

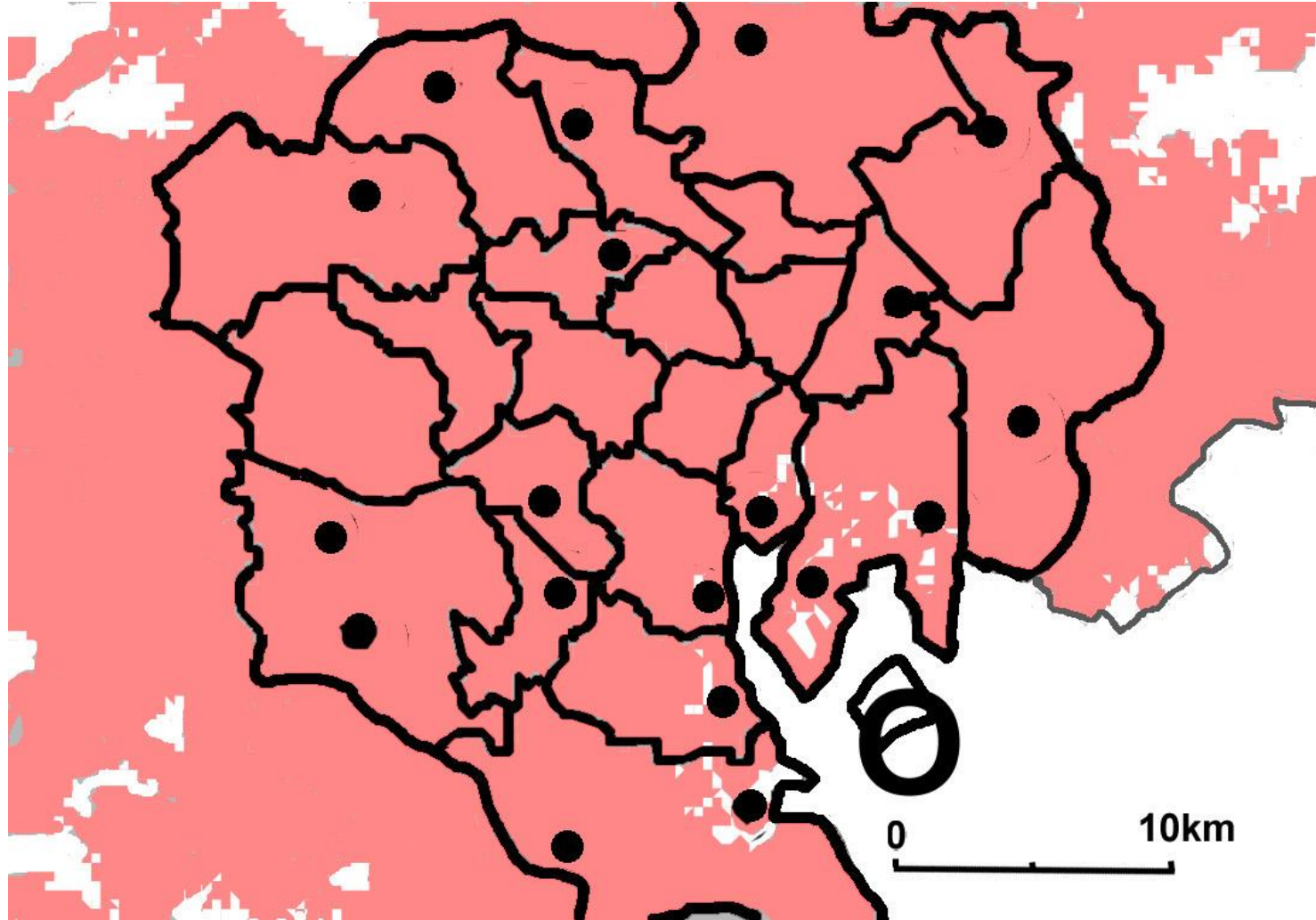
# Provision of Waste Management Facilities

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## Waste Facilities of Tokyo (23 central districts)

Why so many incinerators?



● 19 Incinerators ○ 1 landfill ■ urbanised area

## Tokyo23 (pop. 9mil daytime 12m)

Name Capacity[t/day]

大田第一工場	600
有明清掃工場	400
墨田清掃工場	600
江戸川清掃工場	600
目黒清掃工場	600
千歳清掃工場	600
新江東清掃工場	1800
港清掃工場	600
豊島清掃工場	400
北清掃工場	600
渋谷清掃工場	200
中央清掃工場	600
板橋清掃工場	600
多摩川清掃工場	300
足立清掃工場	700
光が丘清掃工場	300
世田谷清掃工場	300
葛飾清掃工場	500
品川清掃工場	600
杉並清掃工場	600
練馬清掃工場	500
<b>Total</b>	<b>12000</b>

## S'pore (pop. 5m)

Name Capacity[t/day]

Tuas	1700
Senoko	2100
Tuas south	3000
Keppel	800
No. 6	2400
<b>Total</b>	<b>10000</b>

blue = in construction

## 1971: Tokyo War on Waste

Opposition against construction of incinerator in Suginami Ward  
Koto Ward declared they will block waste from Suginami coming in  
Waste collection in Suginami had to be suspended

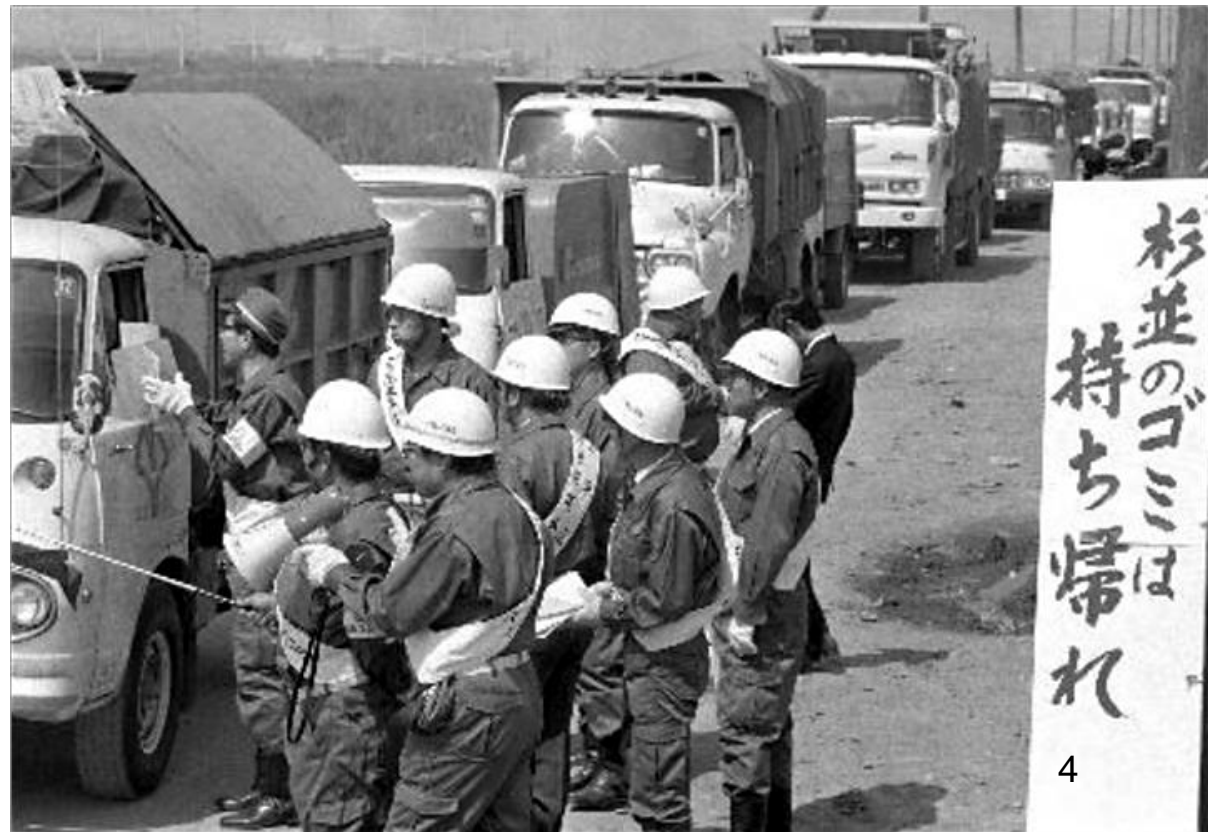
Mayor declared "War on Waste" = use all means (including money) to solve the situation

Principle of self sufficiency of waste facility

= each ward should have one incinerator

Strongly advocated against NIMBY sentiment

Local acceptance more important than cost and performance efficiency



# Pro's and Con's of Size

## **Benefits of bigger facility**

- economy of scale
- ease of pollution control
- efficiency of waste to energy

## **Drawbacks of bigger facility**

- disbenefit of concentration - less resilience, longer distance to transport, road congestion
- distance between benefit-ers and disbenefit-ers  
(lack of "our facility" perception - citizen becomes "consumer" of waste services, not participant of waste management. waste becomes "invisible" = lack of awareness)
- lack of incentive to reduce waste
- reduced opportunity for citizen participation

## Issues with large scale operation

- often collection and treatment body different - e.g. collection by city, treatment and disposal by "joint waste authority"

-> lack of transparency / democracy / responsibility  
(if city owns the facility, city's decision is made through elected mayors and councillors representing all citizen)

-> difficult to coordinate policy - e.g. incinerator wants to burn plastic / collector wants to recycle plastic. Nobody overlooks the total flow from generation to final disposal /recycle.

"lock-in" effect: if facility relies income on gate fees (or generated electricity?), reduction of waste = financial deficit.  
Contracts promising fixed amount of waste. Lack of incentive to reduce waste

## Numazu City, Shizuoka Pref (pop. 200k)

1973: Residents protest against existing waste facility

- > plan of new facility difficult
- > agreement: promise to reduce waste treated at facility
- > waste reduction to be achieved by separate collection of recyclables - diversion from disposal
- > first official separate collection scheme in Japan  
paper, metal, glass (full implementation 1976)
- support of mayor
- cooperation of waste officials/ workers, and residents
- \* Limitation of facility was the motivating force for innovation
- \* for ideal waste management, citizen cooperation is most important, facilities comes second.
- \* moderate population - easier to solicit cooperation /

adopt innovation

## Summary

In the provision of facilities, we need to consider:

not only economic and environmental efficiency of individual processes

but also

- \* coordination of the whole waste management system
  - \* motivation for waste reduction /recycling and participation
- /governance

The City Government is always responsible for managing the whole waste management system - must make sure that public health and the environment are protected, no matter who owns/operates the facilities.