

Japanese waste management in the Pandemic of COVID-19

18th September 2020

Sound Waste Management in response to the Pandemic of COVID-19
International Symposium in JSMCWM

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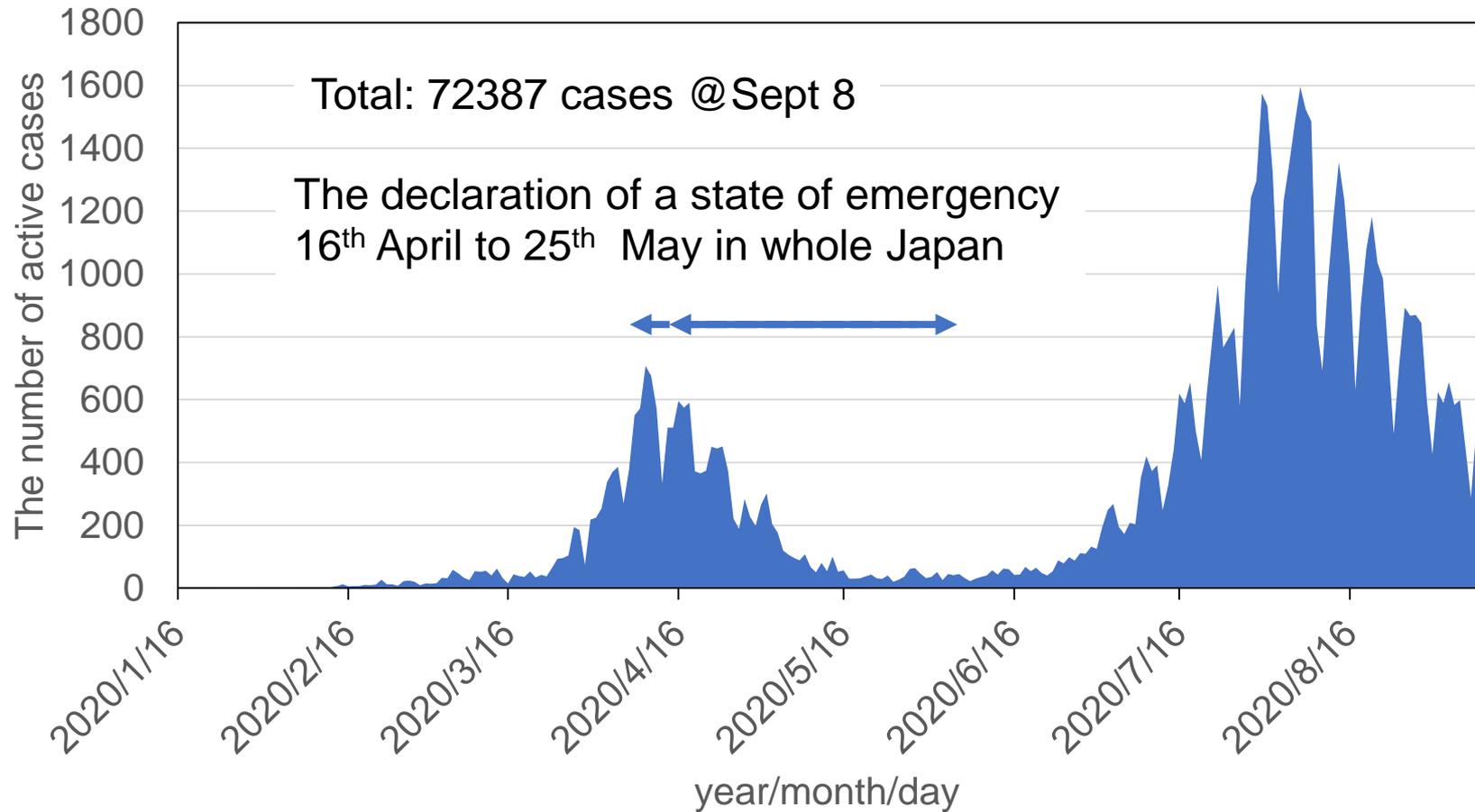
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Content

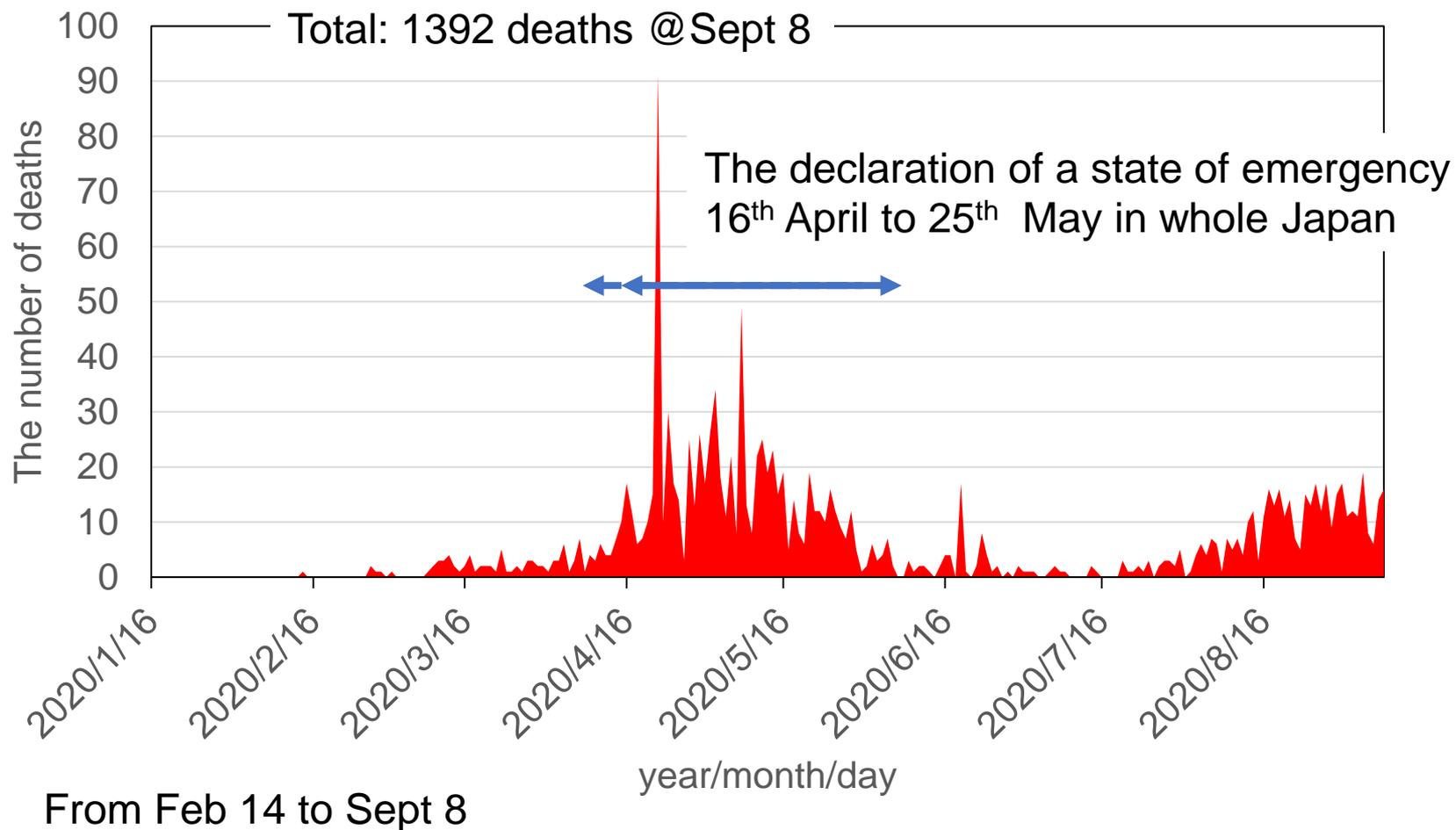
- The current situation of COVID-19
- Waste management as public health measure
- Countermeasures to COVID-19 in waste management
- The effect of COVID-19 on waste management
- Challenges in post COVID-19
- Summary

The Number of Active Cases by PCR in Japan



From Jan 16 to Sept 8

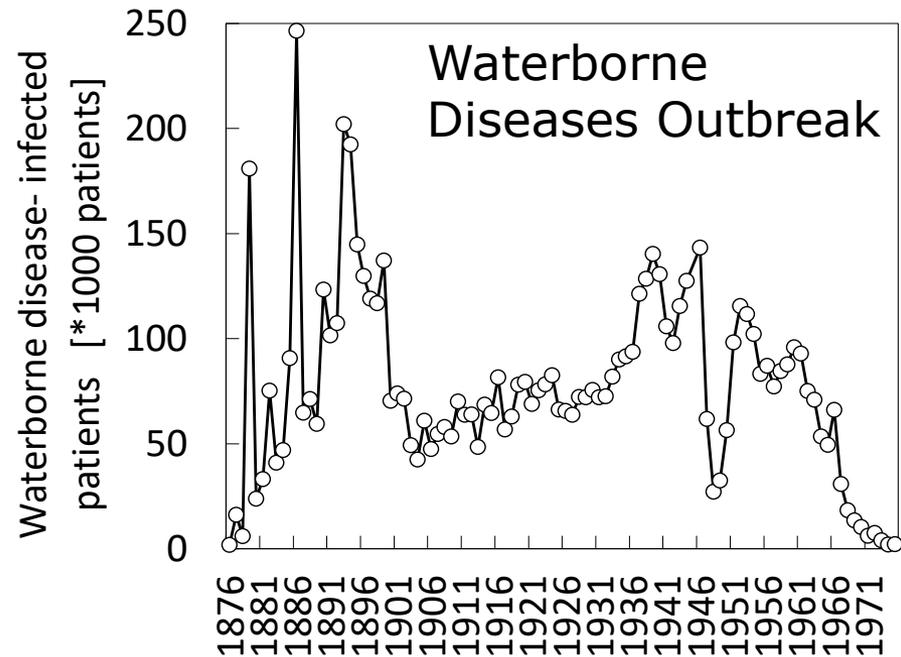
The Number of Deaths by COVID-19 in Japan



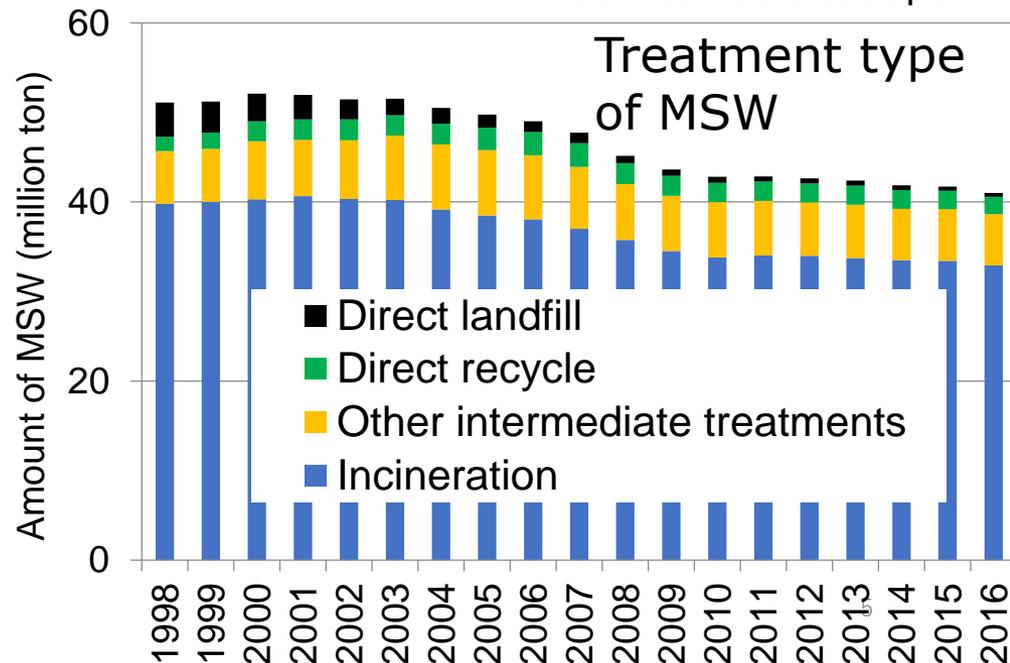
Waste Management as Public Health Measure

- Japan stopped national isolation policy 150 years ago
- Out break : > 0.1 million deaths before 1879
- In 1890, “Garbage should be **incinerated** in the outbreak of cholera .”
- In 1897, Infectious Diseases Prevention Act issued
- In 1900, **Unsanitary Substance Cleaning Law** established

Waste treatment and management are **crucial backbone activities** for our society..



Source: Statics Japan



Countermeasures to COVID-19 in Waste Management (Infectious Waste)

- **Disposal Manual for infectious waste** based on the Waste Disposal and Public Cleansing Law to **protect** disposal workers from infections and **promote** proper disposal of infectious waste in 1992.
- **Guidelines for Measures against New Influenza in Waste Treatment** have been also published in 2009.
- Medical institutions and disposal companies must follow the **Manual** and **Guidelines** to treat infectious wastes including collecting, storing, transportation and disposing of.

Infectious Waste

Wastes discharged from medical institutions

Step 1
Form

Yes

No

Step 2
Place

Yes

No

Step 3
Kind of
infectious
disease

Yes

No

Non- infectious
waste

infectious
waste

Non-infectious
waste

非感染性廃棄物	
医療機関等名	
特別管理産業廃棄物 管理責任者	
排出年月日	

		
鋭利なもの (注射針等) 黄色	固形状のもの (血液が付着したガーゼ等) 橙色	液状又は泥状のもの (血液等) 赤色

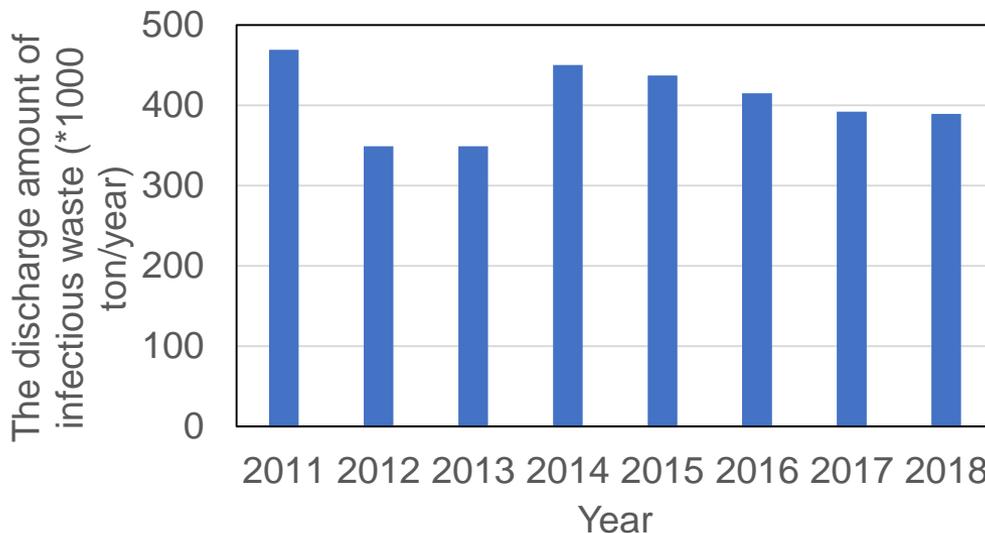
Sharps

Solid

Liquid

- Infectious waste: non-infectious waste= 15:85

Discharge amount of Infectious waste



In Japan, the amount of infectious waste has **not increased** because normal medical cares decrease during COVID-19.

Source: Disposal Manual for infectious waste, WHO, MOE

Infectious Waste Management

- Specially controlled waste since 1992
- Electric Manifest system (49% of Subscribers: Health care service@2019)
- Seal the container due to putrefaction and scattering prevention
- Use short storage periods
- Access to the storage room by only authorized persons



Rubber gloves
Plastic container



Diaper
Cardboard box

- **More than 90% of infectious waste is incinerated.**
- **Wastes have to be supplied to the furnace without manual operation.**



Needles, ampule
Collected containers



Incineration
facility

Source: MOE
& Plantec

Countermeasures to COVID-19 in Waste Management (+ Municipal Waste)

- Since January 22, 2020, Ministry of the Environment Government of Japan (**MOE**) have delivered **many notices and awareness pamphlets** and compiled the **most relevant questions and answers** pertaining to waste treatment and management by referring to information released from Ministry of Health, Labour and Welfare(**MHLW**), and also opinions and advise from experts.
 - **Notices**
 - **Infectious prevention**
 - **Securing treatment capacity and personal protect equipment**
 - **Reducing administrative procedures such as applications, reports, etc.**
- On 8th September, **Guidelines for Measures against COVID-19 in Waste Treatment** have been just published.

A Simple Aid to Prevent Spread and Infection of COVID-19 (Coronavirus Disease 2019) at Home: Household Garbage Disposal

If you might be sick and/or someone living with you might be sick with the coronavirus, please always follow the instructions below to handle household garbage safely. To dispose items such as used face masks and tissues, please remind yourself of the following:

“Do Not Touch Garbage with Bare Hands”,

“Securely Tie to Seal Every Garbage Bag”, and

“Wash Hands Right after Disposal”.

Instructions

① Cover an empty garbage container with a plastic garbage bag. At a time of disposal, securely tie and seal the garbage bag as shown in ②, before it becomes full.



② Securely tie the garbage bag to avoid direct contact with garbage inside.



*Double bag the garbage if the garbage accidentally contacted outside the garbage bag.

③ Immediately after disposal, wash your hands carefully in running water with soap.



Following the instructions not only helps protect you and your family from the novel coronavirus and influenza viruses at home, but also protect staff and personnel who take care of your waste at local municipalities and waste disposal companies.

Please check and make sure that your disposal manner meets rules and regulations of the local municipality of the area you live. Be careful and remind yourself of **“Do Not Touch Garbage with Bare Hand”, “Securely Tie to Seal Every Garbage Bag”, and “Wash Hands Right after Disposal”,** at each time you dispose used masks and the like. **NO LITTERING.**



Visit our website → for more information



HOW TO DISPOSE OF HOUSEHOLD GARBAGE

For Infection Prevention and Control Measures to the Novel Coronavirus

— Five (5) Manners to Keep in Mind for Household Garbage Disposal —

1 Securely tie to seal garbage bags!

Securely tied garbage bags are not easily opened, so garbage inside does not come off, and can be carried safely during collection and transportation.



2 Deflate air inside the garbage bags!

This allows garbage bags to be carried easily, and prevents bags from bursting when loading them into garbage trucks.



3 Drain water from kitchen waste!

It helps reduce weight of garbage.



4 Try to reduce “everyday garbage”!

Minimizing garbage is equally important. Preventing food waste by eating all that has been served can reduce a significant amount of household garbage for example. Here are ideas you can easily begin with to enjoy more chances of cooking and serving meals at home.

Visit our **“Food Loss Prevention Portal Site”**. (Japanese)



5 Check and follow sorting and disposal rules at your local municipality!

Some municipalities may have stopped receiving bulky waste, or may have changed sorting and disposal rules for recyclables to cope with the coronavirus situation. Littering is strictly prohibited under any reasons.



Disposal of Face Masks and Items Used by Those Infected or Suspected of Infection including the Novel Coronavirus (COVID-19)

If you and/or someone living with you are, or might be, sick with Infection such as the novel coronavirus, please always keep in mind to follow the manners below in disposing of household garbage.

① Cover an empty garbage container with a plastic garbage bag.

Dispose of garbage before it becomes full.



② Securely tie garbage bags to avoid direct contact!

Deflate garbage bags before tying. Double bag the garbage if the garbage bag is torn and/or the contained garbage accidentally contacted outside the garbage bag.



③ Wash your hands immediately after disposal!

Wash your hands carefully in running water with soap immediately after every disposal.



Your considerate attention and care are essential for both your family and waste management staff members.

Thank you very much for your kind cooperation!



For Medical Institutes and Staff Handling Medical Waste Novel Coronavirus-Related Waste

Infectious waste related to the novel coronavirus can be handled in the same manner as other infectious waste. (Please follow "Infectious Waste Treatment Manual under the Waste Management and Public Cleaning Act")

In order to reduce amount of waste, do NOT waste items (such as linens) which can be disinfected for reuse.

Linens and towels used by those who are infected or suspected of infection with the novel coronavirus may be handled in the same way as handling items contaminated with other infectious diseases. Therefore, please do not unwittingly dispose of them, but follow the same method and process applied to existing infection controls. Cautions must be taken to avoid direct contact by wearing gloves and a facemask; then implement the normal process including hot water laundry and disinfection with hypochlorous acid or alcohol.

Infectious waste should be contained or sealed appropriately depending on types and characteristics of the waste.

Please choose appropriate containers along with kinds and characteristics of the infectious waste, which is able to be sealed, easy to be stored, not easy to be damaged.

① Sharps like injection needles and scalpels	② Bloodlike liquid or muddy material	③ Non-reusable items like gauze contaminated with blood
Sturdy containers with certain penetration resistance	Leakage preventive sealing containers	Double bagged sturdy plastic bag and/or sturdy container



Ex.) Plastic container box



Ex.) Plastic bag (double bagged) and Cardboard container (sealed bag contained inside)

※Please follow rules of respective local municipalities.



Access to Our Official Website



Access to Infectious Waste Treatment Manual under the Waste Management and Public Cleaning Act (PDF)

To Carefully Handle Waste from Temporary Lodging Facilities

Please implement the following measures at waste discharge in temporary lodging facilities for patients with mild or no symptoms of the novel coronavirus.

— Three (3) Points to be Reminded When Handling Waste —



DO NOT TOUCH GARBAGE WITH BARE HANDS !

Avoid direct contact to garbage. When processing waste, always use gloves, facemasks, and other personal protective equipment, and wear work clothes (long sleeves and long pants) with minimum skin exposure.



TIE SECURELY TO SEAL GARBAGE BAGS !

Double bag the garbage if garbage inside comes out to contact the outer surface of the garbage bag. Do not stuff garbage, and deflate air inside the garbage bag to prevent the bag from rupturing while being loaded in a garbage truck.



WASH HANDS IMMEDIATELY AFTER HANDLING GARBAGE !

Always thoroughly wash or disinfect hands and fingers using running water and a soap or alcohol based disinfectant. Be cautious that garbage might have been contacted and contaminated hands with viruses without an aware, thus wash thoroughly.



Although waste from temporary lodging facilities may be treated as non-infectious waste under the Waste Management and Public Cleansing Act, please ensure implementation of appropriate measures for waste management staff workers to prevent and protect them from infection.

Note:

- Temporary lodging facilities are offered for patients with mild or no symptoms of the novel coronavirus. Unlike hospitals and medical clinics, these facilities are not places for doctors and medical professionals to conduct medical practices.
- The Waste Management and Public Cleaning Act defines infectious waste as waste being contaminated with any infectious pathogens, which is discharged by medical practices from medical institutions such as hospitals.

Please be aware that if waste from those temporary lodging facilities would be treated as infectious, vast extra amount of waste are rushed into waste processing facilities for infectious waste, causing process overload and stagnancy.



For waste transporters

Countermeasures for the novel coronavirus related to waste collection

Make sure to take measures, before work, during work and breaks, and after work.

POINT 01.

4 things to do before work

1 Health care/ Understanding your physical condition

Please maintain your health such as by getting plenty of sleep, and check your temperature regularly to understand your physical condition.



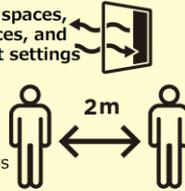
3 Appropriate use of personal protective equipment including gloves, goggles, and masks

To prevent adherence of the virus during work, make sure to wear gloves, goggles, and masks.



2 Avoiding the "3 Cs" 3 Cs : Closed spaces, Crowded places, and Close-contact settings

When changing clothes, maintain sufficient distance with others. Open doors and windows in changing rooms for thorough ventilation.



4 Work clothes with little exposed skin (wearing long sleeves/long pants)

To avoid the virus adhering to exposed skin during work, let's wear long sleeves and long pants.



POINT 02.

4 things to do during work

1 No touching with bare hands

Make sure not to touch any waste with bare hands. When putting on and removing gloves, make sure not to touch the outside of the gloves or your face with your bare hands.



2 Thorough disinfection

During spare moments at work, find chances to use alcohol based disinfectants.



1/2

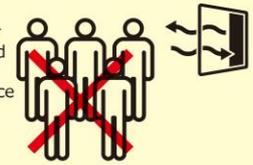
3 Ventilation of vehicles (opening windows)

Open the windows of work vehicles, and maintain good ventilation at all times (Always wear mask when more than one person is in the vehicle)



4 Avoid the "3 Cs" during breaks

During breaks, open windows when indoors or in the office, and maintain sufficient distance with others.



"3 Cs" :
Closed spaces,
Crowded places, and
Close-contact settings

POINT 03.

3 things to do after work

1 Thorough disinfection/cleaning

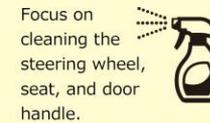
After returning to office, let's focus on disinfecting the following!

Disinfecting/cleaning vehicles



Disinfect and clean using alcohol based disinfectants or sodium hypochlorite cleaners (disinfection using 0.05% sodium hypochlorite or 70% alcohol)

Disinfecting the driver's seat



Disinfecting/cleaning gloves and goggles

Properly disinfect and clean used gloves and goggles.



Disinfecting smartphones, tablets, etc.



2 Thorough handwashing

After returning to office and disinfecting as listed above, wash your hands and, as necessary, your face.



3 Precaution when changing clothes

When taking off work clothes and protective gear, turn them inside out as not to touch the outside surfaces, and wash work clothes after taking them off. When changing clothes and showering, maintain sufficient distance with others.



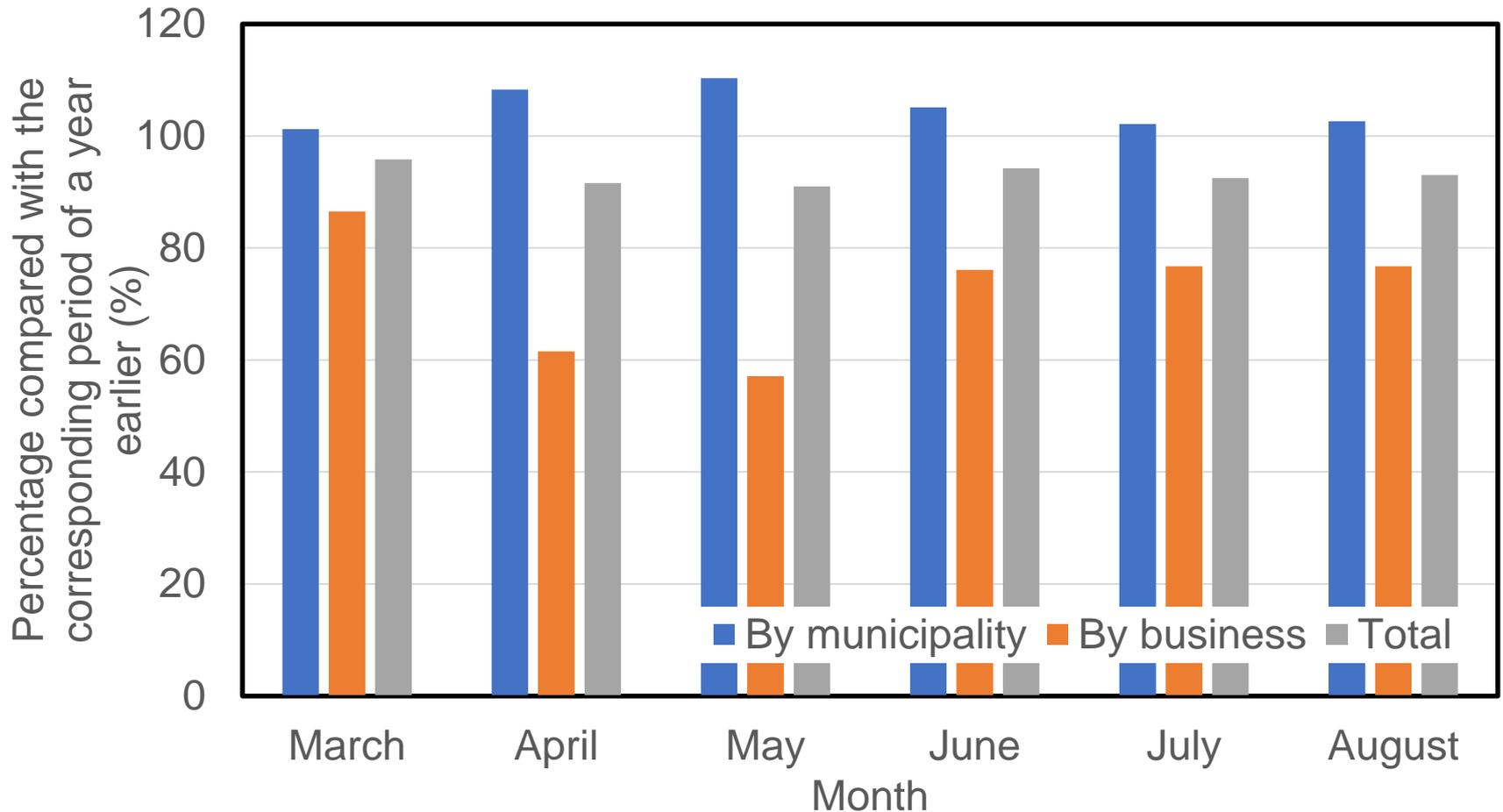
Municipal Waste in Tokyo 23 Wards

Total: -7.1%

Municipal waste

Household waste: **50-75%**

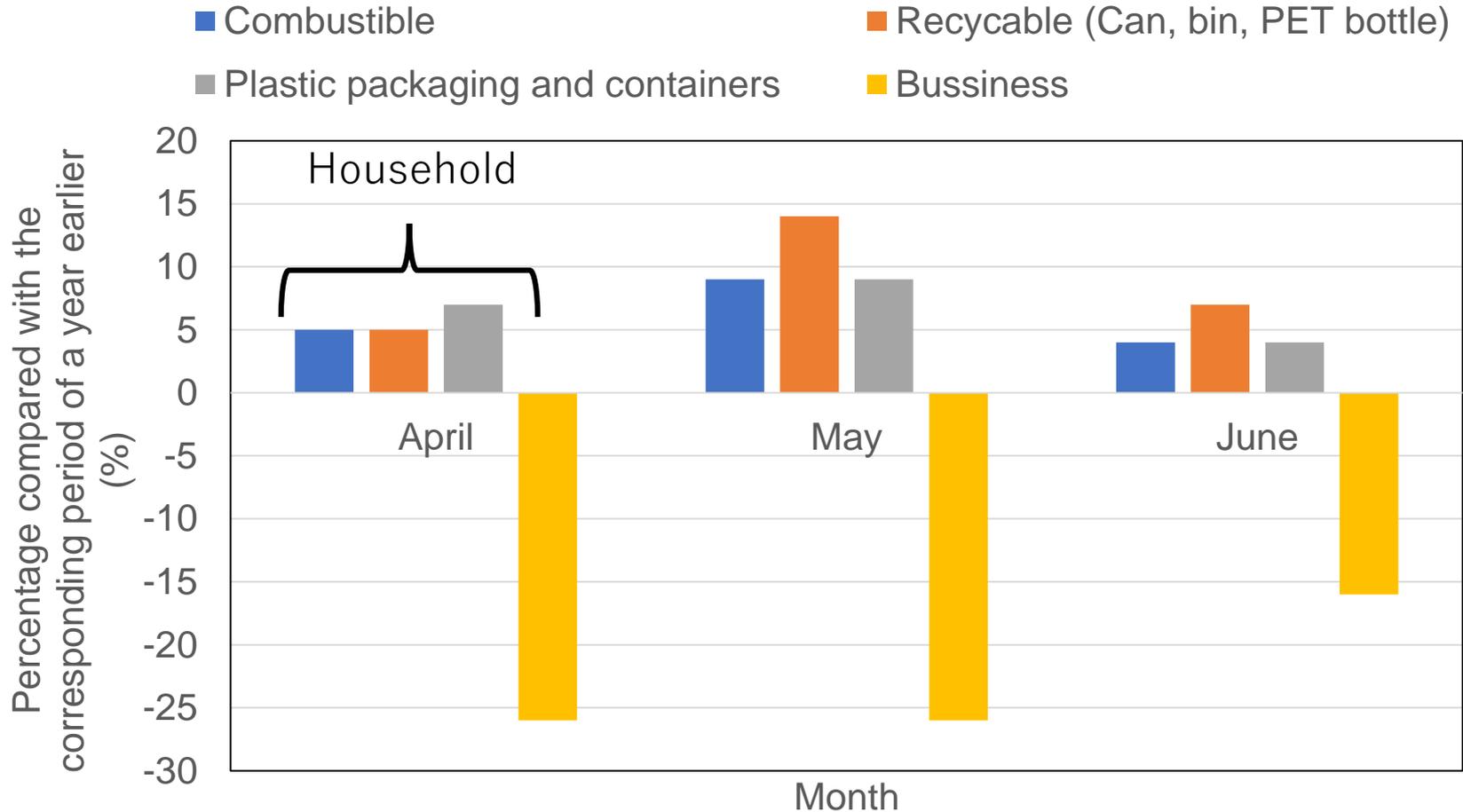
Business waste: **25-50%**



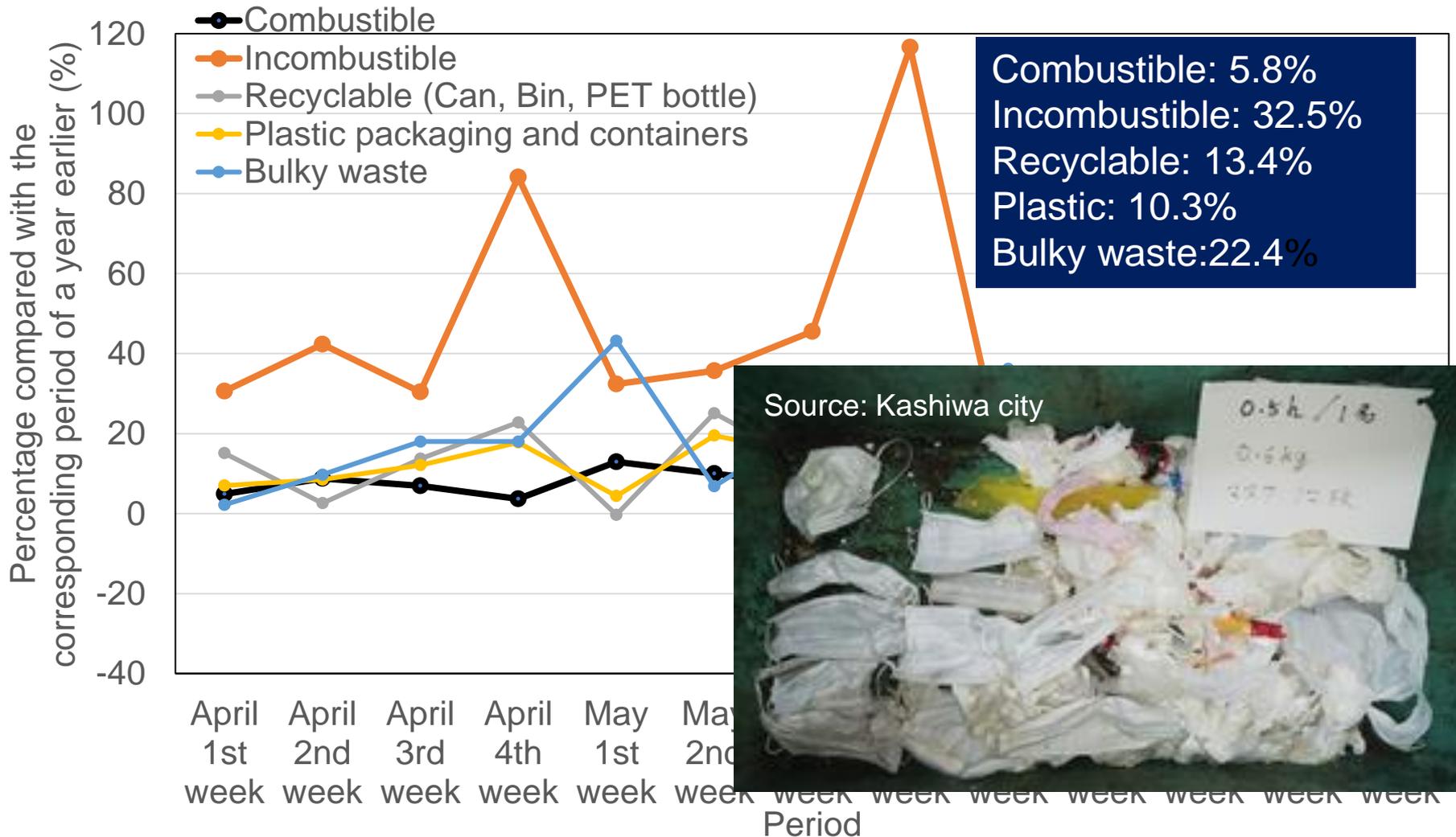
Source: Clean Authority of Tokyo

Municipal Waste in Kyoto City

Total: -5.2%

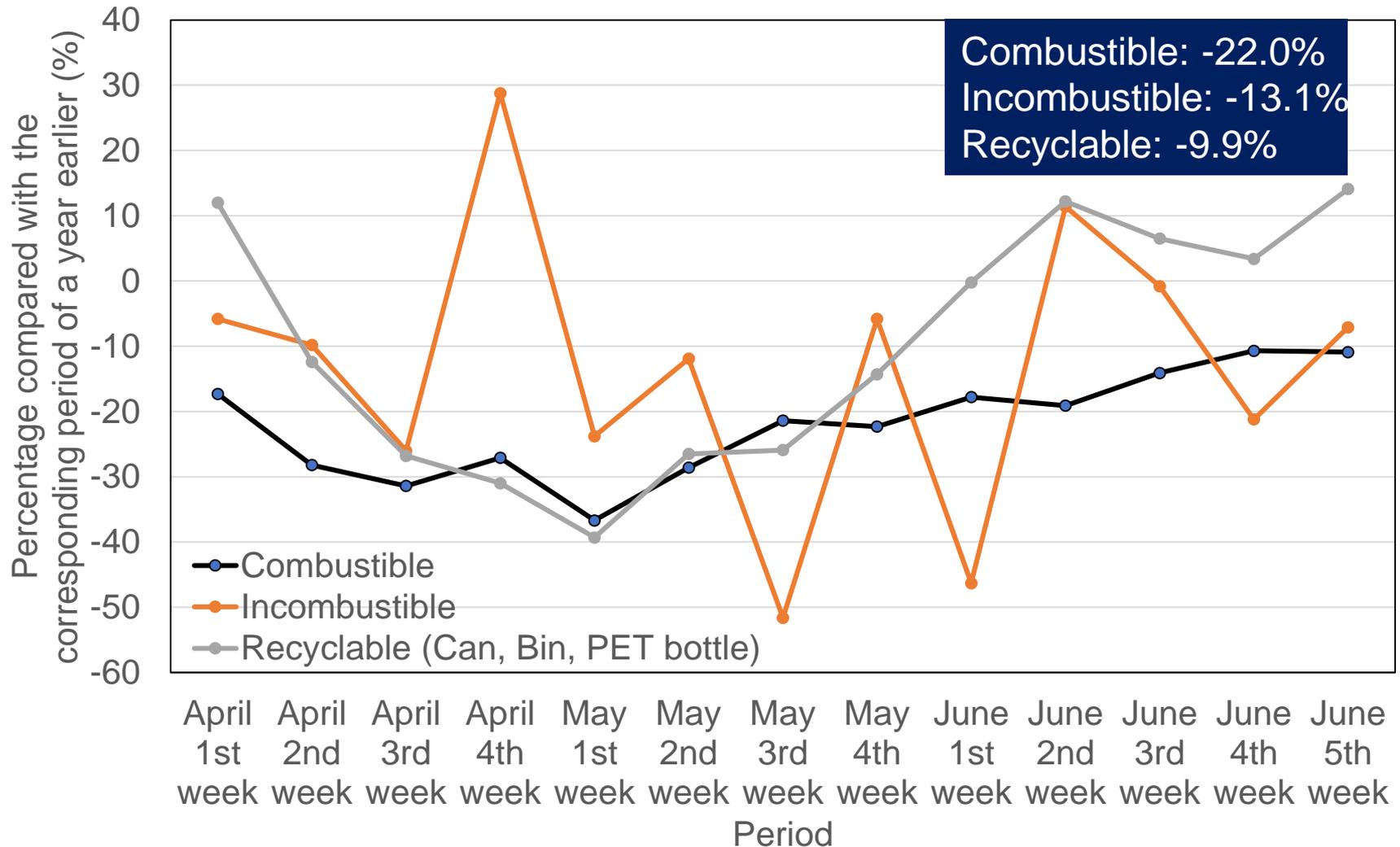


Increase of Household Waste in Kobe city



Decrease of Business Waste in Kobe City

Total: -2.6%



Source: Kobe City

Challenges in Post COVID-19

- **Change of lifestyle**

- Work from home, Social distance policy (Decentralization), reflection of people's consumption, Stock waste as potential waste from unused belongings that had been stored up in a house over time

- **Keeping the environment clean**

- Inappropriate treatment or disposal of solid waste invites a host of problems. Climate change impacts on infectious diseases.

- **Business continuity**

- Waste collection and/or waste disposer companies
- Local government

- **Restructure of Supply chain**

- Secure the materials that are essential for continuation of the waste management services including personal protect equipment.

Challenges in Post COVID-19

- **Non-contact, automation and remote technologies**
 - AI powered sorting, cleaning
 - Automation of recycling and waste to energy facility
- **Digitalization**
 - Information technology for waste collection and transportation, e-manifest system
- **Enhancement of 3R and renewable**
 - Green recovery: Construction of Regional Circular and Ecological Sphere, Plastic waste issue,
- **Health aging in elderly society**
 - Reconsideration of Infectious general waste

Summary

- The effects of the pandemic of COVID-19 on waste management reveal. They affect waste composition and generation and hidden problems become apparent.
- **Waste from home** is increasing, whereas, **business waste and infectious industrial waste** are decreasing because peoples' lifestyle changes and industrial activities are low.
- At present, **no serious problem** has been observed in waste treatment and management for infectious waste and municipal waste in Japan.
- The pandemic of COVID-19 **accelerates** the 3 Rs (reduce, reuse, and recycle) +renewable policy, digitalization, and decentralization, which suggests construction of Regional Circular and Ecological Sphere.

**Thank you very much for your kind
attention**

Q&A