Quantifying Food Loss and Waste

First Step to Prevention

SUMMARY

Toks, a 100% Mexican restaurant chain with more than 200 restaurants throughout the country, has undertaken various initiatives to reduce food loss and waste (FLW), including offering some of its dishes in different portion sizes.

Recently, after quantifying FLW at one of its branches according to the practical guide from the Commission for Environmental Cooperation (CEC), it found opportunities for savings of around P$330,000 (pesos) per year and to abate 40 tons of greenhouse gas (GHG) emissions.

HIGHLIGHTS

- **Savings:**
  $330,000 pesos per year.
- **GHG emissions avoided:**
  40 tons per year.
- **Recoverable Food:**
  17.9 tons per year.
- **Equivalent meals**:
  31,006 per year.

Gains through sustainability

In addition to its commitment to customer satisfaction through service and its food freshness, quality and taste, Toks holds a strong conviction concerning care for the environment. Therefore, and with the aim of reducing its ecological footprint, the restaurant chain has undertaken various activities, such as replacing certain inputs with recycled materials, fostering water savings and its waste separation program (which even benefits its workers).

Through Toks's commitment to growth and reinventing itself with customers, it has been awarded the following recognitions:

- *H Award*[1] for safe handling of prepared foods.
- Socially Responsible Enterprise Award[2] for its commitment to society and the environment, toward the common good.
- Participant in the UN Global Compact[3] for its human rights, labor standards, environment and anti-corruption commitments.

[1] This recognition is awarded by the Ministries of Tourism and Health, to those fixed food and beverage establishments, as prescribed by Mexican Standard NMX-F605 NORMEX 2016.

[2] For 13 consecutive years, Toks has been awarded the "Socially Responsible Enterprise" distinction by the Mexican Center for Philanthropy, recognized for 10 best practices and three honorable mentions. These initiatives have been recognized on four continents and have been presented in business and academic forums, such as Harvard University.

[3] Toks has participated as a member of the Supply Chain and Human Rights Advisory Group for 10 years.

In addition to working hand-in-hand with universities to develop business projects that give young people an up-close view of business realities, Toks includes certain artisanal products from small indigenous producers in its supply chain, in the form of production projects.

Estimating FLW based on the CEC practice guide

Due to Toks's participation in environmental and social topics, in 2018 it was invited to participate in the group of experts created by the CEC to measure FLW in North America. In support of this theme, the CEC sponsored a study to quantify FLW at Toks branches.

In the first visit to the selected branch in the La Gran Plaza Fashion Mall in Zapopan, Jalisco, Mexico, waste separation was found to focus on inorganic waste, given its potential value in recycling, rather than food waste (organic waste).

The CEC practical guide was used to quantify food loss and waste, as the basis to conduct the study.

A specific measurement procedure was designed that would differentiate the FLW generated in two principal processes: 1) pre-consumer (food preparation), and 2) post-consumer (after the food is served to the customer).

The following methods and tools set forth in the CEC practical guide were used:

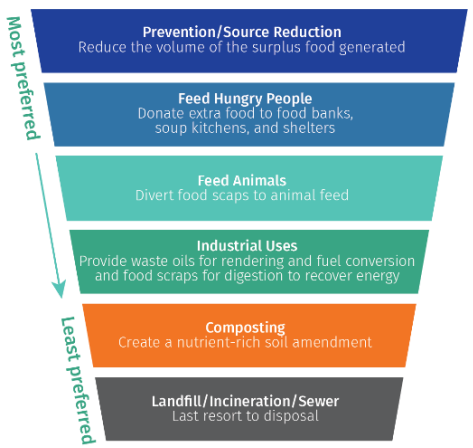
- Waste composition analysis
- Direct weighing
- Records
- Interviews or surveys
- Indirect or substitute data and mass balance
- *Food Loss and Waste Tool Kit*[4]

It was thus possible to estimate that:

- Total FLW generated in the establishment in one year represents the equivalent of 31,006 meals, equal in weight to 17.9 tons per year handled as waste.
- Around 27% of the waste generated in the pre-consumer process is made up of food, currently treated as organic waste. If this percentage were deemed raw material, the equivalent loss that could be reduced would be around $273,000 pesos per year.

Areas of opportunity

The study enabled the documentation of areas of opportunity to improve Toks's FLW operations. Taking into account the opinions of Toks customers and the experience and knowledge of its employees, as well as the technical and reengineering contributions of SIPRA, potential short-term solutions were designed and analyzed. Both the analytical process and the solutions considered the food recovery hierarchy shown in the following figure: [5]



Hierarchical food recovery system, with potential short-term solutions.

[4] Tool developed by Provision Coalition to determine the value of FLW across different processes, whose use it suggested in the CEC guide.

[5] CEC (2019). *Why and How to Measure Food Loss and Waste: A Practical Guide*, Commission for Environmental Cooperation, Montreal.

Results

The solutions identified were grouped according to the hierarchical food loss recovery system, as briefly described below:

1. **Prevention/Source reduction:** a) sensitizing personnel to better use inputs or raw materials; b) implementing measures enabling the reuse of some foods in the branch's operations; c) preparing smaller quantities of food; d) modifying or substituting some of the food containers used; e) informing the customer and offering FLW reduction options.
2. **Feed hungry people:** organizing excess food donation activities through different means, such as food banks.
3. **Feed animals:** a) acquiring the necessary equipment to storage food at the branch, ensuring its adequate conservation and subsequent valorization; b) executing agreements with service providers interested in using this food.

Given the nature of these solutions, all of which can be realized in the short term (less than one year), Toks will obtain the following benefits:

- Decreasing costs by more than $130,000, with a return on investment in 0.60 years.
- Contributing to society by donating more than 3.8 tons of food per year.

By engaging in even more efficient processes, Toks will also obtain medium- and long-term benefits,[6] with the following additional gains:

- *Medium term*: annual savings above $230,000 pesos (reducing FLW by 70%), avoiding the generation of 28 tons of GHG emissions per year.
- *Long term:* estimated annual savings of P$330,000 (bringing FLW down to the minimum), avoiding the generation of 40 tons of GHGs per year.

[6] Estimates do not consider the costs of the investments required to decrease FLW in the medium and long terms.

The importance of FLW quantification

The quantification of food loss and waste is the basis for identifying where FLW occurs and understanding its causes, in order to define actions to prevent it and measure progress and performance over time: “You can manage what you measure.”

Quantification also enables the determination of potential savings and benefits that can be derived from food waste prevention, and is the starting point for transforming FLW into benefits gained.

“Given Toks's commitment to continuous improvement, it is our duty to increase the efficiency of our processes, ensuring the utmost respect for the environment and society's well-being. We are very proud of having conducted this analysis to prevent food waste. We give profound thanks to the CEC for giving its support.”

Roberto Villar, Social Responsibility, Toks

“I never knew that my leftover food could have such a negative impact on the environment. I congratulate Toks for getting involved in the issue and hope that it communicates its actions.”

Anonymous customer, Toks

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