewson, D. (2025). Food Waste Mitigation Strategies in Hotel Restaurants. African Journal of Hospitality, Tourism and Leisure, 13(4):127-134. DOI: https://doi.org/10.46222/ajhtl.19770720.592

Introduction

Food waste is a global challenge that impacts society, the economy, and the environment (Harish et al., 2021). According to the Food and Agriculture Organization (2013), one-third of food wasted globally is intended for human consumption. Vizzoto et al. (2021) highlight that in developed countries, the consumption stage of the food chain is a major contributor to waste. In the food service sector, consumers are responsible for one-quarter of the waste, emphasizing the sector's critical role in developing strategies to reduce food waste (ReFED, 2018). While previous studies have examined various aspects of food waste, such as restaurant food waste management innovations (Martin-Rios et al., 2018), consumer behaviors (Van Geffen et al., 2020), serving styles (Filimonau et al., 2020), and guest food waste attitudes (Okumus et al., 2020), limited research has focused specifically on food waste mitigation strategies in hotel restaurants (Principato et al., 2018). Failing to communicate the problem of food waste through effective prevention and mitigation measures will prevent the hospitality industry's striving towards sustainability, leading to substantial waste generation (Betz et al., 2015). Food wastage is a problematic sustainability challenge under public debate, with stakeholders discussing terms of its meaning, causes, and solutions (Filimonau & Sulyok, 2021). Environmental health is an important pillar in tourism sustainability (Crotts et al., 2022). Food waste crucially contributes to climate change by emitting methane, a dangerous greenhouse gas, into the atmosphere through decomposition in landfills (Sucheran & Olanrewaju, 2021). Therefore, this paper aims to contribute to the literature by exploring food waste in restaurant settings and outlining strategies for its mitigation from the perspective of hospitality industry managers. The study objectives were to explore how management repurposes food waste and to analyse management strategies for food waste mitigation.

Literature review

The hospitality and tourism industries are among the largest contributors to the South African economy (Sucheran, 2021; Taal, 2021). The industry of hospitality consists of tourism, food and beverage establishments, and accommodation. Within the hospitality industry, restaurants are the largest subsector, growing rapidly and providing 7.6% of total job employment, which amounts to 45,000 jobs (Taal, 2012). Although an important economic contributor, the hospitality sector remains with substantial food wastage, making up considerable hotel waste (Kasavan et al., 2022). In this context, a literature review has been conducted to gain an understanding of food waste mitigation strategies in hotel restaurants to minimise food waste. This research aims to contribute to literature by exploring managerial recommendations on repurposing food waste and analysing management strategies on food waste mitigation.

Food waste major trends in restaurants

The hospitality industry often generates excess food due to changes in demand in the food preparation stage (Boschini et al., 2020). Despite using different demand forecasting methods, which include direct and technology-driven predictions, accurately forecasting guest numbers remains a crucial challenge (Pirani & Arafat, 2016). Food service providers frequently produce more food than required to avoid turning customers away because of food shortages (McAdams et al., 2019). Additionally, guests may leave food unconsumed when offered a buffet, which is often a decision implemented by foodservice operators to improve customer satisfaction (Filimonau et al., 2022). Food waste happens during processes like fat trimming, over-preparing food, removing the skin and bones from meat and poultry, and increasing portion sizes to meet consumer demand (Okumus, 2019). Another major trend mentioned by Dougherty (2023), highlights that incorrect storage and failure to follow the food safety laws can lead to food deterioration, rendering it potentially hazardous and unfit for human consumption. Eating rotten food presents significant health risks to customers, including foodborne illnesses. To mitigate this type of food waste, prioritising correct storing techniques is important, which include controlling temperatures, adhering to expiry dates and training staff regularly about safety protocols (Dougherty, 2023). Functional inventory management is also important, with restaurants recommended to conduct daily inventory checks to ensure adequate stock and understand usage patterns (Bharucha, 2018). This involves daily checks for perishable food items like dairy and poultry products and weekly checks for non-perishable food items like grains and sauces. Inadequate stock management can impact storage. For instance, the first in, first out (FIFO) approach, commonly used in the foodservice sector to minimise spoilage, is not always effectively implemented (Charlebois et al., 2015).

Major gaps found in restaurant food waste

Plate waste is a result of unfinished meals, which is attributed to the actions of consumers (Tomaszewska et al., 2021). For instance, guests could place an order of excessive food to demonstrate generosity, particularly at social events (Filimonau et al., 2020). Additionally, guests could their have high standards for food appearance and taste, leading them to reject meals that fail to meet their expectations (von Massow & McAdams, 2015). However, waste from plates can be attributed to management choices and guidelines, such as excessive portion sizes, which are determined by food service providers (Betz et al., 2015). Furthermore, Filimonau & Sulyok (2021) states that, consumers have the right to reject poorly cooked meals, and this waste should not be the only factor attributed to consumer behaviour. More gaps include poor training in trimming and plating among junior chefs' resulting in cooking mistakes and food waste, while experienced chefs' nonchalant attitude towards waste worsens the situation (Goh & Jie, 2019). Experienced chefs repeatedly fail to recognise food waste as a major problem, instead seeing it as an inherent part of operations (Iomaire et al., 2023). This leads to avoidable cooking errors such undercooking or overcooking, resulting in plate waste, which can be attributed to staff shortages, technical issues, or chefs being too busy (Filimonau et al., 2022). Furthermore, chefs are hesitant to adopt waste-reducing practices, fearing it may affect customer satisfaction (De Visser-Amundson, 2021).

Waste tracking methods

To effectively reduce food waste, restaurant managers ought to initially pinpoint the specific places where they operate their business where food waste occurs most frequently, identify the underlying causes, and then regularly implement targeted interventions to minimise waste in those areas (Filimonau & de Coteau, 2019). Various methods are employed to measure food waste, including direct methods for specific measurements and indirect methods for broader estimates (Hanks et al., 2014). However, the differing approaches make it difficult to compare and quantify food waste volumes (van der Werf & Gilliland, 2017). The most commonly used technique is direct weighing, a quantitative approach that involves weighing and analysing the composition of wasted food (Parfitt et al., 2017). This method utilises specialised equipment to accurately measure waste for specific food items (Hanson et al., 2016). Although it requires significant resources and space—limiting the scope of other observations—it remains the preferred method for food service measurements (Clowes et al., 2018). For instance, in 2015, Wang, Liu, and their colleagues conducted field surveys using direct weighing to assess restaurant food waste in China, capturing both the quantity and patterns of waste. Waste audits enable restaurants to conduct a thorough examination to identify the underlying causes, categories, and amounts of wasted food generated. This analysis empowers restaurants to take targeted actions to address waste efficiently (Mettler, 2023). By assessing food waste, restaurants can pinpoint specific areas where waste is most prevalent, whether during food preparation in the kitchen, from unfinished meals in the dining area, or due to expired ingredients in storage. Understanding the sources of food waste allows restaurants to implement strategies to minimise waste and reduce costs (Mettler, 2023). The waste tracking sheet, developed by WRAP (2015) specifically for the UK food service industry, was adapted for auditing food waste to meet the needs of food service operators. According to WRAP (2015), food service operators should document the quantities of wasted food generated within their establishments over a minimum of three typical business days to gain a representative understanding of their food waste patterns. Additionally, digital photography provides another method for assessing consumed versus wasted food at any given time. This approach involves capturing images that can be reviewed for consistency and reliability by multiple judges (Smith & Cunningham-Sabo, 2013). Additionally, visual estimation—a technique that requires trained observers—is another method for measuring waste. Although this method involves less time and space, it is considered reliable and effective (Hanks et al., 2014; Martins et al., 2014).

Possible solutions of food waste management

Firstly, inaccurate demand forecasting has most potential to reduce food waste because it avoids overproduction of meals and oversupply of food, which reduces the probability that it will spoil (Filimonau et al., 2019). Considering the factors of consuming food at restaurants, accurate demand forecasting is the most efficient mitigation strategy, but it is also challenging to implement (Hu et al., 2004). When it comes to company policy, managers who commit to lowering down on food waste during preparation and storage are more probably to set aside a sizeable portion of funds for investments in advanced models for forecasting (Filimonau & de Coteau 2019). Creating strong relationships with suppliers can be important to restaurants' efforts to reduce food waste because restaurant managers may be able to place the proper food orders only if and when not it's really necessary (Derqui et al., 2016). Secondly, managers ought to keep a close eye on "use by" dates on their food items and label the food with the shortest shelf life so that they are used first to reduce food wastage (Filimonau et al., 2020). Although some restaurants only conduct daily stock checks for food likely to expire such as dairy products and products related to poultry, and weekly stock take for other supplies such as grains sauces, the majority of restaurants conduct inventory checks every day to stock up on necessary materials and gain information about the food items being used (Bharucha, 2018). Restaurant managers have to monitor the actions of all employees involved in the product procurement process. This is because proper product shelf-life conservation requires careful storage (example, proper refrigeration temperature adjustment), and accurate inventory management and placing an order based on previous wasted food records (WRAP, 2015). Food waste will result from noncompliance with food safety laws because of contamination, particularly if it comes to perishable items (Parfitt et al., 2010). Thirdly, given that menu design is an important task in reducing food wastage, restaurant management has made it clear that they regularly redesign their menus in order to make better use of the leftover ingredients (Okumus et al., 2020). According to previous studies, menu planning is by 50% of restaurants as a crucial first step in reducing food wastage (Wu & Teng, 2022). In the process of food production, chains of food service outlets, a lack improper menu planning skills and an abundance of menu options which are the main drivers of food wastage (Okumus et al., 2020). However, it seems that independent restaurants with greater latitude and the ability to redesign their menus are the most suitable candidates for such techniques (Filimonau & Krivcova, 2017). Portion size significantly contributes to food waste during serving and consumption stages (Benton, 2015).

Fourthly, repurposing the excess food items and redistributing the extra meals is necessary to avoid food waste (Betz et al., 2015). There are multiple ways in whereby restaurateurs could accomplish this, including staff meals that might be offered with any leftover food (Filimonau et al., 2019). While adhering to food and health safety regulations, chefs could repurpose food items from served dishes in the preparation stage to create brand-new, creative recipes. For instance, fruits and vegetables that are spoiled can be juiced for beverages and sauces, or use leftovers to make soups, broths, gravies, and sauces. They could focus on pre-service preparation according to the popularity of the meal and use a few ingredients or goods that might not be required throughout the service period (Principato et al., 2021). Carrillo et al. (2021) emphasised that chefs must be trained to utilise leftover ingredients to cut down on kitchen food waste. This highlights how important it is for chefs to have creative cooking abilities. The fifth solution includes employee education in the domains of food production and service to effectively manage food wastage is a valuable strategy (Gossling et al., 2011). By providing training and fostering a culture that values food, staff can play an active role in reducing waste within restaurants (Shapiro, 2023). Foodservice businesses can use policies and standardised procedures to instruct and teach staff. Additionally, they can put policies in place to avoid food spoilage, control and separate food waste, and encourage staff members to offer ideas that lower expenses and waste (Benton, 2015). Offering incentives, such as recognition and reward programs, can motivate staff to engage in food waste reduction efforts (Silva & Florêncio de Almeida, 2024). To create lasting changes, it is essential to reduce food waste, hotels' restaurants and foodservice establishments should implement sustainable production and consumption methods (Papargyropoulou et al., 2014). Farmers can use food that is unfit for human consumption as animal feed or recycle it through commercial composting (Immanuel et al., 2013). Organic and inorganic waste should be collected separately for different purposes, and some food may be redistributed through charity programs. Additionally, restaurants can establish standard operating procedures for employees to follow (Chu & Hsu, 1999).

Methodology

The study collected and analysed data using a case study qualitative research approach (Yin, 1989). This method was selected for the study because it made it possible to thoroughly examine people's actual emotions and life experiences by examining social events, which differs from the quantitative approach (Gair, 2012; Heikkila, 2016). The study employed an explanatory approach, as the topic required a thorough exploration (Pollock, 2020) and the issue of food waste in the foodservice sector is often poorly understood (Wang et al., 2017). The qualitative approach was well-suited to the study's focus on the global societal issue of food waste in restaurants, particularly by gathering insights from hotel restaurant managers whose experiences are crucial for effective mitigation (Martin-Rios et al., 2018). A sampling procedure was employed where the researcher selected a specific group of participants to represent the larger population (Ogula, 2005). This study used a purposive sampling method, a non-probability technique that targets participants with specific knowledge about the topic (Frost, 2024). Participants were selected from hotel restaurant management, given their expertise in the study area (Filimonau et al., 2024). Restaurant and kitchen managers were identified as suitable sample as previous research has shown that restaurant managers significantly influence food waste in their establishments (Filimonau et al., 2019). The researcher identified and approached a restaurant located within a hotel in Rosebank and selected 10 participants on-site, comprising: Hotel manager, executive head chef, hot kitchen chef de partie, cold kitchen chef de partie, pastry chef de partie, kitchen scullery manager, food and beverage manager, human resource manager, stores manager, waste manager. This sample size was selected to increase the analytical power of the research project. The recruitment criteria for participating hotel restaurant managers were as follows:

- The current management team had to be willing to discuss their food waste mitigation strategies.
- Participants were required to provide access to background data, such as company policies regarding food waste (Filimonau et al., 2020).
- Managers needed to be available for interviews and consent to the interviews being recorded for data analysis and interpretation.

To achieve the study's objectives, primary data collection was employed to gather detailed information on hotel management's experiences with food waste (Robinson et al., 2014). Structured interviews were used to generate data, consisting of pre-planned, logical questions (Pollock, 2020). One-on-one interviews were conducted with managers from the food and beverage, human resources, stores, and waste departments. To ensure content validity, the interview schedule was adapted and restructured based on previous research (Okumus et al., 2020). The interview questions were meticulously crafted to delve into managerial perspectives and experiences with food waste mitigation strategies. The interviews were conducted at a hotel restaurant in July 2024. Ten interviews, each lasting 5-10 minutes, were recorded and fully transcribed using ATLAS.ti, a software analysing tool for qualitative data.

Results and discussion

The results that came across within the study were sub-categorised into two themes. These themes were primarily the results based on the contributions of all the participants involved from the networking views that were generated from the codes that were transcribed from the different interviews. The two major themes that were of key significance looked at management strategies, mitigation strategies. As seen in the table below, the themes are categorised and coded.

Table 1: Coding structure with themes

Themes	Codes
Mitigation Strategies	Forecasting
	Redesign menu
	Portion Control
	Staff training
	Storage and inventory management
Management Strategies	Repurpose leftovers Staff meals Waste into compost Waste tracking systems

Source: Authors'

The Table illustrates practical mitigation strategies aimed at preventing food waste from reoccurring. Forecasting, menu redesign, portion control, staff training and appropriate storage and inventory management are just a few of these strategies. Management has also designed plans to manage and utilise waste that has already been produced. These practices are things like repurposing leftovers, supplying staff with meals, turning compost into waste, and monitoring waste via systems. These are all reactive strategies, which seek to mitigate the effects of waste. The growing results are further below now:

Management strategies

The findings indicate that one of the restaurant's strategies for managing food waste includes repurposing leftovers to create new dishes. They also provide unconsumed food to staff as meals. Meat bones and fruit and vegetable peels make up the majority of the garbage. Preventing food waste requires redistributing surplus meals and repurposing excess food (Betz et al., 2015). Providing additional food to employees as staff dinners is the most popular way to reduce food waste, according to a study by Sakaguchi et al. (2018) that involved a group of restaurant managers. Given that it is typically more common in fast-casual restaurants with higher dish turnover, the practice of repurposing ingredients in full-service restaurants is remarkable (Filimonau et al., 2019). Participants reported using vegetable scraps to make sauces, soups, and stocks; fruit peels for jam and smoothies; and meat scraps, such as bones and fat, for stock. Additionally, meat with excess fat is trimmed and used in dishes like beef stroganoff. Using these waste materials demonstrates the restaurant's commitment to maximizing ingredient utilisation and minimizing waste. One participant mentioned that: ''So maybe like there's veggies leftover or there's old like veggie expired, like old stock that you need to use up so that it doesn't affect our food cost. Then we'd make like a vegetable soup, or we'd have like something called a meal of the day, like a special called like maybe fish of the day. And then every day we create a new dish for the dinner time service.''

This innovative use of ingredients reflects a strategic approach to minimizing food waste through creativity in the kitchen. Additionally, the restaurant effectively manages its waste by converting it into compost. This is achieved by segregating waste into different components, with perishable and non-perishable items separated into bokashi bins. The results reveal that recyclable materials are sorted for potential sale or used in composting, while non-recyclable waste is disposed of conventionally. This process helps reduce environmental impact, minimise landfill contributions, and promote sustainability in food waste management (WRAP,2017). A key element of the restaurant's waste management plan is the separate collection and recycling of food waste (Filimonau & de Coteau, 2019). The primary task in this process is sorting food waste into dry and wet categories. By participating in the recycling of food waste, these efforts enhance the restaurant's reputation and image, while also promoting a positive corporate identity (Thyberg & Tonjes, 2016). A participant stated: "So, we haven't put anything into place as such for managing waste other than bokashi or separation of waste kind of things like that kind of thing. But it's very interesting with bokashi because I did quite a lot of gardens, I had my own where I experimented quite a lot with it, and if you actually bokashi the same vegetable in the bokashi in different bins and then use that bokashi to fertilise the same vegetable, you see the incredible results that you get. It's incredible."

Mitigation strategies

Practical methods for cutting down on food waste in the restaurant sector involve precise forecasting to prevent overproduction. Research indicates that using advanced forecasting models, instead of relying solely on managerial estimates, can significantly decrease food waste (Filimonau et al., 2019a). This is especially important when catering for large parties and events, as reconfirming guest numbers can help avoid over-cooking and subsequent waste (Papargyropoulou et al., 2019). Restaurants can also tailor their food preparation based on anticipated occupancy levels and sales forecasts to minimise over-catering and redundant production. Additionally, daily departmental briefings can facilitate effective planning, leading to more efficient kitchen and restaurant operations (Hu et al., 2004). Accurate demand forecasting is recognised as the most effective strategy for tackling the factors that influence food consumption in restaurants, although there are challenges in its implementation (Hu et al., 2004). Despite these challenges, this technique is commonly utilised throughout the industry (Lasek et al., 2016). One participant underscored that "On certain items, so the kitchens also trained hard to prep and they prep must be based on occupancy and forecasting of what, uh, trade we're going to be doing and the same applies in the restaurant. We don't want to over cater so we also ensure that the planning proper planning is done and that and that leads back to the daily briefings that we have within the department" According to Gustavsson et al., (2011), it is important to track the types and quantities of food that was discarded while cooking. By doing so, establishments can identify which items are being wasted and make necessary adjustments to their cooking processes to minimise food waste. WRAP (2015) suggests that food service managers document the quantities of wasted food generated over a minimum of three typical business days to gain a representative understanding of their waste patterns. Interviews with food service managers indicate that while they track and manage their food waste, they typically do so every month, as exemplified by the following quote: "So again, it's just those goals that we have in terms of food very specifically, it's very important for us to make sure that food waste is controlled and tracked. And we do this, the chefs do it with any food waste that is not for consumption that's thrown away, gets tracked, it gets weighed. It's logged and on shifts food tracker and this gets recorded monthly, and we have to then submit it to head office and then it's also track with other hotels and to also see where we are and how we can help one another to do better." One participant mentioned that they measure their food waste using a scale. They track and record the weight of wasted food as part of their food waste management strategies. This data helps them calculate the total cost of waste. They then transfer the wasted food to a designated recycling company for environmentally responsible disposal. According to WRAP (2015) not having effective waste tracking and measuring systems prevents kitchens from understanding their actual food waste patterns. Therefore, it would be beneficial for restaurants to implement waste tracing systems to track the waste they produce on a daily, monthly, and yearly basis. To support, a participant added: "The wasted food is weighed on the scale and then we return down so that we know at the end of the month cost of the wastage we have and then we give then to a company that we give and then the company is going to recycle that food."

One important factor in lowering food waste is menu design, encouraging restaurant management to frequently update their menus to better utilise leftover ingredients (Okumus et al., 2020). Effective menu planning can also help implement portion control by giving customers more variable portion sizes and maximising the usage of seasonal items (Gössling et al., 2011; Kallbekken & Saelen, 2013). Additionally, streamlining the menu may be necessary, especially if certain items are unpopular and contribute significantly to waste (Papargyropoulou et al., 2016). For example, ordering too many raw ingredients can be avoided with a more condensed menu (Martin-Rios et al., 2018). Okumus et al. (2020) point out that while this strategy can be effective, care should be taken, particularly in full-service restaurants that rely on extensive menus to stand out in the market. It may be more practical to design menus that allow for the repurposing of leftover ingredients in other dishes. The restaurants examined also reported adjusting portion sizes to reduce the waste left on customers' plates. Price reductions combined with smaller portion sizes can help decrease food waste (Juvan et al., 2018) and encourage healthier choices (Wansink & van Ittersum, 2013). However, offering smaller amounts may lead to consumer dissatisfaction and negatively impact customer loyalty, so this approach should be implemented carefully (Filimonau et al., 2020). A participant highlighted: "So, one of the things that I do with my menus for example is I cross pollinate dishes. OK. So, if I'm using an ingredient in one of my lunch menus, that same ingredient will be used on a dinner menu and most likely in a breakfast menu as well kind of thing. So, one ingredient is going across instead of having a list of ingredients that apply only to the lunch menu, a list of ingredients that apply only to the dinner menu, and then a list of ingredients that apply only to." The participants shared that they provide regular training at their respective restaurants to ensure optimal food waste management. They conduct regular training sessions for chefs every three months to reinforce key practices, such as following the FIFO inventory system, to minimise waste and maintain high standards. Chen and Chen (2018) emphasise that educating and training hospitality employees is essential for minimising food waste in operations. Furthermore, training sessions that clearly explain the program and promote staff and management commitment should be integral to food waste reduction initiatives (Strotmann et al., 2017). Staff should also receive training on cutting and trimming food, as well as effectively repurposing excess food instead of throwing it away, based on the causes of wastage. Augmenting these views, a participant underscored that: "We provide training with like the staff members, every three months. We do train again just to make sure and also to minimise and we make sure that they follow FIFO accordingly."

The participating restaurants revealed that they have implemented an inventory management system to prevent or at least reduce food waste. This method involves following the FIFO (First In, First Out) inventory management approach. To ensure compliance with FIFO, they have established comprehensive receiving and storage procedures. Upon receiving new stock, all items are dated and stored in fridges according to their dates. Staff members are trained to issue items based on FIFO, and store managers conduct regular checks to ensure that these procedures are being followed. Additionally, regular stock-taking is carried out to determine the ordering needs, taking into account upcoming events and existing inventory levels. A quote from Sucheran & Olanrewaju (2021:64) emphasising more on inventory management "The correct storage of food suggests that food stock is stored at the right temperatures and in the right areas to make sure that it lasts up to its maximum time. The application of the first-in-first-out method will ensure that the food purchased first would be used first and this would prevent restaurants from keeping old stock. Deliveries must be checked upon arrival, before storage. Sometimes, items will be different to what was ordered and it is best to exchange this instead of wasting it "Orders are placed only when necessary to avoid overstocking and ensure just-in-time delivery of important items. According to a study by Bharucha (2018), most restaurants conduct daily inventory checks to restock necessary materials and gain an understanding of which items are being used. Some establishments only conduct daily inventory for perishable items such as dairy products and poultry, while they conduct weekly inventory checks for other materials like grains and sauces (Bharucha, 2018). A shown by the quote "A person is not allowed to use the stock or received today while there's stock received yesterday then the third one when we have to order our stock we check the level of the stock and the stores, we can't order the stock while we still have enough stock we only order when there's need to order the stock, we check the we checked our events, what events were having in the week so that we ordered the necessary stock not more than that." In summary, this examination highlights the significance of tackling food waste within the restaurant sector. The primary factors leading to food waste—such as overproduction, inadequate inventory management, and untrained or careless employees—can lead to considerable financial losses and health hazards. Nonetheless, by utilising effective methods like precise forecasting, reimagining menus, managing portion sizes, training employees, and enhancing storage techniques, restaurants can significantly minimise food waste.

Conclusion

This study examined food waste reduction strategies employed by restaurants in Gauteng. The findings reveal that key strategies include repurposing leftover ingredients, providing meals to staff, and recycling waste through composting. It also identifies the main causes of food waste and their impact on restaurant operations. Like any study, this research has its limitations. Some respondents struggled to express themselves clearly due to language barriers. Additionally, due to time constraints and work obligations, interviews were conducted over just three days, which limited participants' ability to elaborate on their observations and the strategies they had implemented. Additionally, this research concentrates exclusively on hotel restaurants in Gauteng; hence, the results may not be directly relevant to other areas in South Africa or to various nations, considering the disparities in regulations, cultural standards, and industry practices. However, the study showed that food waste results in significant financial losses and reducing it can save restaurants a substantial amount of money. This underscores the need for sustainable practices to minimize waste and mitigate health risks, such as food poisoning. Furthermore, the research demonstrates that accurate forecasting and effective inventory management are crucial for reducing food waste. Implementing forecasting techniques and systems like the First In, First Out (FIFO) method helps ensure that food production aligns with demand, thereby minimizing overproduction and waste. The study also emphasizes the importance of staff training and involvement in waste reduction. Proper training on food preparation and waste management can help decrease avoidable waste and prevent the financial costs associated with food waste in restaurants.

Reference

Benton, D. (2015). Portion Size: What We Know and What We Need to Know. *Critical Reviews in Food Science and Nutrition*, 55, 988–1004. https://doi.org/10.1080/10408398.2012.679980

Betz, A., Buchli, J., Göbel, C. & Müller, C. (2015). Food Waste in the Swiss Food Service Industry – Magnitude and Potential for Reduction. *Waste Management*, 218-226 https://doi.org/10.1016/j.wasman.2014.09.015

Bharucha, J. (2018). *Tackling the Challenges of Reducing and Managing Food Waste in Mumbai*. *British Food Journal*, 120(3), 639-649. https://www.emerald.com/insight/content/doi/10.1108/BFJ-06-2017-0324/full/html

Boschini, M., Falasconi, L., Cicatiello, C. & Franco, S. (2020). Why the Waste? A Large-scale Study on the Causes of Food Waste at School Canteens. *Journal of Cleaner Production*, 246118994. https://doi.org/10.1016/j.jclepro.2019.118994

Buonocore, E., Picone, F., Russo, G.F. & Franzese, P.P. (2018). The Scientific Research on Natural Capital: A Bibliometric Network Analysis. *Journal of Environmental Accounting Management*, 381-391. https://www.lhscientificpublishing.com/Journals/articles/DOI-10.5890-JEAM.2018.12.010.aspx

Carrillo, J.C., Marshall, M., Wellton, L. & Jonsson, I.M. (2021). When Sustainable Cuisine Imaginaries Become Unsustainable: Storage and Preservation Practices in Swedish Restaurants. *International Journal of Gastronomy and Food Science*, 24,100353. https://doi.org/10.1016/j.ijgfs.2021.100353

Charlebois, S., Creedy, A. & von Massow, M. (2015). Back of House"–Focused Study on Food Waste in Fine Dining: The Case of Delish Restaurants. *International Journal of Culture, Tourism, and Hospitality Research*, 9, (3), 278-291 https://doi.org/10.1108/IJCTHR-12-2014-0100

Chen, C.R. & Chen, R.J. (2018). Using Two Government Food Waste Recognition Programs to Understand Current Reducing Food Loss and Waste Activities in the US. *Sustainability*, 2760-2783, https://doi.org/10.3390/su10082760

Chu, W. & Hsu, W. (1999*)*. Pollution Source Identification and Waste Loading Reduction at Chinese Fast-Food Restaurants. *Environment international*, 25(1), 97–107. https://doi.org/10.1016/S0160-4120(98)00087-7

Clowes, E.W., Erbslöh, G. & Kokobobo, A (2018). The Business Case for Reducing Food Loss and Waste. *Russia's Regional Identities*. https://www.taylorfrancis.com/chapters/edit/10.4324/9781315513331-1/introduction-edith-clowes-gisela-erbsl%C3%B6h-ani-kokobobo

Crotts, J.C., Magnini, V.P. & Calvert, E. (2022). Key Performance Indicators for Destination Management in Developed Economies: A Four Pillar Approach. *Annals of tourism research empirical insights*, 3(2), 100053 https://doi.org/10.1016/j.annale.2022.100053

Derqui, B., Fayos, T. & Fernandez, V. (2016). Towards a More Sustainable Food Supply Chain: Opening up Invisible Waste in Food Service. *Sustainability, 8(7), 693.* https://doi.org/10.3390/su8070693

De Visser-Amundson (2021). A Multi-Stakeholder Partnership to Fight Food Waste in the Hospitality Industry: A Contribution to the United Nations Sustainable Development Goals 12 And 17. *Journal of Sustainable Tourism*. https://doi.org/10.1080/09669582.2020.1849232

Dougherty, P. (2023). Reducing Food Waste: How Restaurants Can Use Technology to Implement Sustainable Practices. *Restaurants Technology News*. https://restauranttechnologynews.com/2023/06/reducing-food-waste-how-restaurants-can-use-technology-to-implement-sustainable-practices/

Filimonau, V. & Coteau, D. (2019). Food Waste Management in Hospitality Operations: A Critical Review. *Tourism Management*. Bournemouth University. United Kingdom. https://doi.org/10.1016/j.ourman.2018.10.009

Filimonau, V. & Krivcova, M. (2017). Restaurant Menu Design and More Responsible Consumer Food Choice: An Exploratory Study of Managerial Perceptions. *Journal of Cleaner Production*, 143, 516-527. https://doi.org/10.1016/j.jclepro.2016.12.080

Filimonau, V., Matyakubov, U., Allonazarov, O. & Ermolaev, V.A. (2022). Food Waste and its Management in Restaurants of a Transition Economy: An Exploratory Study of Uzbekistan. *Sustainable production and consumption*, 2925-35. https://doi.org/10.1016/j.spc.2021.09.018
Filimonau, V., Sezerel, H., Ashton, M., Kubal-Czerwińska, M., Bhaskara, G.I. & Ermolaev, V.A. (2024). How Chefs Develop the Practice to Manage Food Waste in Professional Kitchens. *International journal of hospitality management*, 119103712. https://doi.org/10.1016/j.ijhm.2024.103712
Filimonau, V. & Sulyok, J. (2021). 'Bin it and Forget it!': The Challenges of Food Waste Management in Restaurants of a Mid-Sized Hungarian City. *Tourism management perspectives*, 37100759. https://doi.org/10.1016/j.tmp.2020.100759
Filimonau, V., Todorova, E., Mzembe, A., Sauer, L. & Yankholmes, A. (2020). A Comparative Study of Food Waste Management in Full-Service Restaurants of the United Kingdom and the Netherlands. *Journal of Cleaner production*. Netherlands. https://doi.org/10.1016/j.jclepro.2020.120775
Frost, J. (2024). Purposive Sampling: Definition and Examples. *Statistics by Jim*. https://statisticsbyjim.com/basics/purposive-sampling/
Gair, S. (2012). Feeling Their Stories: Contemplating Empathy, Insider/Outsider Positionings, and Enriching Qualitative Research. *Qualitative Health Research*, 22 (1) (2012), pp. 134-143. https://journals.sagepub.com/doi/10.1177/1049732311420580
Goh, E. & Jie, F. (2019). To Waste or Not to Waste: Exploring Motivational Factors of Generation Z Hospitality Employees Towards Food Wastage in the Hospitality Industry. *International journal of hospitality management*, 80126-135. https://doi.org/10.1016/j.ijhm.2019.02.005
Gössling, S. Garrod, B., Aall, C., Hille, J. & Peeters, P. (2011). Food Management in Tourism: Reducing Tourism's Carbon Foodprint. *Tourism Management*, 32 (2011), pp. 534-543 https://doi.org/10.1016/j.tourman.2010.04.006
Gustavsson, J., Cederberg, C. & Sonesso, U. (2011). Global Food Losses and Food Waste. *Food and Agriculture Organisation of the United Nations*. Germany. https://www.fao.org/3/i2697e/i2697e.pdf
Hanks, A.S., Wansink, B. & Just, D.R. (2014). Reliability and Accuracy of Real-Time Visualization Techniques for Measuring School Cafeteria Tray Waste: Validating the Quarter-Waste Method. *Journal Academy Nutritional Diet*, 114, 470–474. http://dx.doi.org/10.1016/j.jand.2013.08.013
Hanson, C., Lipinski, B., Robertson, K., Dias, D., Gavilan, I., Gréverath, P., Ritter, S., Fonseca, J., Van Otterdijk, R., Timmermans, T., Lomax, J., O'Connor, C., Dawe, A., Swannell, R., Berger, V., Reddy, M., Somogyi, M., Tran, B., Leach, B. & Quested, T. (2016). *Food loss and waste accounting and reporting standard*. https://files.wri.org/d8/s3fs-public/FLW_Protocol_Guidance_on_FLW_Quantification_Methods.pdf
Harish, K., Jeswani., Gonzalo, F.T. & Azapagic, A. (2021). The Extent of Food Waste Generation in the UK and its Environmental Impacts. *Sustainable Production and Consumption.* The University of Manchester. Manchester. Available at: https://www.sciencedirect.com/science/article/pii/S2352550920314202/pdfft?md5=ef8e696846649488c599b9e247cb917f&pid=1-s2.0-S2352550920314202-main.pdf
Heikkila, L., Reinikainen, A., Katajajuuri, J.-M., Silvennoinen, K. & Hartikainen, H. (2016). Elements Affecting Food Waste in the Food Service Sector. *Waste Management*, 56, 446-453. https://doi.org/10.1016/j.wasman.2016.06.019
Hu, C., Chen, M. & McCain, S.L.C. (2004). Forecasting in Short-Term Planning and Management for a Casino Buffet Restaurant. *Journal of Travel & Tourism Marketing*, 16(2-3), 79-98. https://doi.org/10.1300/J073v16n02_07
Kallbekken, S. & Saelen, H. (2013). Nudging Hotel Guests to Reduce Food Waste as a Win-Win Environmental Measure. *Economics Letters*, 119 (3) (2013), 325-327. https://doi.org/10.1016/j.econlet.2013.03.019
Immanuel, M., Hartopo, R., Anantadjaya, S. & Saroso, T. (2013). Food Waste Management: 3R Approach in Selected Family-Owned Restaurants. *Journal of Management Studies*, 2, 18–37. https://ssrn.com/abstract=2280928
Iomaire, M.M.C., Afifi, M.F. & Healy, J. (2023). Chefs' Perspectives of Failures in Foodservice Kitchens, Part 1: A Phenomenological Exploration of the Concepts, Types, and Causes of Food Production Failure. *Journal of Foodservice Business Research*. https://www.tandfonline.com/doi/pdf/10.1080/15378020.2022.2044736
Jayadevan, C.M. (2022). Impacts of Food Wastage on Economic Growth. *Wiley online library*. University of New England. Australia. https://onlinelibrary.wiley.com/doi/10.1002/wfp2.12038
Juvan, E., Grun, B. & Dolnicar, S. (2018). Biting Off More Than They Can Chew Food Waste at Hotel Breakfast Buffets. *Journal Travel Research*, 57 (2), 232-242. https://doi.org/10.1177/0047287516688321
Kasavan, S., Siron, R., Yusoff, S. & Fakri, M.F.H. (2022). Drivers of Food Waste Generation and Best Practice Towards Sustainable Food Waste Management in the Hotel Sector: A Systematic Review. *Environmental Science and Pollution Research*, 29, 48152–48167. https://doi.org/10.1007/s11356-022-19984-412
Katsarova, I. (2016*).* Tackling Food Waste. The EU's Contribution to a Global Issue. *European Parliamentary Research Service*. https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/593563/EPRS_BRI(2016)593563_EN.pdf
Lasek, A., Cercone, N. & Saunders, J. (2016). Restaurant Sales and Customer Demand Forecasting: Literature Survey and Categorization of Methods. *Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering,* 166. Springer, Cham. https://doi.org/10.1007/978-3-319-33681-7_40
Martins, L.M., Cunha, L.M., Rodrigues, S.P. & Rocha, A. (2014). Determination of Plate Waste in Primary School Lunches by Weighing and Visual Estimation Methods: A Validation Study. *Waste Management*, 34, 1362–1368. https://doi.org/10.1016/j.wasman.2014.03.020
Martin-Rios, C., Gössling, S. & Cornuz, C. (2018). Food Waste Management Innovations in the Foodservice Industry. *Waste Management*. https://doi.org/10.1016/j.wasman.2018.07.033
McAdams, B., von Massow, M., Gallant, M. & Hayhoe, M.A. (2019). A Cross Industry Evaluation of Food Waste in Restaurants. *Journal of Foodservice Business Research*. https://doi.org/10.1080/15378020.2019.1637220
Mettler, A. (2023). How to Conduct a Food Waste Audit to Help Reduce Waste. *Fourth*. https://www.fourth.com/article/food-waste-audit#:~:text=Conducting%20a%20food%20waste%20audit,to%20effectively%20tackle%20the%20problem.
Moser, A & Korstjens, I. (2017). Practical Guidance to Qualitative Research. Part 1: Introduction. *European Journal General Practice*. https://doi.org/10.1080/13814788.2017.1375093
Ogula, P. A. (2005). *Research Methods.* Nairobi. CUEA Publications.
Okumus, B. (2019). How Do Hotels Manage Food Waste? Evidence From Hotels in Orlando, Florida. *Journal of Hospitality Marketing & Management*, 29(3), 291–309. https://doi.org/10.1080/19368623.2019.1618775
Okumus, B., Taheri, B., Giritlioglu, I. & Gannon, M.J. (2020). Tackling Food Waste in All-Inclusive Resort Hotels. *International Journal of Hospitality Management*, 88102543. https://doi.org/10.1016/j.ijhm.2020.102543
Olowoyo, M., Ramaila, S. & Mavuru, L. (2021). Challenges and Growth Trajectory of the Hospitality Industry in South Africa (1994-2020). *African Journal of Hospitality, Tourism and Leisure*, 1077-1091. South Africa. https://doi.org/10.46222/ajhtl.19770720-150
Papargyropoulou, E., Lozano, R., Steinberger, J. K., Wright, N., & Bin Ujang, Z. (2014). *The Food* Waste Hierarchy as a Framework for the Management of Food Surplus and Food Waste. *Journal of Cleaner Production*, 76, 106–115. https://doi.org/10.1016/j.jclepro.2014.04.020
Papargyropoulou, E., Steinberger, J. K., Wright, N., Lozano, R., Padfield, R. & Ujang, Z. (2019). Patterns and Causes of Food Waste in the Hospitality and Food Service Sector: Food Waste Prevention Insights from Malaysia. *Sustainability*,11(21), 6016. https://doi.org/10.3390/su11216016
Papargyropoulou, E., Wright, N., Lozano, R., Steinberger, J., Padfield, R. & Ujang, Z. (2016). Conceptual Framework for the Study of Food Waste Generation and Prevention in the Hospitality Sector. *Waste Management*. https://doi.org/10.1016/j.wasman.2016.01.017
Parfitt, J., Barthel, M. & Macnaughton, S. (2010). Food Waste Within Food Supply Chains: Quantification and Potential for Change to 2050. The Royal Society. https://royalsocietypublishing.org/doi/epdf/10.1098/rstb.2010.0126

Pirani, S.I. & Arafat, H.A. (2016). Reduction of Food Waste Generation in the Hospitality Industry. *Journal of Cleaner Production*, 132129-145. https://doi.org/10.1016/j.jclepro.2015.07.146

Pollock, T. (2020). Why is Your Recruiter Your Company's Biggest Asset? Oliver Parks. https://www.oliverparks.com/blog-news?author=5d024d48505b1000013292aa

Principato, L., Di Leo, A., Mattia, G. & Pratesi, C.A. (2021). The Next Step in Sustainable Dining: The Restaurant Food Waste Map for the Management of Food Waste. *Italian Journal of Marketing*. https://doi.org/10.1007/s43039-021-00032-x

ReFED. (2018). Foodservice Food Waste Action Guide. Available at https://refed.org/downloads/Foodservice_Guide_Web.pdf

Robinson, R.S.N., Solnet, D.J., Breakey, N. (2014). A Phenomenological Approach to Hospitality Management Research: Chefs' Occupational Commitment. *International Journal of Hospitality Management*, 43, 65-75. https://doi.org/10.1016/j.ijhm.2014.08.004

Sakaguchi, L., Pak, N., & Potts, M. (2018). Tackling the Issue of Food Waste in Restaurants: Options for Measurement Method, Reduction, and Behavioural Change. *Journal of Cleaner Production*, 180, 430-436 https://doi.org/10.1016/j.jclepro.2017.12.136

Shapiroe. (2023). Restaurant Food Waste: What You Don't (But Should) Know. *SKIPSHAPRIRO. https://shapiroe.com/blog/restaurant-food-waste/*

Shoprite Food Index. (2023). The Food Index. Better Understanding Food Security In South Africa. *Shoprite Food Index*. https://www.shopriteholdings.co.za/docs/shp-food-index-2023.pdf

Silva, A.S. & Florêncio de Almeida. (2024). Determinants and Effects of Food Waste in Restaurants: A Systematic Literature Review. *International Journal Food System Dynamics*, 15 (4), 2024, 344-357 https://dx.doi.org/10.18461/ijfsd.v15i4.L1

Smith, S.L. & Cunningham-Sabo, L. (2013). Food Choice, Plate Waste and Nutrient Intake of Elementary- and Middle-School Students Participating in the US National School Lunch Program. *Public Health Nutrition*. https://doi.org/10.1017/S1368980013001894

Strotmann, C., Göbel, C., Friedrich, S., Kreyenschmidt, J., Ritter, G. &Teitscheid, P. (2017). A Participatory Approach to Minimising Food Waste in the Food Industry: A Manual for Managers. *Sustainability*, 9(1), 66-87, https://doi.org/10.3390/su9010066

Sucheran, R. (2021). Preliminary Economic Impacts of the COVID-19 Pandemic on the Hotel Sector in South Africa. *African Journal of Hospitality, Tourism and Leisure, 10 (1),115 – 130.* https://doi.org/10.46222/ajhtl.19770720-90

Sucheran, S. & Olanrewaju, O.A. (2021). Food Waste Management of Restaurants in KwaZulu-Natal South Africa. Available at https://www.ieomsociety.org/singapore2021/papers/11.pdf

Taal, M. (2012). Organising in the Hospitality Sector In South Africa. *Labour research service*. South Africa. Available at: www.lrs.org.za.

Thyberg, K.L. & Tonjes, D.J. (2016). Drivers of Food Waste and Their Implications for Sustainable Policy Development. *Resources, Conservation, and Recycling*, 106110-123. https://doi.org/10.1016/j.resconrec.2015.11.016

Tomaszewska, B., Bilska, A., Tul-Krzyszczuk, D. & Kołożyn-Krajewska. (2021). Estimation of the Scale of Food Waste in Hotel Food Services - Case Study. *Sustainability, 13 (1) p. 421*. https://doi.org/10.3390/su13010421

van der Werf, P. & Gilliland, J.A. (2017). A Systematic Review of Food Losses and Food Waste Generation in Developed Countries. *Waste and Resource Management*. https://doi.org/10.1680/jwarm.16.00026

Vizzoto, F., Testa, F. & Iraldo, F. (2021). Strategies to Reduce Food Waste in the Foodservices Sector: A Systematic Review. *International Journal of Hospitality Management*. Italy. https://doi.org/10.1016/j.ijhm.2021.102933

Van Geffen, L., Van Herpen, E. & Van Trijp, H. (2020). Household Food Waste—How to Avoid It? An Integrative Review. Food *Waste Management*. Netherlands. https://doi.org/10.1007/978-3-030-20561-4_2

von Massow, M. & McAdams, B. (2015). Table Scraps: An Evaluation of Plate Waste in Restaurants. *Journal of Foodservice Business Research*, 18(5), 437–453. https://doi.org/10.1080/15378020.2015.1093451

Wang, L., Liu, G., Liu, X. Liu, Y., Gao, J., Zhou, B., Gao, S. & Cheng, S. (2017). The Weight of Unfinished Plate: A Survey-Based Characterization of Restaurant Food Waste in Chinese Cities. *Waste Management*. China. https://doi.org/10.1016/j.wasman.2017.04.007

WRAP. (2015). Food Waste Tracking Sheet. https://wrap.org.uk/sites/files/wrap/Food_Waste_Tracking_Sheet_v1.1_0_050115.pdf

WRAP. (2017). Food Waste Reduction Roadmap. https://www.wrap.ngo/taking-action/food-drink/initiatives/food-waste-reduction-roadmap

Wu, C.M.E. & Teng, C.C. (2022). Reducing Food Waste in Buffet Restaurants: A Corporate Management Approach. *Foods*. https://doi.org/10.3390/foods12010162

Yin, R. (1989). Case Study Research: Design and Methods. *Sage Publications, Newbury Park*. https://books.google.co.za/books?hl=en&lr=&id=FzawIAdilHkC&oi=fnd&pg=PR1&ots=l-_U0bqR1u&sig=bYXvJyN8WXVMhTXXnA3_r8CBh6M&redir_esc=y#v=onepage&q&f=false