

# Chinese Waste Problem and Japanese Waste Management Policy

Presented by

Miho Kurosaki , Shinki Nakanishi

# Purpose

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**Introduction of Japanese  
waste management policy  
as one reference to solve  
waste problems in China**

# Contents of This Presentation

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1. Waste Problem and Policy  
in China

2. Waste Management in  
Japan

# Waste Problem and Policy in China

Presented by  
Shinki Nakanishi

# Waste Problem in China

## ■ 1. Economic growth and urbanization

- 1 ) Economy and Standard of living
- 2 ) Urbanization in China

## ■ 2 . Waste problem

- 1 ) The Situation of Waste Problem
- 2 ) Change of Amount and Quality

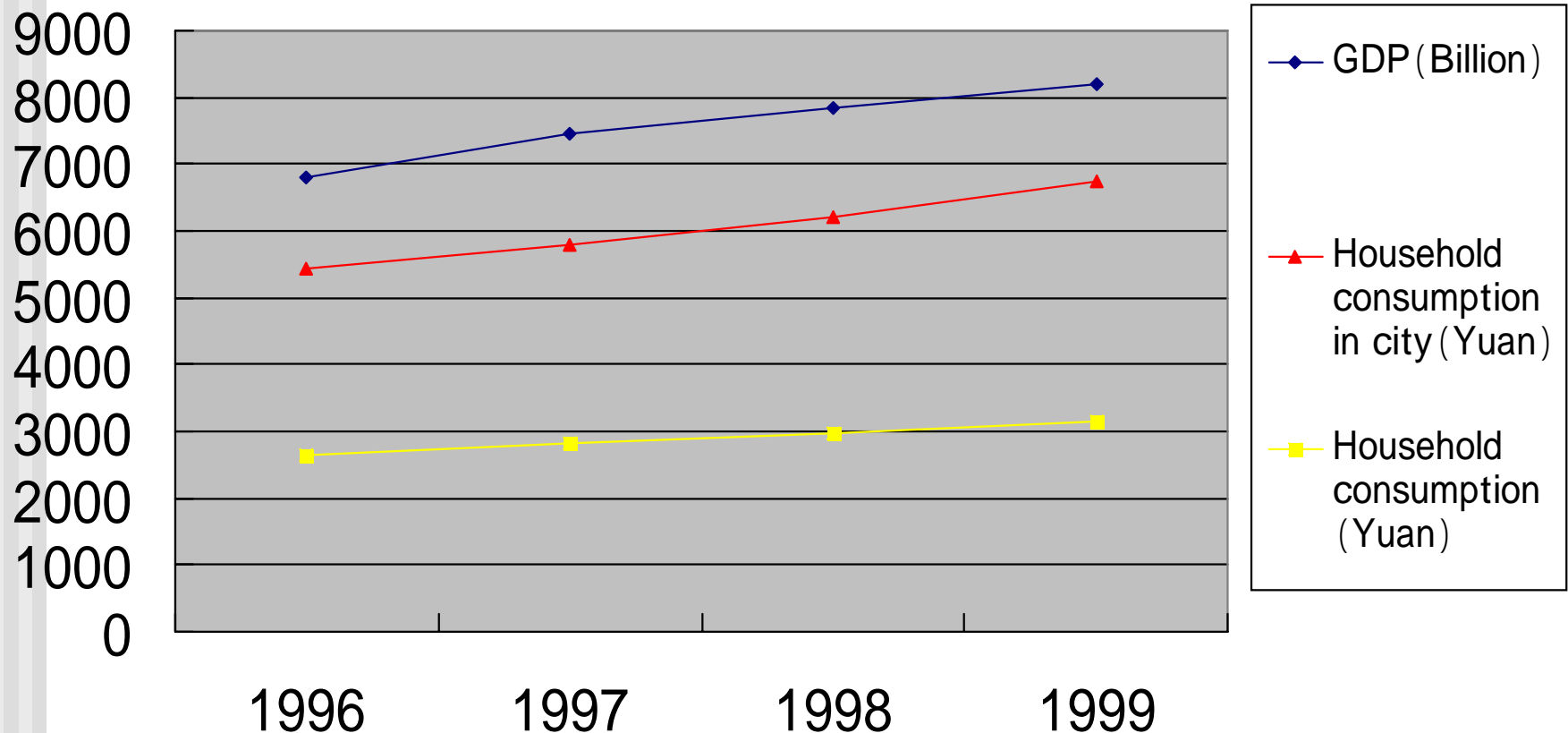
## ■ 3 . The problem of policy

# 1 . Economic Growth and Urbanization (1-1)

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Economic Growth and  
Standard of living

# GDP and Household Consumption



# The Landscape of Economy

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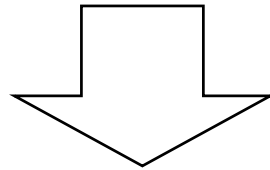
- Economic growth is keeping
- The growth of household consumption is keeping as economic growth
- The Average 6% of Economic growth will be keeping until 2030



# The Summary of (1-1)

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- GDP keeps on increasing .
- The standard of living also keep on increasing as GDP does.



Waste will increase ,too.

# 1 . Economic Growth and Urbanization

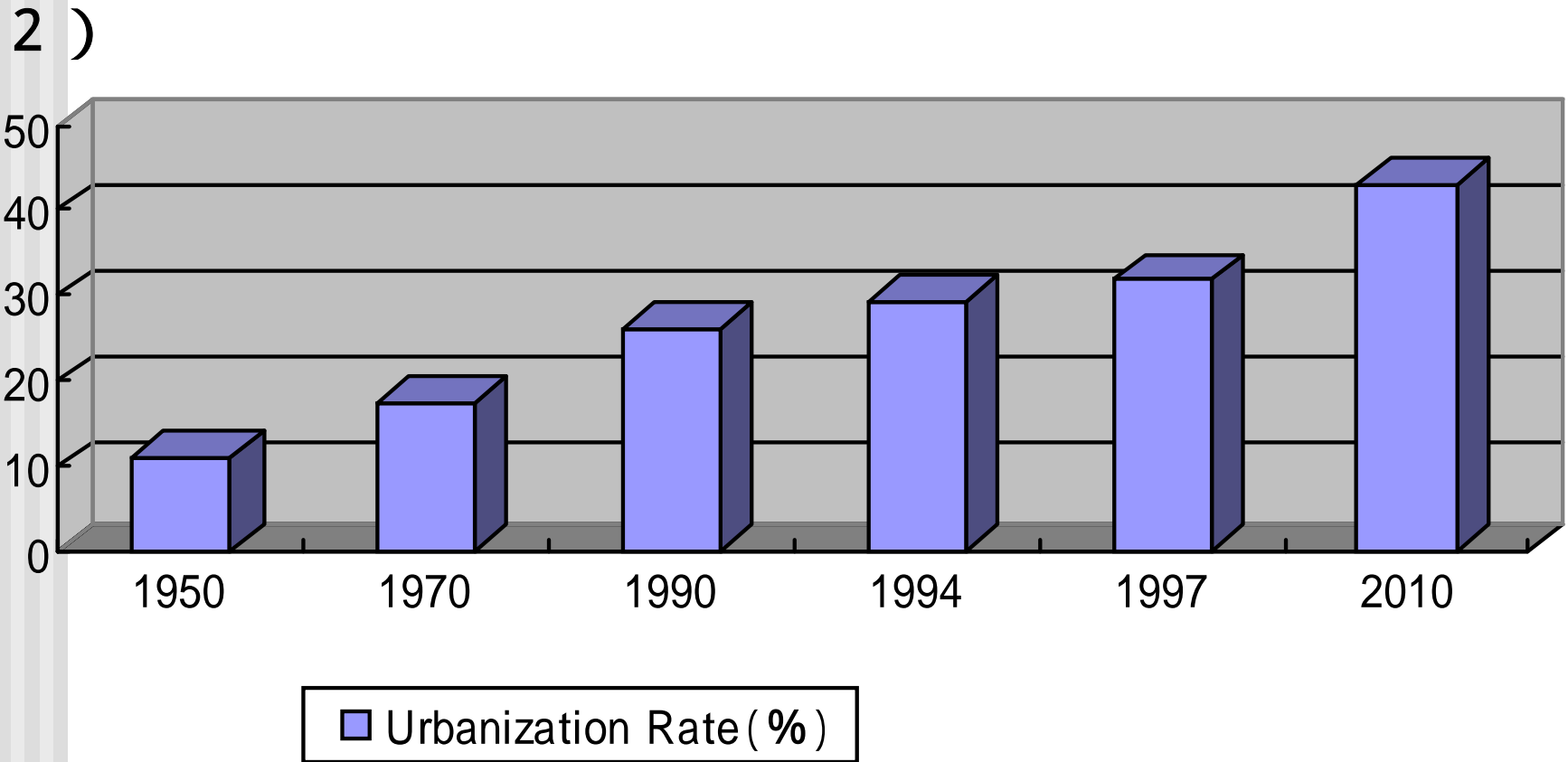
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(1-2)

The Progress of Urbanization

# The Urbanization Rate (%)

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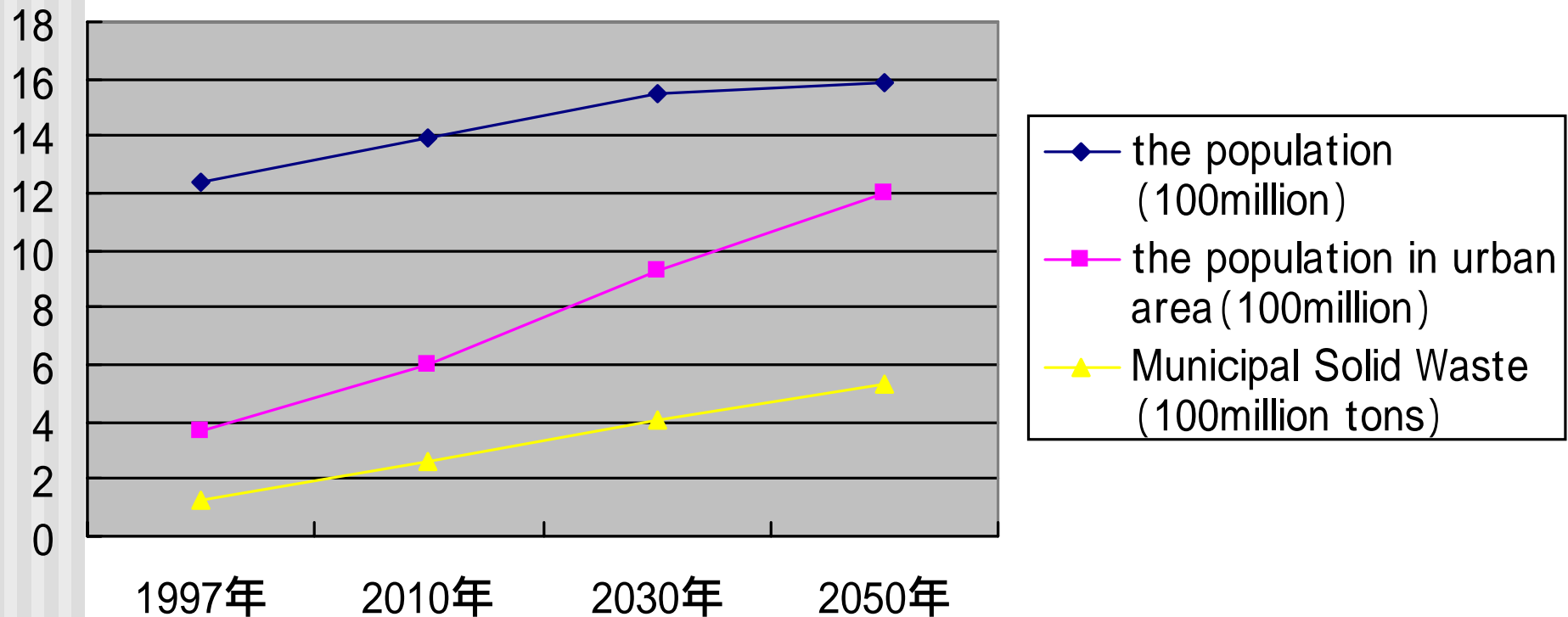
# the Rise of Urbanization rate

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- Urbanization rate is consistently rising.
- Urbanization will keep on advancing in the future.

# The Population of City and the Amount of MSW

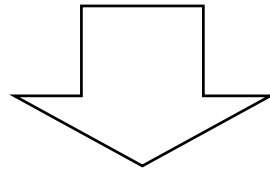
( 3 )



# The relation of urbanization and waste problem

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- The population of the city increases



Waste also increases

# The Summary of (1-2)

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- Urbanization will be progressing as economic growth.

**Waste in Urban area is increased by Urbanization.**

# Conclusion(1)

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- What is the Root Cause of Waste problem??
  - Economic Growth
  - Urbanization



# 2. Waste Problem

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(2-1)

Present condition and  
the policy problem

# Classification

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- **The Municipal Solid Waste(MSW)**
- **The Industrial Waste**

**We Focus on MSW.**

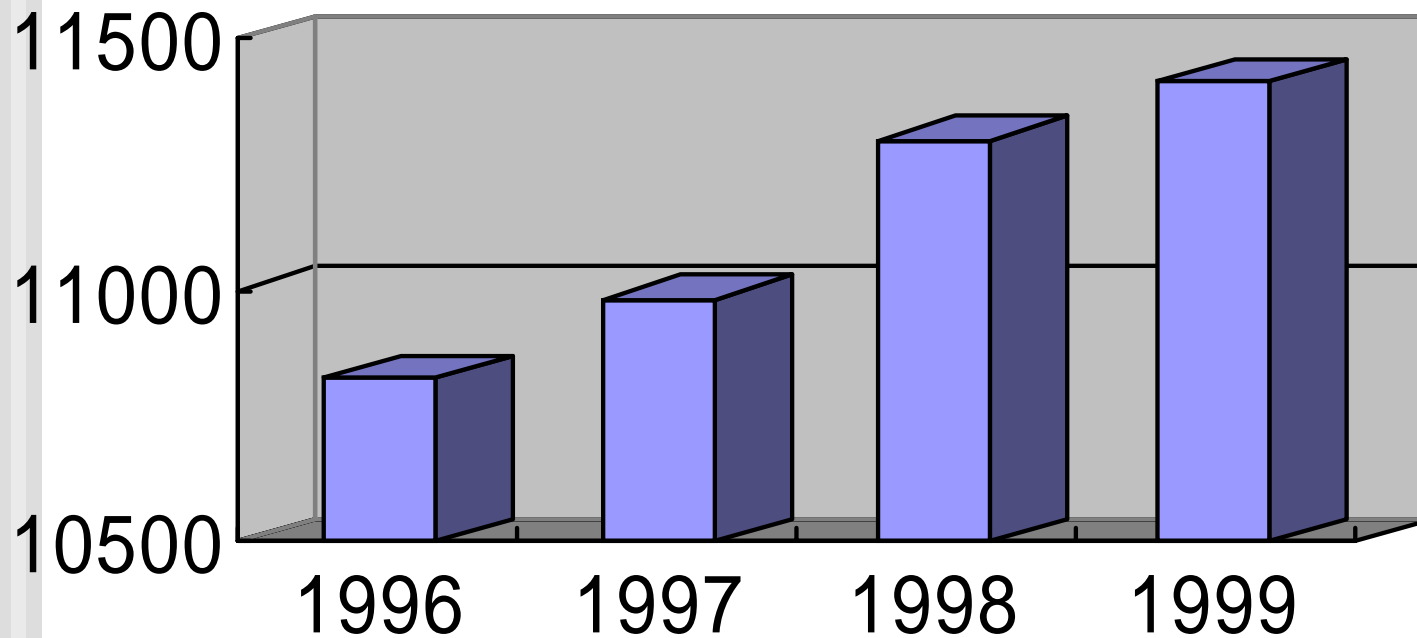
# Why focused on MSW?

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- It's very serious problem.
- It should be meaningful compared with Japanese MSW problem and Policy about MSW.

# Amount of Disposal of MSW

(4)



Amount of disposal of MSW(10thousand tons)

# The Situation of MSW Problem

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- One of 4 harms problem
- Cities Surrounded by MSW
- Average of Increase Rate in a year is 8 - 10 %
- It causes environmental pollution

# Disposal of MSW

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- Directly Landfill is 70 % .
- Traditional Compost is 20 %
- Little Disposal by Incineration

# Environmental Problem by MSW

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- Air Pollution
- Water Pollution
- Harmful insect
- Waste of Land
- Accident of Explosion

## 2 . Waste Problem

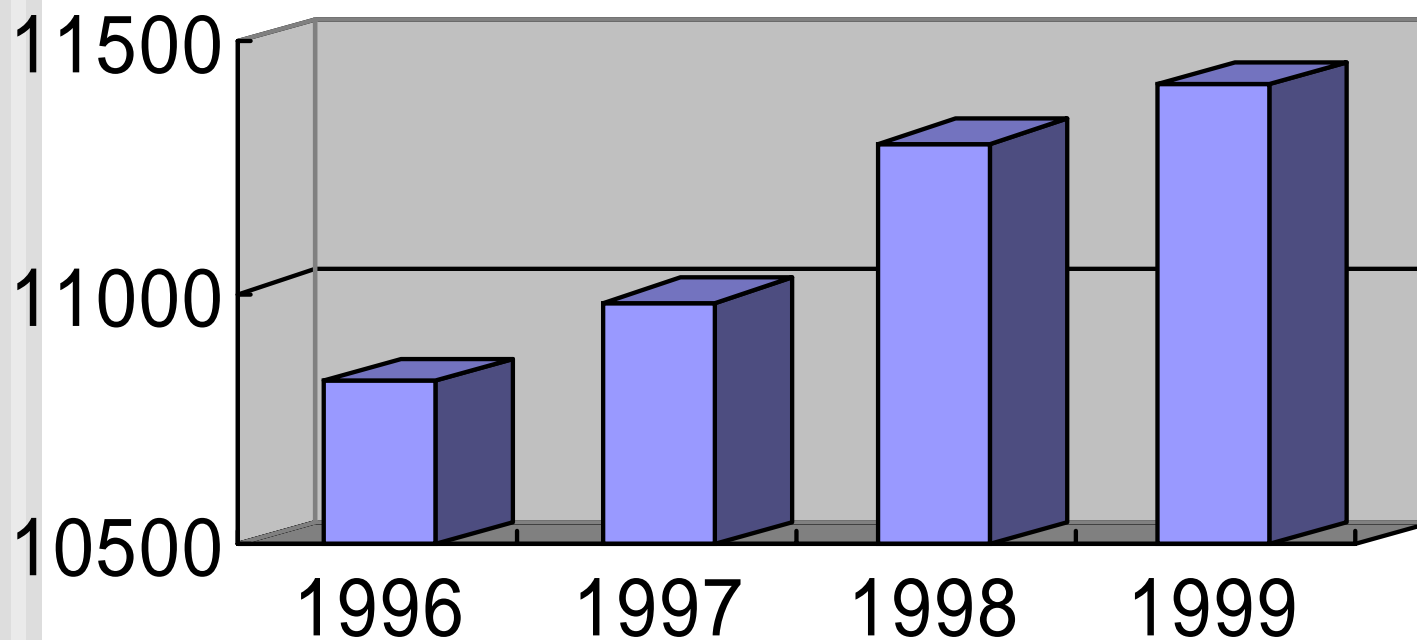
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### (2-2) Changes of Amount and Quality



# Amount of Disposal of MSW

(4)



Amount of disposal of MSW(10thousand tons)

# Increase of Amount

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- Average of increase rate in a year is 8-10%

- 15-20% in Beijing

Amount of MSW keeps on increasing!!

Amount and Quality of Waste

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Changes of Quality

# Composition changes in Beijing

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- Organic matter increases
- (Mineral matter decreases)
- Waste which can be Collected increases

# Change of Waste composition in Beijing(%)

Com posi tion	Food	ash	Pap er	Plastic	glass	M et al	ma ter ial	Plant	Debri s
1990	24.89	53.22	4.56	5.08	3.10	0.09	1.82	4.13	4.11
1995	35.96	10.92	16.18	10.35	10.20	2.96	3.56	8.37	1.56
1998	37.12	5.64	17.89	10.36	10.70	3.34	4.11	9.12	1.11

# Physical Chemistry Changes

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- Unit weight decreases
- Calorific value rises

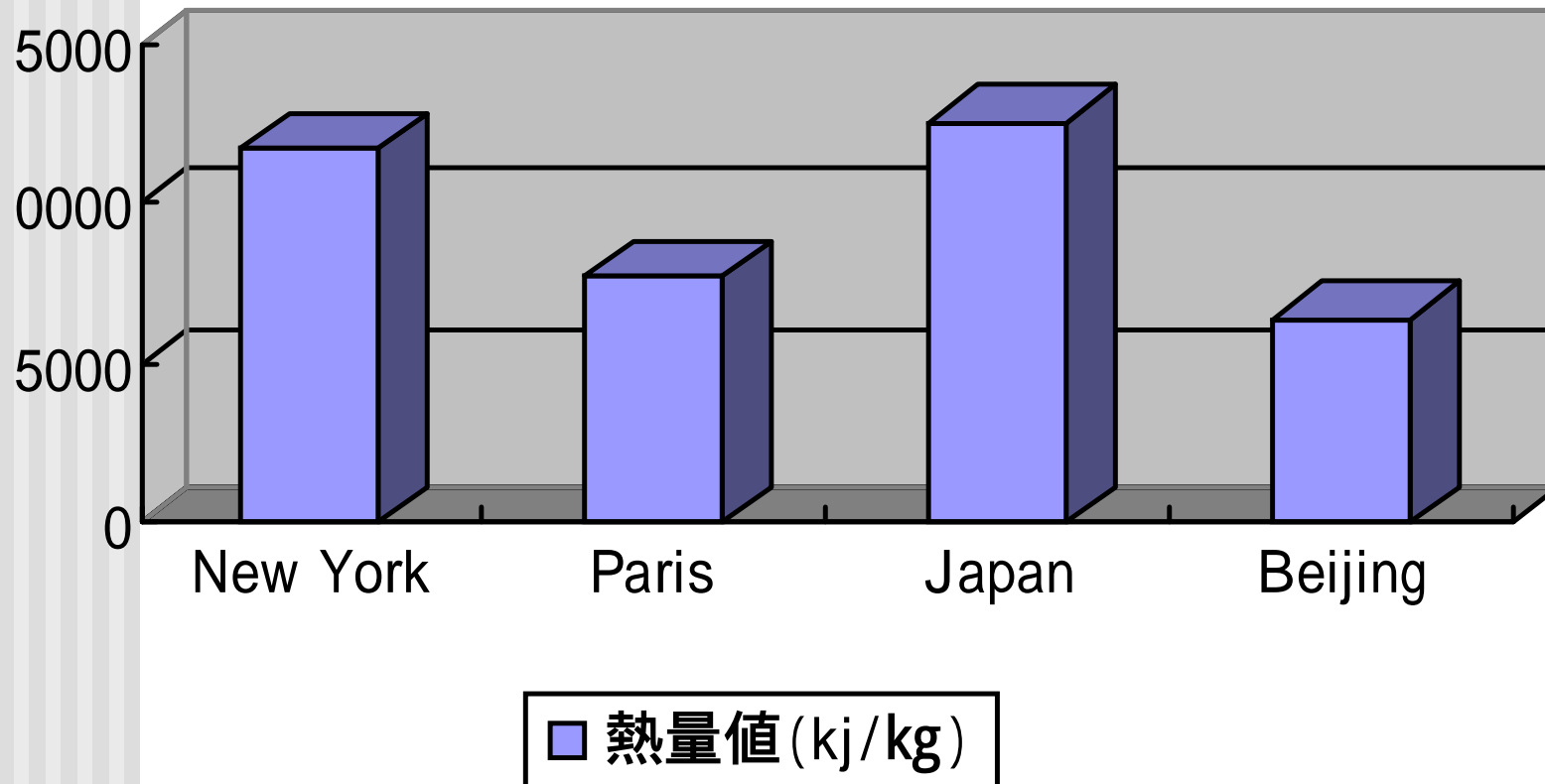
# Average of Calorific Value in Beijing

( 6 )

: kj/kg

地区	Building installed Gas and steam	Sophi sticat ed house	Indust rial Area	Hospital	Commerc ial Area	One- story House
1991	4527	8970	9894	7545	8159	2842
1997	8230	13924	10000	9332	13231	4701

# Calorific Value Compared with Other countries





# Calorific Value Compared with Other countries

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- China is Fewer than Developed Country now
- **But, it has been more and more approaching for Developed country**

# Summary-About Quality-

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- Organic matter increases
- Waste which can be Collected increases
- Unit weight decreases
- Calorific value rises

Quality changing for the type  
of Developed Country

# Summary of Waste Problem

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- GDP keeps on increasing .
- Urbanization keeps on progressing  
.The standard of living increases  
**Amount and Quality has been changing**  
*Changed for the Type of  
Developed Country!!*

# 3 . Waste problem in China

Problems and the

Policy of Waste

Management in China

# 3 . Problem of Policy

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- The Root cause of Waste Problem
  - Economic Grows
  - Urbanization

But ,There are problems on the policy of Chinese Government

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# 3.The policy by Chinese government

# Investment on Environment

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- Invested 700billion yuan on  
The tenth five years plan
- Investment on Environment  
More and more increasing

# Problems of Waste policy

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- The Management system is not fit for capital market
- Run short of funds ,the raise system of money immature
- The law doesn't work well
- Not made mach of reduce
- commingle collection makes Resources waste
- recycling system is undeveloped



# Summary of Waste Problem

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- GDP keeps on increasing .
- Urbanization keeps on progressing  
.The standard of living increases  
**Amount and Quality has been changing**  
*Changed for the Type of  
Developed Country!!*

# Problems of Waste policy

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- The Management system is not fit for capital market
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# Conclusion

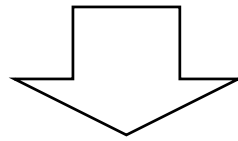
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- The Character of Waste is changing for the type of developed countries in both Amount and Composition .
- The policy of Chinese government doesn't work well.
- It is very important for China to introduce the Waste Management and Policy by the developed country.

# Conclusion

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- The policy by the developed country is useful for China



- **Japanese Experience of Waste Management and Policy might be Useful for China.**

# For Everyone

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Thank you for hearing  
of my presentation!!

Shinki Nakanishi

# **Example 1:**

## **Containers and Packaging Recycling Law**

### **Purpose of this law:**

To reduce the volume of **the containers and packaging waste** and to promote recycling

Constitutes more than half of all domestic waste  
in Japan

## Until 1997

Local governments had the responsibility for managing containers and packaging waste.



But local governments have no incentives to reduce waste management cost.

As a result

**Natural resources are  
used inefficiently.**



# Responsibilities of each Actors:

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- **Consumers**

**Separating waste**

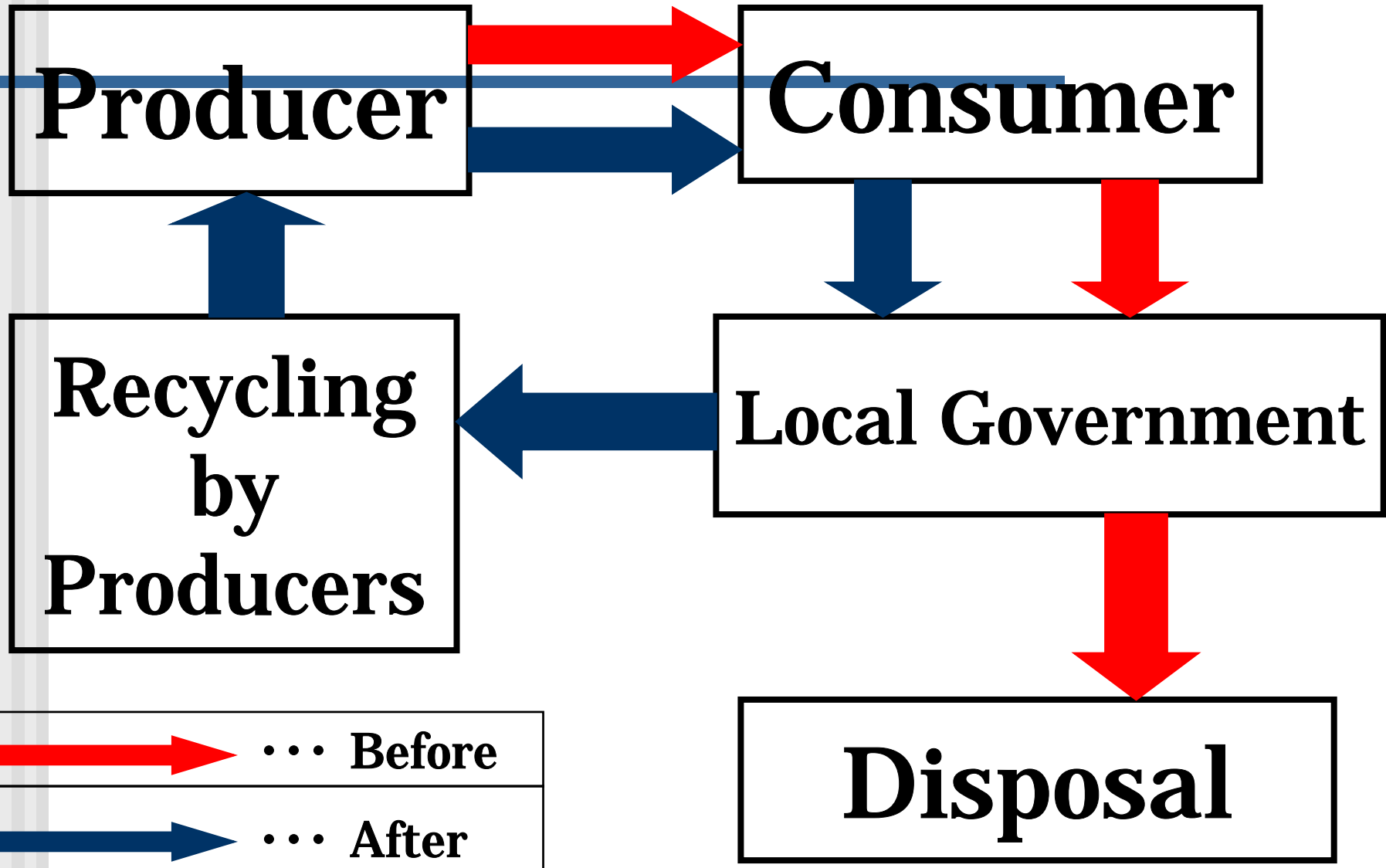
- **Local governments**

**Collecting waste selectively**

- **Producers**

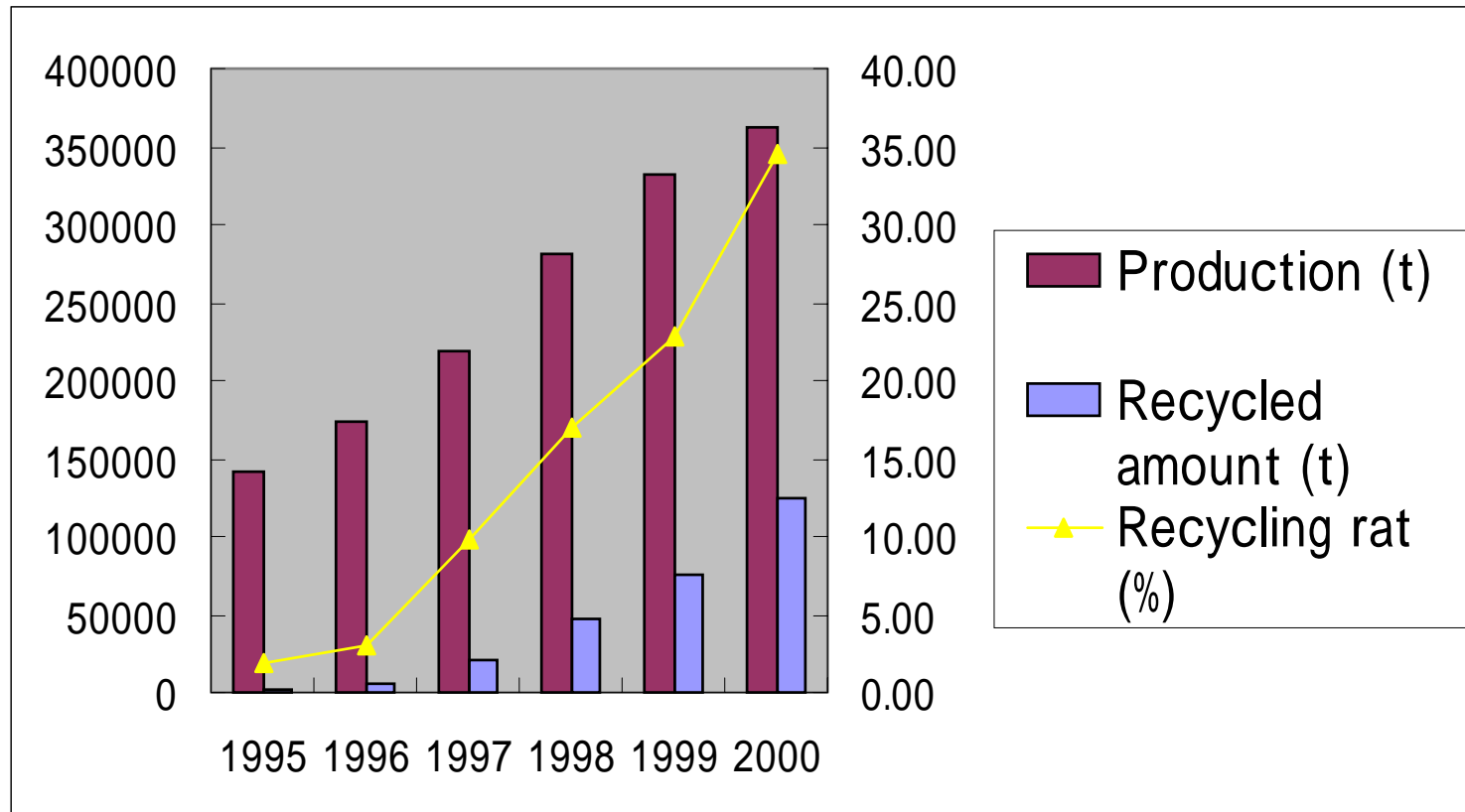
**Recycling**

## Responsibilities of each Actors:



# Effect:

Recycling Rate of plastic bottles has risen.



# **Example 2:**

## **Specific Household Appliance Recycling Law**

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### **Purpose of this law:**

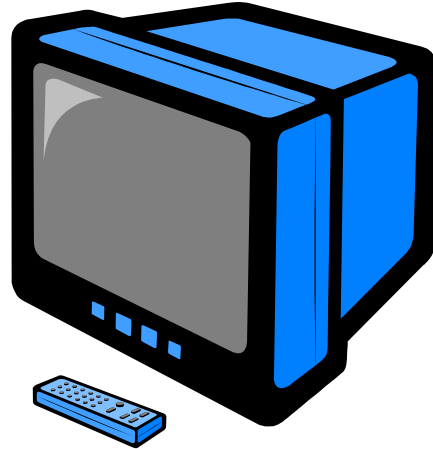
To reduce the electric appliance waste by  
means of recycling

**Why?**

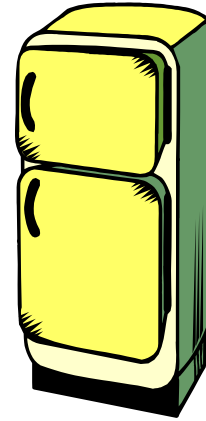
**Household appliances are made up of  
considerable amounts of natural resources.**

# Object appliances :

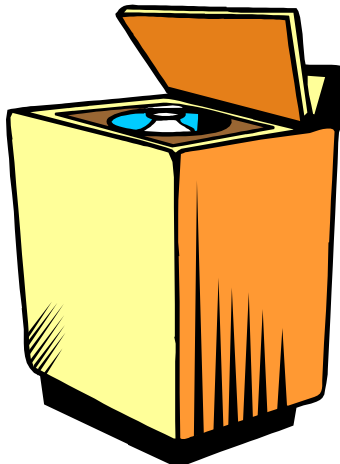
■ **Television**



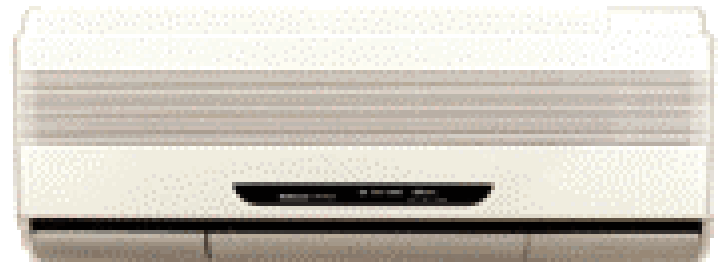
✦ **Refrigerator**



✦ **Washing Machine**



✦ **Air Conditioner**



# Responsibilities of each Actors:

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- ◆ **Consumers**

**Bring appliances to retailer or producer and pay the recycling fee**

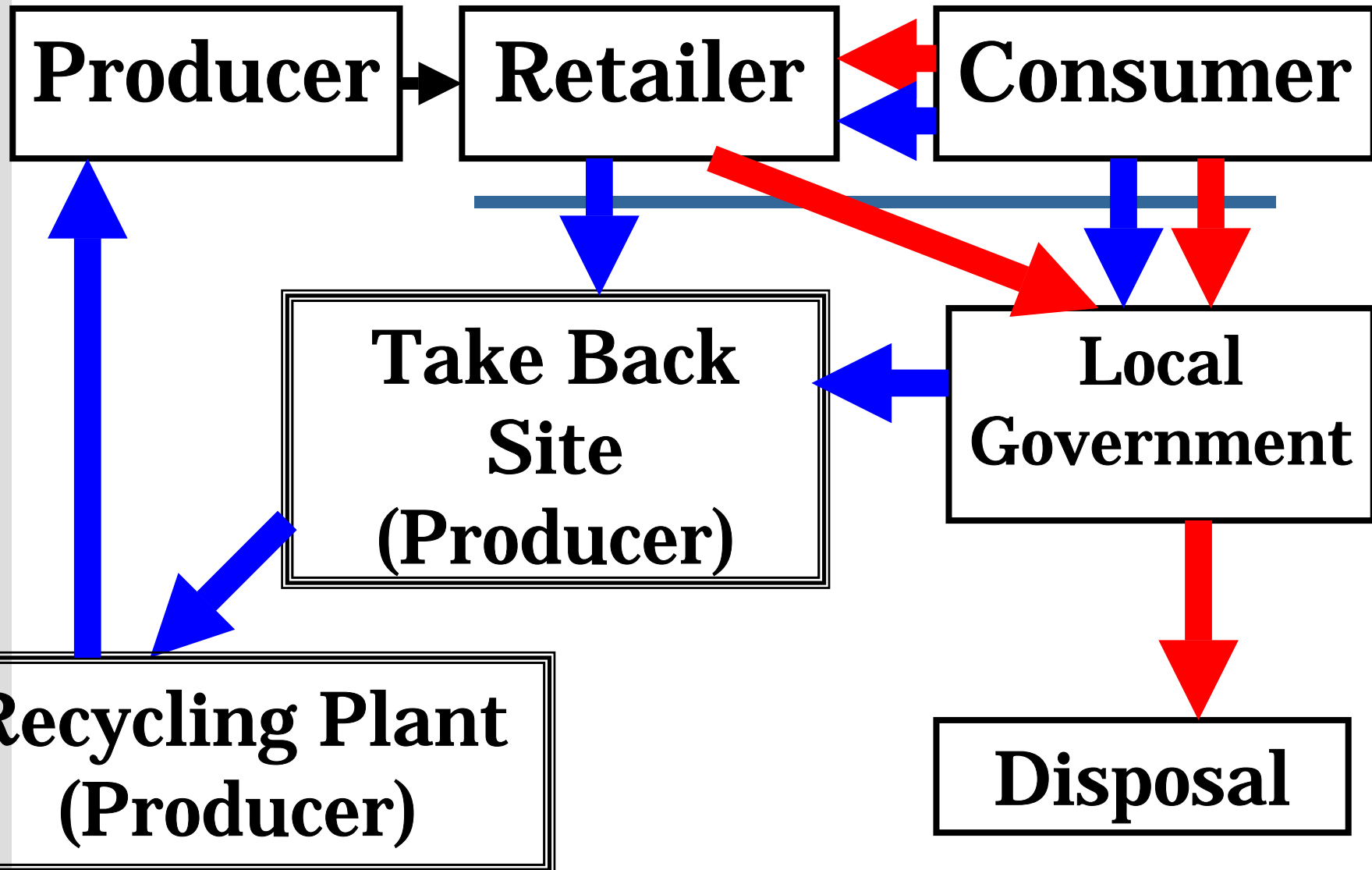
- ◆ **Retailers**

**Send appliances to producers**

- ◆ **Producers**

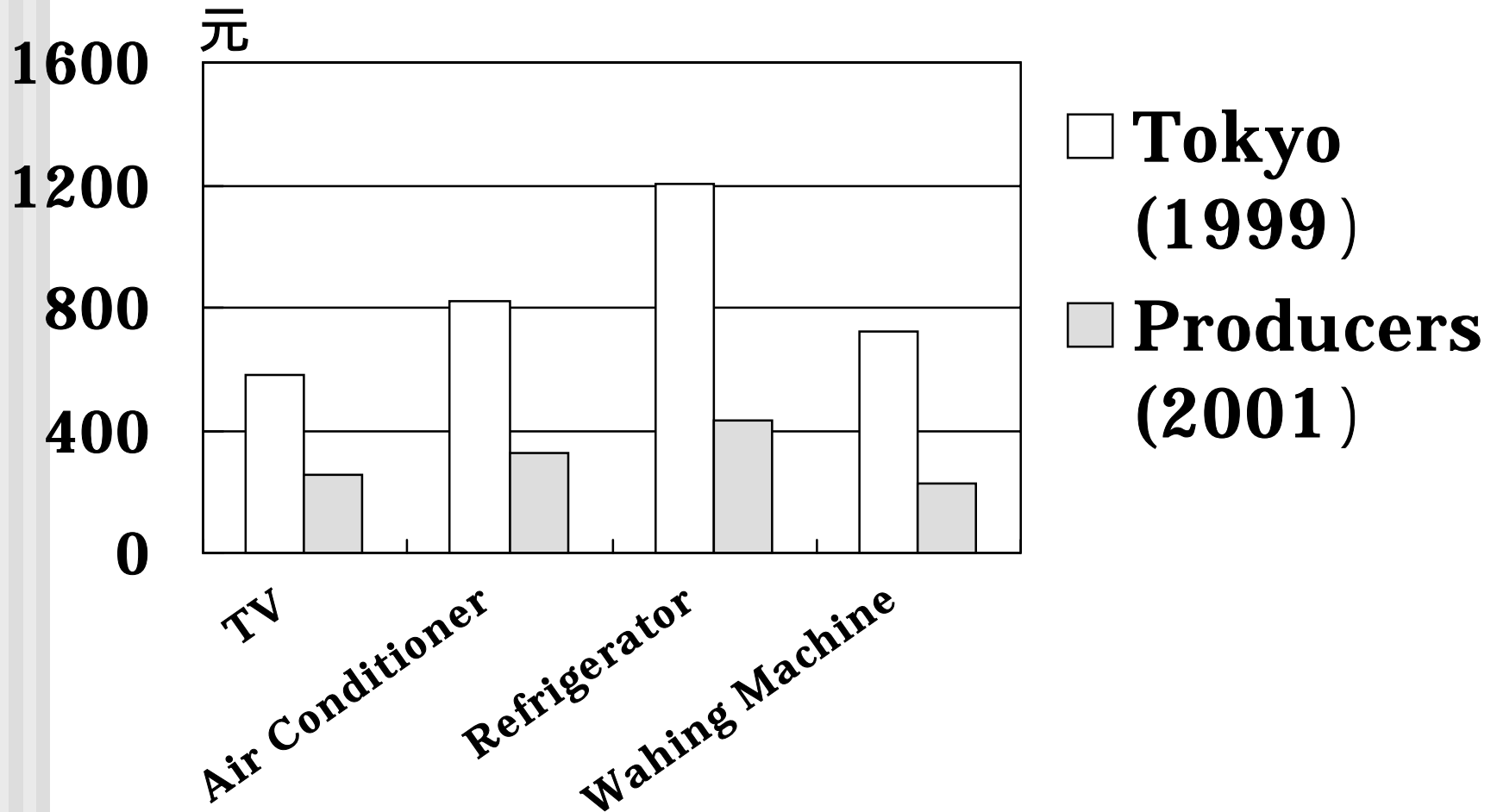
**Recycle the appliances taken back to them**

# Responsibilities of each Actors:

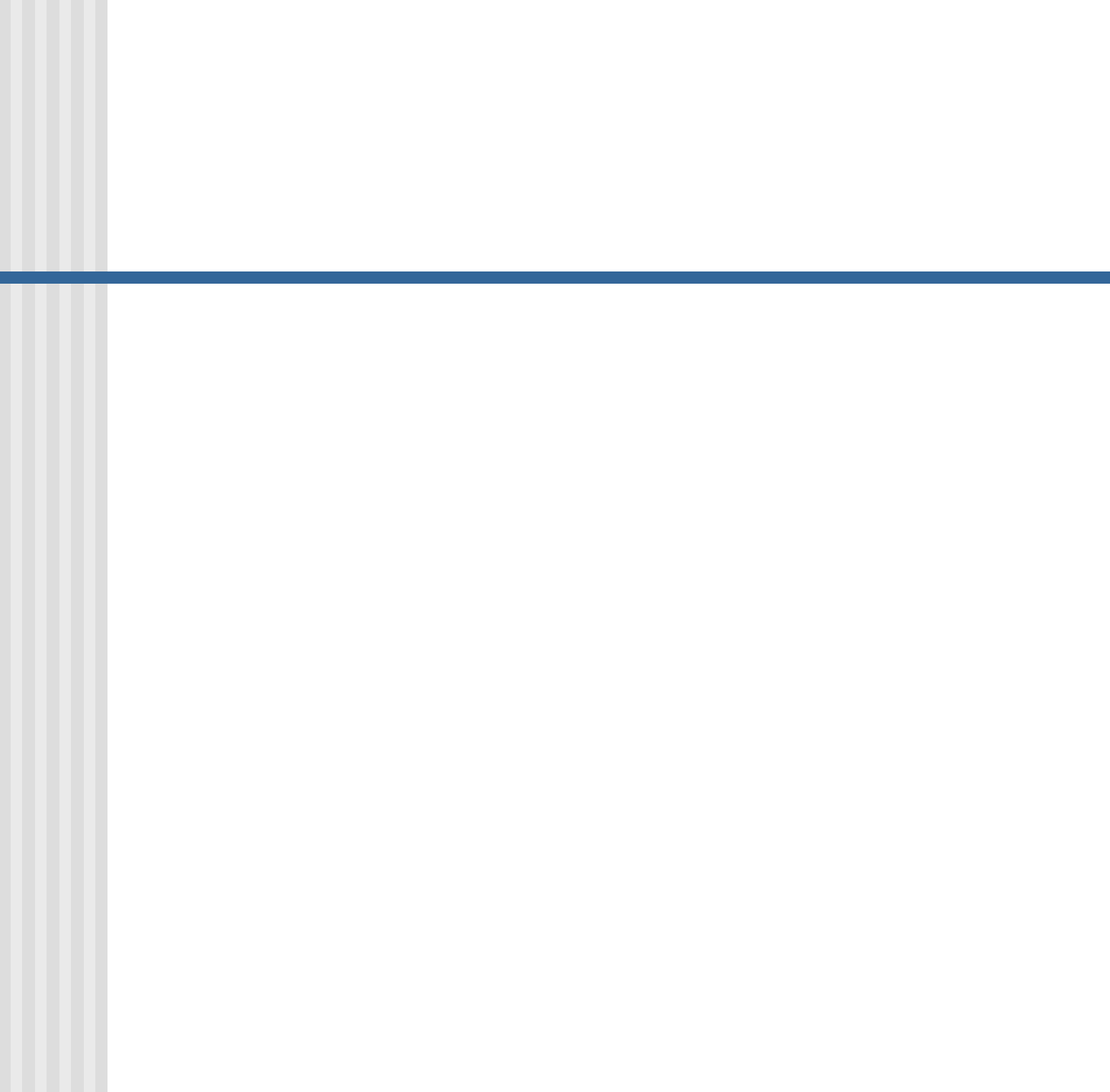


# Effect:

The recycling cost has been lowered.







# What Problems will China Face In The Future?

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**Economy grows.**



**Waste increases.**



- ✦ **Waste management cost may pressure the government.**
- ✦ **The landfill in urban area is shrinking.**
- ✦ **Natural resources are being used inefficiently.**



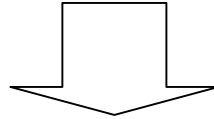
**Japan had the same problem.**



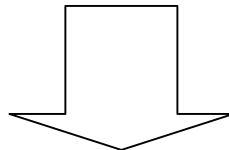
**Japanese waste management policy  
shifted the Responsibility from  
local government to producers.**

# **Why had Producers Better Take Responsibility for the Waste Management?**

**Waste management cost  
influences the product price.**



**Producers have the incentives to  
minimize waste management cost.**



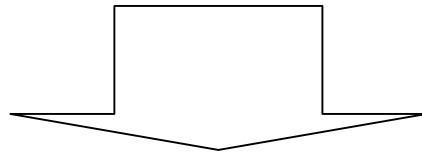


**It is necessary for producers to**  
**use natural resources**  
**efficiently.**



**The amount of waste**  
**will be reduced.**

**In most developed countries,  
the responsibility  
of waste management  
is shifting from local governments to  
producers.**



**Japan's experience may be a  
good precedent for Chinese  
waste problem.**

**That's the end of my  
presentation.**

Thank you very  
much!