

# **Food Waste and Food Loss**

Current State and Future Potential in Japan and in the World

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7. Future Potential

# 1. Global Food Waste

Global Food Waste (per year)

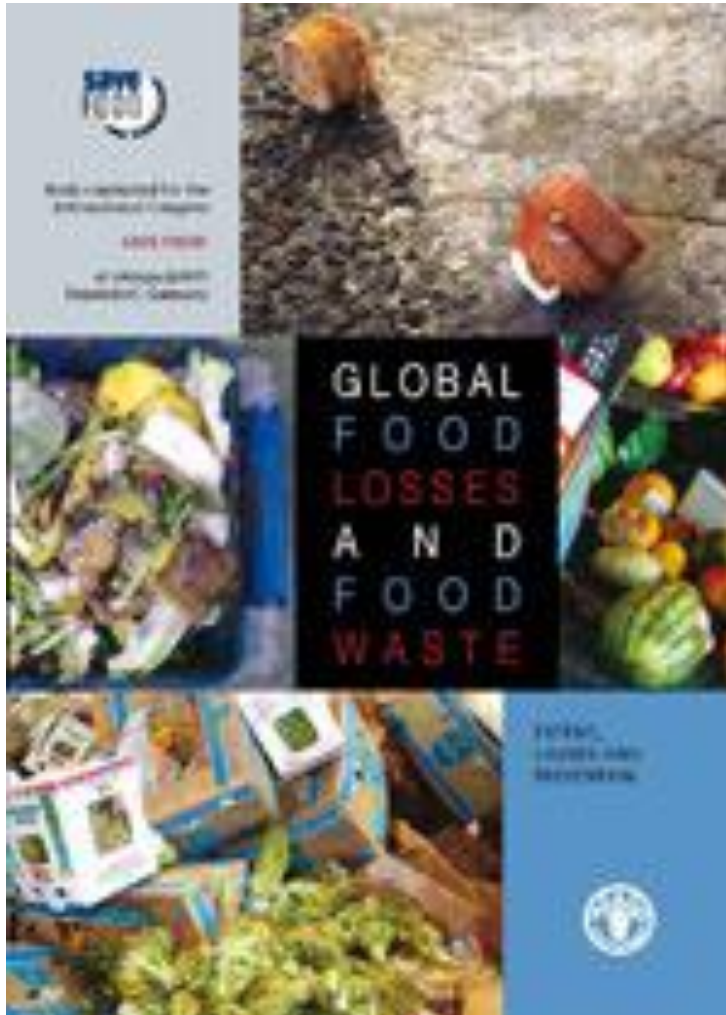
**1.3 billion tons**

**This represents 1/3 of that produced**

Source: the Food and Agriculture Organization  
of the United Nations (FAO)



# Global Food Waste



Research report prepared for the  
SAVE FOOD exhibit shown at  
interpak 2011 in Dusseldorf,  
Germany

Translated into Japanese by the  
Japan Association for International  
Collaboration of Agriculture and  
Forestry (JAICAF)

Food Waste in the US

**53.8 million tons**

(Food waste study conducted by Dr. Timothy Jones in 2004 for the University of Arizona)

Food Waste in England

**20 million tons**

(Waste & Resources Action Programme (WRAP))

## 2. Food Waste and Food Loss in Japan

Amount of food discarded in Japan in one year:

**Over 17 million tons**



The amount of this food that could still  
have been eaten:

**5-8 million tons**

**Study by the Ministry of Agriculture,  
Forestry and Fisheries**

**= Food Loss**

**Annual rice production is 8.43  
million tons**

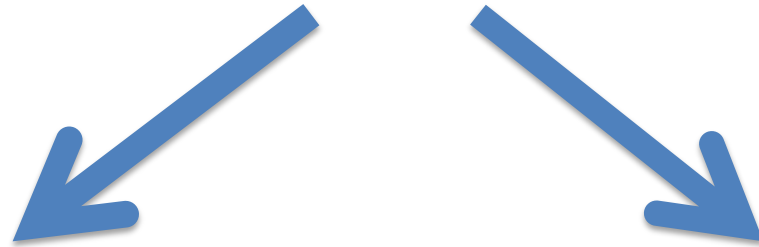


Japan discards more food than the amount  
provided by global food assistance



# Food Loss Breakdown

**5 ~ 8 million tons**



Households

2-4 million tons

Companies

3-4 million tons



# Actual Examples of Food Loss:

Household

and

Company Cases



Image of household waste in Sugunami Ward from the NHK program "Tokyo Metropolis" aired on June 1-4, 2012



Another image of bread taken from major supermarkets in the Tokyo metropolitan area and distributed to Sanya



# 3R



Ministry of Agriculture, Forestry and Fisheries:  
Targets in restricting food production

**Reduce**

Reuse

Recycle

# The Biomass 5F

Usage methods with high added value should be prioritized.

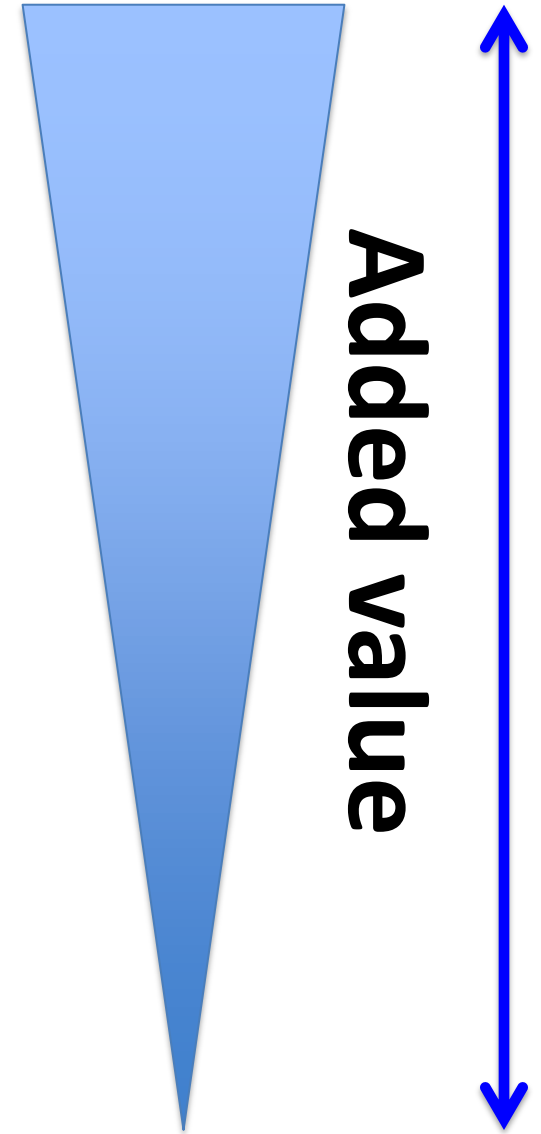
**Food**

**Fiber**

**Feed**

**Fertilizer**

**Fuel**



# Corporate Responsibility

- Compliance with the Food Recycling Law  
Established in 2000 followed by amendment

## Food Recycling Law

The Food Recycling Law was established to promote the effective use of resources and to reduce the amount of food and other waste. The final aim of which is to build a recycling-based society that has little impact on the environment.

- Reduce the production of food and other waste

Targets as of April, 2014

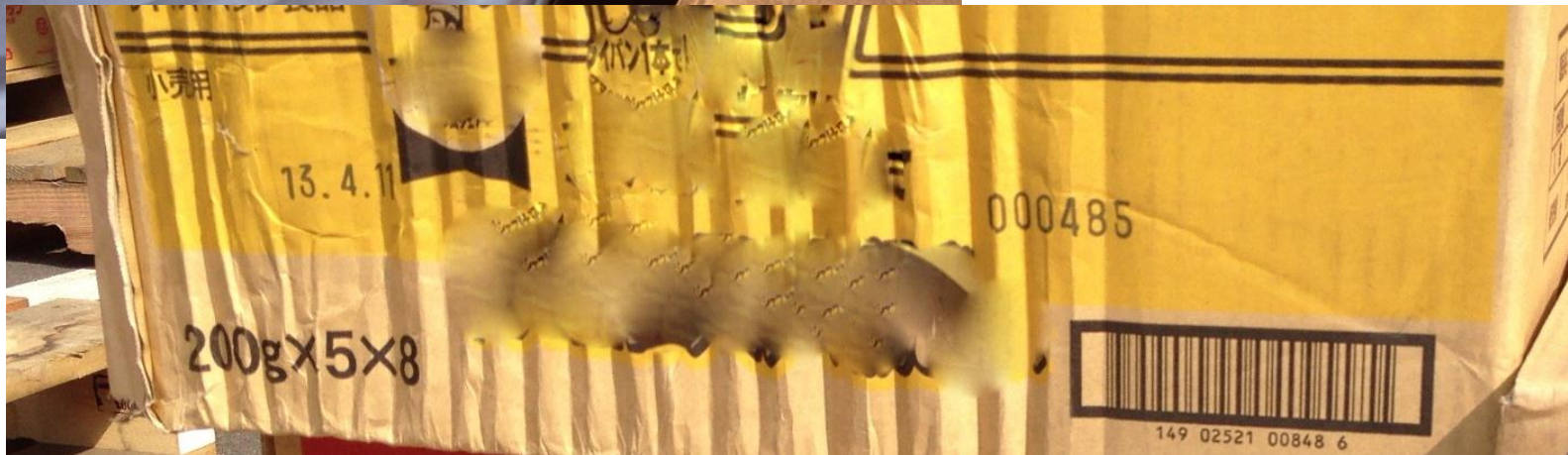
Food retailers: 65.6 kg per 1 million yen of sales

Food manufacturers: Targets set vary depending on  
business classification

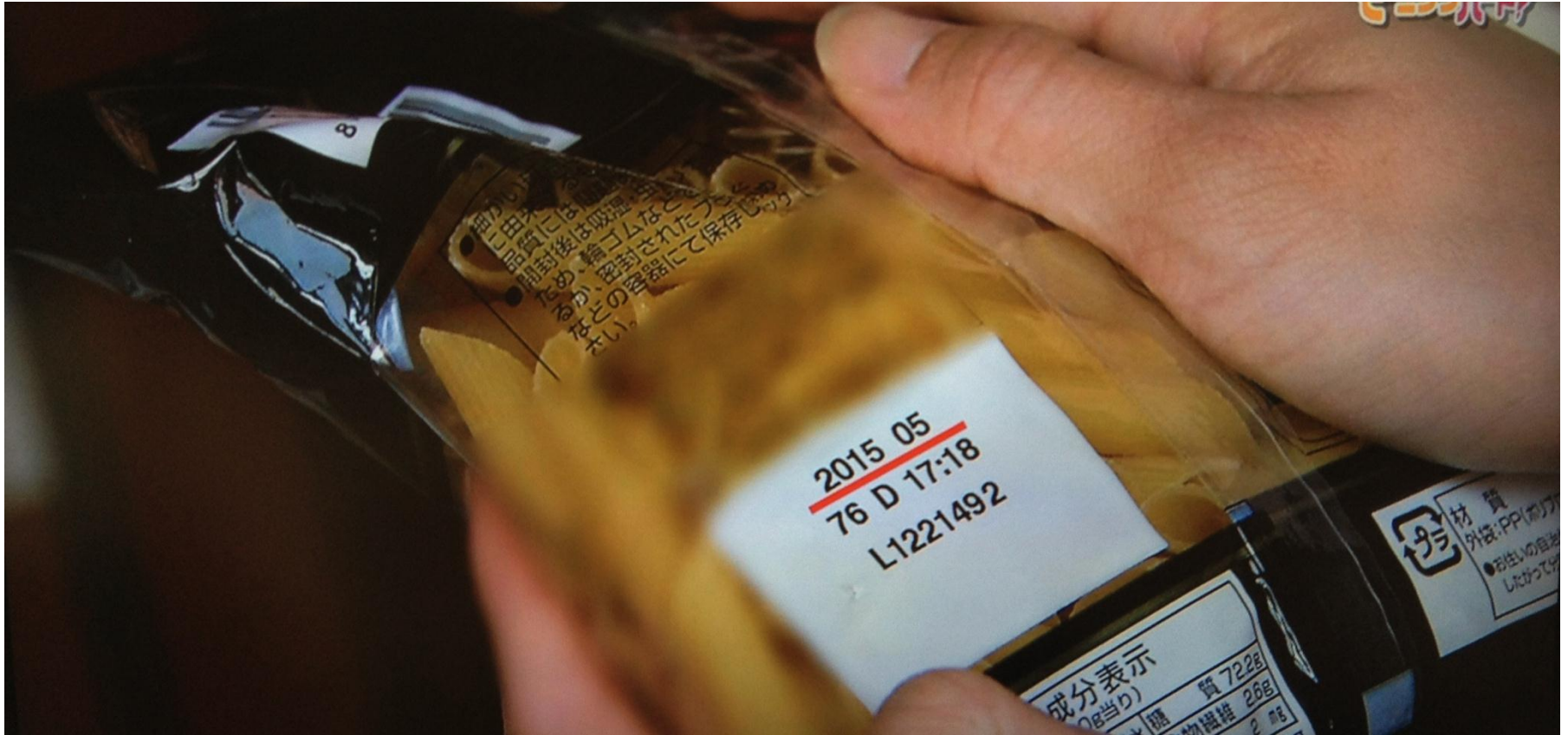
# 3. Factors of Food Loss in Japan

Why is food loss produced?

# 1. Damaged Packaging



## 2. Problems with Food Labeling





### 3. Seasonal, Limited, and Revised Products



## 4. Canceled Products (due to severe weekly sales conditions, etc.)





# 5. Food Inspections and Organizational Cooking



# 6. Vegetables not meeting standards or being mass-produced





# 7. Events and Food Exhibitions

**25,200 bananas in 2013**

**17,680 bananas in 2014**



# 8. Excess Purchasing and Best-before Dates



Image of household waste collection in the metropolitan area from the NHK program "Tokyo Metropolis" aired on June 1-4, 2012

April, 2013: Enforcement of Metropolitan Tokyo  
Ordinance on Measures for Stranded Individuals

**9. Disaster Food Supplies by Households,  
Companies, and Local Government**

**Companies must have 3 days  
worth of water and food  
prepared for employees**



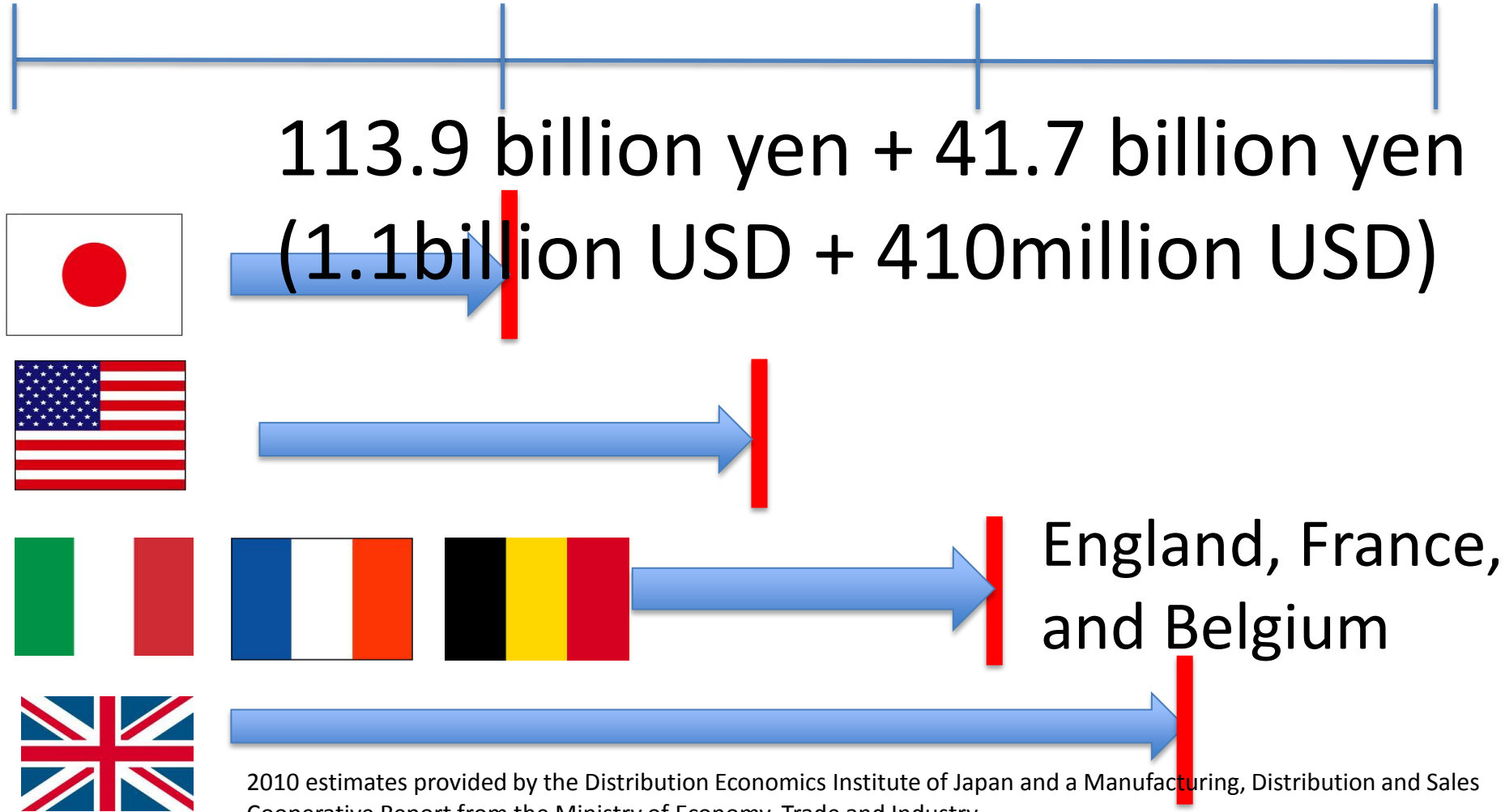
# 10. The One-Third Rule

Production

Delivery Deadline

Sales Deadline

Best-before Date



# What is the “cycle” from consumers to retailers (wholesalers), and producers?

Consumers

Expectations that stores are always filled with product

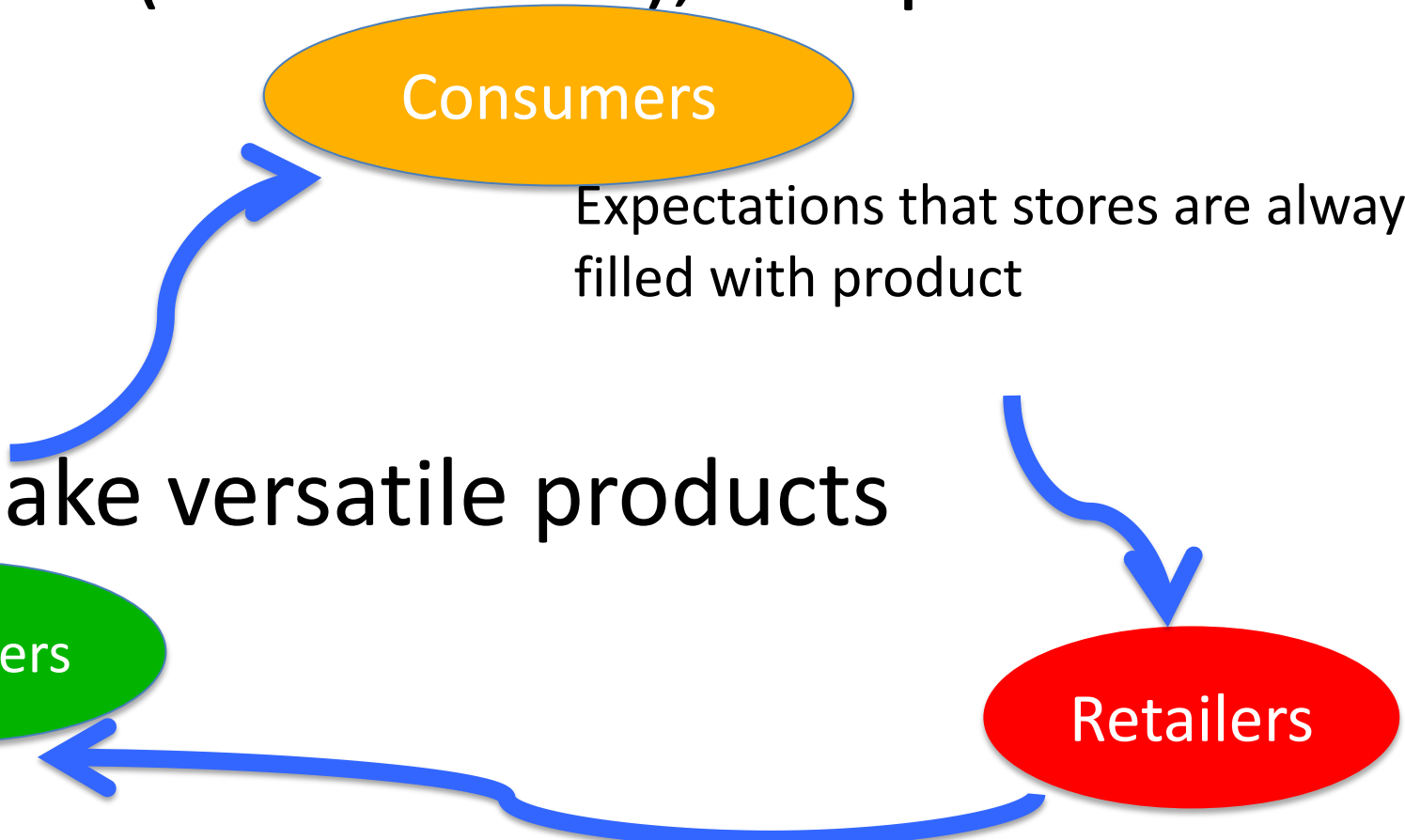
Must make versatile products

Producers

Retailers

Penalized if there are product shortages  
(gross profit compensation).

Efforts to not lose customers due to customer dissatisfaction and competition





Consumers

Retailers

Wholesalers

Producers





# 4. Latest Trends in Japan

# Basic Act on Food Education

(Enacted on July 15, 2005, Article 3, First Chapter)

## Gratitude toward and understanding of food



# Mandates for government agencies to coordinate efforts to reduce food loss in Japan

1. Ministry of Agriculture, Forestry and Fisheries
2. Consumer Agency
3. Ministry of the Environment
4. Cabinet Office (responsible for food education)
5. Ministry of Education, Culture, Sports, Science and Technology
6. Ministry of Economy, Trade and Industry

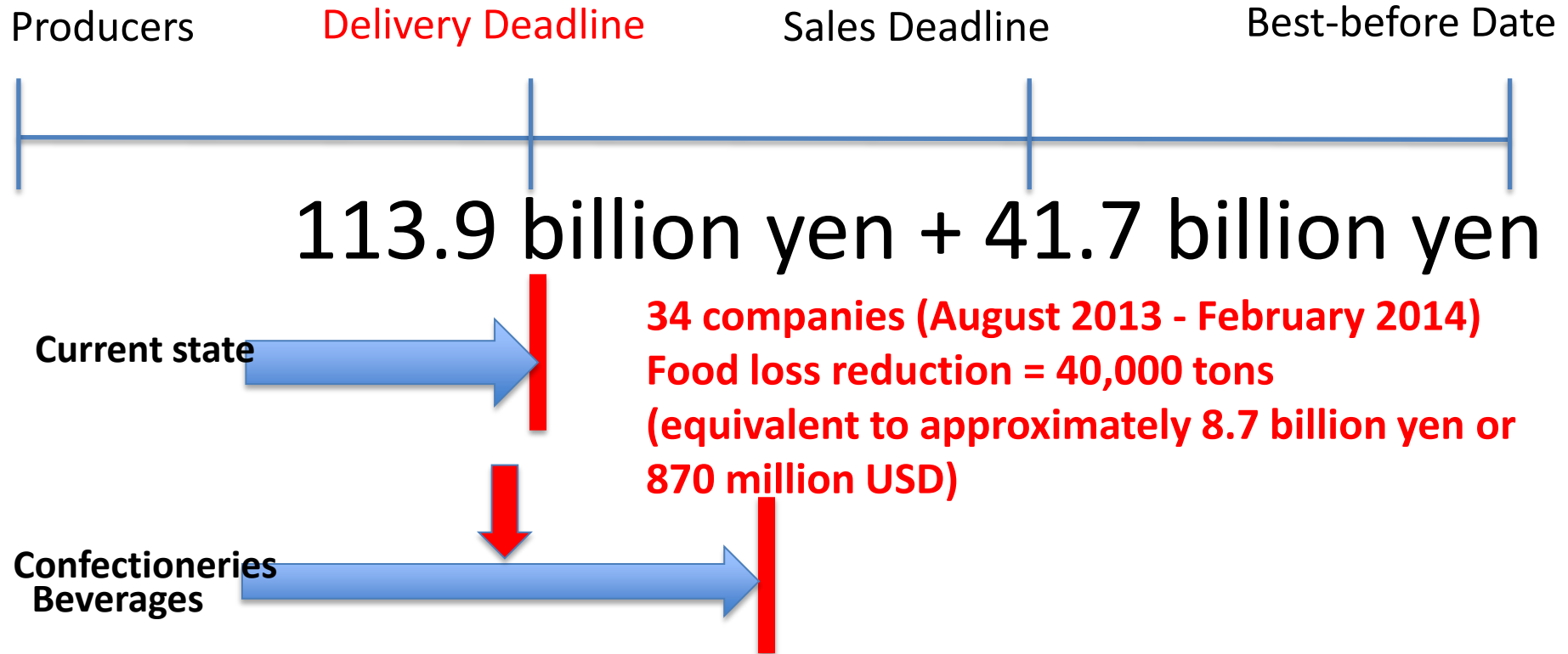
# Working Group on Business Practices to Reduce Food Loss

Grant project by the MAFF

- **Food manufacturers (9 companies):** Ajinomoto (Flavoring and Seasonings Council), Ezaki Glico, **Kikkoman Foods**, Coca Cola Customer Marketing, Suntory Foods International, Nissin Foods, House Foods, Maruha Nichiro Foods, and Megmilk Snow Brand
- **Food wholesalers (3 companies):** Kokubu (Processed Food Wholesalers Association), Mitsubishi Foods, and Yamaboshiya
- **Food retailers (4 companies):** Aeon Retail (Japan Chain Store Association), Ito-Yokado, Tokyu Store, and Family Mart

# Study Group Results

## 1. Confectionery and Beverage Pilot Project



**Continues to study any affect on food loss, reduction in CO2 emissions, and delivery deadlines after a change occurs.**

## 2. Review of Suitable Expiration Dates

Nissin Foods and Myojo Foods from April 1, 2014

**Cup Noodles: 1 month longer (to 6 months)**

**Bag noodles: 2 months longer (to 8 months)**

The Japan Instant Food Industry Association with over 60 companies as members conducted a one-year study on the progress of packaging technologies

They concluded that expiration dates could be extended 1-2 months.

This is expected to have positive impact on reducing food loss as well as disaster food supplies.

### **3. Changing dates to include only the month and year**

May 2013: Labels on mineral water (2 L) changed to include only the month and year removing the actual day.

June 2014: Labels changed for soft drinks with expiration dates of over one year (Ex.: Changed from June 3 to simply May)

Intended to end the difficulty in storing, resupplying, and transporting goods that accompanies expiration dates measured in days and reduce CO2 emissions by reducing transport operations.

The Beverage Industry Environmental Roundtable "Sustainability Project Committee" established to reduce CO2 emissions and wasted transport costs from redelivering good to different businesses only 1 day after the expiration date expires.

Reduce CO2 emissions for the entire industry by 2,000-3,000 tons per year.

# 4. Difference between the expiration date and best-before date

## 期限表示を正しく理解しよう

ほとんどすべての加工食品に、賞味期限、消費期限のどちらかの期限表示が表示されている。賞味期限と消費期限を正しく理解して、ムダな廃棄を減らそう。期限表示は開封前の期限なので、開封後の商品は期限に関わらず、早めに食べよう。

**賞味期限とは**：定められた方法で保存した場合、おいしく食べることができる期限のこと。スナック菓子や即席麺、レトルト食品、缶詰、冷凍食品など、比較的日持ちのする食品につけられる。この期限を過ぎても、すぐに食べられなくなるわけではない。

食べられるかどうかは、においや見た目など、五感で個別に判断しよう！

**消費期限とは**：定められた方法で保存した場合、安全に食べられる期限のこと。食肉や弁当、総菜、生菓子、生めん、調理パンなど比較的傷みややすい食品につけられる。

逆にいえば、この年月日を過ぎたら食べないほうがよいとされる期限。



賞味期限＝  
お菓子、カップ麺

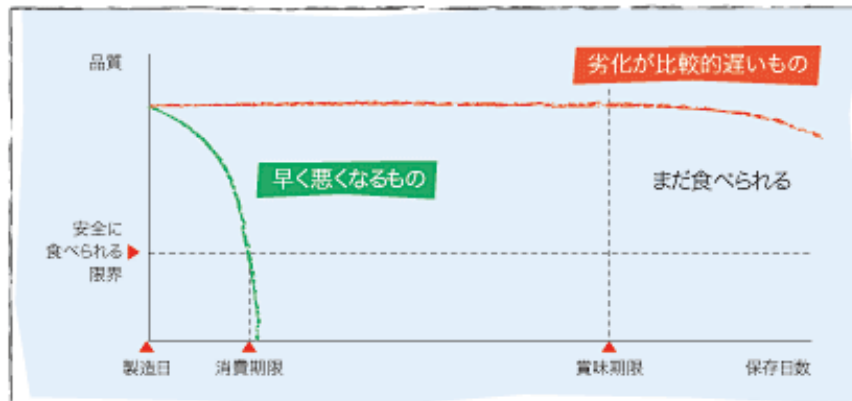


消費期限＝  
サンドイッチ、お弁当



消費者庁  
Consumer Affairs Agency, Government of Japan

## 賞味期限と消費期限のイメージ



Report from the Distribution  
Economics Institute of Japan



## 5. Sales Investigations and Food Bank Activities



Report from the Distribution Economics Institute of Japan

# 5. Food Banks

Initiatives to Reduce Food Loss

# Two Social Issues



Food loss  
(wasteful)

Poverty  
(hunger)

# Brief Description of Food Banks



The diagram consists of two large blue circles connected by a thick orange arrow pointing from left to right. The left circle contains the text 'Leftover Food' and is associated with the text 'Food loss 5-8 million tons' below it. The right circle contains the text 'People who do not have enough food to eat' and is associated with the text '20 million people below the poverty line' below it.

Leftover  
Food

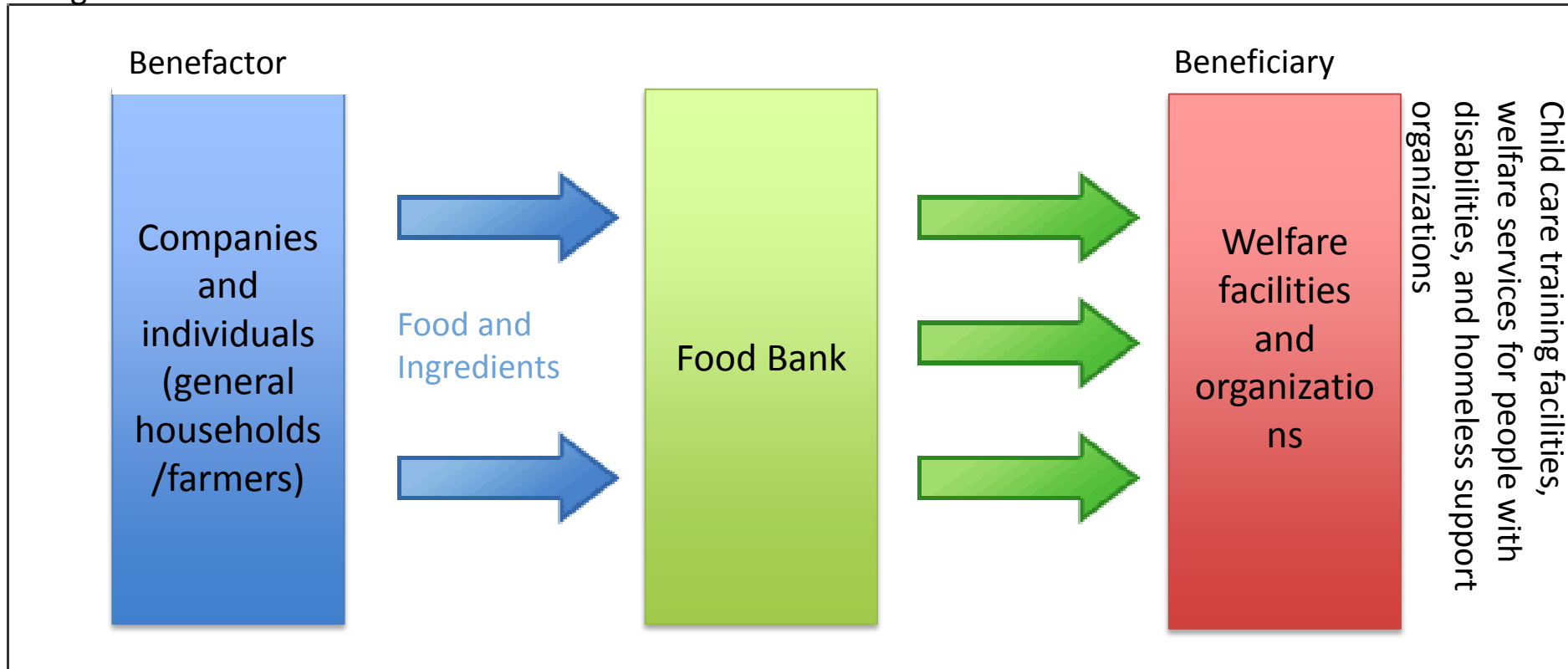
Food loss  
5-8 million tons

People who do  
not have  
enough food  
to eat

20 million people  
below the poverty  
line

# Brief Description of Food Bank Activities

Food Bank Relational  
Diagram



From the Ministry of Agriculture,  
Forestry and Fisheries website



# Global Food Banks (21 countries+)

1967 US

1981 Canada

1984 France

1986 European Food Bank Association

1993 Germany

Asia

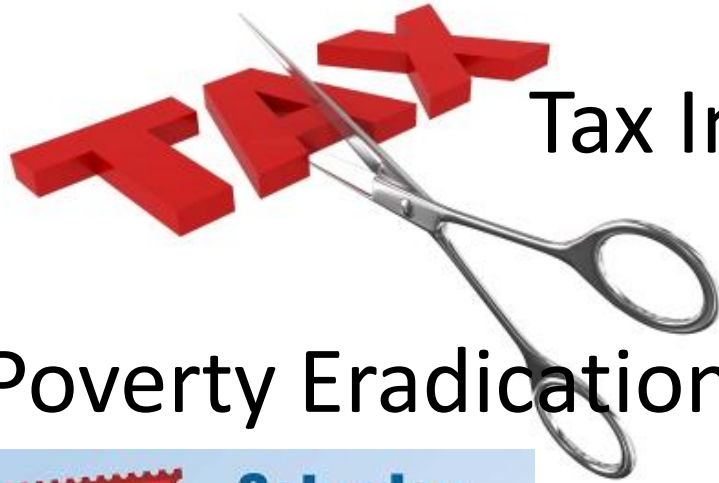
1998 Korea (over 425 locations now)

2000 Japan (over 40 locations now)

2012 Philippines



# US



## Tax Incentives

## Poverty Eradication

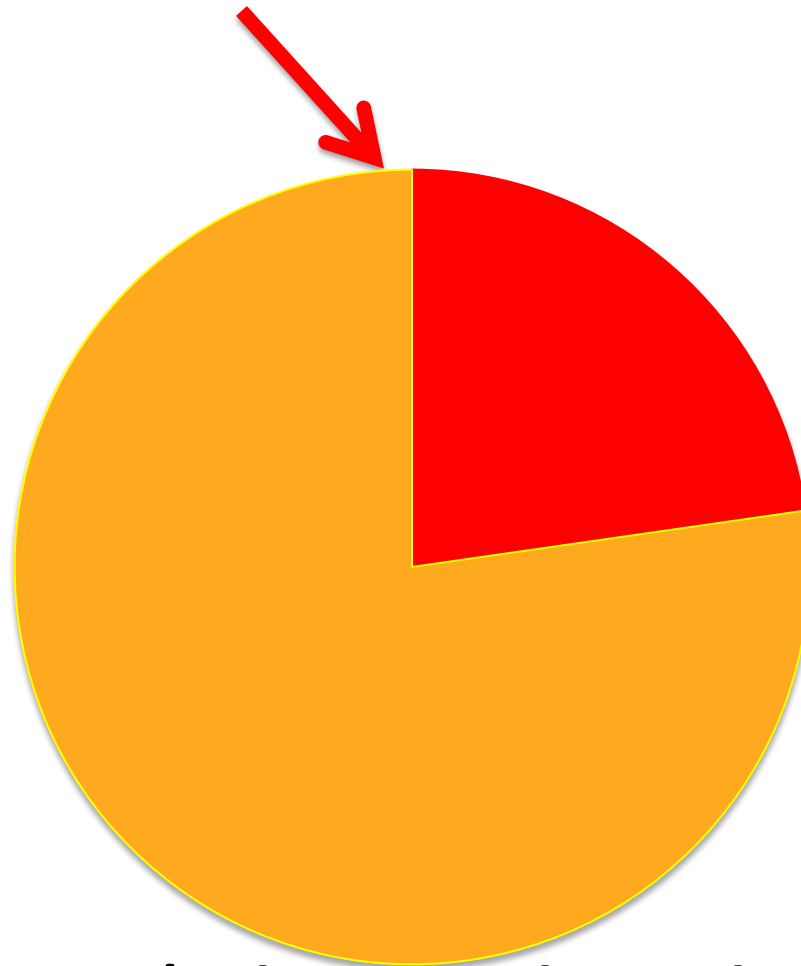


## Good Samaritan Law



# Retail Food Waste in Germany

310,000 tons (1/5 of that in Japan)



(Alternative Online)

# England



**Companies want zero-hour contracts**

**The number of food bank users between January through February in 2013 is equivalent to the total number of users in 2012, or 35,000 people.**

**(According to Trussel Trust, a food bank interim support organization)**

**British Red Cross delivered food for 3 days at the end of November in 2013 (first time since WWII)**

# Turkey

## Social Market





# Examples in the Philippines

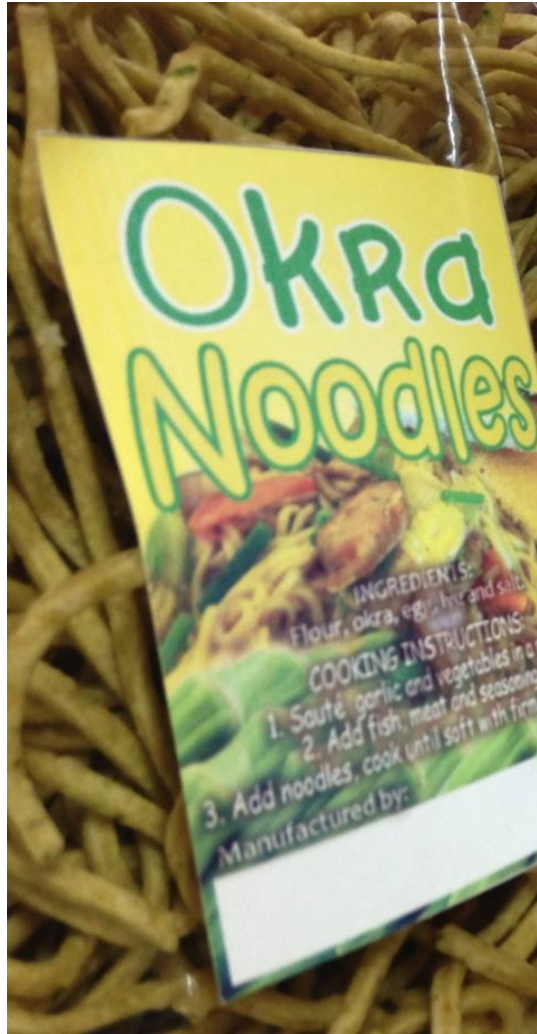
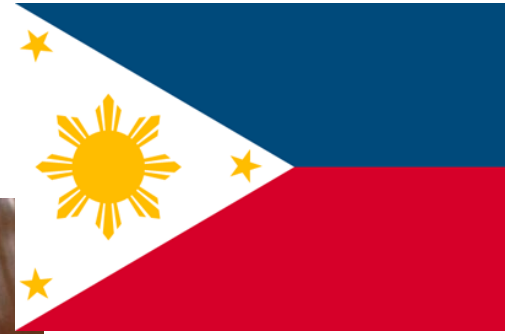
Several hundred tons of okra exported to Japan is discarded due to not satisfying Japanese standards.

Stored for 6 months before being processed into okra noodles

Significant loss of grain and agricultural properties due to processed foods







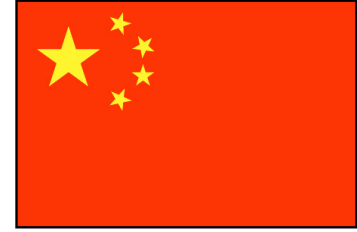
**Repurpose**



# LBC Foundation



# China Clean Your Plate Campaign (stop habitual leftovers)



**50 million tons/year disposed**  
**8% of grain production**  
**20% of vegetable production**

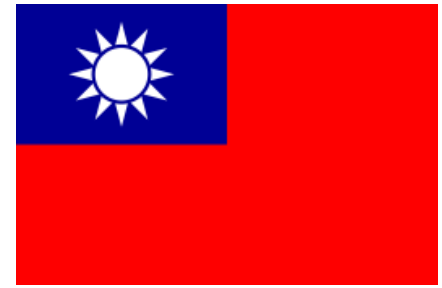
Minister of the Ministry of Agriculture  
"A surprising amount. Saving food is an  
extremely important national strategy.  
The government should provide guidance  
on being more efficient and frugal."

From "Outlook", a weekly news magazine from  
Xinhua News Agency





# Taiwan






# South Korea



# Examples in Japan



Ratio of people in  
Japan that do not  
have enough food to  
eat

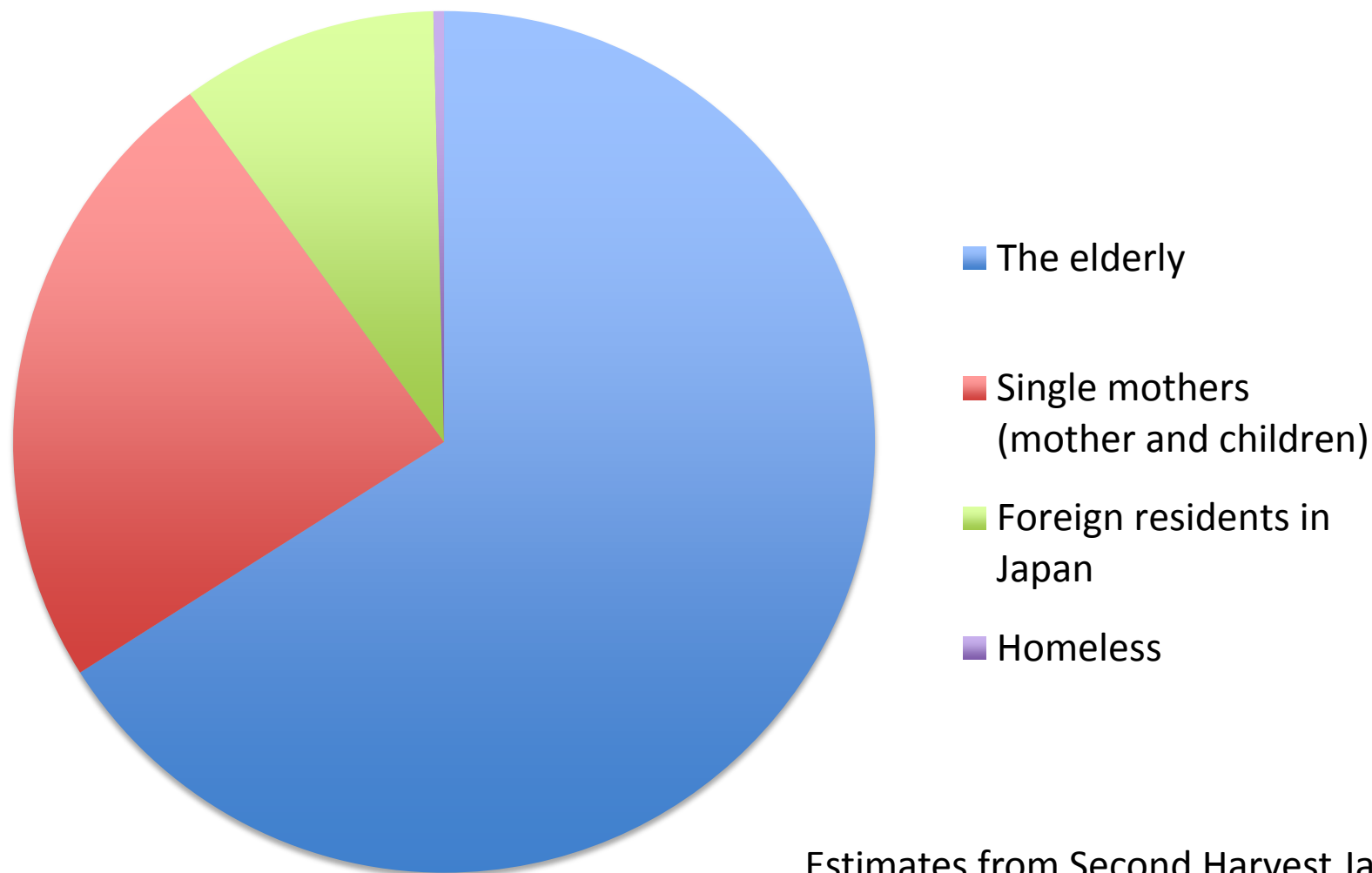
1 in 6 people (20 million  
people)

Basis of calculation

The relative poverty rate as in the "Overview of the 2010 National Livelihood Survey" conducted by the Ministry of Health, Labor and Welfare is 16.1%, which is equivalent to approximately 1/6 of the total Japanese population.

# People with particularly high levels of urgency

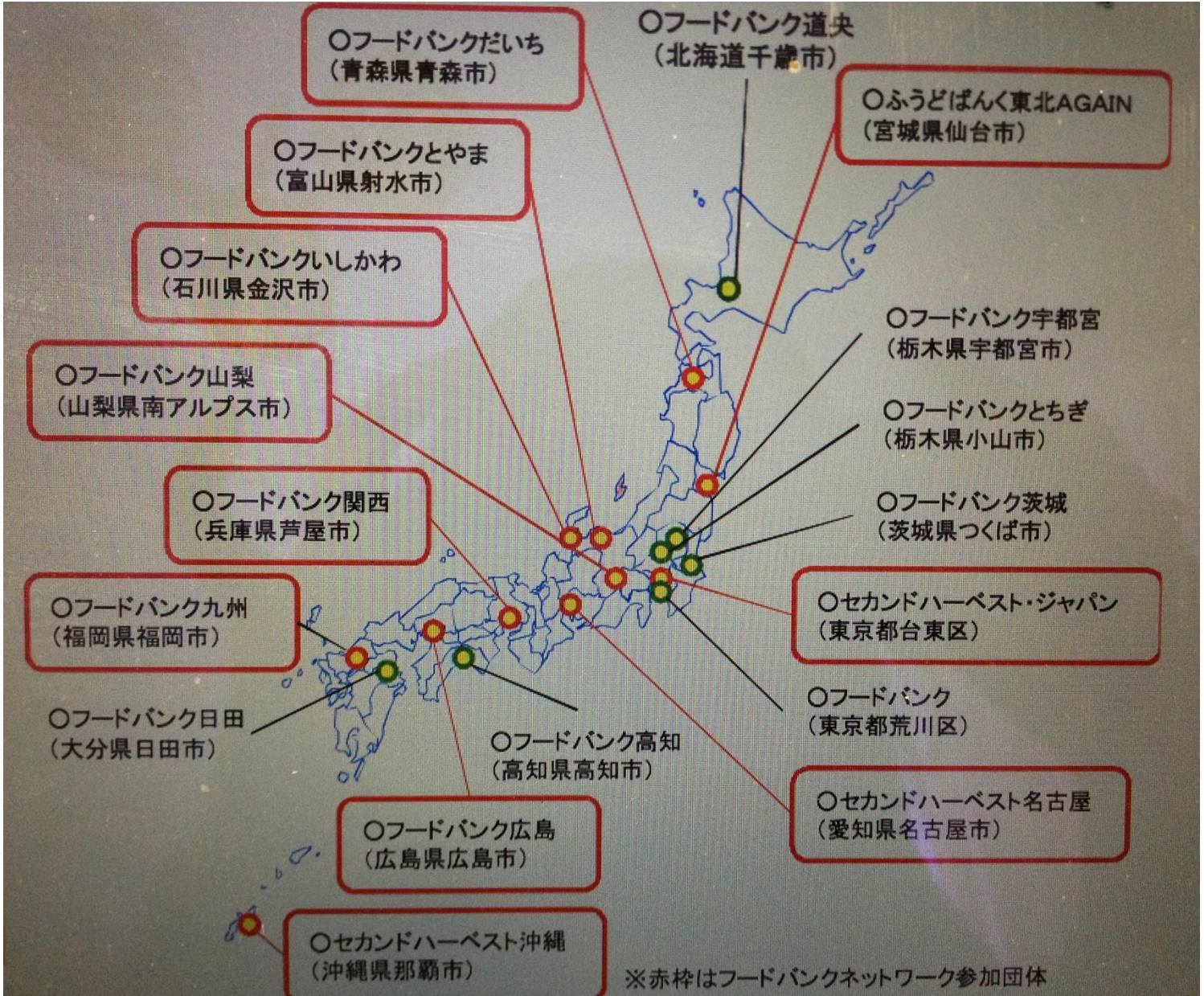
**2.41 million people (estimated)**



Estimates from Second Harvest Japan



# National Food Bank Organizations(MAFF website)

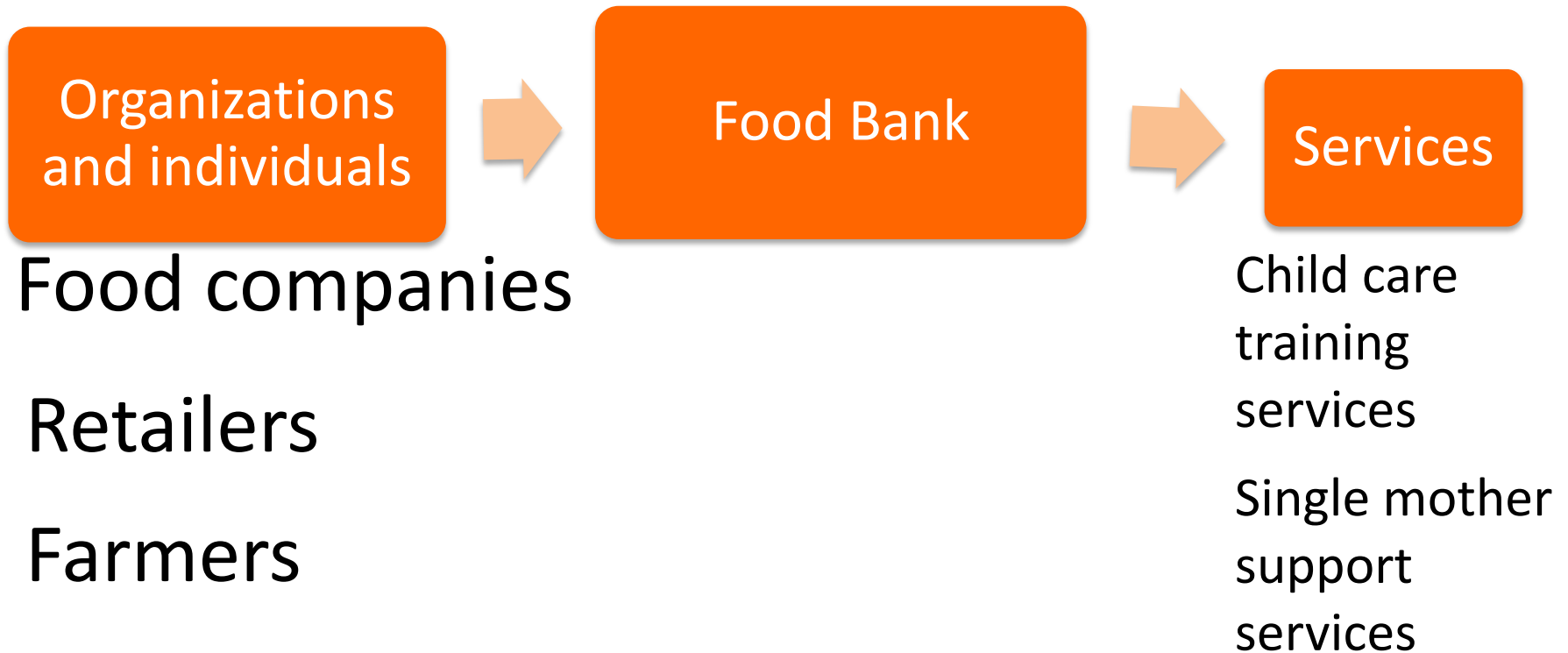


# Second Harvest Japan (2HJ)

- First food bank in Japan started in 2000
- Became an NPO with a director and staff of 11 in 2002
- Food bank (to sites)
- Pantry (to individuals)
- Soup Kitchen
- Policy Recommendations

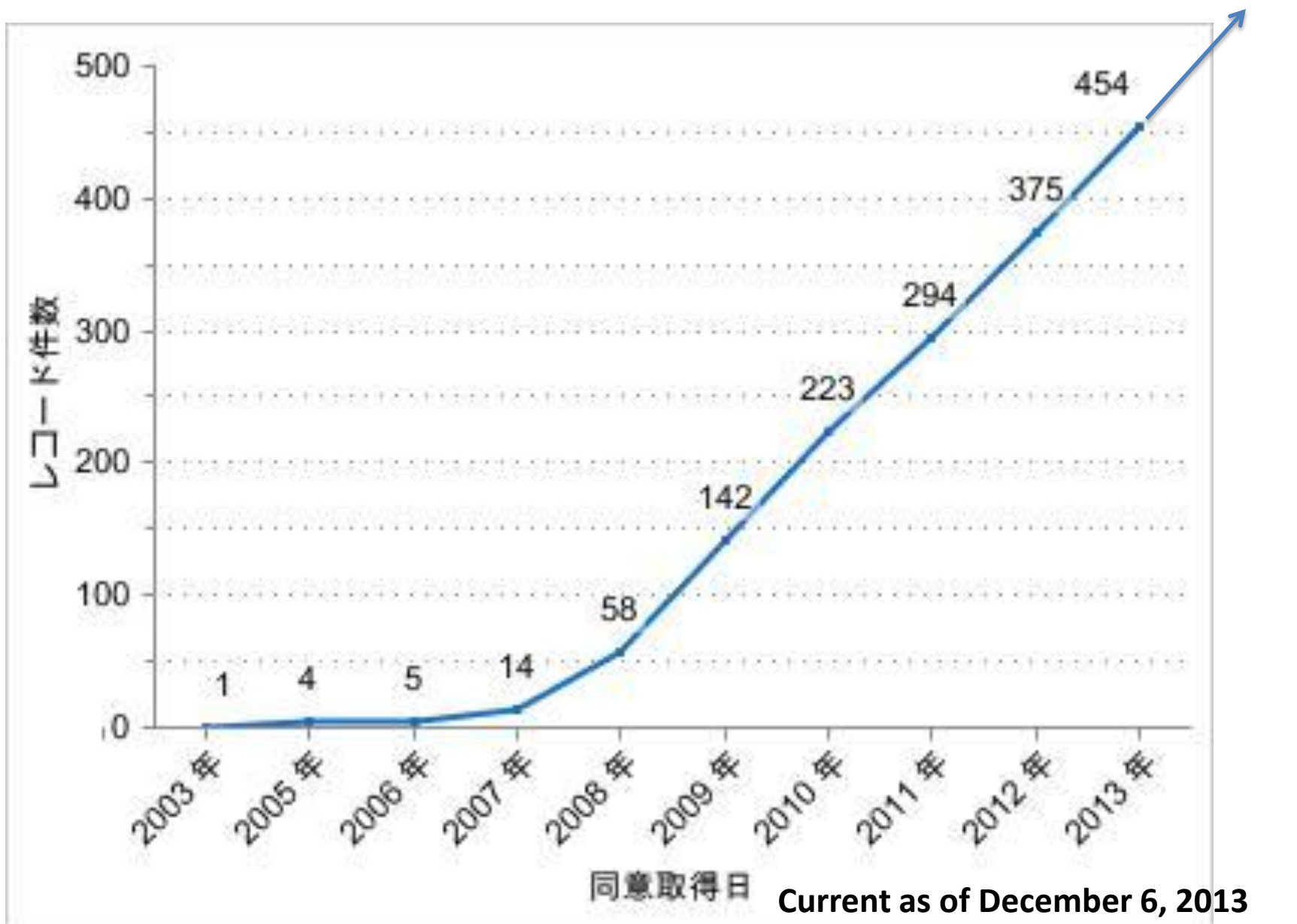






**560 organizations** → **2HJ** → **320 services**

## 2HJ: Growth of companies who have concluded agreements



# Solutions to social issues provided by food banks

Food **loss**: **Reduced** by 10,141 tons



Social **welfare**: 371,645 people



**Economic**: 5,801,320,000 yen  
(58million USD)



**Environmental**: CO2  
emissions reduced by 3935 tons



Second Harvest Japan 2002 - 2013

# Food Banks

Food received from food manufacturers, retailers, and farmers







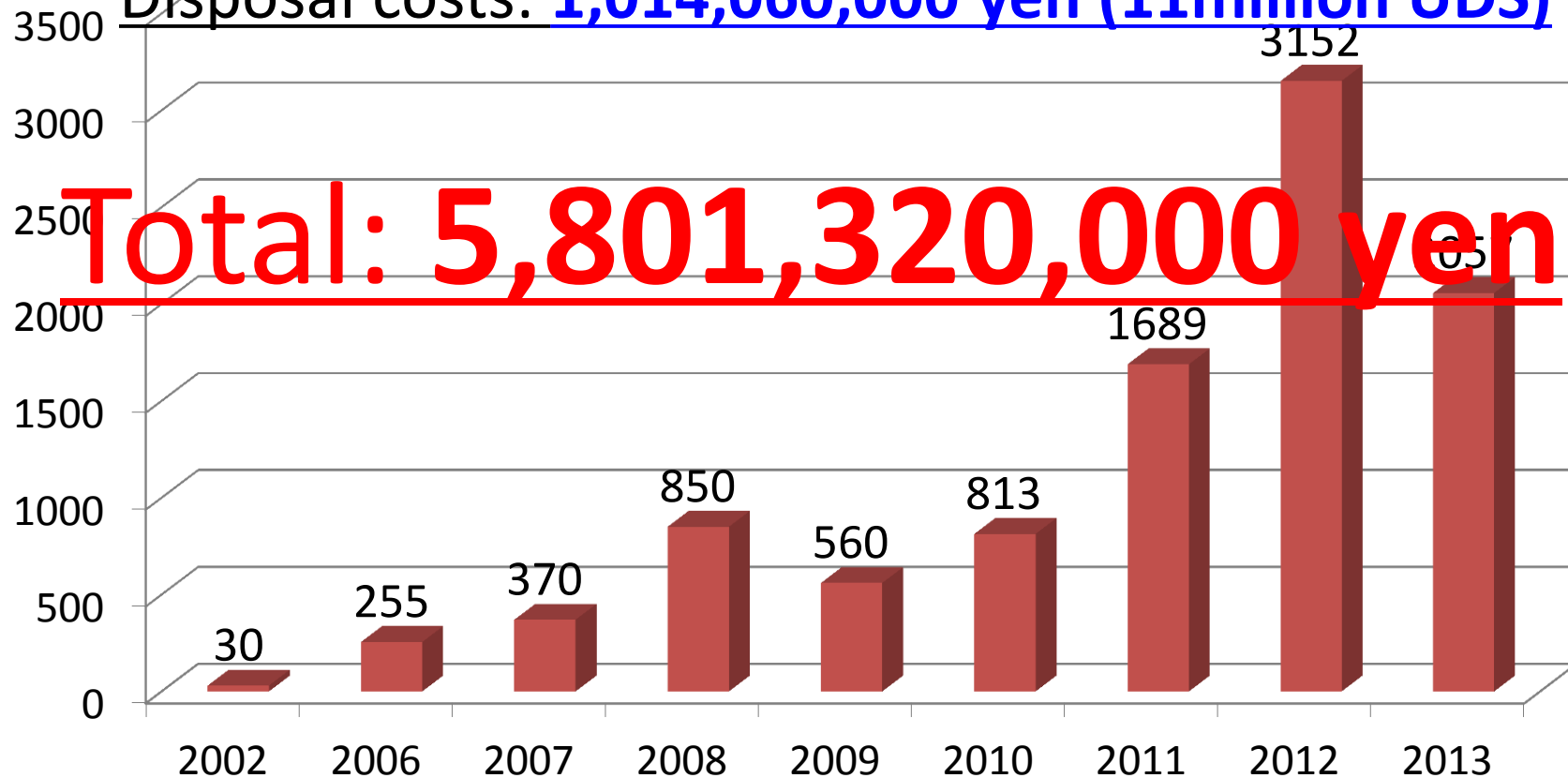
SECOND  
HARVEST  
セカンドハーベスト・ジャパン

# Increases in amount of food managed (tons)

Total between 2002-2013: **10,141 tons**

Financial conversion: **4,787,250,000 yen (47million USD)**

Disposal costs: **1,014,060,000 yen (11million UDS)**



# Current state of food waste

1788 tons/year Food waste (2009)

→ 5-8 million tons (annual rice production)

→ 3-4 million tons from companies

→ 2-4 million from households

**2HJ utilization =  
1/10,000 of total food  
loss**



**Food and environmental issues are national issues**



# Food Banks

Examples of using ingredients at sites





Pantry: Many people from Myanmar and the Philippines  
Grains and processed foods → A lot of carbohydrates and salt





# Many vegetables are used in soups

<Soup Kitchen>

<Supplies>



# Income and Amount of Vegetables Consumed

**Amount of vegetables consumed:** Low for men and women in income brackets less than 2 million yen(200,000 USD) and between 2-6 million yen(200,000 -600,000USD) (Results of national health and nutrition surveys conducted in 2010)





# Soup Kitchen in Fukuoka

Uses many different kinds of vegetables including root vegetables



# 6. Benefits for Companies, Institutions, and Government



# Benefits for Companies

Reduced disposal costs

Reduced impact on the environment

Improved employee moral

Social responsibility (CSR)



# Benefits for Institutions

Appropriate freed up food expenses to other expenses

Increased pleasure and improved experience of eating food

Food cost savings

Mental and physical fulfillment



# Benefits for government

Reduced food loss/environmental conservation

Provide support to impoverished people (poverty eradication)

Reduces financial burden

Community revitalization



# 7. Future Potential

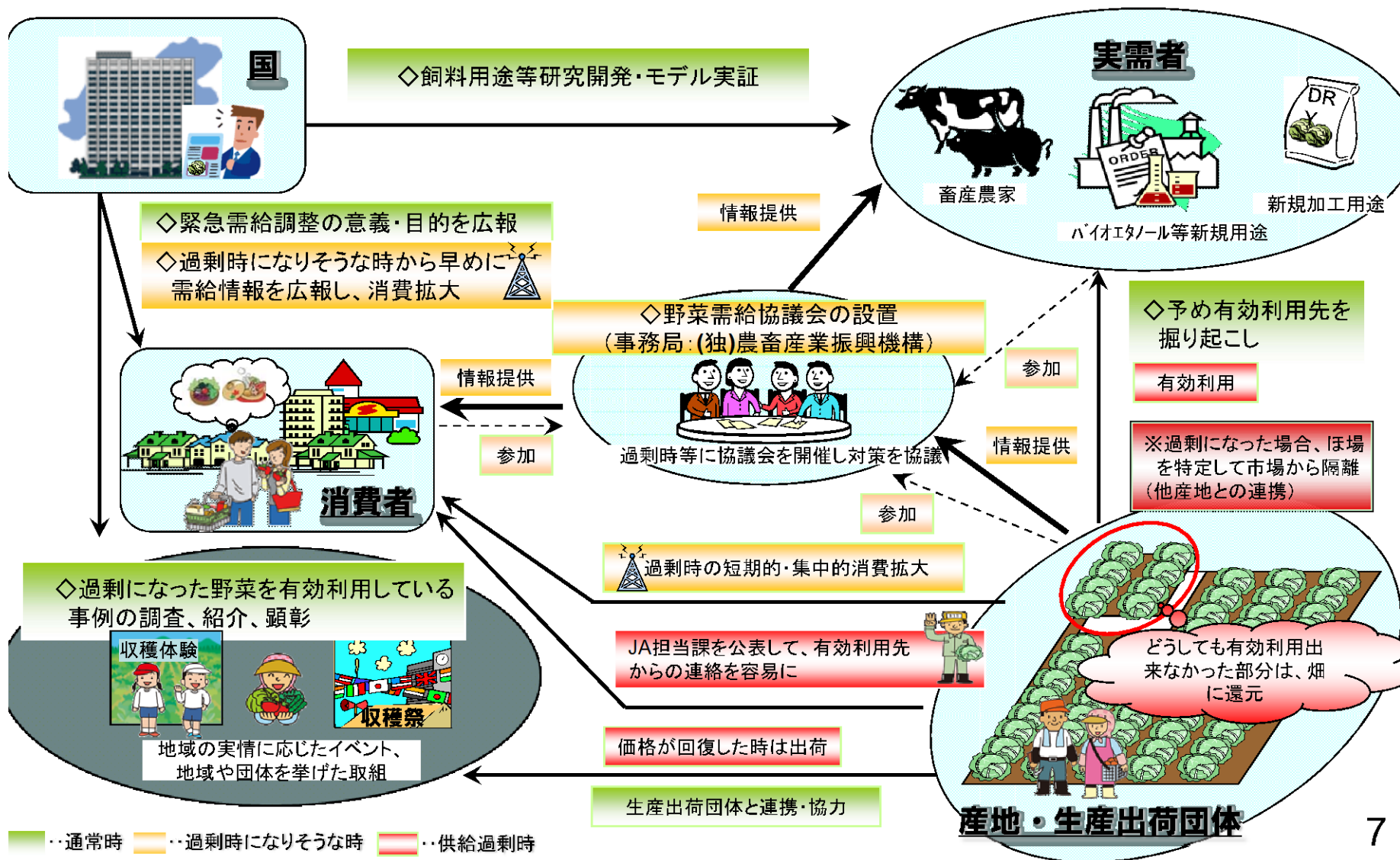


April, 2013: Metropolitan Tokyo Ordinance on  
Measures for Stranded Individuals

**3 days worth of water and  
food must be prepared for  
all employees**



# Quality standard and production adjustment of vegetables



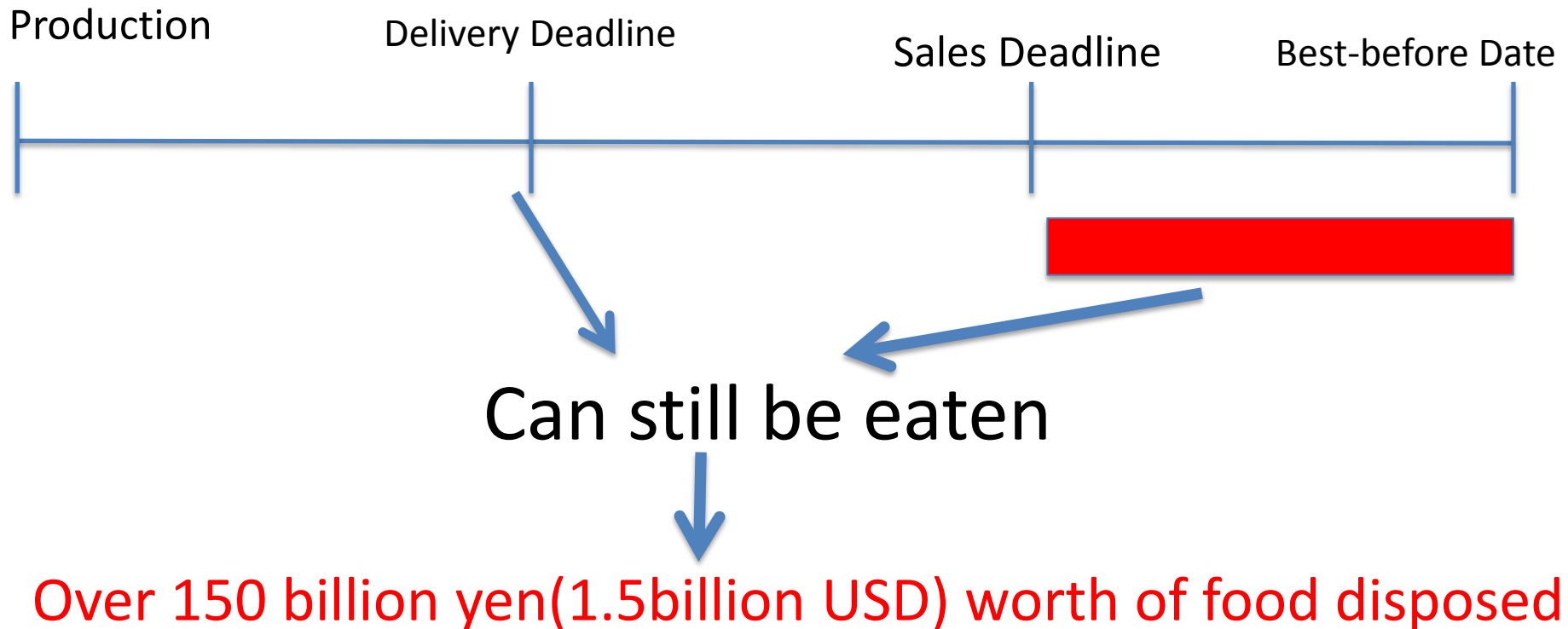
# Producers

Review of new products, number of items produced, and seasonal/limited products



# Distribution and Sales

Review of the 1/3 rule (sales deadlines) and shortage penalties





# Restaurants

Portions that can be  
eaten completely  
Allow takeouts and doggy  
bags



国際ホテルの  
ドギーバッグサービス  
2009 ver.1

Re\*  
PORTER  
RECYCLABLE

国際ホテルのドギーバッグサービス2009 ver.1とは

- 1 立食パーティーで食べ切れなかった料理をお持ち帰りいただけます。
- 2 お持ち帰り可能な料理には指定があります。
- 3 お客様の自己責任でこのサービスをご利用ください。
- 4 お持ち帰りいただいた料理は本日中にお召し上がり下さい。
- 5 お客様と取り組む地球環境活動

ブッフェ(立食)パーティーで  
食べきれなかった  
料理をお持ち帰り

食品ロス削減のため、ご宴会のブッフェパーティー(立食)で食べ  
きれなかったお料理をドギーバッグに詰めお持ち帰りください。  
エコバッグも持ち帰りサービスと一緒に持ち帰ることも可能です。

「環境に配慮したホテル」を目指します。

K/D 国際ホテルグループ

横浜国際ホテル 新横浜国際ホテル 立川グランドホテル

DOGGYBAG  
2009 ver.1

# Municipalities

## Fukui Prefecture



心置きなく食べて、  
もったいないを  
きりかへよう。  
それが、食事の  
あたりまえ。

おいしいふくい  
食べきり運動『展開中』

県では、家庭や宴会等での食べ残しを減らし、おいしい留年と食材を食べきることを目的  
とした『おいしいふくい食べきり運動』を展開しています。みなさんもぜひこの運動にご参  
画ください。食べ残しを減らすことや持ち帰りなどの取組みにご協力をお願いします。

項目	数値
県民一人当たりの食料消費量	2,100g
県民一人当たりの食料消費量	2,100g
県民一人当たりの食料消費量	2,100g
県民一人当たりの食料消費量	2,100g

500円

## Yamaguchi Prefecture



## Nagano Prefecture



## Chiba Prefecture



## Saitama Prefecture



## Toyama Prefecture



## Niigata Prefecture Niigata City



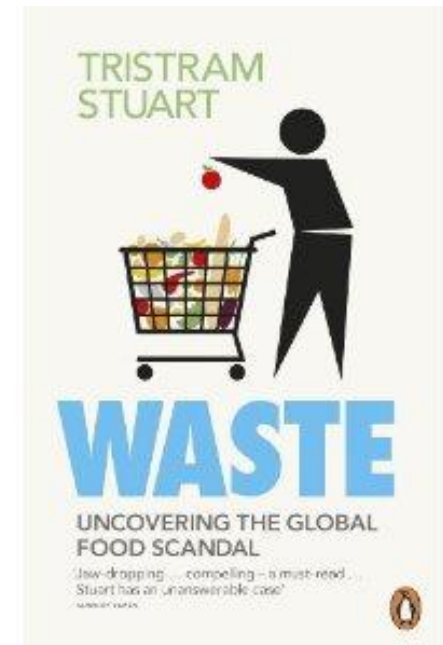
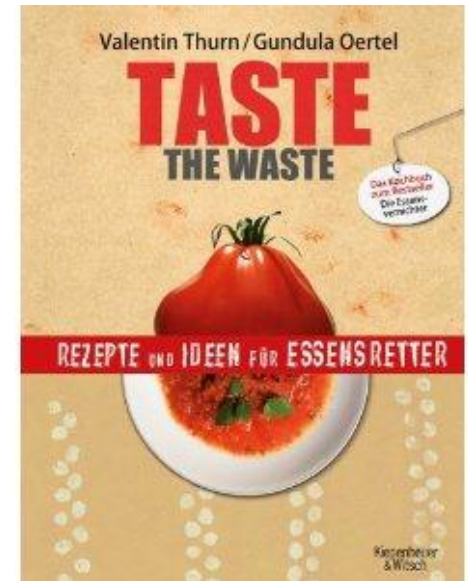


# Religious Organizations

More than 180,000 throughout Japan  
Temples outnumber convenience stores (over 75,000)



# Communication





# Allow Diversity Multiple Stakeholders



Food = Physical + Mental

