EMPOWERING ALL TOWARD
INCLUSIVE GROWTH

OR Food Loss and Waste Strategy and Commitment

2025

Food Loss and Waste Commitment and Strategy

Food Loss and Waste Commitment

Food loss and waste is the main challenge of world hunger problems. According to the UN, the number of people affected by hunger has been slowly on the rise since 2014, and large amounts of edible food are lost and/or wasted every day. Around 14 percent of global food produced is lost between harvest and retail, while an estimated 17 percent of total global food production is wasted (11 percent in households, 5 percent in the food service and 2 percent in retail) (Food Loss and Waste Reduction | United Nations).

Sustainable Development Goal 12.3 is defined as the goal that "by 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses" (fao.org). OR also set the goal on Responsible Consumption & Production to accelerate the production and consumption that take into account the entire value cycle from the beginning of the production process to waste management after consumption, by reducing the amount of waste from the business operations by 1/3 by 2030 (Highlights Circular Economy).

Our Group-wide Commitment on Food Loss & Waste

To response the world hunger problems, align with SDG goal 12.3 and OR Responsible Consumption & Production goal , OR, the food and beverage retail operating businesses, develops our commitment to reduce food loss and waste in our operations through activities targeting the prevention of food loss and waste before it arises, recovery, donation, and recycling.

PTTOR has established a groupwide food loss and waste reduction strategy covering all food and beverage operations. The commitment focuses on diverting food loss from landfill across the value chain through measurement, reduction, and circular reuse initiatives. Key actions in 2024 include converting production waste into soil amendment materials:

- **Café Amazon Roastery Plant 63.04 tons**
- **Bakery plant 130.12 tons**
- **Dry Mix plant 41.62 tons**

These efforts are part of a broader roadmap to measure, manage, and reduce total food loss and waste volumes across all OR food businesses by 2030.

Food Loss and Waste Commitment

Measure food loss and waste

As our lifestyle business related to foods and beverages, we realizes that, food loss and waste may occur in the any activities. Thus, we establish the program to measure food loss and waste in Businesses related to food loss and waste generation. **"Coffee Chaff" "Bread Crumb", "Defect Mixing powder"** are the program that start to apply with OR operating business in 2024.

Program to reduce food loss and waste

Since the measurement of food loss and waste is established, we then set up the program to reduce the total food loss and waste that we had measured. The program has set and track the progress.

Break-down food loss and waste volumes by Lifecycle Stage

To identify critical areas for improvement in food loss and waste management, we track the areas by break-down food loss and waste by food category, lifestyle stage following Food Loss and Waste Protocol as a guideline.

Programs aimed at using food loss & waste for alternative uses

To maximize the benefit, alternative uses for food loss and waste are considered. Various programs are implemented such as **Coffee Chaff Fertilizer and other food loss fertilizers.** The alternative uses may have economic, environmental, or social benefits instead of being discarded without any value creation.

In 2024, OR has set the target for food loss and waste as follows;

Indicator	Target FY2024
Total weight of all food loss & waste (ton) (Roasting plant: Coffee Chaff, Bakery plant: Bread Crumb, Dry-mix: Defect Mixing Powder)	250.00
Total weight of food loss & waste volumes used for alternative purposes (ton) (Roasting plant: Coffee Chaff, Bakery plant: Bread Crumb, Dry-mix: Defect Mixing Powder)	250.00
Total food loss & waste discarded (ton) (Roasting plant: Coffee Chaff, Bakery plant: Bread Crumb, Dry-mix: Defect Mixing Powder)	0.00
Food loss & waste intensity (ton/MTHB) (Roasting plant: Coffee Chaff, Bakery plant: Bread Crumb, Dry-mix: Defect Mixing Powder)	0.00

Food Loss and Waste Associated Programs

Food Loss and Waste Strategy

Programs established to measure food loss & waste

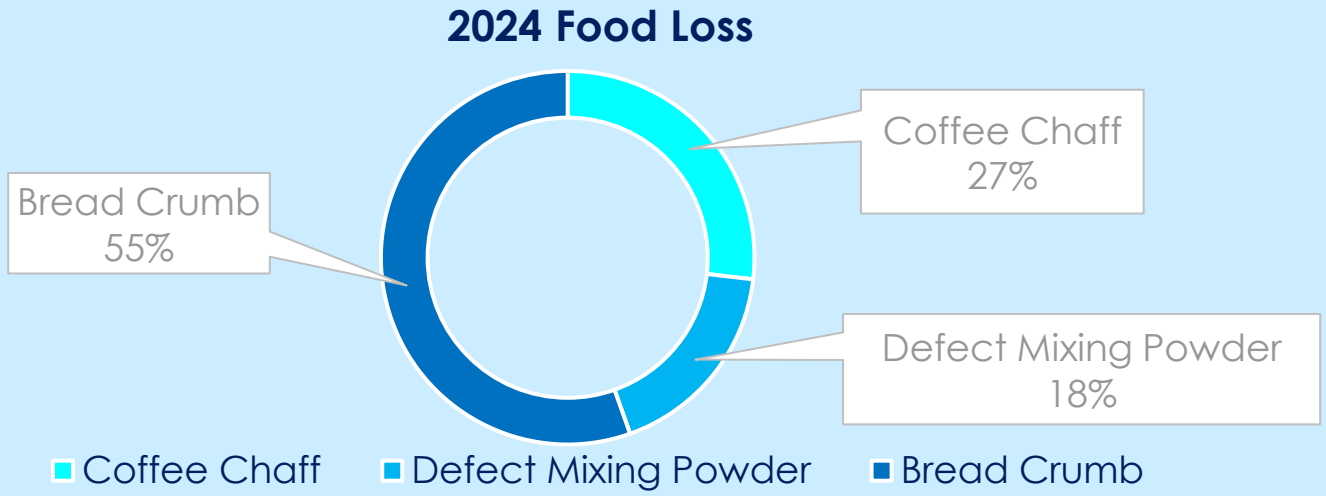
“Daily Logs and EPI Reporting Form”

The measuring on food loss is applied the daily logs sheet from each business. All wastes are reported through the portal for waste tracking including food loss. The reporting is used the direct weighting of wastes. This measuring method presents the accuracy and completeness of waste data collection in operating business. All business units is required to report the monthly total wastes to central data record, called EPI Form.

Waste types will be grouped for each business. The waste types from lifestyle business will be then analyzed to group the food loss types.

In 2024,the total waste tracking of OR is 25,047.31 ton.

The food loss is **234.78 tons** which was divided into **63.04 tons** of coffee chaff, **41.62 tons** of defect mixing powder, and **130.12 tons** of bread crumb.



Food Loss and Waste Strategy

Programs to reduce the total volume of food loss & waste

Collaboration with up/downstream partners to reduce the amount of food loss & waste in the value chain

- **Collaboration with upstream suppliers to reduce food Loss reduction program:** The Community Coffee Sourcing (CCS) project commenced in September 2017, with the signing of a memorandum of understanding (MOU) between Sarn Palang Social Enterprise Limited and farmer cooperatives on trade of parchment coffee from cultivation and production methods that support environmental conservation. The MOU sets out OR's commitment to purchase coffee from farmers to use in coffee production at OR's café Amazon stores. Participating farmers get to access additional benefits and various training courses tailored to their needs. OR provides training courses tailored to the farmer's needs, covering coffee cultivation, maintenance, harvesting, and processing. This helps to improve the quality of the raw materials entering OR's operation as a result food loss from the production process can be reduced.
- Furthermore, OR, in collaboration with the PTT Innovation Institute, is conducting research on utilizing coffee husks and shells as alternative materials for mushroom cultivation. This initiative exemplifies the beneficial reuse of waste generated from production processes.

- **Programs to reduce the total volume of food loss & waste :** When the coffee beans entering Café Amazon Roastery Plant, there will be the screening process to select the qualify raw materials again before entering the production line. The coffee beans that do not meet the specifications for Café Amazon production will be sold for other use as a result reducing of food loss from OR's operation.
- In addition, OR is currently exploring the potential utilization of coffee husks and shells — by-products generated from the coffee milling process at its coffee bean processing facility in Chiang Mai province. The study encompasses the analysis of the chemical and physical properties of the coffee husks, their potential application as soil amendment materials for agricultural use, and the feasibility of converting them into biochar. This initiative reflects OR's commitment to promoting circular economy principles through the valorization of agricultural waste.

Food Loss and Waste Strategy

Programs to reduce the total volume of food loss & waste

“2024 Food loss and waste reduction initiatives at Dry-mix plant in Thailand to reduce the total volume of food loss & waste ”

In 2024, the Dry Mix Plant implemented a Lean Six Sigma project aimed at minimizing product loss and enhancing operational efficiency. These projects are aligning with the 3R waste strategy, specifically 'Refine', which focuses on improving the production process to enhance efficiency and reduce waste (Food loss).

The implementation of Lean Six Sigma follows a structured approach involving statistical data analysis to enhance precision, reduce yield losses, and minimize waste generated during the production process.

These projects focused on reducing process uncertainty, ensuring stable operations with minimal variation and reduce waste from the production process or food loss. Moreover, these projects emphasize employee engagement in identifying, developing, and improving production processes to raise awareness of waste minimization and to reduce food loss from production, while maximizing operational efficiency.

"The outcomes of the project implementation are detailed as follows:".

(1) Cost saving from project
(2) Reduce loss from re-process

Food Loss and Waste Strategy

Break-down on Food Loss and Waste by food category and life cycle stage

Unit: Tonnes

Product	Harvest	Transport	Production	Storage	Total
Coffee Chaff	0	0	63.04	0	63.04
Bread Crumb	0	0	130.12	0	130.12
Defect Mixing Powder	0	0	41.62	0	41.62

Food Loss and Waste Strategy

Alternative Uses Programs of Food Loss & Waste

Program 'Food Loss to Fertilizer Project

Project Objectives

- To maximize benefit our waste from business process in Café Amazon includes Coffee roasting plants, Bakery plant, and Dry-mix **plant.**
- To reduce waste generated from the production process and to transform it into something valuable

Project Methodology

1. From the coffee roasting process, the resulting by-product is known as "Silver skin" or "Coffee Chaff/Coffee Membrane", which is the thin membrane that separates from the coffee beans during roasting.
2. From the bakery process, the waste includes bread scraps, such as crust edges and products that do not meet quality standards. This by-product is referred to as "Bread Crumbs".
3. From the dry mix process, the waste consists of industrial dust generated during production, commonly known as "Defect Mixing Powder".

We turn it into the main component of fertilizer, sent for disposal by making organic fertilizer, as program for alternative use that have economic, environmental, or social benefits instead of being discarded without any value creation.

Project Benefits

- Increasing the value of waste from coffee roasting plants, bakery plant, and dry-mix plant by making fertilizer.

234.78 tones of total coffee chaff, bread crumb, and defect mixing powder that categorized as food loss is used for alternative used instead of being discarded without any value creation.

Moving forward with strong determination and leaving no one behind

6 groups of OR stakeholders

***EMPOWERING ALL** TOWARD*
INCLUSIVE GROWTH

OR เติมเต็มโอกาส เพื่อทุกการเติบโต ร่วมกัน

Harnessing OR competencies to support, fulfill, and elevate

Sustainable growth with Living Community, Healthy Environment, and Economic Prosperity