

Global Roadmap for Food Waste Reduction in the Tourism Sector

Draft for consultation

Appendix 2: Case studies

The following case studies have been provided by the listed organisations in support of the Roadmap demonstrating the value of taking action to prevent food waste.

PLANET 21: REDUCING FOOD WASTE IN THE ACCOMMODATION SECTOR – ACCOR

Background

Accor is a world-leading augmented hospitality group offering unique and meaningful experiences in over 5,000 hotels and residences across 110 countries. It aims to offer its guests healthy and sustainable food, while eliminating food waste.



Its [Planet 21](#) sustainable development programme is based around four strategic priorities to: work with its employees, involve its customers, innovate with its partners and work with local communities. One of the key issues to tackle is food waste and Accor's restaurants were committed to reducing food waste by 30% by 2020 compared with a baseline of 2016. (The deadline was restated until end 2021 due to the pandemic).

Actions taken

To achieve the target reduction in food waste the focus was on four key areas:

- Food waste and loss reduction
- Production of food and/ or procurement
- Sustainable diets/menus and preparation stage
- Communication to consumers

To provide the focus Accor defined a simple four-step strategy:

1. measure food waste;

- 37 2. reduce food waste in the kitchen;
- 38 3. interact with guests to reduce food waste;
- 39 4. resell unconsumed food at low prices or donate it.

40 A range of tools were then introduced to enable the hotels to deliver the strategy,
41 including:

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- 43 • A food waste reduction module “Food Waste Management” was developed in-
44 house. The tool was designed to be very simple to weigh discarded products.
45 This weight is then converted into cost to the business helping the hotel to
46 identify areas to prioritise on to reduce costs and waste.
- 47 • Building on the same principle but using technology and artificial intelligence
48 (AI) Winnow technology was also made available. The technology enables
49 automatic recognition and measurement of food waste. All products not
50 consumed are recorded and weighed by category (expired stock, leftover
51 buffets, cooking errors, peelings, return of plate), then more specifically by
52 ingredient or recipe (bread, dairy products, fish, meat, etc.). This solution
53 enables hotels to measure in detail the weight of waste, its value as well as its
54 environmental and financial impact. The kitchen teams equipped with this
55 solution were then able to implement an action plan to reduce the most
56 wasteful foodstuffs. To date, 62 hotels use Winnow, two of which use Winnow
57 Vision AI.
- 58 • Guidance on communication on reducing customer waste, buffets for instance,
59 to drastically change behaviours towards wasting food.
- 60 • Within the Group, initiatives were put in place to ensure that unused foodstuffs
61 could be donated to food banks, or associations, or sold at affordable prices to
62 local people. For example, The Too Good To Go app, which puts citizens in
63 touch with restaurants or merchants offering their unconsumed products
64 cheaply, has already been introduced in 11 European countries and has been
65 adopted by over 700 hotels.

66 **Outcomes/lessons learned**

- 67 • At the end of 2020, 1,882 hotels had implemented the “Food Waste
68 Management” project
- 69 • 482 hotels are precisely tracking the volumes of wasted food, 30% of which
70 reached the objective of a 30% reduction.
- 71 • 56 hotels used the Winnow connected smart scale and reduced food waste by
72 56% in 2020. For example, the Winnow system was installed at [Sofitel](#)
73 [Kunming](#), China. With simple changes, and with regular meetings to discuss
74 their progress, the team managed to reduce their food waste by over 50%. By
75 cutting food waste, they helped the hotel save over 133,000 RMB (19,000
76 USD) that was be re-invested in other areas. The team also avoided 20
77 tonnes of CO₂ from being released into the atmosphere. I

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- Customer engagement – for example, the “Clear your plate” challenge developed for the China market.
 - In total 1,461 hotels donated or resold food products.
 - Since its launch in 2016, the total number of not wasted meals in restaurants using TGTG was 493,000. It is estimated that this partnership has avoided the equivalent of 1,200 metric tons of CO₂ emissions.

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87 **Next steps**

88 The objective of reducing food waste by 30% by 2020 as part of the Planet 21
89 program ended in 2021.

90 New objectives will be set accordingly with most certainly even more challenging
91 results expected.

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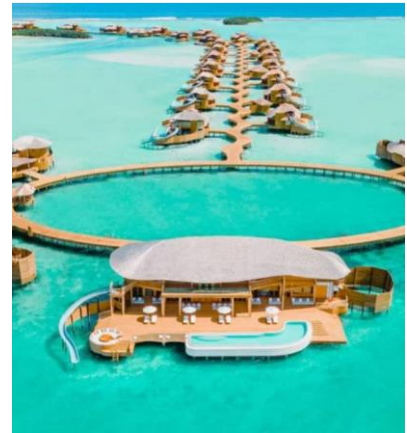
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WASTE-TO-WEALTH: REDUCING AND DIVERTING FOOD WASTE IN THE ACCOMMODATION SECTOR – SONEVA

Background

[Soneva](#) is a world-leading sustainable luxury resort operator with a total of 400 rooms across 3 resorts. It is built on the foundation that a business must exist for a greater purpose than just shareholder returns.

Located on remote islands there is a restricted choice of food products available locally and waste management infrastructure is severely limited. As a result, common practice is to import food and dispose of food waste into the ocean, both of which lead to a high carbon footprint.



Soneva views waste as a resource and aims to achieve zero waste to landfill by 2025 and compost all organic food waste; to increase herb and vegetable production to reduce food imports; and to improve guest satisfaction.

To deliver these goals, Soneva are operating a Waste-to-Wealth programme to reduce, transform and manage waste in each of their resorts.

Actions taken

The programme looked to raise awareness on the value of food, address the challenges of improper waste handling, increase locally produced food products and provide employees and guest with fresher and healthier meals.

Effective implementation of the programme required the engagement of the teams at different stages of the food journey. General managers were brought on board to support, apply the correct emphasis, and to ensure appropriate resources were made available to the programme. Where required, specialist consultants were also brought in to provide guidance and to improve the effectiveness of the programme.

The teams involved included chefs, the Eco Centro team (responsible for solid waste handling) and the Garden team:

- Chefs were encouraged to have an open mind towards reducing food waste. This included utilising what the garden produced based on seasonality and climate and adapting their menus accordingly. They also worked with the Garden team to identify the produce they would like grown and to develop a more plant-based menu.
- Plant-based restaurants such as Shades of Green, So Wild, and Colours of the Garden were established inside the vegetable gardens. This gives guests

- 137 a unique experience to see how the vegetables are grown and enjoy healthy
138 and sustainable meals with the freshest ingredients.
- 139 • The Eco Centro team were trained on permaculture principles so that as much
140 as possible is recycled. Up to 70% of the solid waste is organic (food and
141 garden waste) and composting plays an integral part of the solution in
142 preventing food waste being disposed to the ocean.
 - 143 • Training was also delivered to the Organic Gardening team on permaculture
144 principles to increase garden production, reduce reliance on imported food
145 and utilise compost and other organic waste materials such as cardboard and
146 converting wood waste into biochar.

147 **Impacts achieved**

148 The programme delivered the following impacts:

- 149
- 150 • Food waste reduced by 50% compared against a 2019 baseline
- 151 • Plant-based meals have been increased to 50% of the menu offering.
- 152 • 100% of food waste recycled by composting. 4,200 tonnes since 2009
- 153 • Using a conversion factor of -0.12kg CO₂ per kg food waste composted CO₂
154 emissions have reduced by 500 tonnes since 2009. For all waste the
155 calculation is a reduction of 1,220 tonnes.
- 156 • Recycling of all waste increased from 27% (2009) to 90% (2021)
- 157 • Vegetable production increased from \$16,000 a year (2011) to \$200,000
158 (2021).
- 159 • Waste-to-Wealth has generated \$3 million in total
- 160 • Development of a suite of [Tropical Gardening Course](#) tutorials

161 **Lessons learned**

162 The achievements of the programme are a result of the determination, dedication
163 and hard work by senior management and all employees. Success can also be
164 attributed to Waste-to-Wealth being identified as a profit centre, raising the profile of
165 waste handling and its unique challenges in an island environment. This made it
166 easier to demonstrate the business case for further investment in equipment that
167 help waste handling. Waste should be viewed as a resource. Organic food and
168 garden waste is important to manage as it often comprises 50% or more of solid
169 waste. When composted it provides a valuable resource that can be used to produce
170 food.

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172 A valuable lesson learned was the need to focus more on reducing food waste as a
173 first measure. A subsidiary measure was the opportunity to generate value from the
174 compost. If the focus is placed on composting, there is a risk of becoming
175 complacent with generating food waste. Therefore, it is necessary to recognise that
176 throwing away food unnecessarily is unacceptable and that prevention is a far more
177 sustainable option. This provided renewed focus and food waste was reduced by
178 50%, which in turn made the composting process much more manageable.

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Food waste audits highlighted the areas to focus on. Prevention measures included ensuring spoilage is minimal, appropriate adjustment of portion sizes, presenting less food at buffets and preparing more food for buffets only when required. The guests are very supportive and highly appreciative of all the efforts on waste recycling and food waste composting process. Constant monitoring is required to ensure high efficiency and guest satisfaction is maintained.

Next steps

The programme and commitment to sustainability is constantly evolving and is supported by the additional revenue generated. Beef has been removed from the menus because of its high environmental impact. Dairy, white flour and white sugar content has been reduced by over 80% to offer even healthier menu choices with a further focus on offering more plant-based alternatives.

“First measure your waste. Then focus on why it is arising and how you can reduce it in the first place, before you recycle/compost as much as possible. Look then at ways to generate value from the waste, which often makes in more interesting.”

Arnfinn Oines, Social & Environmental Conscience

SUSTAINABLE FOOD INITIATIVE: REDUCING FOOD WASTE IN THE ACCOMMODATION AND CRUISE SECTORS – FUTOURIS

Background

[Futouris](#) is a not-for-profit organisation working with its 30 members and other organisations globally to develop a sustainable future for the travel industry. Its Sustainable Food Initiative ran for 4 years between 2015 and 2019.



Its objective was to produce practical manuals for hotels, cruise operators and other tourism businesses with which they could develop, implement and promote a sustainable food and beverage offer. To achieve this the project included a quantitative consumer survey with more than 8,000 respondents, field visits, qualitative interviews with hotel and cruise ship representatives and systematic, checklist-based assessments of best practices.

One of the main topics of the baseline study was food waste. Key baseline findings on this included:

- Hotels are currently throwing away between 25 to 60% of the purchased food.
- About 50% of this waste could be avoided.

Actions taken

Three key actions were identified:

- Raise awareness of the issue of food waste in tourism.
- Measurement of food waste within the business.
- Continuous improvement and motivation.

These actions were addressed as follows in the project “Avoiding Food Waste” in the Mediterranean:

- Many of the employees engaged through the project were not aware of the environmental impact of throwing food away. By raising awareness of the impact employees became far more engaged. This was reinforced by empowering the employees to come up with solutions to reduce food waste and hence taking ownership and responsibility for implementation. The topic of food waste reduction was integrated into the general sustainability trainings for staff to maintain the behavioural change in the long term.
- Food waste measurement was carried out in partner hotels to demonstrate the extent of waste and the savings potential if food waste was reduced. Over a period of several weeks, the participating hotels measured food waste (with an

246 online tool provided by United Against Waste e.V.) in the following areas:
247 storage, production, overproduction (mainly from buffets) and guest plate
248 waste. Results from these measurements were then analysed and processes,
249 practices and behaviours which resulted in high wastage of food were
250 identified. It was identified that the “All Inclusive” concept led to guests taking
251 much more from the buffets than they could eat, leading to very high plate
252 waste. Another example was that the entire choice of food offer was provided
253 on buffets until the very end of the mealtime to ensure guest satisfaction. This
254 lead to high overproduction waste from the buffets. This analysis was then
255 presented to management and relevant staff (from kitchen, restaurant service
256 and purchasing departments) so that improvement measures could be
257 developed.

- 258 • Round table meetings were held with key staff including general managers
259 and executive chefs to motivate and discuss possibilities for reduction and
260 jointly create further solutions.

261 **Impacts achieved**

262 Over 40 hotels in Greece, Spain, Italy, Egypt and Germany joined the project and
263 worked towards reducing food waste. 10 hotels did precise measurements of their
264 food waste and implemented various improvements measures. 30 hotels were
265 reached through awareness raising workshops and trainings.

- 267 • For the hotels participating in measurement, food waste was reduced by on
268 average 28%. 58 tonnes of food waste were saved across the 10 hotels.
- 269 • One of the pilot hotels managed to reduce food waste by approximately 400
270 kg per week. This and two other hotels each managed to save between
271 26,000€ - 32,000 € per season due to reduced food purchasing and waste
272 disposal costs.
- 273 • In the parallel project “Reducing food waste on cruise ships”, the participating
274 TUI cruise ships, reduced food waste by over 17%. The three measures with
275 the biggest effect were:
 - 276 ○ Introducing continuous opening hours at the main buffet restaurant
277 between 6:30 a.m. to 9:30 p.m. meaning that there are no clearance
278 phases in which food is disposed of before time control.
 - 279 ○ Bread on demand: Setting up the table only when guests arrive.
 - 280 ○ Less is more: smaller bowls, buffet inserts and food containers on the
281 buffet in conjunction with careful replenishing/refill behaviour.

282 Examples of the food reduction measures that were implemented to achieve these
283 savings included:

- 284 • Smaller portions and plates on buffet.
- 285 • Smaller serving spoons.
- 286 • Analysing buffet and plate leftovers to adapt menu to guest preferences.

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- More show cooking to enable portion control by staff, particularly on cruise ships.
 - Better communication of occupancy rates to the kitchen
 - Communication to guests on how their actions can help reduce food waste, i.e. posters at the entrance of the restaurants, table and buffet displays.

292 Three manuals were developed as a result of the initiative:

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- [Sustainable Food Manual](#)
 - [Sustainable Food Guest Communication Manual](#) (with ready-to-use templates for guest communication materials on reducing food waste)
 - [Food Waste Reduction on Cruise Ships Implementation Guide](#)

297 **Lessons learned**

298 To effectively minimize food waste, it is necessary to measure food waste in different

299 divisions, as only this complex measurement allows for a deep analysis to determine

300 where reduction potentials lie. To avoid misinterpretation, food waste measurement

301 should focus solely on the main restaurant, depending on available resources. Some

302 hotel employees were not as precise when measuring their waste, resulting in

303 incorrect measurements at first; therefore, all involved staff members should be

304 made aware of measurement and training on how to apply it.

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306 Picture protocols of the leftovers on the buffet after the end of the mealtime are very

307 helpful to visualize how much is thrown away. These have had a great effect on the

308 project engagement of head chefs, F&B or purchasing managers as they hadn't been

309 confronted with the food wastage so directly beforehand. Measures to avoid food

310 waste must be developed by the employees themselves to guarantee wider support

311 for the issue. The participating actors must discuss the topic on eye contact with a

312 two-way communication to avoid hotel employees feeling being overruled.

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314 “For all food waste reduction initiatives, the motto “You cannot reduce

315 what you do not measure” should be used as a guiding principle, as

316 measuring and analyzing the food waste is the key to unlocking

317 reduction potentials.”

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319 **Tatjana Peters, Project Manager**

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RESPONSIBLE FOOD CONSUMPTION, WASTE TRACKING AND COMMUNITY SUPPORT – COSTA CRUISES

Background

Costa Cruises is a subsidiary of Carnival Corporation operating 12 ships sailing itineraries in Europe, the Caribbean, and South America.

As part of a holistic sustainability strategy, Costa Cruises operates robust environmental and social initiatives including work to manage waste, reduce water consumption, maximize environmental ship performances through the introduction of technological innovations, and share value with the local communities in the destinations. Their 360° food program aims at cutting 35% of food waste by 2024, while involving guests and crew in awareness and upskilling actions.



Actions taken

The Costa food program was designed to scale solutions that radically changed consumption patterns to generate important social and cultural benefits. The project addresses food service inefficiencies holistically, including actions to review the preparation of dishes, manage food surpluses, and raise awareness and involvement of all stakeholders. Costa Cruises emphasizes the value of food along the entire value chain, from supply to consumption.

To achieve the target reduction in food waste the focus was on four key areas:

- Participation of the crew
- Engagement of cruise guests via targeted message campaigns
- Coordination with local communities to receive donations of surplus food
- Scaling zero waste systems and processes

A range of tools and approaches are used to deliver on the Costa food program ambition:

- The University of Gastronomic Sciences of Pollenzo partnered to rethink food services processes with a long-term vision of gastronomic experience and the appreciation of food on board, including prioritizing the seasonal availability of produce.
- Purchasing processes were revised to include ship ports of call, enabling onboarding of food during voyages and increasing the amount of locally procured food.

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- A partnership with Winnow was developed to analyze and quantify the amount of food wasted during the preparation of meals on each ship in the Costa Cruise fleet. This system allows a continuous improvement approach to reduce overproduction, deterioration of food, and waste. Mapping food waste allows chefs to take action and make corrective changes where necessary. Awareness raising and culinary crew training were essential to maintain accurate use of these systems, especially in the context of high staff turnover rates.
 - A call to action, *Taste Don't Waste*, was introduced fleetwide engaging passengers, guests, and crew members. These messages promote the benefits of healthy eating and encourage responsible behaviors and conscientious consumption.
 - When food waste cannot be avoided, Costa has identified innovative ways to donate food surplus. Via Italy's Law No. 166 on food waste, it became possible to recover and donate high-quality surplus food, including ready-to-eat meals, that have been prepared but not served on cruise ships. This unprecedented work required new procedures for the preparation of food fit for offloading. These procedures were developed in close consultation with the Customs Office and local Border Control Public Health & Safety Agency. Starting in the port of Savona in 2017, this program has now scaled to cities in Italy and abroad to France, Spain, Guadeloupe, and Martinique with over 200,000 portions donated.
 - The program onboard Costa ships has been backed and accompanied by the Costa Crociere Foundation food support program which, since 2015 has distributed over 920,000 meals to local communities in 15 destinations. This brings the total amount of meals donated to people in need by Costa and its Foundation **to over 1.1 million.**

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393 **Outcomes/lessons learned**

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- Via innovative purchasing systems, significant volumes of are procured locally
 - To date Costa has measured a 27% reduction food waste, in line with the goal of -35% by 2024.
 - In 7 years, Costa Cruises, together with its Foundation, distributed more than 1,100,000 portions to support community members in need

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400 **Next steps**

401 Costa Cruises will maintain and further improve its food program, including Winnow-

402 enabled measurement across the fleet, into the future for the purpose of continual

403 improvement.

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406 **WAR ON FOOD WASTE – LINDBLAD EXPEDITIONS**

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408 **Background**

409 Lindblad Expeditions is an expedition travel
410 company offering cruises to destinations on
411 all seven continents aboard 15 ships with
412 capacities ranging from 28 to 148 guests.

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414 Lindblad Travel founder and father of
415 Lindblad Expeditions founder Sven-Olof
416 Lindblad, Lars-Eric Lindblad, is regarded as
417 the father of ecotourism, and championed
418 his belief that travel to difficult-to-reach

419 places encourages a desire to preserve and protect the planet. In 2004, Lindblad
420 Expeditions partnered with National Geographic, pairing expedition leaders,
421 naturalists, and historians with National Geographic scientists, oceanographers, and
422 other experts.

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424 Environmental sustainability is at the heart of Lindblad Expeditions' operations, with
425 the company achieving carbon neutrality in 2019. Part of this work is careful
426 procurement and service of food and managing food waste.

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428 **Actions taken**

429 Minimizing food waste is a priority for Lindblad Expeditions and is at the core of their
430 food program. A wide range of behaviors have been introduced fleetwide to adjust
431 how crew is trained, how menus are planned and executed, and how food is
432 procured. Actions have included:

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- 434 • “Smart” purchasing strategies to limit waste, including careful menu planning
435 and par levels.
- 436 • Procuring food locally, focusing on smaller quantities purchased more often.
437 This also results in reducing shipping of procured food, shrinking the carbon
438 footprint of Lindblad’s supply chain.
- 439 • Careful maintenance of food stores. If overstock is observed in storage areas,
440 or another source of food surplus is noticed, chefs will adjust menus to make
441 use of ingredients that are at risk of going to waste.
- 442 • Plated meals prioritized over buffet food service.
- 443 • Cross-utilization of ingredients across menu items, including experimental
444 menu offerings such as vegan bacon produced from banana peels, potato
445 peel chips, corn husk as a smoker starter, and use of cuttings to make stocks,
446 sauces, mousses, and rillettes. Additionally, cross-utilized ingredients and
447 surplus are served for crew meals.
- 448 • Extending ingredient quality by pickling, fermenting, and preserving.



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- Requesting guests indicate their dinner selection each morning (meat, fish, vegetarian) to help reduce over production.
 - Offering a presentation, *War on Food Waste*, led by the Hotel Manager and Chef to share strategies the crew is using to cut waste.

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454 **Outcomes/lessons learned**

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- Publication of *A Travel Advisor's Guide: Sustainable Travel*, with a dedicated section on sustainable food, to help travel professionals introduce sustainable tourism options to their clients.
 - By the end of 2022, every culinary crew member aboard a Lindblad Expeditions vessel will have received training on initiatives to cut down on food waste.
 - In 2021-2022, Lindblad Expeditions reduced food waste by 45% as tracked through food cost by shifting to plated meals.
 - In 2021, vegetable purchases were reduced by 10% as cross-utilization of scraps offset procurement for stocks and sauces, and more focus is placed on preserving and fermenting foods.
 - Each week aboard Lindblad's Galapagos voyages, an average of 25 kgs of food is sent to be composted by farmers on Santa Cruz Island.
 - Crew training on efficient food prep has resulted in a reduction of 8% of prep waste daily.
 - Meal Sign-Ups for travellers are offered on 100% of Lindblad vessels.

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472 **Next steps**

473 Lindblad Expeditions will continue their ambitious strategies to limit and manage food

474 waste. Future work will include:

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- Increasing crew and guest awareness via weekly workshops and reinforcing messages on the importance of food waste and how to reduce it.
 - Annual training for galley teams to maximize ingredient preparation yields, cross-utilize ingredients across applications, and properly store and rotate perishable food.
 - Expand "nose-to-tail" menu approaches by hosting a chef competition on full-use recipes.

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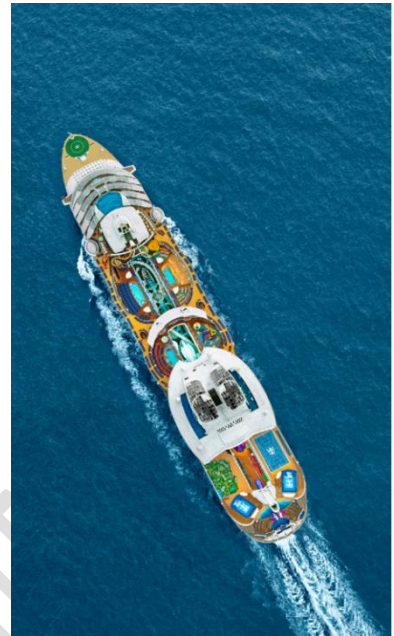
WIN ON WASTE – ROYAL CARIBBEAN GROUP

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Background

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490 Royal Caribbean Group (RCG) is a global cruise holding
491 company with fleets including Royal Caribbean
492 International, Celebrity Cruises, and Silversea Cruises.
493 As self-contained vessels, cruise ships can't rely on
494 traditional services to manage waste produced by guests
495 and crew.

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497 For thirty years, Royal Caribbean Group has been
498 operating the Save the Waves program with the primary
499 goal of reusing and recycling as much material as
500 possible. Save the Waves has evolved through the years
501 to encompass robust policies, initiatives, and
502 technologies. In 2021, RCG's Royal Caribbean
503 International, launched a new five-year WIN on Waste
504 initiative to help reduce food waste on ships by 50%.



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506 As of 2022, 26 of the Group's ships as of 2022, uses their WIN on Waste artificial
507 intelligence system to estimate how much food should be produced, prepped,
508 thawed, and ordered, on a given day, at any given time. This system considers data
509 points including guest demographics, itinerary, and weather conditions to produce
510 just the right types and amounts of food to satisfy diners. Data dashboards are
511 reviewed by ship and corporate leaders to inform adjustments and track initiative
512 progress. This initiative is overseen by dedicated Food & Beverage Operations
513 Excellence Controllers (FOEC).

Actions taken

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516 Royal Caribbean Group brands focused on the following areas to address food
517 waste:

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- Continual, data-informed improvement
 - Adjusted menus and procurement based on demographics and itineraries
 - Rigorous procurement and food handling processes
 - Efficient food preparation and service
 - Careful surplus and waste management
 - Communication and training for crew
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525 A range of tools and strategies are used to prevent and manage food waste:

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- All crew members are trained on waste management best practices via the
528 Save the Waves training program.

- 529 • Food is procured and handled carefully from quality and quantity standards to
530 ensure crew and guest expectations are met throughout the voyage. For
531 example, bananas are procured at different stages of ripeness and held
532 separately to ensure perfectly ripe bananas are available throughout voyages.
- 533 • Food inventory is maintained carefully by inventory and storeroom teams, and
534 food quality is checked formally when received from suppliers for each
535 voyage.
- 536 • Demographic information of crew and guests informs menu adjustments
537 before each voyage.
- 538 • Recipes with specific preparation instructions and photographs are referenced
539 for each dish, and a cook is assigned responsibility for a specific dish during
540 service. Similarly, buffet servers use reference photos and guides to ensure
541 buffets are set with quality and efficiency in mind. Accuracy is checked by
542 leaders including sous chefs and restaurant managers and reported to
543 Executive Chefs daily. Many hot items are prepared using small batches and
544 “À la Minute” cooking methods.
- 545 • Buffet service has adjusted away from tray and large plate dining. Live-action
546 and carving stations are utilized to preserve quality, maintain portion sizes,
547 and engage guests. Perishable food displays and decorations are reduced on
548 buffets.
- 549 • Consistent communication is maintained between dining room and galley
550 teams and frequently wasted items are noted to inform future adjustments.
551 Waste datasets are reviewed daily by ship Food & Beverage leaders.
- 552 • Active campaigns on efficiency and the value of food permeate crew culture,
553 including crew dining rooms in the form of poster campaigns.
- 554 • All food waste becomes the responsibility of a ship’s Environmental Officer.
555 Most items are processed through a pulper and pulverized to less than 22mm,
556 as per international standards. Waste is then either dried and incinerated
557 onboard, discharged no closer than 12 nautical miles from land, or landed
558 ashore to an authorized waste provider. All waste is recorded in the ship’s
559 garbage log and audited via industry regulatory bodies.
- 560 • In 2021, the *Celebrity Apex*, one of 14 ships in the Celebrity Cruise fleet,
561 installed a prototype Hydrothermal Oxidation Technology to treat food waste.
562 This system is designed to increase energy efficiency and ensure food waste
563 is treated without discharge to sea.

564 **Outcomes/lessons learned**

- 565 • Save the Waves training is compulsory, all crew are trained
- 566 • 100% of Group ships equipped to be landfill-free
- 567 • Waste-to-landfill reduced by 87% between 2007 and 2021
- 568 • FOEC role introduced on each Royal Caribbean International ship,
569 responsible for daily ship data reviews and bi-weekly connection with
570 corporate team

571 **Next steps**

572 RCG is working with World Wildlife Fund to curb food waste in Royal Caribbean
573 International and Celebrity Cruises fleets. Future activities include improving data
574 management processes, engaging crew members, and continually improving
575 efficiency of food service.

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Draft for consultation

578 THE MAURITIUS PROJECT

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580 Background

581 In Mauritius, a small island nation off the coast of Africa, Food Waste Hygiene
582 Mauritius estimates that over 5,281 tons of food waste is produced annually. Food
583 prices are peaking across society and there is a high dependence on imports to feed
584 the population. Meanwhile, the escalating climate change crisis is being fuelled by
585 food waste, with landfills leading to dangerous amounts of methane gas that has led
586 to the rising temperatures over Mauritius and beyond.

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588 Actions taken

589 In 2021, through a program titled “Zero Food Waste Mauritius” engineered by UN-
590 awarded LightBlue Consulting the project worked with eight hotels and two corporate
591 canteens. The partners embarked on a journey to cut down on food waste, reduce
592 unnecessary costs and negative environmental impacts, and reach the international
593 certification The PLEDGE™ on Food Waste.

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595 The PLEDGE™ on Food Waste is a third-party Certification and Benchmarking
596 system designed to reduce food waste, save costs, and attract new customers. It is
597 composed of 95 criteria articulated around 7 pillars, and when successful the
598 “pledgers” are granted bronze, silver, gold or ALL-STAR certified status.

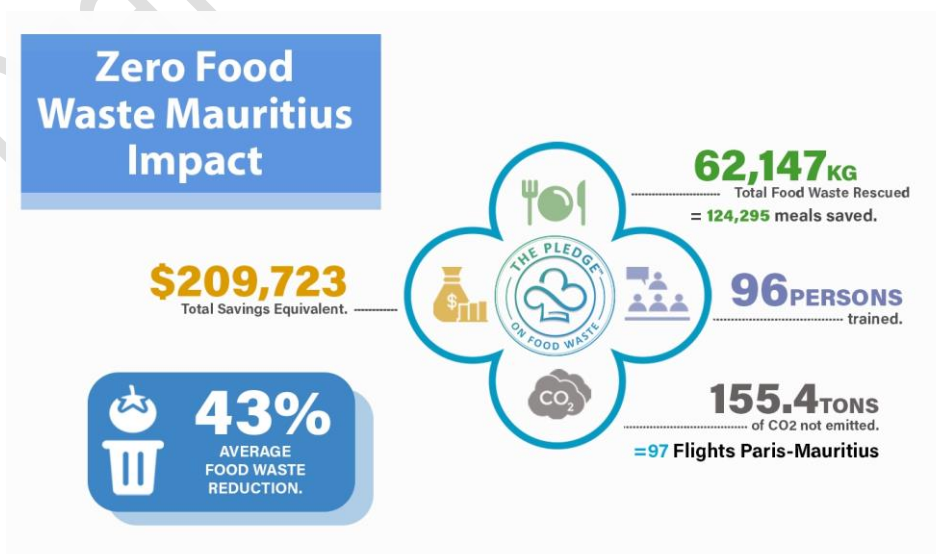
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600 Food waste arisings were tracked and analyzed using a multilingual app and data
601 analytics software, offering a practical and scalable solution for commercial kitchens
602 willing to track and reduce food waste and associated costs at multiple locations.

603

604 A multi-department Food Lovers' Committee was set up to implement the certification
605 and run the program. Pledgers strive for zero food waste to landfill operations and
606 long-term behavior change among the staff.

607



608

609 **Impacts achieved**

610 After nine months, these actions led to:

611

- 612 • 43% average reduction in food waste/cover
- 613 • 62,566 Kg of food not being wasted, therefore 125,132 meals saved
- 614 • \$209,717 saved
- 615 • 156.4 Tons of CO2 Emissions prevented

616 The ten participants in the PLEDGE™ also reached the “Silver, Gold, and All-Star”
617 Certification as a result of their strong commitments to the implementation of
618 responsible and sustainable practices in their kitchen operations.

619

620 **Lessons learned**

621 Seismic impacts can be made when actionable plans, guidance, technical training,
622 practical tools, and a solid certification system are implemented.

623

624 It was found that by combining capacity building, food waste tracking through the
625 Food Intel Tech technology, data analysis and the implementation of a certification
626 process, a positive impact could be created on food waste, on adopters' own
627 financial performance, and in encouraging circular systems.

628

629 It was concluded that:

630

- 631 1. A drive from top management is key
- 632 2. It's not a one person's job. Cross departmental approach, clear roles and
633 responsibilities, and KPIs linked to bonus/performance.
- 634 3. There cannot be substantial results without capacity building, the technology
635 for data-driven change, and a Certification for a rigorous methodology.
- 636 4. Public Communication about the efforts by participants early in the program is
637 instrumental.
- 638 5. Change in behavior requires time and must be data-driven.

639

640 **Next steps**

641 The Mauritius Project not only was a resounding success in reducing food waste,
642 CO2 emissions, and costs saved on the island nation, but it serves as a proven-
643 blueprint and foundation for the next Food Waste Prevention project LightBlue
644 Consulting oversaw. This time on a much grander scale across the Asia-Pacific
645 region with eight Hyatt hotels between April to July 2022.

646

647 There, within a shorter time frame of four months, the participants were able to
648 achieve:

649

- 650 • 36% average reduction in food waste/cover
- 651 • 49,020 Kg of food not being wasted, therefore 98,041 meals saved
- 652 • \$241,170 saved
- 653 • 122.5 Tons of CO2 Emissions prevented

654
655 With these successive projects achieving significant results, LightBlue’s pool of
656 clients seeking their consultancy, guidance, training, tools, and taking the PLEDGE™
657 on Food Waste certification systems has been growing.

658
659 An indisputable sign that Food Waste Prevention is finally becoming the new-normal.

660
661 "We clearly see the need for a structured approach to food waste
662 prevention that helps restaurants and hotels cut significantly on costs.
663 The PLEDGE™ is also a fantastic tool to recognize the personnel's
664 efforts and show customers that adopters really care about the future of
665 our island."

666
667 **Pamela Leste, Senior Manager, Economic, Market Analysis & Sustainability**

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