

CASE STUDY

Production Process Change Drives Impressive Food Recovery



Executive Summary

As a signatory of the Pacific Coast Food Waste Commitment and the U.S. Food Waste Pact, Fresh Del Monte collaborated with TripleWin Advisory to roll out a food waste employee engagement program at its manufacturing plant in North Portland, Oregon. The goal of the initiative was to identify and implement food waste mitigation strategies that are measurably effective and replicable across its global operations.

The project ran over a six-month period (March to August 2024) and included several plant-wide interactive elements:

- 1** An educational **training video** on food waste available in [Spanish](#) and [English](#).
- 2** A four-week **employee engagement challenge** based on the collaborative concept of solving the puzzle of food loss and waste to build awareness and excitement around identifying food waste reduction ideas.
- 3** A **Food Waste Opportunity Register** to aggregate, categorize, and prioritize food waste reduction ideas.
- 4** An eight-week **audit** of an employee-identified **Quick Win** food waste reduction idea.



The project yielded impactful results:

- **87% of employees** (contracted and full-time) at Fresh Del Monte's North Portland plant received food waste educational training by watching the food waste video in person at the plant.
- **75% of plant employees** submitted food waste reduction ideas.
- A total of **197 food waste ideas** were captured in the Food Waste Opportunity Register.
- An employee idea was piloted and tested on five commodity fruits—cantaloupe, honeydew, mango, pineapple, watermelon; among fruit that would have gone to waste, **53.2% was recovered**.

Key insights from the project include:

- Having an engaged manager on staff to facilitate the process ensured the project ran smoothly, kept on deadline, hit key goals, and was successful.
- The goals of the food waste challenge need to be clearly stated early on and reinforced throughout the competition by supervisors and line leaders.
- The training video was rated the most memorable educational asset by employees.
- Incorporating rewards and incentives for a broad set of employees and publicly posting achievements encouraged greater participation and engagement.

Introduction

Del Monte Fresh Produce N.A., Inc. is the North American subsidiary of Fresh Del Monte, a global leader in the production, marketing, and distribution of high-quality fresh and fresh-cut fruits and vegetables. As part of Fresh Del Monte, Del Monte Fresh Produce N.A., Inc. benefits from its parent company's status as one of the world's foremost vertically integrated companies in the fresh produce industry. Fresh Del Monte's products reach consumers in over 80 countries worldwide, reflecting its commitment to quality and global reach.

This pilot project took place at the company's North Portland, Oregon facility, which employs over 126 employees and contractors.

Project Background

Fresh Del Monte has a strong commitment to managing food loss and waste throughout its entire value chain from farm to consumer. As a signatory to the Pacific Coast Food Waste Commitment (PCFWC), and to the U.S. Food Waste Pact, Fresh Del Monte is actively involved in multiple initiatives to minimize food loss and waste and identify diversion and circular upcycling opportunities within its plant operations.

Fresh Del Monte has the following waste and climate goals that are aligned with UN Sustainable Development Goals (SDGs) 2, 12, and 13:

- Reduce food waste in standard operational practices.
- By 2030, reduce Scope 1 and 2 emissions by 27.5% compared to 2019 levels.
- By 2030, reduce Scope 3 emissions by 12.3% compared to 2020 levels.
- By 2030, reduce food loss and organic waste sent to landfill by 50% compared to its 2020 baseline.

To make progress on the above goals, Fresh Del Monte sought to engage employees at every level of facility operations in the North Portland, Oregon facility, providing the opportunity and a voice to frontline workers who experience how and where food waste happens during daily production cycles. Fresh Del Monte knew that leveraging "in-the-know" employees and engaging them on this important topic would yield important ideas that could lead to meaningful waste reduction initiatives. This effort to engage employees on identifying food waste reduction ideas was a test pilot before Fresh Del Monte rolled-out a more comprehensive program to its other U.S. operations.

Fresh Del Monte was inspired by similar employee engagement projects implemented at CPG (consumer packaged goods) manufacturing plants owned by [Bob's Red Mill](#) and [Land O' Lakes](#), efforts that were initiated by the PCFWC to catalyze food waste reduction efforts in the Pacific Coast region of the United States.



Project Elements

Education & Awareness

To provide foundational employee awareness around food waste, a 12-minute training video was adapted for Fresh Del Monte. This video covered all aspects of food production—from farm to consumer—and explained the important issues linked to food waste, such as climate change, greenhouse gas emissions, global hunger, and wasted resources. It was a critical necessity for the video to be bilingual, so as to ensure that Fresh Del Monte’s majority Spanish-speaking workforce had inclusive access to the food waste education materials.

The video was shown to groups of plant workers in a conference room over a two-day period to accommodate all plant employees and shift schedules.



A frame of the food waste training video.

Employee Engagement

Next, multiple “GEMBA” walks—a continuous improvement strategy used in manufacturing—were conducted over multiple days and shifts at the North Portland plant to provide a measured view of how product is handled from the moment it is received to when it becomes a finished product. GEMBA walks allow a small team of individuals to walk through all plant



During the GEMBA walk, every area of the plant and the various products in production were observed. The processing section had many areas with potential for improvement. (Photo Credit: TripleWin Advisory)



Paper notepads were provided for employees to write down their ideas and submit into a ballot box. QR codes were also displayed for employees who preferred to submit their ideas digitally.

processes and to engage employees on where they experience food waste while working on an active floor. All ideas, thoughts, and perspectives were captured and entered into a Food Waste Opportunity Register.

Simultaneously, a customized Fresh Del Monte-branded “Solve the Puzzle of the Lost Food” employee engagement challenge was held over a four-week period to make the

process of identifying and submitting food waste reduction ideas into a fun competition for employees. Two large wall banners were displayed—one in Spanish and the other in English—in the plant hallway and employee break room for maximum visibility. The banners were made up of blank puzzle pieces that were steadily “found” each week, eventually revealing the three main tenets of food waste reduction: reduce, divert, and upcycle.

Just like the training video, the other engagement materials of the competition were made bilingual, to ensure broad participation and inclusive access. This competition employed gamification elements, such as giving away multiple weekly prizes and honoring five levels of “Champion Puzzlers.” A large leaderboard was updated each week with the five prize winners who received unique gifts ranging from gift cards to Bluetooth speakers to special Fresh Del Monte-branded items, which kept interest and engagement high. Prizes varied in value from \$5 to \$25. Winners were chosen by the Fresh Del Monte



Santos Coria, Director of Plant Management at Fresh Del Monte, (right) delivers a weekly prize in front of the leaderboard to one of the employees who submitted a winning idea. (Photo Credit: Fresh Del Monte)

team based on key criteria set before the competition launched, such as:

- Most engaged
- Most interesting idea submitted
- Most ideas submitted

TripleWin collaborated with the Fresh Del





Weekly posters were placed at key locations throughout the plant to keep employees engaged, highlighting various aspects, such as prizes and participation rate, and providing information. These were provided in both Spanish and English.

FOOD WASTE SOLUTION CHAMPIONS Campeones de soluciones para el desperdicio de alimentos		WEEK 1	WEEK 2	WEEK 3	WEEK 4
	Rubyglow®				
	Pinkglow®				
	Honeyglow®				
	Carbon Zero				
	Gold				

Bilingual “Champion Puzzlers” leaderboard featuring new champions each week, displayed prominently in the employee break area.

Monte team throughout this process to ensure that the way the competition unfolded would be the most appropriate for their employees. The competition required consistent pass-down messages, refined over time for clarity and impact, and real-time signage updates.

The “Solve the Puzzle of the Lost Food” employee engagement challenge saw 20 individuals win prizes for their participation and food waste reduction submissions. Additionally, the plant won a company-wide carne asada lunch BBQ as a culminating celebration for achieving competition goals. All in all, a total of 97 employees (75.2%) at Fresh Del Monte’s North Portland plant participated in the month-long engagement competition.

Food Waste Opportunity Register

A total of 197 food waste ideas were identified through the GEMBA walks and employee engagement competition. All were added to the Food Waste Opportunity Register and categorized across multiple dimensions:

- **Speed of impact:** Quick Win, Gem, Strategic or Capital Investment, Don't Pursue
- **Degree of food savings:** Low, Medium, High
- **Degree of resources (cost and effort) required to implement:** Low, Medium, High

As with other food waste employee engagement projects, this Fresh Del Monte initiative was intended to identify and pilot one employee-submitted Quick Win food waste solution in order to measure how much food waste could be reduced through the implementation of the idea. Quick Win ideas had to meet certain criteria:

- Constitute “do it now” opportunities
- Yield substantive food waste savings
- Require little-to-no cost to implement
- Need minimal effort to deploy

FOOD WASTE REDUCTION WITH FRESH DEL MONTE PLANT FACILITIES			
Opportunities to Reduce Food Waste			196
Oppty #	Opportunity Name	Description	FDM #
1	Repair	Veggie Conveyor Line broken plastic guard rail	North Po
2	Process change: grape destemmer	Persistence in setting up grape destemmer tray capture horizontally. Two trays set up vertically to catch destemmed grapes. Grapes bounce off void in middle of trays to floor. Best process is to set up 1 tray to capture destemmed grapes to avoid washed grape waste.	North Po
3	Process change and education: pineapple	Line Operators cut too much off the bottom of pineapples in preparation for line feed.	North Po
4	Process change and upcycle	Pre-separate Pineapple core & chunks from stem & base before feeding into line & upcycle waste into another product. Product TBD.	North Po
5	Process change and upcycle	Sort ripe, bruised or less-ripe sections from Pineapple peel & chunker pre-ABL; process and upcycle waste into another product. Product TBD.	North Po
6	Process change: mangos	Mangos falling on floor after being cut but before being packaged. Capture Mango slices/chunks before hitting ground	North Po
7	Process change: green onions	Green onion rubber bands get mixed in with discarded outer product; organic matter can't be composted. Separate green onion rubber bands from compostable organic matter	North Po
8	Process change: ABL, pineapple machine / upcycle	Create two separate trash lines on ABL, pineapple machine. Tops, bottoms, cores, and outside skin of pineapples (1st section of line) are commingled with ripe, bruised and other pineapple flesh pieces (from 2nd section of line); all going to compost. Can the 2nd line section have a separated conveyor to cordon off and hold ripe, bruised and other pineapple flesh pieces to be upcycled into something else?	North Po
9	Upcycle	Pineapple browning pieces not fit for final product: what can be done to upcycle pieces?	North Po
10	Upcycle or Donate	Bad batch of broccoli: reached too high of temperature in transit; heavily browned. What can be used/donated after plant stands stems to use in coleslaw?	North Po
11	Process change: dryer spinners	Fruit/vegetable pieces stuck to sides of dryer spinners. Scrape dryer spinners free of stuck vegetable pieces	North Po
12	Process change: lettuce	Washed lettuce, outer leaves separated from lettuce headed, floating in white bag water container. Most separated outer leaves are sent to compost.	North Po
13	Process change: sweet peppers	Utilize (or upgrade) sorting/cutting table with holes to slide sweet peppers into holes that directly capture commodity into bins for FP, instead of manually dropping or throwing sweet peppers into buckets to the side of the sorting table.	North Po
14	Equipment/process change: table	Loss of product as FP is weighed and re-portioned into FP plastic trays. Possibly put lip on table to prevent chunked product (melon) loss.	North Po
15	Upcycle / Reuse	Reuse/upcycle QA bin pieces. 2-3 tons (6 hours) of pineapple come into this bin and only 1 ton ends its way into FP	North Po
16	Equipment/process change: table	Dryer machines. Spinners are hoisted into dryers with produce inside. Then, spinners are hoisted out and opened from the bottom, where product is dumped onto prepping tables. Table has two holes in it. Where was occurs mostly is when spinners are opened at bottom and produce falls through table holes onto plant floor.	North Po
17	Upcycle / reduce waste: mango	instead of ultimately throwing mango seed into compactor bin, further process seeds to deruse it of remaining mango flesh for other upcycling use	North Po
18	Upcycle watermelon	All over-ripe, bruised or under-ripe (whiter) pieces are thrown into a bin to be compacted. Could they be upcycled instead: to be juiced, freeze-dried, or made into fruit popsicles?	North Po

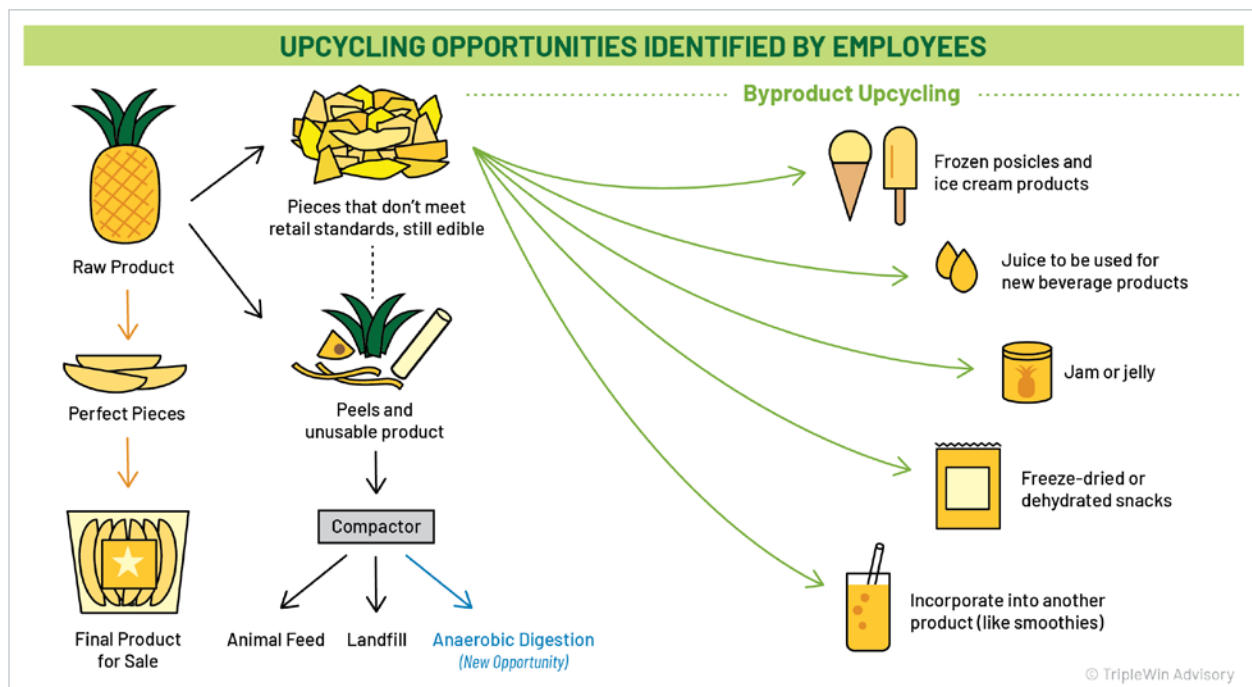
The Food Waste Opportunity Register used to record and categorize employee-submitted ideas.

A Stand-Out Category of Food Waste Opportunity

Just over 15% of all the food waste reduction ideas submitted during the month-long employee engagement challenge centered on opportunities **to upcycle byproducts** that currently end up as food waste.

These types of opportunities represent a major chance to process would-be food waste into new and different products or to sell food byproducts to a different set of secondary market clients. This food loss and waste (FLW) pilot project presented significant food upcycling opportunities that are viable and revenue-generating.

Some food upcycling ideas centered on using small or slightly bruised but edible pieces of fruit or vegetables to create a wide variety of new products, such as: *fruit juices, popsicles, smoothies, shavings for salads/ coleslaws, freeze-dried or dehydrated snacks, wine, soda, jam, and baby food.*



Waste Reduction Opportunity

Three employee ideas, #15, #86, and #161, all stating the same food waste reduction opportunity for the Fresh Del Monte plant, were selected. These ideas required developing a new process for receiving fresh produce and a change of inspection location, but they had the opportunity to significantly improve the quantity of edible food that could be recovered and incorporated into sellable finished product, without any impact on quality or freshness.

The waste reduction idea was piloted on five key Fresh Del Monte commodities—cantaloupe, honeydew, mango, pineapple, and watermelon—all of which are high-volume products at the North Portland plant with relatively low fruit utilization yields compared to other commodity types (e.g., strawberries, apples, broccoli).

Business as Usual (Pre-Adjustment)

During the two-week pre-adjustment, business-as-usual (BAU) phase of the food waste reduction pilot, the Quality Assurance (QA) inspector went about inspecting the five commodities received each week under existing processing protocols: all fruit inspected (or tested before received) during the QA phase is thrown away (into a gray trash bin) — not just the inspected or tested chunks. The thrown away fruit is then compacted and sent to farms as feedstock.

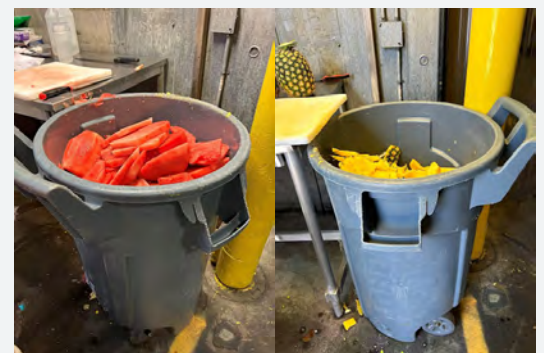
- 1. Business as Usual:** Fruit is inspected in the Receiving Area, outside of the Production Area, in a non-sanitized area resulting in no usable fruit from those tested products. (Photo Credit: Fresh Del Monte)
- 2. Waste Audit Signage** for BAU used on Production Floor.
- 3. Business as Usual:** Fruit is not cleaned beforehand. All tested fruit goes into gray bins. All gray bin organic material is fed into a compactor. (Photo Credit: Fresh Del Monte)



1



2



3

Post-Adjustment

During the post-adjustment stage, Fresh Del Monte’s North Portland plant relocated its QA receiving area, placing it within the production room. This change in standard operating procedure (SOP) redirected commodities to be cleaned and sanitized before QA inspection. Fruit inspections remained the same with one key difference: all parts of the fruit except for the inspected chunks were placed in white bins, which then flowed through the plant’s standard production processes where the “recovered” fruit was incorporated into salable goods. During this five-week period, both the gray (waste) and white (production) bin weights were measured for each commodity and lot received.



Post Adjustment: New sanitized area within the production room is set up for the waste audit with white bins to weigh and capture clean, recovered fruit. (Photo Credit: TripleWin Advisory)

TripleWin analyzed the weights from both the pre- and post-adjustment phases of the waste audit to determine how much fresh produce was able to be diverted away from immediate compaction and into final product production. To normalize the results of the waste audit, food waste and usable fruit recovered in the post-adjustment phase are reported in pounds (lbs) of product per day (see Table 1 below). Remember, in the BAU phase of the audit, all fruit inspected equals food wasted.

Table 1 | Sum of Wasted and Recovered Food for Both Waste Audit Stages: BAU and Post-Adjustment

Audit Stage	Product	lbs Food Waste per Day	lbs Recovered Food per Day
BAU	Cantaloupe	65.67	0
BAU	Honeydew	118.00	0
BAU	Mango	38.60	0
BAU	Pineapple	72.33	0
BAU	Watermelon	110.20	0
Post-Adjustment	Cantaloupe	23.00	42.57
Post-Adjustment	Honeydew	36.67	59.35
Post-Adjustment	Mango	34.94	30.51
Post-Adjustment	Pineapple	51.71	43.90
Post-Adjustment	Watermelon	95.83	95.01

Waste audit summary table by commodity of lbs of product per day of food wasted versus recovered, usable fruit.

The waste audit allowed the Fresh Del Monte plant to realize an average yield (%) on usable fruit recovered across the five measured commodities of between 47% and 64% (see Table 2). This is in contrast to zero fruit recovered during the BAU phase of the waste audit.



Post-adjustment yields of usable fruit (mango) recovered and sent into production. (Photo credit: Fresh Del Monte)

Visualization of Food Waste Destinations Before and After the Process Change



Table 2 | Average Yield (%) of Recovered Fruit Commodity Type

PROCESS CHANGE WASTE AUDIT		
Fruit Type	BAU Period Average Yield (%) of Usable Fruit Recovered	Post-Adjustment Period Average Yield (%) of Usable Fruit Recovered
Cantaloupe	0.0%	64.1%
Honeydew	0.0%	61.8%
Mango	0.0%	60.9%
Pineapple	0.0%	46.6%
Watermelon	0.0%	50.9%
Average Total for All Fruit Types	0.0%	53.2%

Weekly fruit commodity yields were also assessed to determine if a change in production yields for the plant could be identified between the BAU and post-adjustment phases of the waste audit. The plant was able to show an increase in commodity yields (%) for all audited fruits during the waste audit weeks with the exception of cantaloupe, which reported a decline in post-adjustment yield (see Table 3). The cantaloupe yield decline is attributed to smaller fruit sizes received through summer’s progression.

Table 3 | Average Plant Production Yields (%) by Fruit Commodity Type

Fruit Commodity	Plant Yields (%) During BAU Period	Plant Yields (%) During Post-Adjustment Period	% Change In Plant Yields (BAU - Post-Adjustment)
Cantaloupe	53.6%	52.7%	- 0.9%
Honeydew	47.3%	62.4%	15.1%
Mango	33.8%	39.1%	5.3%
Pineapple	20.6%	32.3%	11.7%
Watermelon	42.2%	46.9%	4.7%

In finished product terms, the amount of usable fruit recovered during the waste audit would have allowed Fresh Del Monte to produce the following additional number of 6-ounce fresh fruit containers:

- 672 four-fruit blend packs of Honeydew, Cantaloupe, Pineapple, and Watermelon
- 562 sliced Mango packs
- 2,914 Watermelon chunk packs
- 472 Pineapple chunk packs

In total, the Fresh Del Monte North Portland Plant would have been able to produce nearly 4,620 additional units of finished product packages for its clients over the five-week, post-adjustment period (see Table 4 round-up below), an impactful measure of additional, untapped revenue waiting to be seized from one process change.

Table 4 | Round-Up of Recovered Fruit Products

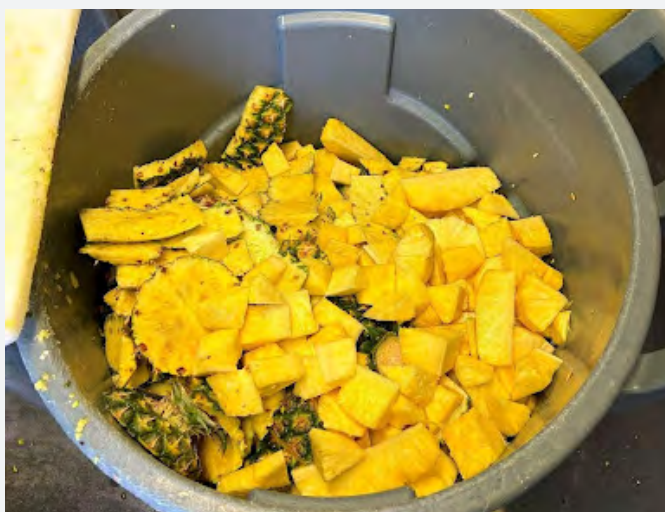
Fresh Del Monte Finished Product “Recipes”	
Example Selection of Finished Product Packages Shipped to Customers	# of Finished Product Containers That Could be Made From Usable Recovered Fruit
6-ounce 4-Fruit Blend (Honeydew, Cantaloupe, Pineapple, Watermelon)	672
6-ounce Mango Slices	562
6-ounce Watermelon Chunks	2,914
6-ounce Gold Pineapple Chunks	472



Waste Audit Signage for Post-Adjustment used on Production Floor to indicate gray bins for product waste to be composted (red sign) and white bins for usable fruit (white sign).



Post-Adjustment: All fruit is cleaned first and moved into the sanitized production area. Less fruit needs to be put into the gray bins, and all usable pieces go into white bins to be put into production. (Photo Credit: Fresh Del Monte)



Before (left) and After (right) The amount of wasted fruit has dropped significantly since the usable fruit is now recovered. (Photo Credit: Fresh Del Monte)

Best Practices for Implementation of Employee Engagement Campaign

TripleWin has observed a set of best practices when following this employee engagement model, including:

- Setting measurable goals (e.g., employee participation rate, # of ideas to be submitted) for the employee engagement initiative before it is implemented is critical to successfully reach those targets. The goals shape many of the key aspects of the program from who is involved in the GEMBA walks, length of competition, and incentive structures, to the employee talking points that are developed.
- Designating a key point person for the implementation, execution, and communication of an employee engagement program is a critical determinant to the success of these food waste reduction initiatives.
- The active involvement of the plant managers has proven to be a crucial linchpin in the success of all projects. When pass-down messaging needed refinement, the active input and involvement of supervisors improved idea submissions.
- Messaging updates and talking points should be developed and deployed by supervisors to plant workers at least every other day throughout the entirety of the competition timeframe.
- When new SOPs needed to be followed and waste measurements accurately recorded, the plant managers took up the responsibility to ensure adherence and accuracy.
- Working with a workforce that is a hybrid of company employees and third-party contractors presents a unique set of challenges. Carefully assessing language, educational, and even communication barriers before implementation will be time and effort well-spent. Challenges can be overcome through innovative participation tools, such as recording audio, photo, and video ideas, and putting mechanisms in place to have a designated “food waste translator” who writes spoken ideas onto paper.
- Customizing the competition assets with a company’s own illustrations and brand designs makes the FLW challenge assets feel company-specific and easier to scale across operations from a communications standpoint.
- The content in the FLW training video that resonated most with employees was the description of how food waste contributes to crises such as world hunger and financial issues, followed closely by information on how to identify food waste at work.
- The weekly prizes and the educational FLW video were extremely popular with the employees and were rated in post-competition surveys as the most effective ways to encourage participation.

Next Steps and Expansion

Following the success of this food waste employee engagement project, Fresh Del Monte is considering several initiatives to continue building momentum towards reaching its goal of reducing food loss and organic waste by 50% by 2030, including:

- Evaluating a change in standard operating procedures across all plant operations for QA inspections of commodities to be received.
- Catalyzing food loss and waste educational training across the company's entire workforce.
- Rolling out the employee engagement competition and GEMBA walks to other high-volume production plants.
- Pursuing additional Quick Win and Gem food waste reduction ideas collected in the Food Waste Opportunity Register, particularly those addressing donation and byproduct upcycling.



Acknowledgments

The PCFWC would like to thank Fresh Del Monte and TripleWin Advisory for their contributions to this case study.

About Fresh Del Monte

Del Monte Fresh Produce N.A., Inc. is one of the world's leading vertically integrated producers, marketers and distributors of high-quality fresh and fresh-cut fruit and vegetables. Their products are sold in more than 80 countries around the world. The Del Monte® brand has been a symbol of product innovation, quality, freshness and reliability since 1892.



About TripleWin Advisory

TripleWin Advisory is a CDP Accredited Solutions Provider focused on progressing circularity solutions for industry. The company is a woman-owned, public benefit company and certified Women Enterprise Business (WEB) in the state of Oregon.



About the Pacific Coast Food Waste Commitment

The Pacific Coast Food Waste Commitment (PCFWC) arose out of the [Pacific Coast Collaborative](https://www.pacificcoastcollaborative.org/) in 2016 and is an innovative public-private partnership made up of West Coast jurisdictions, U.S. food industry leaders, and nonprofit resource partners that together seek to eliminate food waste in the region by 50% by 2030. Learn more about the initiative and its members at [pacificcoastcollaborative.org/food-waste](https://www.pacificcoastcollaborative.org/food-waste).



About the U.S. Food Waste Pact

The U.S. Food Waste Pact is a national voluntary agreement to help food businesses accelerate progress toward their waste reduction targets. Led by national nonprofit partners ReFED and World Wildlife Fund, the U.S. Food Waste Pact is aligned around the global framework of "Target, Measure, Act" to help food businesses reduce waste within their operations.



Pacific Coast Food Waste Commitment Business Signatories

(As of Winter 2024)

Retailers



Hospitality and Foodservice



Distributors



Manufacturers



Growers



Resource Partners

