

# Waste Reduction Measures in Nagoya City

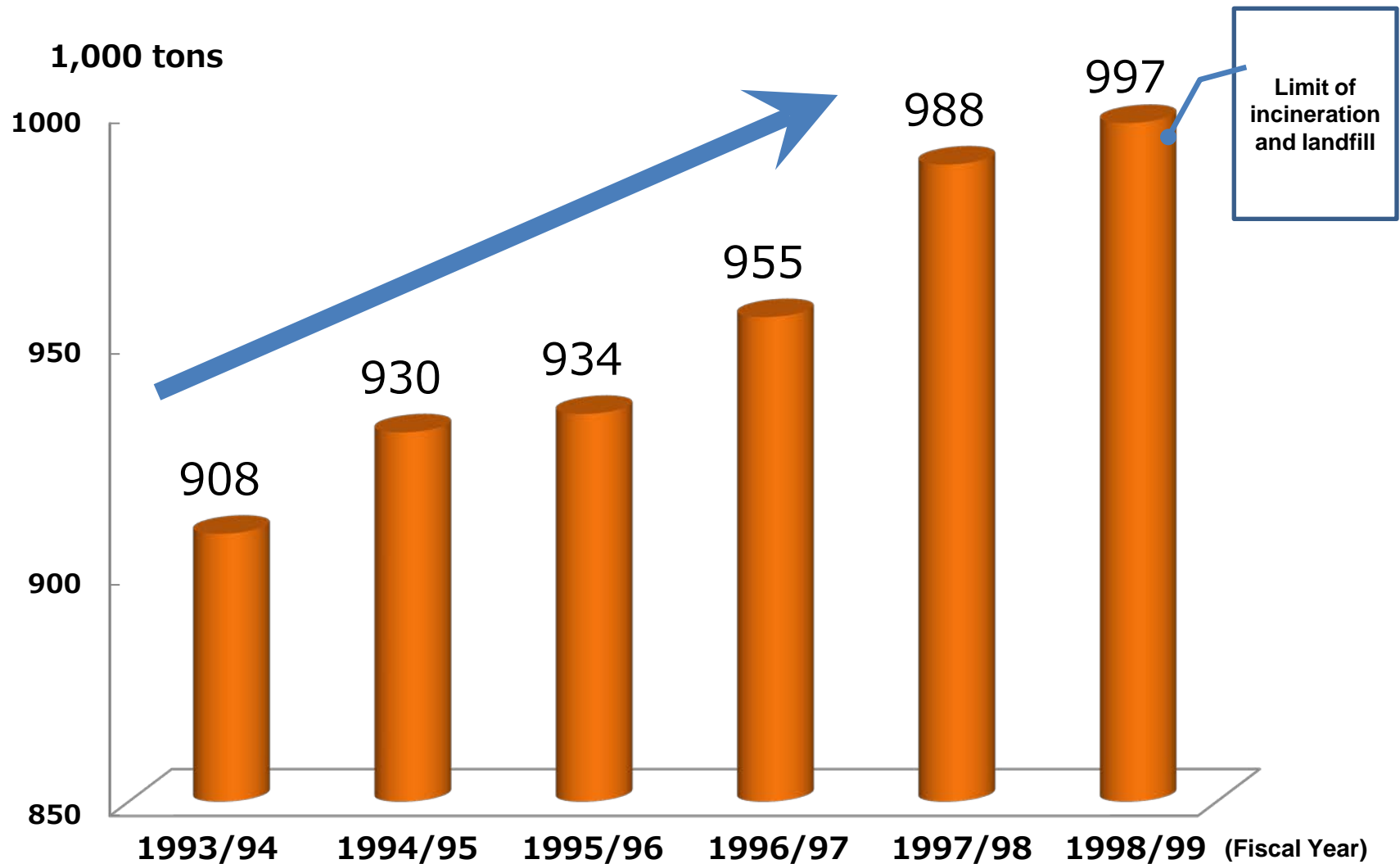
Waste Reduction Promotion Office,  
Waste Reduction Department,  
Environmental Affairs Bureau,  
City of Nagoya  
Director Rika Ogihara



Nagoya City  
Recycling Society Image Character  
Killer Whale "Jun-chan"

# **Waste Emergency Declaration and Efforts to Reduce Waste**

# Continued Increase in Garbage Disposal Volume



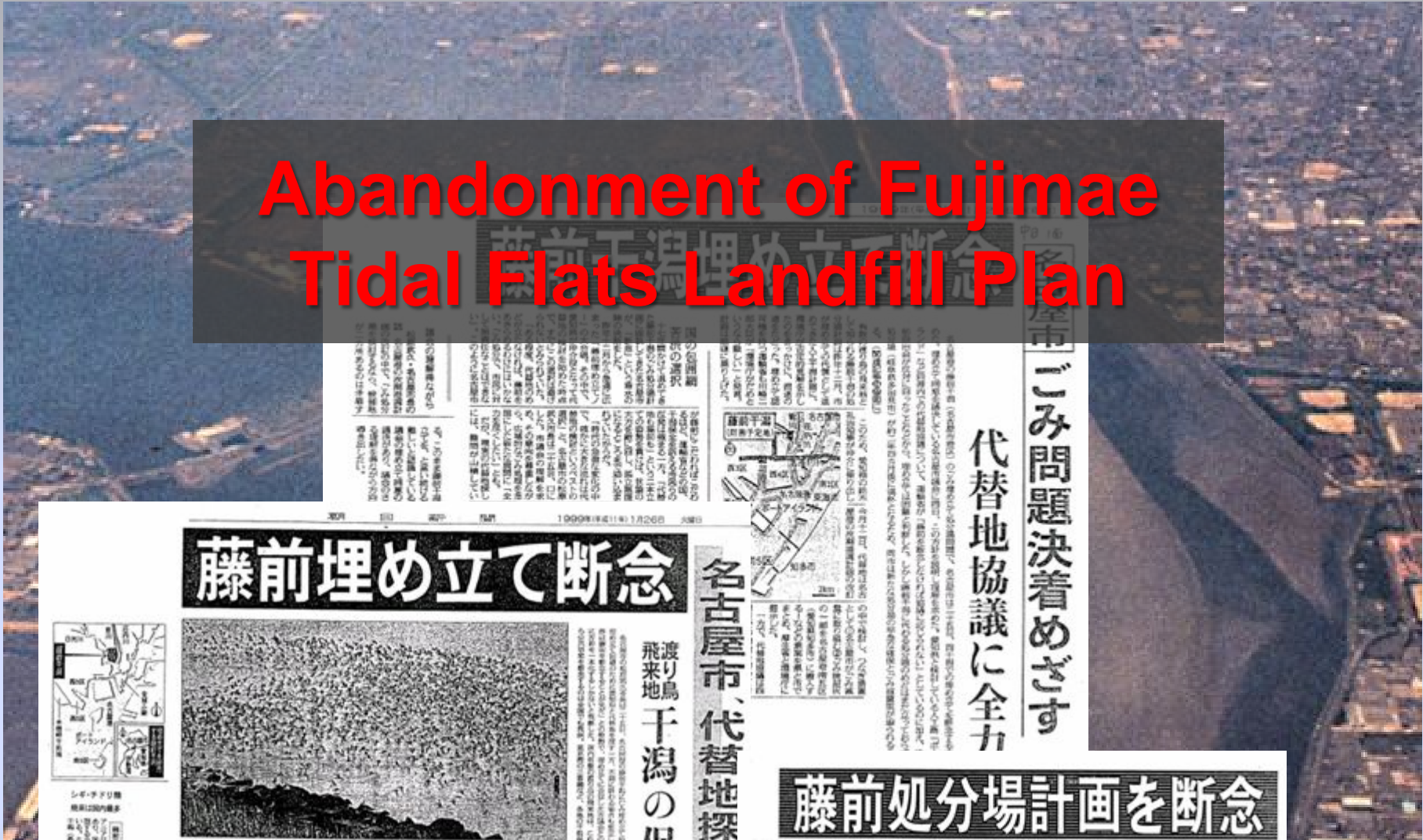
# Aigi Disposal Site (Tajimi City, Gifu Prefecture)



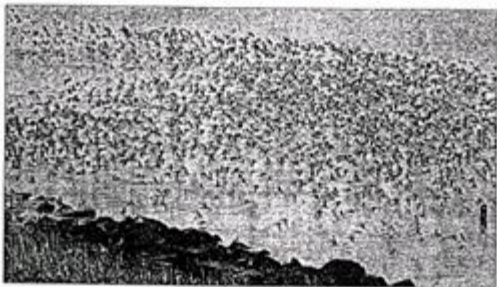


# Fujimae Tidal Flats and Planned Landfill Area

## Abandonment of Fujimae Tidal Flats Landfill Plan



### 藤前埋め立て断念



渡り鳥  
飛来地 干潟の保全確定

名古屋市、代替地探し専念

代替地協議に全力  
ごみ問題決着めざす

### 藤前処分場計画を断念

名古屋市与

国と代

# “Emergency Declaration on Waste Management” Issued

- **February 1999 “Emergency Declaration on Waste Management”**
  - Aigi Disposal Site forecast to become full in two years or so
  - Limit to the processing capacity of incineration plant (overflow)
  - Challenge is to secure a new disposal site and drastically reduce waste
  - **Collaborative efforts among citizens, businesses and authorities are needed**



- Waste Reduction Goal  $\Rightarrow$  Triple 20
- Goal for 20% waste reduction (200,000 tons) within the 20<sup>th</sup> century

# Main Waste Reduction Measures

## FY 1999/2000

- Expansion of empty bottles/cans collection (9 → 16 wards)
- Introduction of system designating household garbage bags

## FY 2000/01

- Abolishment of garbage collection with container boxes
- Strengthening of subsidies for voluntary collection by citizens (group collection of recyclables) and start of collection by school districts
- **Start of station-based collection of plastic containers and packaging, paper containers and packaging and plastic bottles**

## Advance Notice and Explanatory Meetings

- Distribution of “Public Information Nagoya” (March, April, June, August Editions)
- Community explanatory meetings held **about 2,300 times** (June, July)  
→ About 210,000 citizens participated

## Methods/Mediums for Publicity

- Public Information Nagoya, pamphlets, posters, etc.
- Explanatory videos, newspaper advertisements, TV/radio commercials, TV/radio municipal government programs, public relations magazines, news programs shown in movie theaters, posters in subways/city buses, etc.





# Media Reporting the Confusion Among Citizens

平成12年8月7日(月曜日) 中日新聞 別冊 (夕刊) (本紙欄外付)

## 分別 複雑すぎて…警告シール次々

名古屋市の分別回収が、市民の間で混乱を招いている。市は警告シールを次々発行している。市民は「分別が複雑すぎて、何をどう捨てるかわからない」と訴えている。市は「分別回収のルールを守らなければならない」と強調している。

### 容器包装分別収集スタート

## 名古屋混乱 警告3割増

名古屋市の分別回収が、市民の間で混乱を招いている。市は警告シールを次々発行している。市民は「分別が複雑すぎて、何をどう捨てるかわからない」と訴えている。市は「分別回収のルールを守らなければならない」と強調している。

### 仮柱 叩氏

## 容器包装、分別収集 1週

警告シールが紛れ、1週間放置されたゴミ袋の名古屋市中央区内で14日午前撮影

## ごみ 振り回される生活

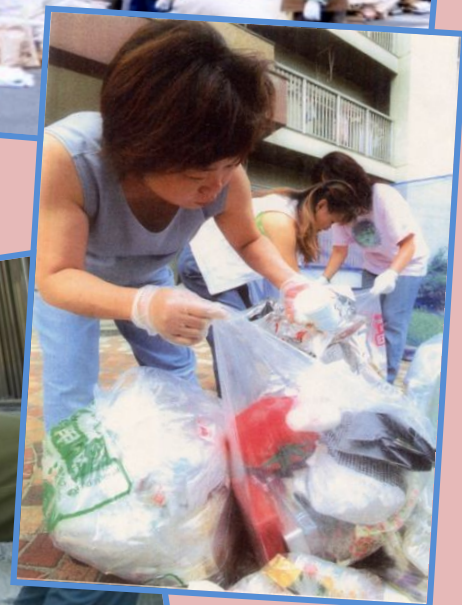
### あなたの隣

## 名古屋の分別回収

論文書くひまもない 市外へ脱出

## ルール 2割守らず

分別回収の市 目立つ置き去りごみ袋

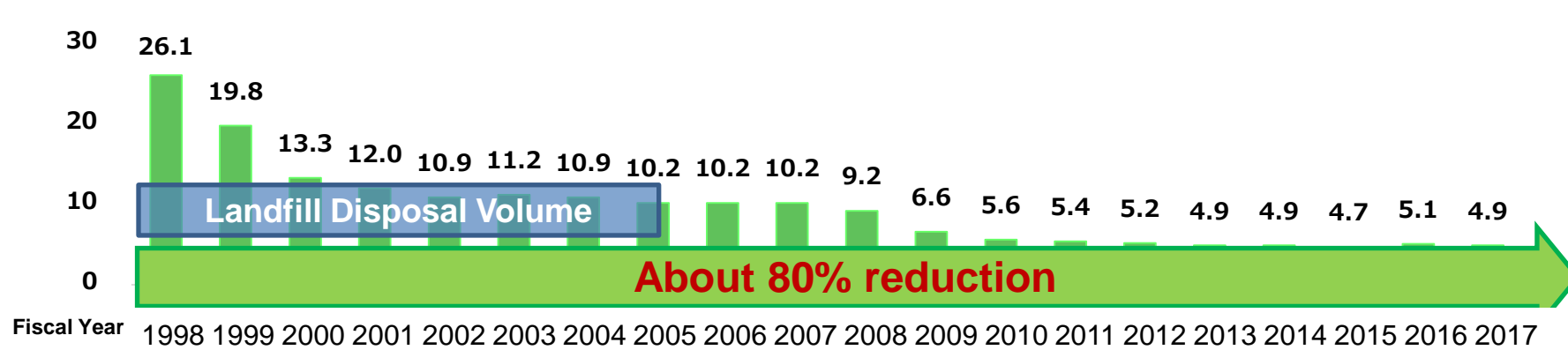
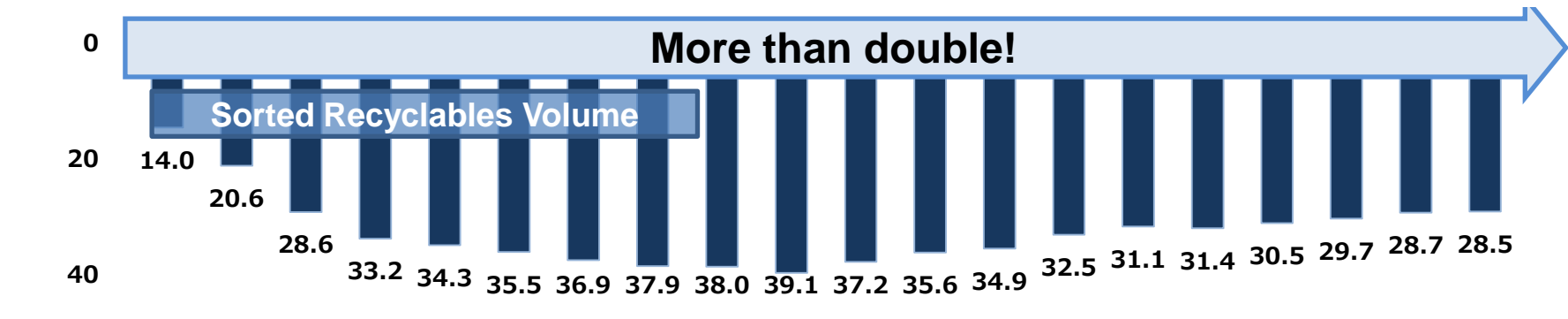
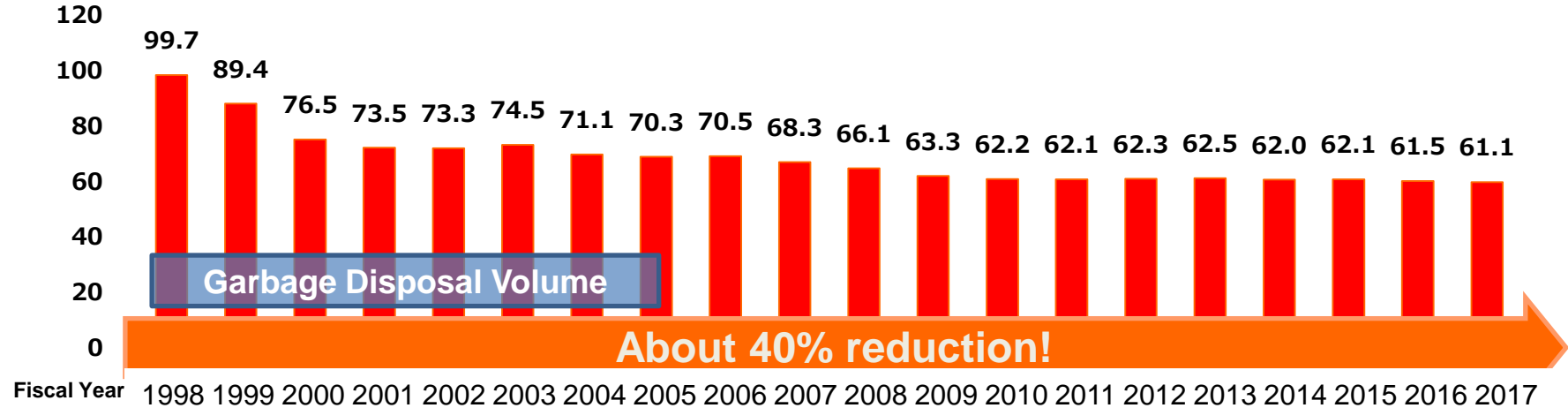


Citizens working on sorting and recycling garbage



# Results After the “Waste Emergency Declaration”

10,000 tons



# Changes to Aigi Disposal Site



**1998**

Non-flammable garbage and large-sized garbage was brought in, leading to a mountain of garbage. Landfill volume was 260,000 tons per year.

**Now**

Due to waste reduction and changes in waste treatment methods, landfill is mostly incinerated ash and slag (covering soil) after melting.

Landfill volume has been reduced to 50,000 tons per year.



## Registration of Fujimae Tidal Flats into the Ramsar Convention (November 2002)



Certificate

## “Local Government Environment Grand Prix” Award (May 2003)



2.2 million Nagoya citizens and Nagoya City jointly received the “Environment Minister’s Award” and “Grand Prix” at the same time

October 2010  
COP10 (The 10th Conference of the Parties to the Convention on Biological Diversity)

- Nagoya Protocol
- “Aichi Target” adopted

November 2014  
UNESCO World Conference on Education for Sustainable Development

Looked back on the activities of “Decade of UN’s ESD” and discussed measures for post-2014





# Kitchen Garbage Sorting and Collecting/Recycling Operations

## March 2004-March 2008

- Implemented in two elementary school districts (**about 7,400 households**)
- Distributed buckets designated for kitchen garbage, special bags and moisture controlling agent to each household
- Garbage was thrown out in special bags for kitchen garbage on the same days as combustible garbage
- Garbage was collected by trucks dedicated for kitchen garbage and sent to kitchen garbage recycling facility for composting



## Result/Assessment of Operations



- **2,859 tons** of kitchen garbage was recycled
- Cost was **about twice of cost for regular garbage disposal**  
(Cost factors) • Operating dedicated collection trucks  
• Outsourcing fee to private recycling facility
- Complaints of odor/pests around recycling facility



Household kitchen garbage: **Promote reduction of waste generation and voluntary composting**

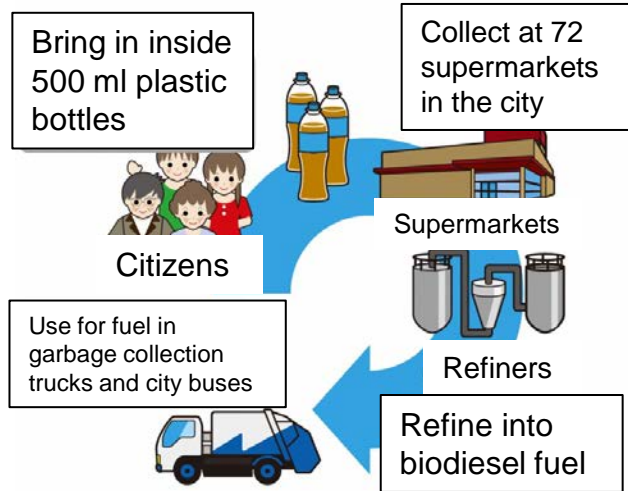
Business-generated kitchen garbage: **Improve private recycling facilities, encourage voluntary recycling**

# Private Facilities in the City for Kitchen Garbage Recycling

Name	Bio Plaza Nagoya	Nagoya Eco Feed Center
Recycling Method	Composting	Making fodder
Location	37-10 Minato Ward, Shiomi-cho	2-1102 Moriyama Ward, Hanasakidai
Construction Completion Date	February 2007	September 2009
Processing Capacity	Maximum 326 tons/day	Maximum 36 tons/day
Exterior		

## Recycling Cooking Oil

- Start of model operations in 2009
- Collected from **78 stores in the city** (Dec. 2017)
- **Collected volume: 61,613 liters** (2016)
- Refined into biodiesel fuel and used for fuel in garbage collection trucks and city buses



Garbage Collection Truck



City Bus

## Recycling Small Household Electric Appliances

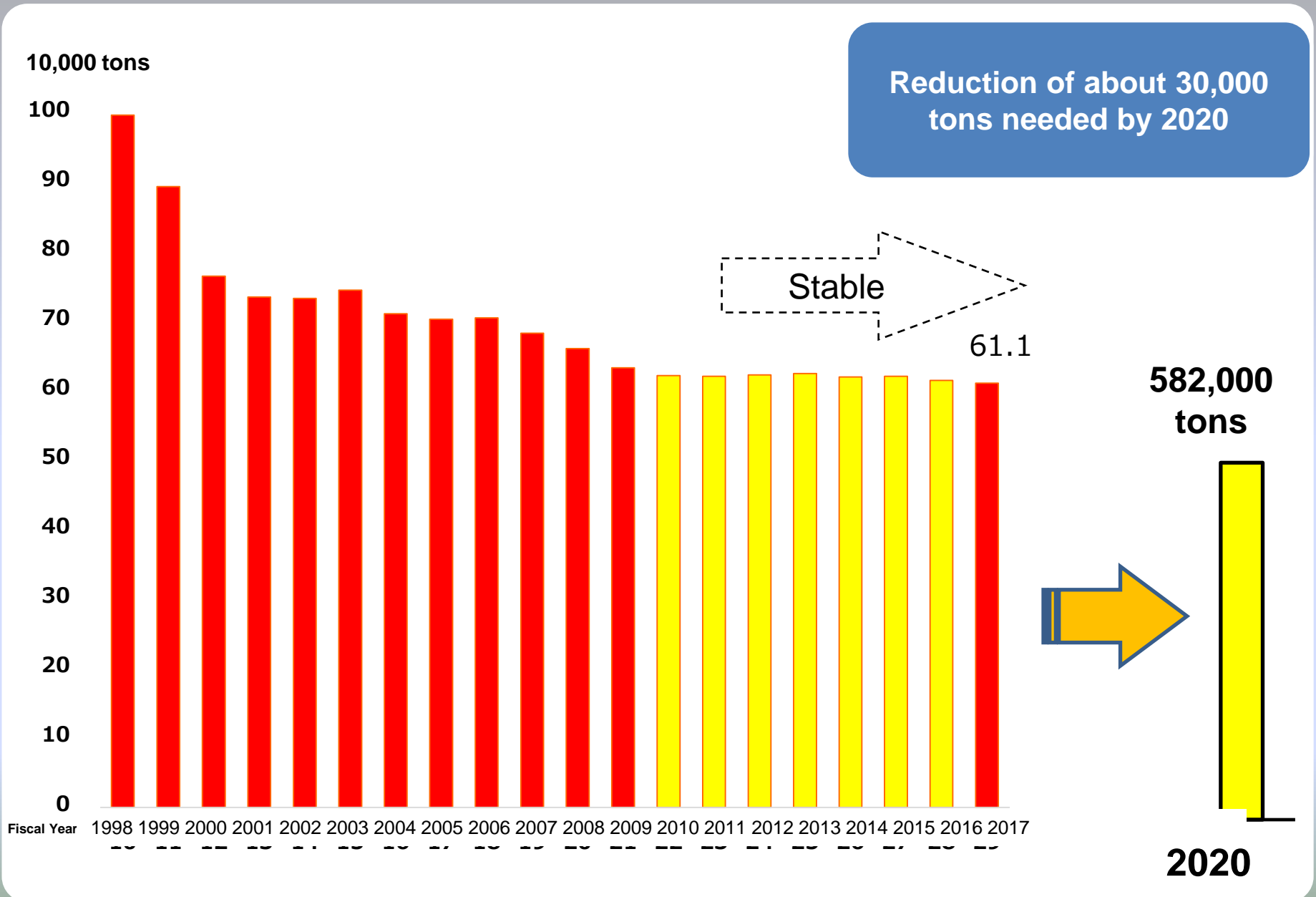
- Started in February 2014
- Collected from 57 locations in the city (Dec. 2017)
- **Collected volume: 109 tons** (2016)
- Participated in “Make from an Urban Mine! Medal Project for Everyone”





# **Waste Reduction in the Future**

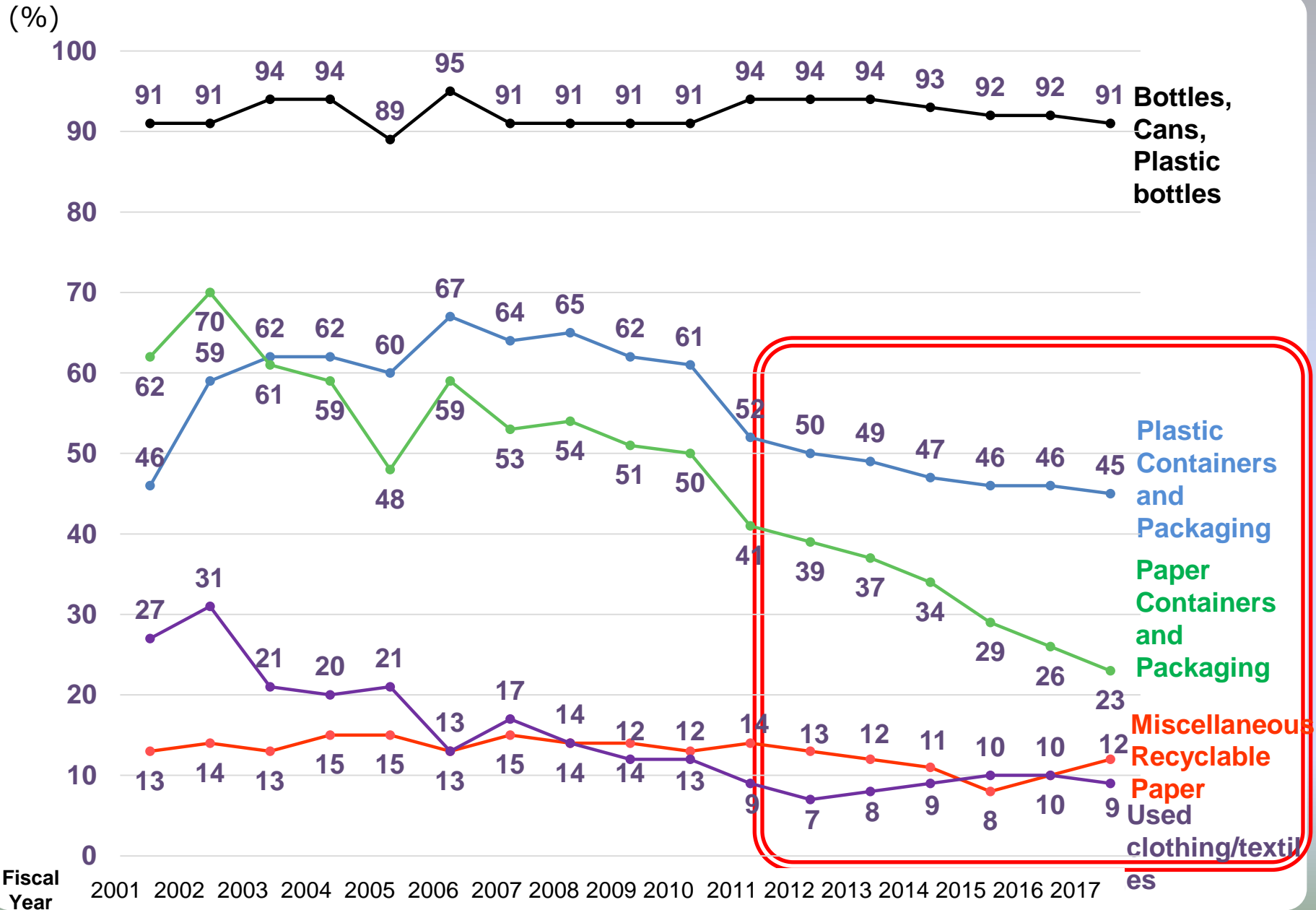
# The State of Waste Disposal Volume in Nagoya City







# Changes in Percentage of Sorted Recyclables



# State of Household Garbage and Sorted Recyclables

FY2017/18 (10,000 tons)

Household-generated	Garbage 40.9	Recyclables 13.2
Used Paper (Newspapers, Magazines, Corrugated Cardboard, Miscellaneous Recyclable Paper)	3.8	7.5
Textiles (Clothing, Cloth)	2.3	
Bottles, Cans, Plastic Bottles	0.2	2.5
Plastic Containers and Packaging	2.7	2.2
Paper Containers and Packaging	2.3	0.7
Plastic Items	1.6	
Plants, Branches	5.1	
Kitchen Garbage	12.3	
Other (Paper difficult to recycle, etc.)	10.6	



○ Many recyclable items mixed with garbage

○ Need to increase percentage of recycling



○ Need further efforts to limit generating kitchen garbage, plastic items, etc.

# Efforts to Reduce Food Waste

## Food Drive

Food drive held at "Ecopal Nagoya" on a regular basis from May 2017



## Zero Leftovers Participating Stores

Efforts to spread information from the city about restaurants tackling food waste reduction

### Restaurants, hotels in the city

- Educating people on reducing leftovers (hanging posters, etc.)
- 30-10 Movement
- Offering small portions on menus, etc.
- Responding to customers who request takeaways
- Ideas other than those above to reduce leftovers

### Nagoya City

- Creating/providing educational material
- Creating/providing designated website (From Sept. 16, 2017)
- Spreading information to citizens



### 30-10 Movement

- ① Order an appropriate amount of food
- ② Enjoy your meal for **30 minutes** without standing up after the toast
- ③ Enjoy your meal for **10 minutes** at your seat before the gathering is over

### 3 Don'ts Movement

- Don't buy too much
- Don't cook too much
- Don't leave leftovers

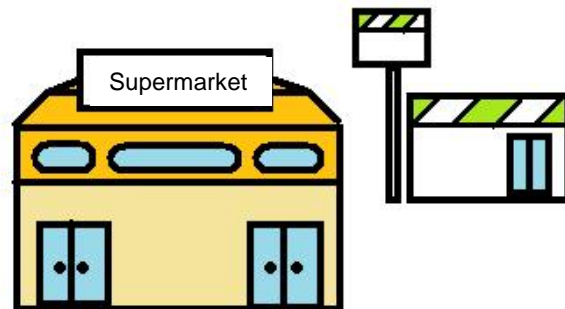
# Plastic Shopping Bag Charging System

Consumers go shopping



Stores charge plastic bag fee  
(Supermarkets, etc.)

Plastic Bag Fee



Donation to support  
community and  
environmental activities

- Plant lawns for playgrounds
- Build green walls Etc.

**Fund for Returning  
Plastic Bag Fees**

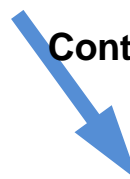
Contribution



Agreement



Contribution



Return fees  
independently

**2R Promotion Executive Committee  
(Citizens, Businesses, Government)**



Number of  
participating  
stores: 824  
(As of April 2018)

Number of bags reduced:  
About 225 million per  
year

**For every citizen:  
About 100 bags per  
year**



# What is Needed for Waste Reduction Measures in the Future

Ongoing aging of population

Increase in single households,  
nuclear families

Dilution of local community ties

Increase in people moving in  
from outside the city

Increase in foreign population

Diversification of information

...and other rapid changes to social conditions and lifestyles

	2000	2017
Elderly People	338,795 (15.6%)	562,879 (24.7%)
Elderly Single Households	59,890 (6.7%)	171,601 (15.6%)
Single Households	298,525 (33.2%)	483,106 (43.9%)

➔ This trend will  
**accelerate in the  
future**

Station disposal burden

Sorting burden

Local Communities

...Etc. Changes to citizens who supported waste reduction

Risk for the **burden of sorting/disposing becoming too much** for households,  
making it **difficult to maintain their support for waste reduction**

Need to think about **forms of cooperation and future burden on citizens** when  
aiming to build a sustainable, recycling-oriented society

**By collaborating with citizens and  
businesses, we aim to become  
"Nagoya, the Environmental Capital"**

**Thank you for your  
attention**

