

# Initiatives to acquire a better knowledge of the radioactive materials in foods for Japanese consumers after the Fukushima Daiichi NPP Accident

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OECD/NEA Workshop on PREPAREDNESS FOR POST-ACCIDENT  
RECOVERY PROCESS: LESSONS FROM EXPERIENCE

February 18-19, 2020, Tokyo, Japan

Day 1 (18 FEB 2020) SESSION 3: FOOD (16:20-18:20)

# Content

- Role of Consumer Affairs Agency (CAA) in food safety administrations
- Trend of the survey on consumer's attitude to the radioactive materials in foods (RAMs)
- Provision of information and the dialogue with various stakeholders

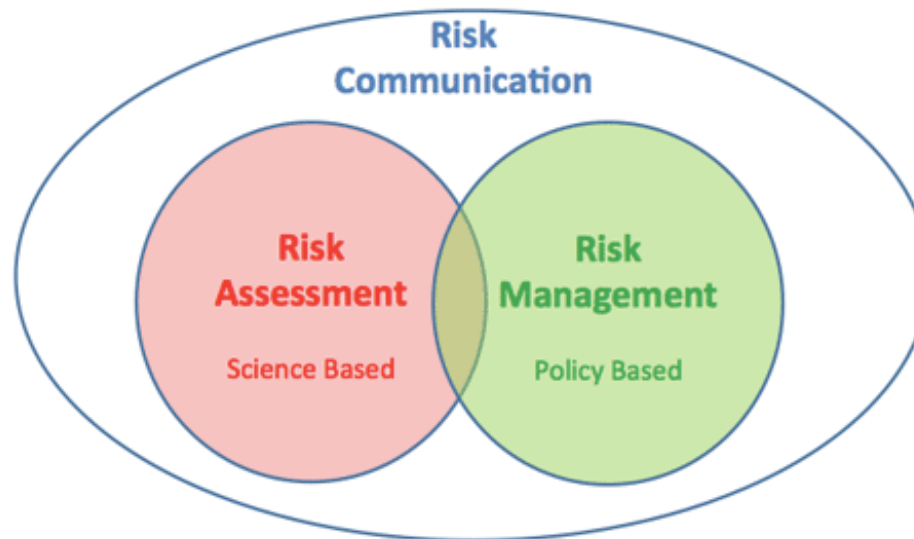


# Risk Analysis in international food safety frameworks

## **RISK ANALYSIS:**

A process consisting of three components:  
risk assessment, risk management and risk communication.

FAO/WHO. 2015. Codex Alimentarius Commission. Procedural Manual, 24th edition.



<http://www.fao.org/food/food-safety-quality/capacity-development/risk-analysis/en/>

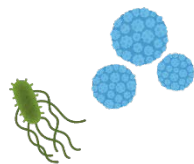
# Definition of HAZARD and RISK focus on food safety

## RISK ≠ HAZARD

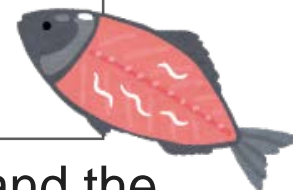
**HAZARD:** A biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.

### Box 1.3. Examples of hazards that may occur in foods

Biological hazards	Chemical hazards	Physical hazards
<ul style="list-style-type: none"><li>• Infectious bacteria</li><li>• Toxin-producing organisms</li><li>• Moulds</li><li>• Parasites</li><li>• Viruses</li><li>• Prions</li></ul>	<ul style="list-style-type: none"><li>• Naturally occurring toxins</li><li>• Food additives</li><li>• Pesticide residues</li><li>• Veterinary drug residues</li><li>• Environmental contaminants</li><li>• Chemical contaminants from packaging</li><li>• Allergens</li></ul>	<ul style="list-style-type: none"><li>• Metal, machine filings</li><li>• Glass</li><li>• Jewellery</li><li>• Stones</li><li>• Bone chips</li></ul>



FAO/WHO. 2006. Food safety risk analysis A guide for national food safety authorities.



**RISK:** A function of the probability of an adverse health effect and the severity of that effect, consequential to a hazard(s) in food.

FAO/WHO. 2015. Codex Alimentarius Commission. Procedural Manual, 24th edition.

# Role of Consumer Affairs Agency (CAA) in Food Safety Administrations

## CAA established in 2009

*Food Safety Basic Act (Act No. 48 of 2003, abolished in 2018)*

- Conduct the survey
- Information provision
- Coordination of Risk Communication with various stakeholders

Themes: BSE, Dietary Supplements, Imported Foods,  
Agricultural Chemicals, Food Poisoning, Food Additives etc.

**RAMs was added to one of the themes after the accident**

**RISK COMMUNICATION:** The interactive exchange of information and opinions throughout the risk analysis process, concerning risk, risk-related factors and risk perceptions, among risk assessors, risk managers, consumers, industry, the academic community and other interested parties, including the explanation of risk assessment findings and the basis of risk management decisions.

FAO/WHO. 2015. Codex Alimentarius Commission. Procedural Manual, 24th edition.

# ■ Control of radioactive materials in foods

## ■ Establish limits for radioactive materials in foods

- The indicator values given by the Nuclear Safety Commission were set as the provisional regulation values. (March 17, 2011 - March 31, 2012)
- The present limits for radioactive materials in foods took effect. (April 1, 2012 - )



## ■ Monitor radioactive materials in foods

- The monitoring is conducted by the local governments around the 17 prefectures. (March 18, 2011 - )
- The Nuclear Emergency Response Headquarters established guidelines on the local governments' formulation of monitoring plans for radioactive materials in foods. (April 4, 2011)



## ■ Recall and dispose of foods containing radioactive materials above the limits

All the articles in a lot in which the levels are exceeded are recalled or disposed of.

## ■ Restrict the distribution of foods [Nuclear Emergency Response Headquarters]

Distribution is restricted on a prefecture basis (or a smaller area basis in a prefecture), judging from the spreading of places where radioactive materials above the limits are detected as a result of inspections. (March 21, 2011-)



## ■ Lift restrictions [Nuclear Emergency Response Headquarters]

Every testing result from samples collected within the past one month from at least three different locations in a municipality must be below the corresponding limits.



Ministry of Health, Labour and Welfare

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Ministry of Health, Labor and Welfare, Abstract (Current Situation and Protective Measures for Radioactive Materials in Foods), [https://www.mhlw.go.jp/english/topics/2011eq/index\\_food.html](https://www.mhlw.go.jp/english/topics/2011eq/index_food.html)

# ■ Monitoring of radioactive materials in foods

**The monitoring of radioactive materials in foods is conducted by the local governments around the 17 prefectures on the basis of the inspection plan.**

March 18, 2011 – March 31, 2012

137,037 of which 1,204 were detected as above the provisional regulation values. (excess rate:0.88%)

April 1, 2012 – March 31, 2013

278,275 of which 2,372 were detected as above the present limits. (excess rate:0.85%)

April 1, 2013 – March 31, 2014

335,860 of which 1,025 were detected as above the present limits. (excess rate:0.31%)

April 1, 2014 – March 31, 2015

314,216 of which 565 were detected as above the present limits. (excess rate:0.18%)

April 1, 2015 – March 31, 2016

340,311 of which 291 were detected as above the present limits. (excess rate:0.09%)

April 1, 2016 – March 31, 2017

322,563 of which 461 were detected as above the present limits. (excess rate:0.14%)

April 1, 2017 – March 31, 2018

306,623 of which 200 were detected as above the present limits. (excess rate:0.07%)

April 1, 2018 – March 31, 2019

299,424 of which 313 were detected as above the present limits. (excess rate:0.10%)

※The number of food samples tested includes test results of foods distributed in the market and test results implemented by the local governments other than the 17 prefectures designated by the guideline.

※The sampling is purposive to detect the contamination or to remove restrictions and the majority of occurrence (exceeding JML) is limited to wild harvest monitored at area where distribution is already restricted.



Ministry of Health, Labour and Welfare

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Ministry of Health, Labor and Welfare, Abstract (Current Situation and Protective Measures for Radioactive Materials in Foods), [https://www.mhlw.go.jp/english/topics/2011eq/index\\_food.html](https://www.mhlw.go.jp/english/topics/2011eq/index_food.html)



# The survey on the consumer's attitude for the RAMs

## Background

- The central and local governments cooperating with the related organizations conducting inspections to check the values/levels of the RAMs, before distribution
- The consumer's attitude for the RAMs after the accident is not clearly known

## Aim

To explore the consumer's attitude for the RAMs from affected area from the accident at Fukushima Daiichi nuclear power plant since February 2013



# Design, Method and Sample

## Design and method

A series of cross-sectional design  
using internet-based survey

## Sample

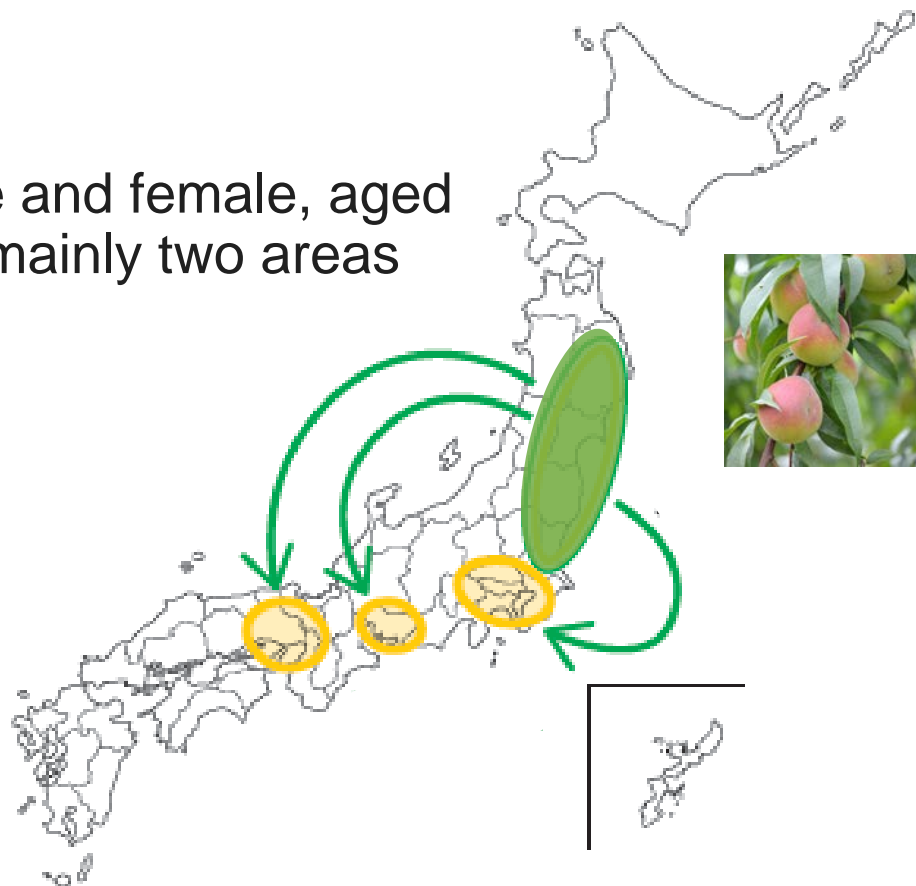
A total of 62,112 consumers, male and female, aged  
from 20s to 60s who are living in mainly two areas

### 1. Affected four areas (4 prefectures)

Iwate, Miyagi, Fukushima and Ibaraki  
prefecture

### 2. Additional areas where main sale of regional agriculture, forestry and fishery products (7 prefectures)

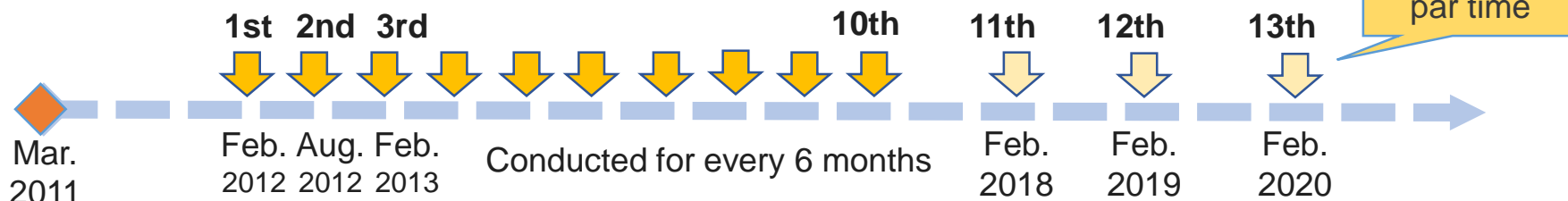
Saitama, Chiba, Tokyo, Kanagawa, Aichi,  
Osaka, and Hyogo prefecture



# Survey period and questionnaire

## Survey period

- Conducted 12 time surveys
- The survey was conducted two types of period according to time-related situation from the accident
  - Twice a year; 1<sup>st</sup> -10<sup>th</sup> survey conducted in February and August
  - Once a year; after 11<sup>th</sup> survey conducted in February

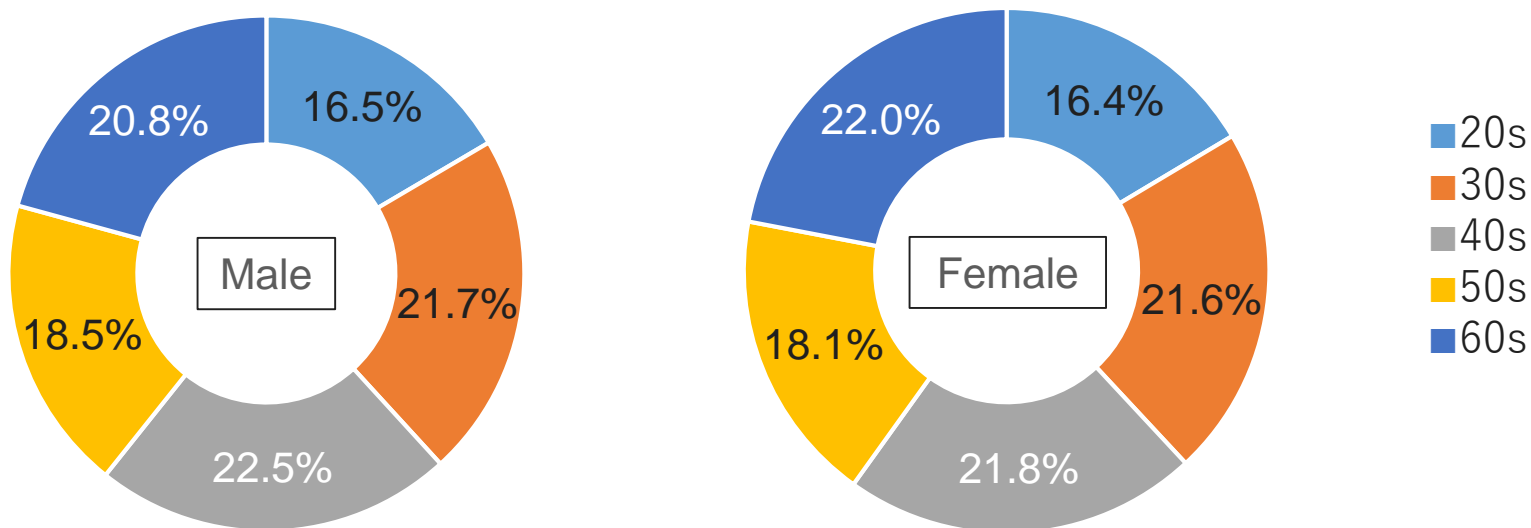


## Questionnaire

- Basic concepts for food choice, Consciousness and knowledge about the radiation or the RAMs etc.
- Mean values for continuous variables and percentage for categorical variables were calculated according to survey years

# Participants

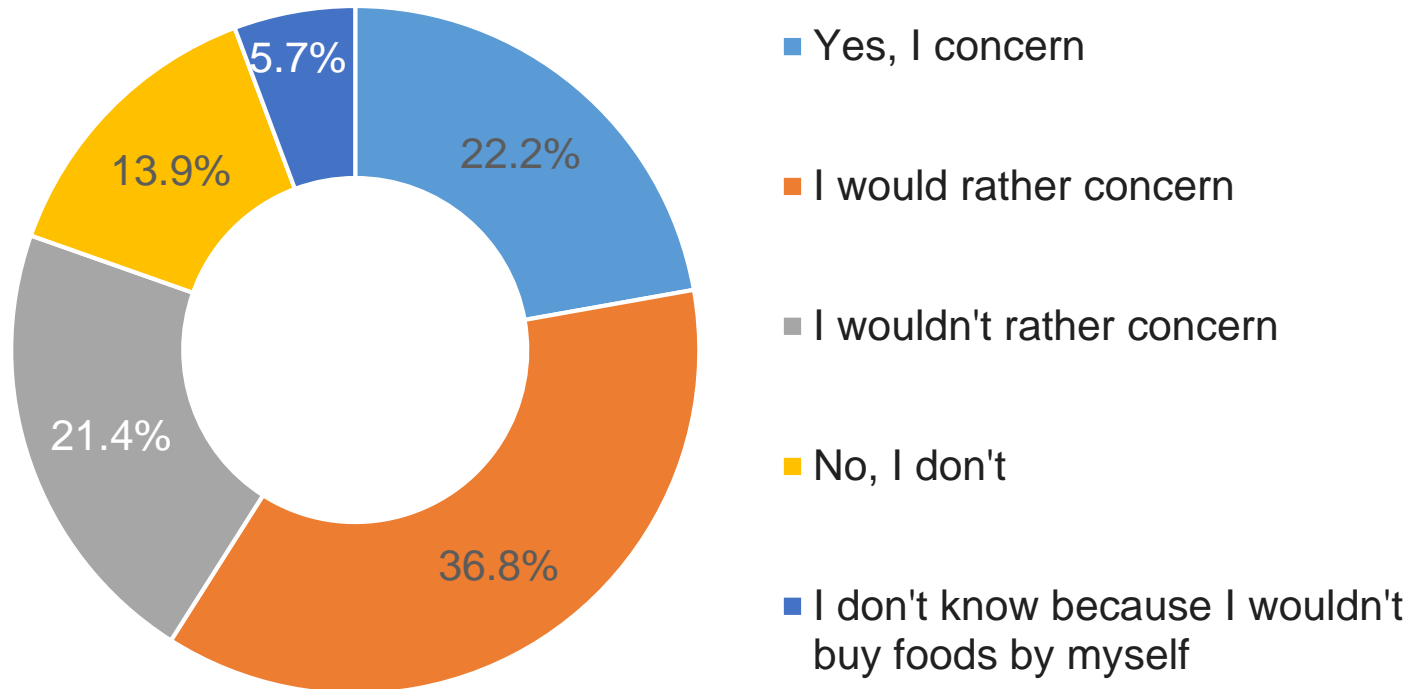
Age and sex distribution of 5,176 participants at 12th survey, February 2019



Consumer Affairs Agency (2019). 12th Consumer Awareness Survey on the Negative Impact of Unfounded Rumors, (Japanese).

# More than half of participants concern the place of the food production on a daily basis

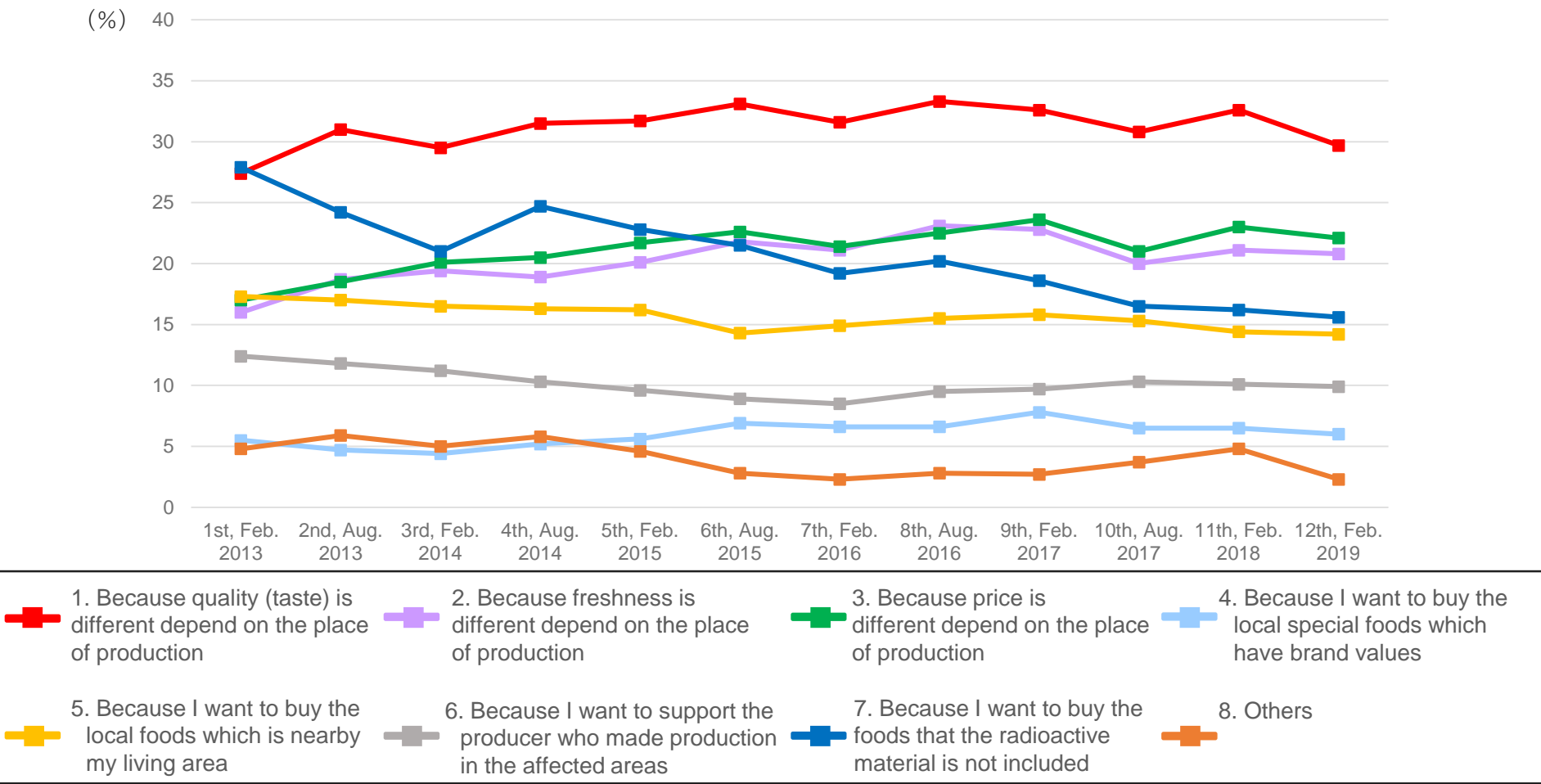
Do you concern the place of the food production? *(Single answer.)*



Consumer Affairs Agency (2019). 12th Consumer Awareness Survey on the Negative Impact of Unfounded Rumors, (Japanese).

The reason to concern the place of the food production, the answer “Buy the food that radioactive material is not included” has been decreasing constantly

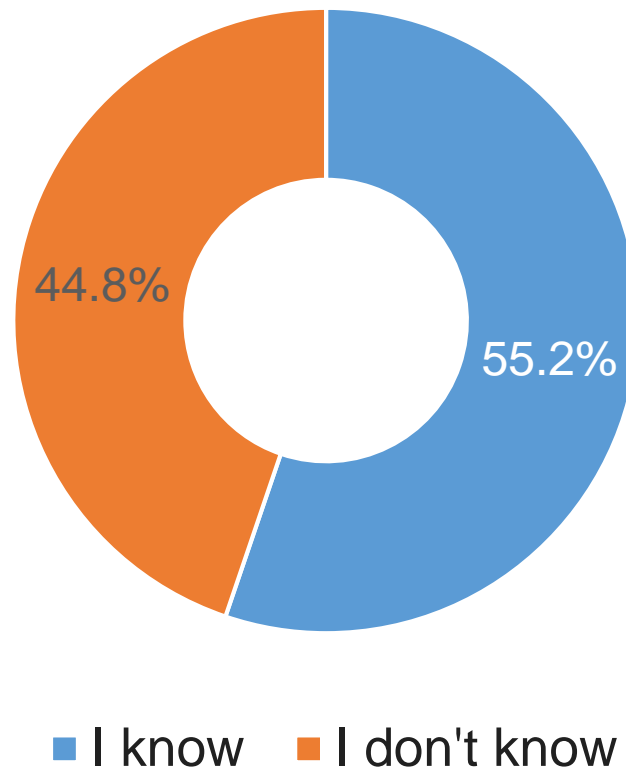
What is the reason to concern the place of the food production? *(Multiple answer.)*



Consumer Affairs Agency (2019). 12th Consumer Awareness Survey on the Negative Impact of Unfounded Rumors, (Japanese).

# More than half of the participants know the RAMs were inspected before distribution

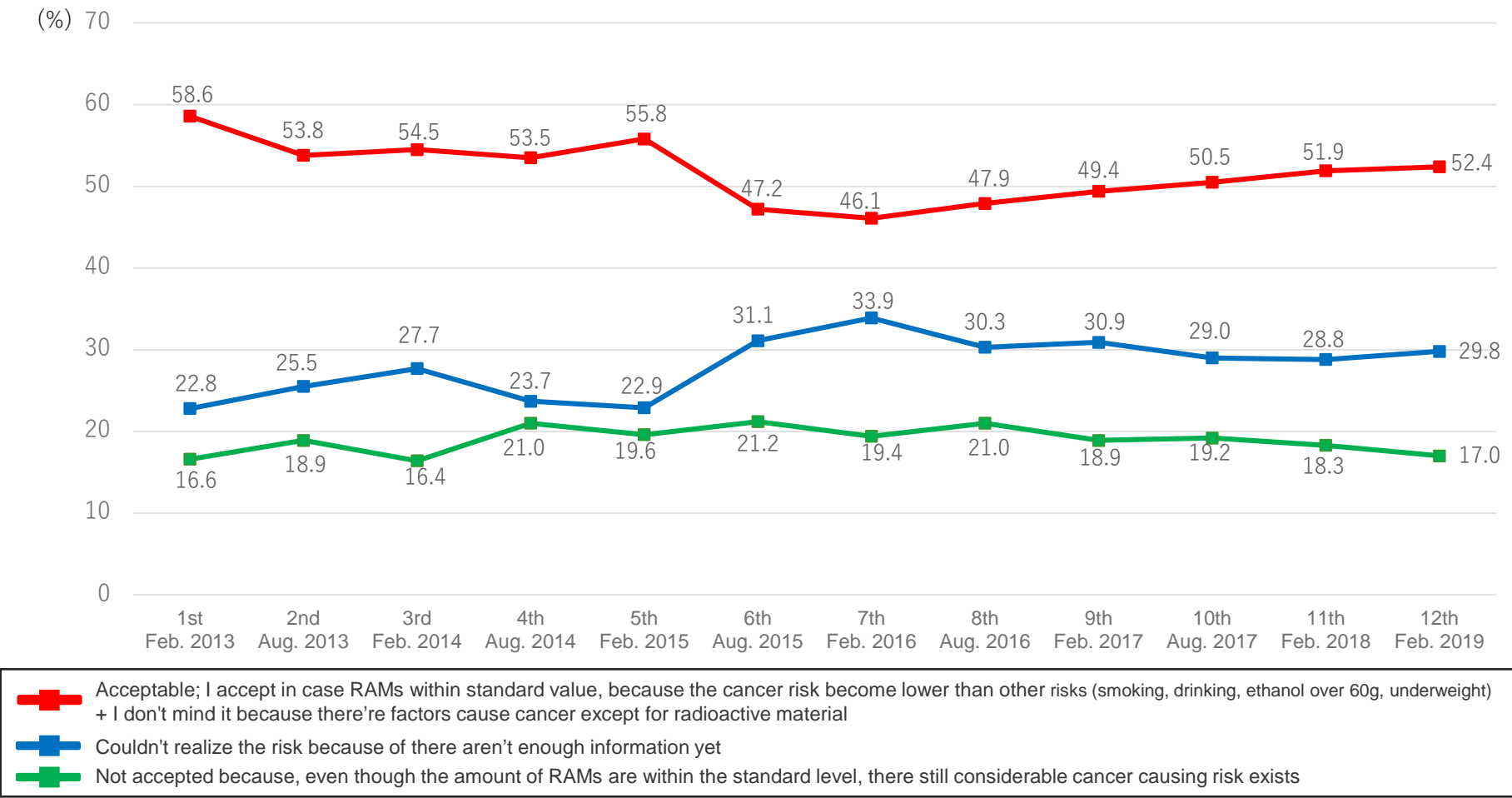
Do you know about the inspection of the RAMs before distribution?



Consumer Affairs Agency (2019). 12th Consumer Awareness Survey on the Negative Impact of Unfounded Rumors, (Japanese).

# Trend of consumer's consciousness for the low dose radiation risk to human health have been constant

How do you think about low dose of radiation risk against human health? (Single answer.)



Consumer Affairs Agency (2019). 12th Consumer Awareness Survey on the Negative Impact of Unfounded Rumors, (Japanese).



# Information Provision about the RAMs

## Booklets

### Question and answer about food and radioactive

- ◆ The 1<sup>st</sup> edition was published in May 2011
- ◆ The latest; 13<sup>th</sup> edition, June 2019
- ◆ Approximately 910,000 booklet were distributed for free, including 700,000 booklet for all consumers lived in Fukushima prefecture



### Summarized version

- ◆ Published in March 2015 for the 1<sup>st</sup> edition
- ◆ The latest; 5<sup>th</sup> edition, June 2019
- ◆ Translated in Chinese, English and Korean for the 4<sup>th</sup> edition



🔗 [https://www.caa.go.jp/disaster/earthquake/understanding\\_food\\_and\\_radiation/material/](https://www.caa.go.jp/disaster/earthquake/understanding_food_and_radiation/material/)

# Risk Communication (Dialogue with various stakeholders)

## 1. Forming “Team for the consumer’s promotion for better understanding for food and radioactivity” in CAA since 2013

Organized based on the instruction of Prime Minister Abe, to ex-Minister Mori in charge of Consumer Affairs and Food Safety at her inauguration

Member: Director general in charge of food, director of consumer education and local cooperation, director of consumer safety and person who was selected the member by Vice-Commissioner among these divisions

## 2. The number of Risk Communication<sup>\*1</sup>

Subjects / FY <sup>*2</sup>	2011	2012	2013	2014	2015	2016	2017	2018	2019	sum
About the RAMs	45	175	99	99	100	100	108	136	96	958

<sup>\*1</sup>As of end of January 2020, <sup>\*2</sup> FY; fiscal year

Collaborate with central/local governments, consumer organizations, producers and trade associations



# To provide a better knowledge of food safety to consumers

- There are the consumers who are acceptable after deep consideration, although the others are still not
- Some consumers think they need more information and communication for the RAMs and future risk for health
- Long-term issue; use the result of the survey to promote information provision and risk communication for the RAMs and make another initiatives for the RAMs

