Reconsidering the Food Journey in Hotels:
Prevention and recovery actions

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Executive Summary

- Food waste and loss is identified as a major preventable problem in the hotel industry. Trash disposal is the worst way to get rid of excess food in hotels.

- Food waste can take (A) *preventable* and (B) *recovery* actions.

- This is accomplished by creating prevention awareness for training purposes, and measurement standards for waste recovery procedures that can be used across the hotel and lodging industry

- Maximizing food potential for repurposing (its preventable value) is the responsibility of the chef and kitchen crew. However, awareness of food purpose and its value is *not shared* equally by members across various points and flows in the complex system of inputs and outputs to the kitchen.

(A) Food waste prevention:

- Maximizing food value and preventing waste has different dimensions. Food has <u>*experiential*</u> *value as an aesthetic pleasure for guests;* Food has <u>*transactional*</u> *value as a profit of business; Food gains "creative" value* from *a <u>positive work-culture</u> that inspires a supportive environment for ideas to surface.* As such, a generalized, one-size-fits-all type of awareness of food waste is *not sufficient*, since food takes multiple pathways in and out of the kitchen.

    a. Awareness and training of *Transactional* food value to prevent food waste. This can reduce food surplus, poor planning, and lead to training that recognizes improved practices that waste less food to begin with.
    b. Awareness and training of *Experiential* food value to repurpose food for consumption. Measures encourage creative design, use and reuse of food along aesthetic dimensions for guest, employee or food bank satisfaction.
    c. Awareness and training of positive *Work-culture Attitudes and Environment* that inspires the best practices from employees and how they can feel empowered to help minimize food waste.

(B) Food waste recovery:

- Food that leaves the kitchen must be removed from human consumption for health and safety reasons. However, there needs to be standards for measurements in quantifying food waste and creating inventories for accountability. Food waste can be quantified by various measurements:

    1. **Material type**: food materials included in the inventory (food only, inedible parts only, or both)

    2. **Inventory Timeframe**: period of time in which inventory results are being gathered and reported. Set timeframes can be monthly or tied to other food inventory inputs

    3. **Food journey Destination**: where food waste goes when removed from the food lifecycle. This includes a number of possible locations such as animal feed; bio-material/processing; codigestion/anaerobic digestion; composting; controlled combustion; land applications.

    4. **Food Boundary**: food category such as all food, dairy products, fruits/vegetables; meat/poultry; whole pieces or cuts and food lifecycle stage such as recommended by expiration date/stamp for dairy and produce.

Once food is quantified, it can be measured and then standardized in a sequence of practices: 1 Define the goals; 2 review reporting principles; 3. decide how to quantify food waste; 4. gather the data; 5. calculate inventory results; 6. report food waste outcomes.

Introduction

A significant amount of food grown for human consumption is never eaten. The Food and Agriculture Organization of the UN (FAO) in 2009 estimates that a third, by weight, of all food produced in the world was lost or wasted. This level of inefficiency has great economic, social, and environmental impacts, costing approximately $940 billion per year in economic losses. Moreover, the amount of food lost or wasted translates into about a quarter of all water used by agriculture, requires cropland equivalent to an area the size of China, and is responsible for around 8 percent of global greenhouse gas emissions. Clearly, there is a social and environmental need to reduce food loss and waste.

Many countries, cities, and companies lack sufficient insight into how much, why, and where food is removed from the food lifecycle. Specifically to the food, beverage and lodging industry, many hotels lack the insight and awareness to affect change. Our goal in this study along with AHLA and WWF is to develop strategies and prioritize actions in the hotel industry to prevent food waste and loss; identify the most productive use of food in hotel service; and foster awareness in developing measurements and procedures to train others to make positive change. In short, what we become aware of, we can measure and ultimately manage. Nevertheless, what's considered "food waste" and how to prevent it varies widely in the hotel industry. Without a consistent set of guidelines or an accounting and reporting framework, it is difficult to compare data within or among entities over time and draw useful conclusions.

This study hopes to suggest a level of awareness for training and measurement standards that can be used across hotel, food and lodging industry, as well as in other industries. Developing such standards across the industry includes finding universally applicable definitions for describing the elements of food loss and waste, and possible training to alleviate waste. The rationale also focuses on preventing hotel food waste and loss from occurring in the first place where its *value* can be recreated or recovered, as well as diverting non-edible food to better use elsewhere outside the hotel.

1. Awareness enhances inventory measurements of food lifecycle flow to inform a hotel about its own internal blocks and flows
2. Reporting results of food lifecycle and waste can comply with industry association regulations, or other third-party food reuse-reduction efforts
3. Flexibility in the food lifecycle system permits users in the hotel to choose which particular scope is most appropriate for their food lifecycle inventory.
4. Inform and implement training for food lifecycle awareness can customize guidance on standards developed and applied to that particular hotel.

Overview

Managing food use and waste in the hotel industry is the primary responsibility of the head chef and his kitchen staff, and depends on levels of awareness and consideration for food use and reuse. Food is anticipated for audiences and planned for events such as for hotel restaurants, cafes, and banquets from the best intentions of the chef. It is ordered from multiple vendors and purveyors, delivered in trunks, unloaded, inventoried and stored. Food is inspected, trimmed, brought into use, some reused, other served and restored, some may go to employees, reused for guest dishes, repackaged for Food Banks, placed in digesters, or discarded as trash. These are ways of assigning food different *value* in its lifecycle. A General Manager states "When you put *value* to something like food, it changes the way we think about it."

Nevertheless, creating awareness of food value and maximizing its potential for repurpose is *not shared* by every member situated across various points and flows of food in the complex system of inputs and outputs to the kitchen. Moreover, food imparts different perceptions of its value according to the different responsibilities of the staff. The chef plays the major role of the maestro around food value – directing, monitoring, and creating a masterpiece that is *experiential as an aesthetic pleasure for guests; transactional as a profitable business*, and works best *in a work-culture that fosters shared values for constituting a positive environment.* As such, a generalized, one-size-fits-all type of awareness of food waste is *not sufficient*, since food takes multiple pathways into and out of the kitchen. The chef holds a complex role as *artist, manager, and work-culture coach*. These conflicting aspects lead to different impressions of food value, functions, and impact for food utilization and waste measurement.

Food awareness begins with understanding the flow of food use components, in and out of the food lifecycle system in and out of the kitchen, such as from suppliers, distributors and purveyors of food, to its distribution. Food orders are initiated by chefs for hotel guests. Raw and prepared ingredients are unpacked and inventoried in kitchens by sous chefs and staff, and transformed into meals that not only satisfy hunger but also entertain and delight hotel guests. Unused or unconsumed food that has not left the kitchen is utilized or repurposed into new or clever meal creations invented by the chef to serve hotel guests in hotel restaurants; or it can be fed to employees in break rooms and cafeterias; or it can be utilized by Food Banks, and other charitable food organizations, or it can be turned into compost for non-human guests, or discarded as trash. These require decisions by the chef for calculating flow, quality and timing of food, as well as good relations with his staff to manage food through various points of inputs to the kitchen and outputs for guests and beyond.

Complicating matters, food awareness for the chef is mediated by the conflicting responsibilities of his job. The chef's primary role is his artistic function: creating food that is aesthetically pleasing to guests in appearance, smell and taste, and is proportionately satisfying. His success is measured by the subjective nature of guest satisfaction and reported meal delight, which we refer to as *experiential* dimension of food consumption. This is measured from guests by hotel and meal satisfaction surveys.

The chef also has fiscal responsibilities to manage food budgets according to operational goals set by the organization and the hotel General Manager. He keeps expenses under budget while maximizing guest service, which we refer to as *transactional* dimension of food consumption. Food cost is ultimately a transactional measurement of waste, but is vague in its specifics and only tied to revenue. The chef also works with the hotel General Manager, who's role it is to foster good employee/staff relations to support the chef which relates to fostering positive work-culture environments. The work culture is often an understated dynamic of food waste but employee attitudes, work ethic and shared values can make a difference in food efficiencies.

These *experiential, transactional* and *work-culture* dynamic of the hotel have a direct impact on food awareness in and around the kitchen – from moving food through various inputs and outputs, to artistic creation, management efficiency, and to good staff relations –which all interact and allow for creating multiple ways of measuring success and minimizing errors in the goal of *reducing food waste*.

Objectives: Explore *experiential, transactional* and *work-culture dynamics* that impact degrees of **awareness at different touch points** within the food lifecycle distribution network to develop effective measurements.

1. **Primary goals:** (working with the chef and kitchen team)
    B. Acknowledge *Transactional* points of food flow for better behavioral control around food waste. This will reduce food surplus, poor planning, and lead to better training with improved practices that waste less food.
    C. Explore *Experiential* or subjective validation of food in its repurposing use for guest, employee or food bank satisfaction. This calls for measures that appreciate use and reuse of food along aesthetic or experiential dimensions.
    D. Understand positive *work-culture* behavior that inspires the best practices from employees and how they can feel empowered to help minimize food waste.

2. **Secondary goal:** change the thinking, language and assumptions around food services in hotels. Surplus food is too quickly considered "waste and recovery," and needs to be reframed for maximizing its potential as food "awareness with purpose." These goals are linked to training that leads to new language and terminology for "food with purpose." Reconsidering food and assigning it "value" starts with changing terms of food from "waste" to "purpose." Ultimately, new forms of awareness linked with new terms of communication around food distribution and meal creation, create new food *value* at various stages and minimize waste.

Methodology

Conduct in-person and on-site interviews when possible with key individuals in the food and lodging industry in the form of ethnographic interviews. Ethnographic interviews with respondents allow us to observe behavior in the context of their natural environments, where food preservation, use and waste take place. This provides an

immediate 'lived' relation between the person and food, kitchen equipment, storage, and other staff to discern the role and meaning of food and waste in their lives.

Interviews included a tour of the kitchen, work facilities, storage and shelving spaces, loading docks and other areas relevant to food use and waste.

- 4 fieldtrips involving on-site interviews and tours of facilities were made to observe hotel operations, kitchen operations, staff dynamics and so forth.
- 4 phone interviews (lasting ¾ to one hour long).
- Attended the general meeting of managers at Food Waste meeting in NYC (9/20/16)

The following hotel industry individuals and roles were interviewed (names are withheld to ensure confidentiality)

- a General Hotel Manager of Marriott
- a General Manager of Hampton Inn in CT
- the Head Chef, Grand Hyatt Grand Central Station
- The Senior Food Steward at Intercontinental NYC
- a Food Production Manager at Gate Court
- a General Manager at Westin Las Vegas
- a Former senior Manager Food and Beverage Supply Chain at Starwood Hotels & Resorts and former head Chef
- the CEO of Table de chefs (Food retrieval organization)

MAKING FOOD PURPOSEFUL THROUGH PREVENTION AND REPURPOSING

The task of re-valuing food for multiple uses beyond singular use, changes linear thinking into broader multipurpose awareness and new appreciation of food through various touch points in the food lifecycle. This change calls for acknowledging various kinds of awareness and types of control for purposeful food action throughout the entire food lifecycle. Finally, recommendations are divided into a *Pre* and *Post Kitchen* focus– separating food purposely used and reused **(Sections I, II and III)** from food that can be thoughtfully and appropriately discarded **(Section IV).**

SECTION I. TRANSACTIONAL DIMENSION OF FOOD REPURPOSING

From a transactional perspective the food journey begins with the chef forecasting and ordering food in anticipation of guest buffet services, hotel restaurants and cafés, catered guest events, and so forth. Ultimately food efficiency - not wasting food - hinges on the chef and staff's awareness of food in storage, in food inventories, the types of packaging ordered, efficiently timed delivery, various and different audiences they serve, and the anticipation of its re-use for post food value. Food is thus valued in the precision of anticipating and targeting audiences, ordering precise amounts of food, handling it properly, maximized its going out to guests. The dynamics of food awareness and utilization forecasts food coming in, and maximizes it going out.

Most of transactional efficiency from an operational view has to do with precise food ordering, food arrival, storage, produce rotation, proper inventory rotation and upkeep as well as workplace cleanliness and sanitation. As the former senior Manager Food and Beverage Supply Chain at Starwood Hotels & Resorts and Chef states, "The loading dock in the back of the hotel is *ground zero* for kitchen efficiency." This is where trucks deliver and unload, bring goods in and out of the hotel. It is also where staff manages efficiencies through communication and actions. Controlling the focus of incoming and outgoing food creates different forms of value.

Transactional Awareness means:

- Distribution and loading channels - issues in arrival of packaged food is problematic if communication is off. There are set number of perishable items per container, quality of packaging, condition on arrival. These variables impact food quality, usability and perishability.
  Measurement solution: **Clear communication by use of apps or assigning individual responsibility to loading/unloading helps prevent errors of food sitting too long on docks)**

- Change packaging to be more efficient. Packaging and requisition waste – often how the food is delivered and inventoried can lead to waste (½ cases of lettuce v. full cases of lettuce when shipped). 8 pallets of pre-cut or 5lb bag.
  Measurement Solution: Precise ordering and sizing of items per container (6 heads of lettuce v 12 per box, for example) can keep food fresher by ordering smaller numbers as needed.

- Inventory timing and use – food can wrongly be under ordered or hastily over ordered, so that it potentially goes to waste. Food can sit on shelves too long, get lost, not rotated frequently enough (past expiration date) and may require more space-management care to alleviate problems.
  Measurement Solution: "Just-in-time" inventory forces better awareness (creates food value) on an as-needed basis, adds greater importance to food arrival, and less potential for waste.

- Storeroom operations– poor management and placement of food can create waste. Pilfering of food by employees as they exit the back door "the nibble factor" can reduce inventories, and deplete necessary stocks. "Situations will cause thieves"
  Measurement solution: storage needs to be monitored, inventoried daily and/or locked or secured for special high cost items (lobster, steaks). **Tighter controls, better storage of food, and better employee relations can reduce potential for food loss.**

KITCHEN TRANSACTION AWARENESS - Food in the kitchen area has multiple roles. Food comes in to be transformed into appetizing meals. Greater precision and control *minimizes* potential food surfeit so less waste occurs to begin with.

- Greater utilization in the kitchen prep stands *maximizes* Unused or unconsumed food so that less is wasted.
- Kitchen WIP tables/stations (work in progress)- More monitoring of this critical touch point site where excess food scraps can be utilized. Reward suggestions by staff who may come up with inventive food ideas.
- Garnishes can be multi-purposed for cold or hot plates. Clever use of food can turn cold side garnishes into hot side dishes (i.e., baby carrots).
- Beef trimmed at WIP stations can be discarded or gathered, stored and round up for stews.

Kitchen cleanliness and organization is a priority for minimizing waste. "It all starts with the organization of a kitchen. You can walk into a kitchen anywhere and quickly tell is this a good kitchen. Is it organized, clean, everything where it belongs, is it safe? The back of a kitchen is a reflection of the front of the house." Big well-run organizations have many more controls in place. They have situations that deal with many parts of meal making, ordering. Food waste less likely than in smaller organizations.

- Good food management in the kitchen leads to efficient cross utilization of food. After a banquet, food can go either into break-room (cafeteria) to serve employees, or food can be reused and repurposed for guests in new recipe creations of stews, meat sliced for salads or as a special for a la carte restaurant. Food also has shelf life to be packaged, stored, frozen and utilized again.

II. EXPERIENTIAL DIMENSIONs OF FOOD REPURPOSING

From an experiential perspective, the food journey begins with the chef knowing the experiential likes, tastes and preferences of his audience. He predicts and creates meals that satisfy guests, anticipating a positive meal experience for them. Whether for a women's group, a men's football team or a Boy Scout event – the tastes of what to prepare will be different.

> "Being well informed of who my customer is the best way to reduce waste. I think ahead of how can we prepare meals and ideas to best target the segment served. The closer meal audiences are targeted the better the experience for them and the less waste of food." (a Food Production Manager at Gate Court).

Good meal practices starts with knowing your audience before they arrive. Experiential Awareness means developing a typology of audiences based on familiarity. According to David Adkins, he segments his customers as:

- Retail/hotel customer – these are people I know first-hand, "hand-shaken knowledge, "pull out the chair for them"
- Repeat customer – I see the person repeatedly
- Corporate customer – Profile customer to anticipate the needs

Measurement solution: STP – Segment, Target and position your audience beforehand to better anticipate food appeals. Keep close track of data as it comes in to prepare for the event. Most chefs have a number in their head for serving size per guests (steak 6 oz; hor derves – 2 per person), but these are not precise. *Know the psychological and social qualities of audiences* to better to focus on tastes. Ask, what are their likes, the appearance of food, the way they like its presentation. Beyond set measurements of quantities, chefs can *enhance food appearance* by using garnishes, adding rich savory sauces, and offering plating styles that add aesthetic value over abundance.

Aesthetic or experiential suggestions for enhancing guest experience while reducing food volume:

- Redesign the buffet stations around individuals not mass groups. Develop appearance and presentation of food around *concept of individuality and one-to-one service* (i.e. serve Breakfast Parfaits of granola in small single-serve jar, instead of large bowl of yogurt and granola. This customizes the meal while prevents large amounts of waste.
- Buffet presentation of dishes change from "over the top, brimming with food, to slim and sexy." Thinner serving trays, a cleaner look for the buffet station.
- Redesign serving plates for guests or offer square plates with a broader rim that are heavier and emphasize color and texture instead of quantity of food on the plate. People eat more from white plates than from black or colored plates. Weighted plates give the feeling of a fuller plate in hand of guest.
- Remove self-serving trays from buffets to reduce the overload of food brought back to tables by guests

Experiential Awareness in the kitchen. Repurposing food in kitchen storage and inventory. Design change can affect employee perceptions and heighten food awareness and classification. *Color coding and clear labeling* for storage creates awareness for different types of food for different types of waste.

- Work-place sanitation and cleanliness is not universally practiced. Bins, labels, storage containers can suggest the type of action required: immediacy or delay in reusing food, (green for green vegetables, bags are dated, whether meat, bread, veggies it has its own bin color)
- The chef is also responsible for repurposing leftover food from events, in the kitchen with pre-event scraps, which can be reused in multiple ways. Post-event surplus of food in the kitchen can be created into new meals for hotel guests, served for employee cafeteria meals, or given to food banks to feed less fortunate people. The chef is called on his creative imagination to deal with food in experiential ways.
- Food does not have to be well presented to feed the hungry at Food Banks. Just well containered and sealed, and carted off immediately or flash frozen after deemed leftover and before exiting the kitchen

- The chef needs to be incentivized for arriving at clever ideas in repurposing food (before and after meals). Currently chefs are not rewarded for repurposing food. This can be a measurement (reuse) beyond cost (added level of productivity).

III. MAKING FOOD PURPOSEFUL AND REPURPOSING: WORK-CULTURE DIMENSIONS OF FOOD WASTE AND REPURPOSING IN THE KITCHEN

The Chef in the kitchen among his staff acts like a coach who shows skills, rewards efforts of others, encourages new ways of doing things (techniques) and thinking (attitudes) to save time and energy. The chef can create a positive work culture in which efficiency, cleanliness and good communication lead to less waste. The General Manager hires the staff, but getting to know their skills and career wishes can better harmonize their skills and add quality of experience to employee relations. This affects food waste practices.

"From chef to staff, the kitchen should practice a culture that understands how to do things. Create a *culture of care* that is organized, practices cleanliness, and safety. A *Mise en place* – everything in its place. The culture should offer an understanding of what's expected of you, and feel appreciated for what you do."

"A Positive work culture reduces waste. The kitchen should lead by example."

DEVELOPING A WORK-CULTURE AWARENESS:

- Kitchen employees should have a high degree of attention to detail, carefulness, and sense of order. Screen for this in hiring practices.
- Create opportunities for employees to transfer to kitchen help, if/when they show aptitude for order and attention to detail.
- Chefs can learn from employees – even the dishwasher may offer better, faster more efficient ways to work and the chef should reward this.
- Train employees to be operationally savvy – good at understanding needs, and the result is less waste. An employee who's not happy will hurt your business and lead to waste. i.e., undercooking food requires throwing it away"
- An 'open door' policy allows employee to speak freely and offer solutions. Employees come up with clever solutions to problems (i.e., handing out wrist bracelets to guests for controlling room and pool use). Encourage employees to oversee operations more effectively, call out problems as they arise.
- The care culture starts in the kitchen among staff, employees all contributing and leads to happy employees.
- "You respect your employees, they respect you. Communication is key to success, but also the right people for the right position – talk to them often to find out passions, skills, and career interests to better place them at work"

Developing hotel guest awareness around food value

Problem: Consumers eyes are bigger than their stomachs. Weekender guests, especially families, tend to take too much food for a variety of reasons. Children

learn to make choices, select their own preferences and bring food to the table. It's partly driven by wanting to 'get your money's worth.' And this is also partly because we seek variety. A busy schedule or a disliked dish may prompt customers to waste food. But overall, it's because they can—there are no repercussions.

The all-you-can-eat model is problematic. Implemented in the name of hospitality, this strategy has heavy costs—leading to overeating, waste and bloated board coasts. Solutions include:

- Removing service trays and let customers carry items individually
- Offer samples, so that more sampling encourages less to be taken
- Closely track consumer demand so supply is directly in line and on time.
- Preparing food only as need arises. As shifts of meals near an end (i.e. 15 min left for serving breakfast), start to close down buffet to signal end of food.
- Eliminate "all-you-can-eat" messaging, which encourages waste
- Create entertainment and performance experience for guests by cooking meals fresh (Plated or buffet) in front of them
- Inform consumers about food waste - include games such as "weigh the waste," and have large decorative bins that children can guess the weight for a prize" This communicates to guests how much food is wasted every day at every meal.

IV- FOOD THOUGHTFULLY DISCARDED: PROPER FOOD WASTE MEASUREMENT

Once food leaves the kitchen, for health and safety reasons, it must be removed from human consumption. Food that is not repurposed in the kitchen is discarded. There needs to be set measurements for accountability. Food Loss and Waste accounting and reporting can lead to developing standards along 4 dimensions of *what and how* food waste disposal can be measured and put to good alternative use (along the lines suggested by Food Loss and Waste Protocol Steering Committee).

A. What can be quantified in food waste measurement (see Appendix for detailed descriptions)

1. **Material type**: the food materials that are included in the inventory (food only, inedible parts only, or both)
2. **The Inventory Timeframe**: the period of time in which the inventory results are being gathered and reported. This timeframe can be monthly or tied to other food inventory inputs.
3. **Food journey Destination**: where food waste goes when removed from the food lifecycle. This includes a number of possible locations.
4. **Food Boundary**: food category, lifecycle stage

B. How food waste is quantified

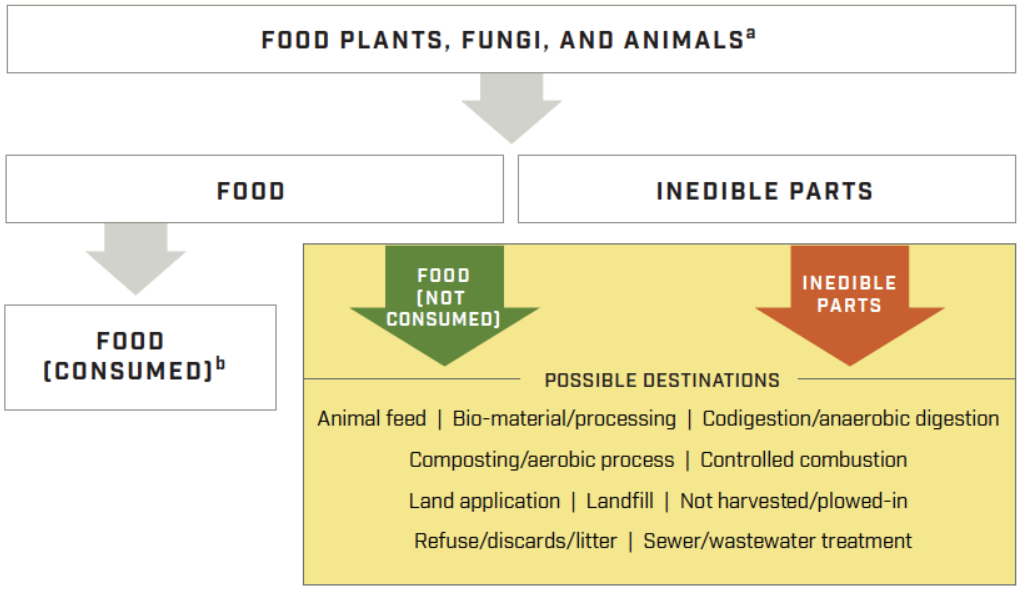
The current practice in hotels is for food waste to be calculated as a percentage of total food costs. But this model is not specific to what types of food are lost, and when and where in the food lifecycle it is lost. Cost is also more favorable to savings models (ROI) than to preventing waste models, and does not specify what to do with saved or extra food.

Once food is deemed uneatable and suitable for discard then it can be quantified and measured for proper use in non-edible forms. Food waste can be measured by weighing it, or through waste composition analysis, or mass-balance calculation, or by surveying. From following the protocol above, food can be first quantified in material type; set timeframes for inventories of calculating food waste; set destinations for food waste; establish boundaries for food types. This can then be implemented in sequential steps.

Food measurement then can be standardized: 1 Define the goals; 2 review reporting principles; 3. decide how to quantify food waste; 4. gather the data; 5. calculate inventory results; 6. report food waste outcomes.

APPENDIX:

Food Material Type included in the inventory and possible destinations



BOUNDARY DIMENSION	DEFINITION	CLASSIFICATION SOURCE TO USE	SELECTED EXAMPLES
Food category	The types of food included in reported Food Waste	Select one or more categories from system including:	All food Dairy products Fresh fruits and vegetables Fresh meat, poultry, and game, whole pieces or cuts
Lifecycle stage	The stage(s) in the food supply chain or food lifecycle within which reported Food Waste occurs	Write in the lifecycle stage as recommended by date/stamp	Entire food supply chain Two stages: manufacture of dairy products and retail of food and beverage

DESTINATION of Food Waste	DEFINITION
Animal feed	- Diverting material from the food supply chain[a] (directly or after processing) to animals
Bio-based materials/ biochemical processing	- Converting material into industrial products. Examples include creating fibers for packaging material; creating bioplastics (e.g., polylactic acid); making "traditional" materials such as leather or feathers (e.g., for pillows); and rendering fat, oil, or grease into a raw material to make products such as soaps, biodiesel, or cosmetics. "Biochemical processing" does not refer to anaerobic digestion or production of bioethanol through fermentation
Codigestion/anaerobic digestion	- Breaking down material via bacteria in the absence of oxygen. This process generates biogas and nutrient-rich matter. Codigestion refers to the simultaneous anaerobic digestion of Food Waste and other organic material in one digester. This destination includes fermentation (converting carbohydrates— such as glucose, fructose, and sucrose—via microbes into alcohols in the absence of oxygen to create products such as biofuels)
Composting/aerobic processes	- Breaking down material via bacteria in oxygen-rich environments. Composting refers to the production of organic material (via aerobic processes) that can be used as a soil amendment
Controlled combustion	- Sending material to a facility that is specifically designed for combustion in a controlled manner, which may include some form of energy recovery (this may also be referred to as incineration)
Land application	- Spreading, spraying, injecting, or incorporating organic material onto or below the surface of the land to enhance soil quality
Landfill	Sending material to an area of land or an excavated site that is specifically designed and built to receive wastes
Not harvested/plowed-in	- Leaving crops that were ready for harvest in the field or tilling them into the soil
Refuse/discards/litter	- Abandoning material on land or disposing of it in the sea. This includes open dumps (i.e., uncovered, unlined), open burn (i.e., not in a controlled facility), the portion of harvested crops eaten by pests, and fish discards (the portion of total catch that is thrown away or slipped)
Sewer/wastewater treatment	- Sending material down the sewer (with or without prior treatment), including that which may go to a facility designed to treat wastewater
Other	- Sending material to an un-described destination