

公開シンポジウム「我が国が誇る循環産業の海外展開プラットフォーム」

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場所：東京大学伊藤国際学術研究センター



# Global Waste Management Outlook

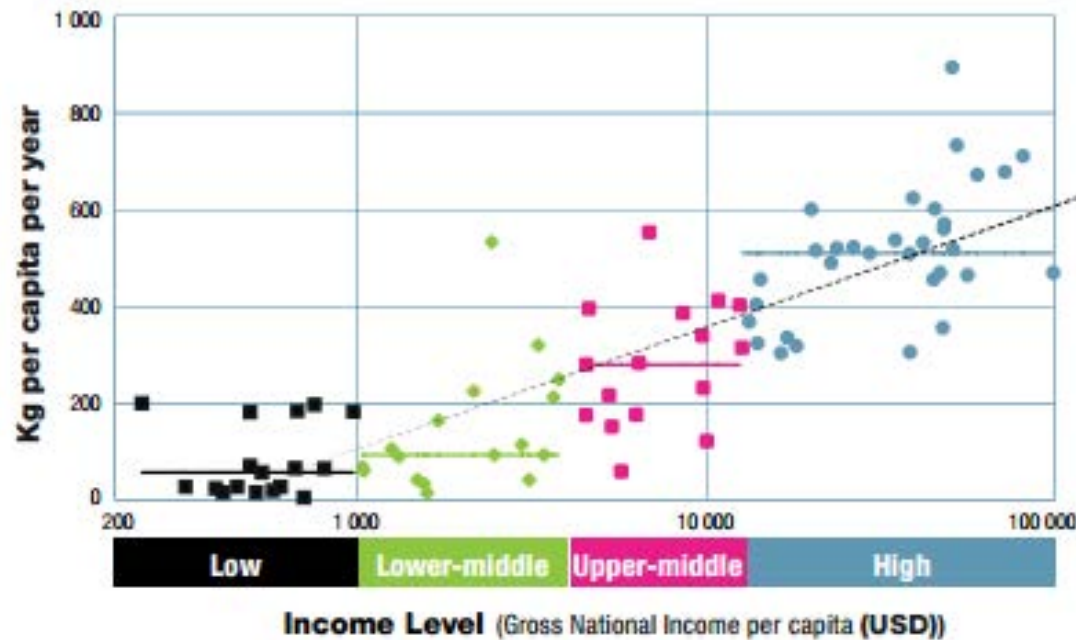
## Summary for Decision-Makers

国連環境計画国際環境技術センター（UNEP/IETC）シニアアドバイザー

谷津龍太郎

# 都市ごみの総排出量

## Municipal solid waste per capita increases with income level



Note: Data for selected countries

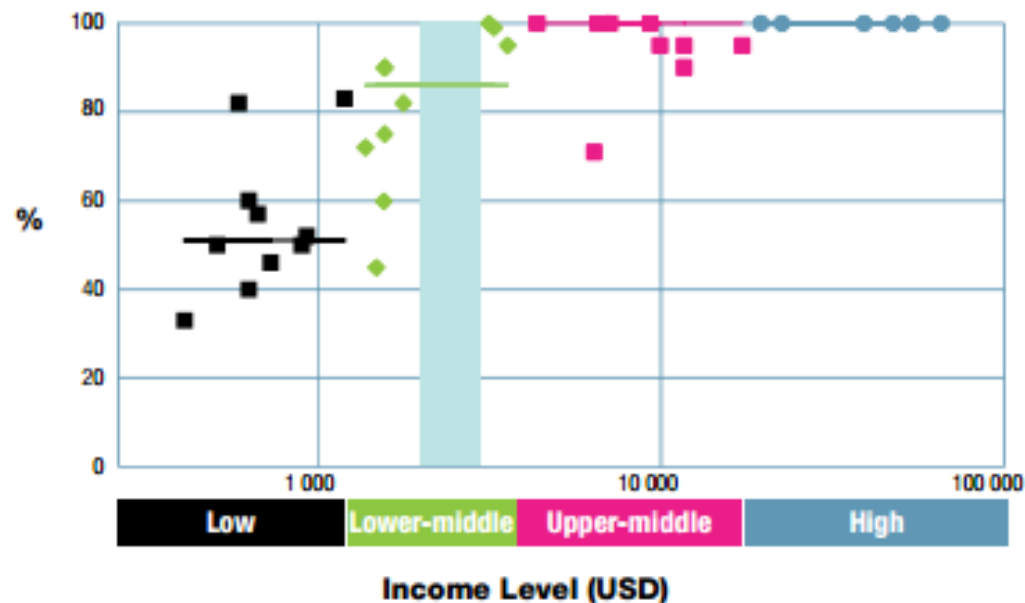
**2 billion**  
tonnes per year  
of municipal solid waste

**7-10 billion tonnes**  
of 'urban' solid waste  
from households, commerce,  
industry and construction

**Worldwide quantities**  
increasing

# 途上国における都市ごみの収集運搬

## Waste collection coverage



Note: 2012 data for selected cities

Developing countries have made significant progress since the 1990s, when **average collection coverage was around 50%**

**2 billion people**  
without access to solid waste collection

# 廃棄物対策のコストと便益

## The costs of inaction

### Public health impacts of uncollected waste

- Gastrointestinal and respiratory infections, particularly in children
- Blocked drains aggravate floods and spread infectious disease

### Environmental impacts of open dumping and burning

- Severe land pollution and freshwater, groundwater and sea pollution
- Local air pollution and climate change

**Costs to society** exceed the financial costs per capita of proper waste management by a factor of 5-10

- Health care
- Lost productivity
- Flood damage
- Damage to businesses and tourism



**Proper waste management** makes economic sense but still has a financial cost

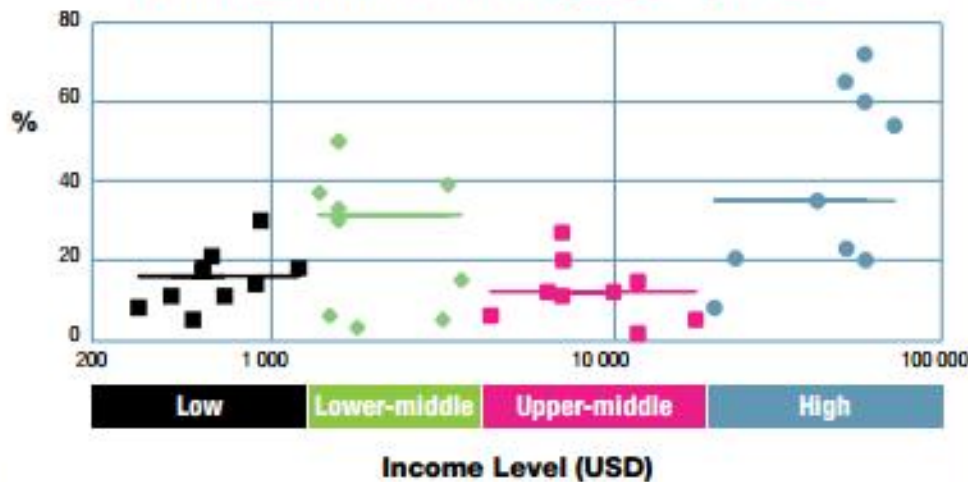
- Affordability is a major challenge in developing countries
- Even the poorest will pay something when they can see the benefits of a clean and healthy community
- Raising finance for investment in modern facilities continues to be a challenge in all countries

# 廃棄物対策のコストと便益

## Opportunities to reduce waste management costs and investment needs

3Rs (reduce, reuse, recycle) cut the investment needed in sound treatment and disposal facilities

### Potential to build on existing recycling rates



Note: 2012 data for selected cities

### Waste reduction

- Making less that goes to waste saves business money on raw material, energy and labour costs
- Estimated savings to business worldwide: hundreds of \$ billion per year

### Reuse and recycling

- Developing countries often achieve good rates through the informal sector
- Developed countries have rebuilt rates in the last 20-30 years



# 対策の方向

## Focus on waste prevention

- Reducing waste improves resource security, improves well-being and saves everyone money
- Design out waste and hazardous waste
- Maximize repair, reuse and remanufacture
- Keep materials separate/segregate waste at source to minimize contamination and facilitate reuse and recycling

## Bring hazardous wastes under control

- Separate hazardous waste, and in particular hazardous healthcare waste, from other waste at source
- Manage them separately in environmentally sound facilities
- Need a holistic approach to managing all residuals, as pollution controls concentrate contaminants from air emissions and wastewater into (often hazardous) waste

## Stop uncontrolled dumping and burning

- Extend affordable collection services to all in society, irrespective of income level
- Ensure the controlled disposal of all waste as a necessary first step towards environmental protection

## Focus on the 'feedback loops'

- Maximize recycling
- In low-income countries, integrate existing small-scale entrepreneurial recycling within mainstream waste management
- Develop environmentally sound energy recovery facilities and landfills for residual waste that cannot be sustainably recycled

# 対策の意義



## Climate change

Potential impact of improved waste management on reducing GHG emissions across the economy: **15-20%**

Prevention of the **1.3 billion tonnes of food waste generated per annum** enough to feed all the undernourished people in the world twice over, could save **9% of total worldwide GHG emissions**



Diversion from disposal of biodegradable wastes prevents emissions of methane, a powerful greenhouse gas (GHG)

Reduction, reuse and recycling all displace virgin materials and products, and the GHG emissions in their manufacture

# 対策の意義



## Enterprise and creating sustainable livelihoods

'Waste to wealth' projects in Africa have demonstrated that new waste services can be used as **a catalyst for sustainable livelihoods and economic development** in poor neighbourhoods of some of the world's poorest cities

2000-2010 in Europe  
**employment in waste and  
resource management doubled: > 2 million**

**15-20 million people**  
working in the small-scale  
entrepreneurial 'informal' waste  
sector worldwide

**Estimate of worldwide potential  
for new jobs in the circular  
economy: 9 to 25 million**