

# How to Reduce Food Loss in Kyoto

w202003:Kyoto Prefectural Toba High School

## Research Question

### How can we reduce food loss in Kyoto?

## Background

In thinking about a sustainable world, which is the theme of the SDGs, not wasting food is an important issue around the world. However, the amount of food loss in Japan reaches 6.12 million tons per year. In this research project, we wanted to understand the current situation of food loss and find out if there was something we could do as high school students to help solve this problem.

## Investigation

### RQ①

#### Is food loss really a problem in the world?

Every year, one third of the food produced for human consumption, or 1.3 billion tons, is wasted. Food loss has become a major problem for the world. Considering the total amount of food in the world, there is enough food to feed the world's entire population every day, yet more than 800 million people worldwide are suffering from hunger.

<Reference>

Ministry of Agriculture, Forestry and Fisheries  
(<https://www.maff.go.jp>)

### RQ②

#### How serious is food loss in Japan?

In Japan, about 6.12 million tons of food is thrown away every year. Assuming that a cup of rice is 150 grams, 6.12 million tons means that every citizen throws away a bowl of rice every day. The problems caused by food loss are not only an increase in the number of starving people, but also the CO<sub>2</sub> emitted from the incineration of discarded food, which leads to further global warming.

<Reference>

Ministry of Agriculture, Forestry and Fisheries  
([https://www.maff.go.jp/j/pr/aff/2010/spe1\\_01.html](https://www.maff.go.jp/j/pr/aff/2010/spe1_01.html))

### RQ③

#### How do we reduce food loss?

In the course of our research, we learned that there are some food banks in Japan. In order to reduce food loss, those who contribute to food loss should change their mind. In fact, there are many companies that are trying to reduce food loss. For example, Sun Food Industry Corporation, which sells processed fish foods, tried to cut parts of fish that were thrown away into small pieces and season them to make fish products. This was very successful because tiny pieces of fish is favored as a food to put in a lunch box.

<Reference>

SECOND HARVEST (2nd.org)

### RQ④

#### What can we do?

We came up with the idea of making and selling recycled food products using food ingredients before they are disposed of. The first step was to sell recycled food products at the cafeteria of Toba High School, and if they became popular, we thought that we could expand the range of sales little by little. We chose a snack as a recycled food product. However, there was one problem. According to the result of a questionnaire survey of 150 students in the second year of our school, it showed that although 70% of them wanted to eat snacks, only less than 50% of them wanted to buy recycled food products sold in the cafeteria. The main reason for it was that they were not comfortable with buying recycled food products. We should think about how to make recycled food products appeal to them.

### RQ⑤

#### How do we get food before it is discarded?

The first thing we did was talk to the people working at a cafeteria of Toba High School. We asked if we could get some of the ingredients if the cafeteria had ingredients which were thrown away. Because the cafeteria had an advance reservation system, food loss problems didn't occur. So, we looked for another supplier and contacted Sun Food Industry Corporation. They said that they throw away several kilograms of raw fish such as flounder and salmon every day, and agreed to provide us with raw fish before it was discarded.

<Reference>

Interview with a cafeteria worker at Toba High School and with Sun Food Industry Corporation

### RQ⑥

#### What kind of processed food should be made?

We actually went to the Minami Ward Youth Activity Center and made several prototypes using raw fish given by Sun Food Industry Corporation. We made three kinds of donuts: deep-fried salmon donuts, deep-fried flounder donuts, and salmon and flounder cookies.

The fried salmon doughnuts were too fatty, as salmon is a fatty fish. The fried flounder doughnuts were somewhat better than the salmon doughnuts, but they were still too oily to sell as a product. However, the ginger and cinnamon used to remove the smell from fish worked very well, and they were delicious, so we thought that we could sell our products if they were seasoned.

<Reference>

cookpad.com

## Proposal

We can reduce food loss by processing discarded ingredients into snacks such as cookies.

## Discussion

Food loss cannot be reduced if recycled food products are not sold regularly. Therefore, we are planning to have the food club of Toba High School regularly make products based on the recipes we have developed. As for future research, we would like to think about a better way to promote our products. In this research, we have made high-calorie cookies that use fish, so as the next step, we are thinking of making healthier cookies made of vegetables.