More Growth, Less Garbage

Silpa Kaza
Senior Urban Development Specialist

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WORLD BANK GROUP

Main Messages

- Waste generation is anticipated to increase by 73% by 2050 with Sub-Saharan Africa and South Asia growing the fastest (30% of global waste by 2050)

- Waste generation is decoupling from economic development for some high-income countries where the sector is approached in an integrated, sustainable manner.

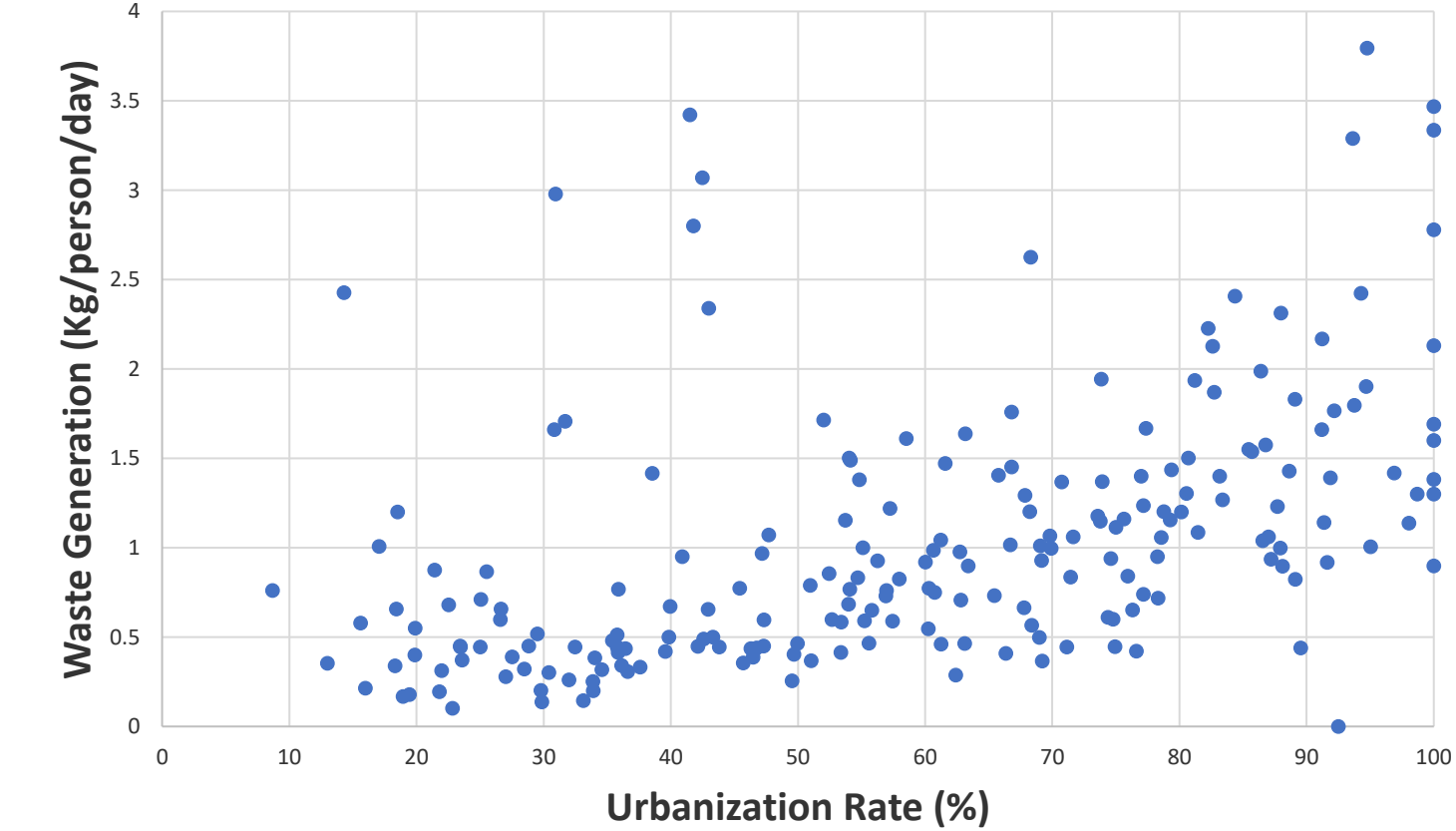
- Low- and middle-income countries do not have to wait until their waste generation rates are comparable to those of high-income economies before taking action.

Waste is expected to increase by 73% by 2050

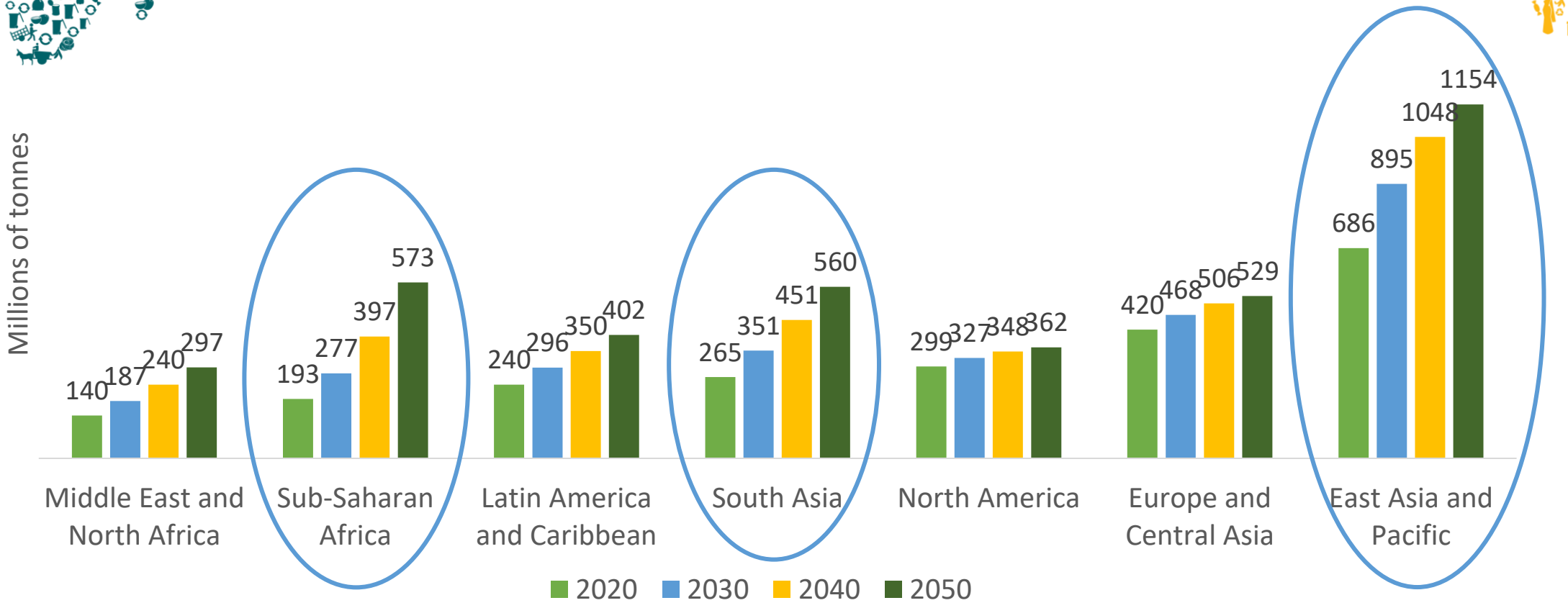
2020: 2.24 billion tonnes

2050: 3.88 billion tonnes

Waste generation is positively correlated with urbanization

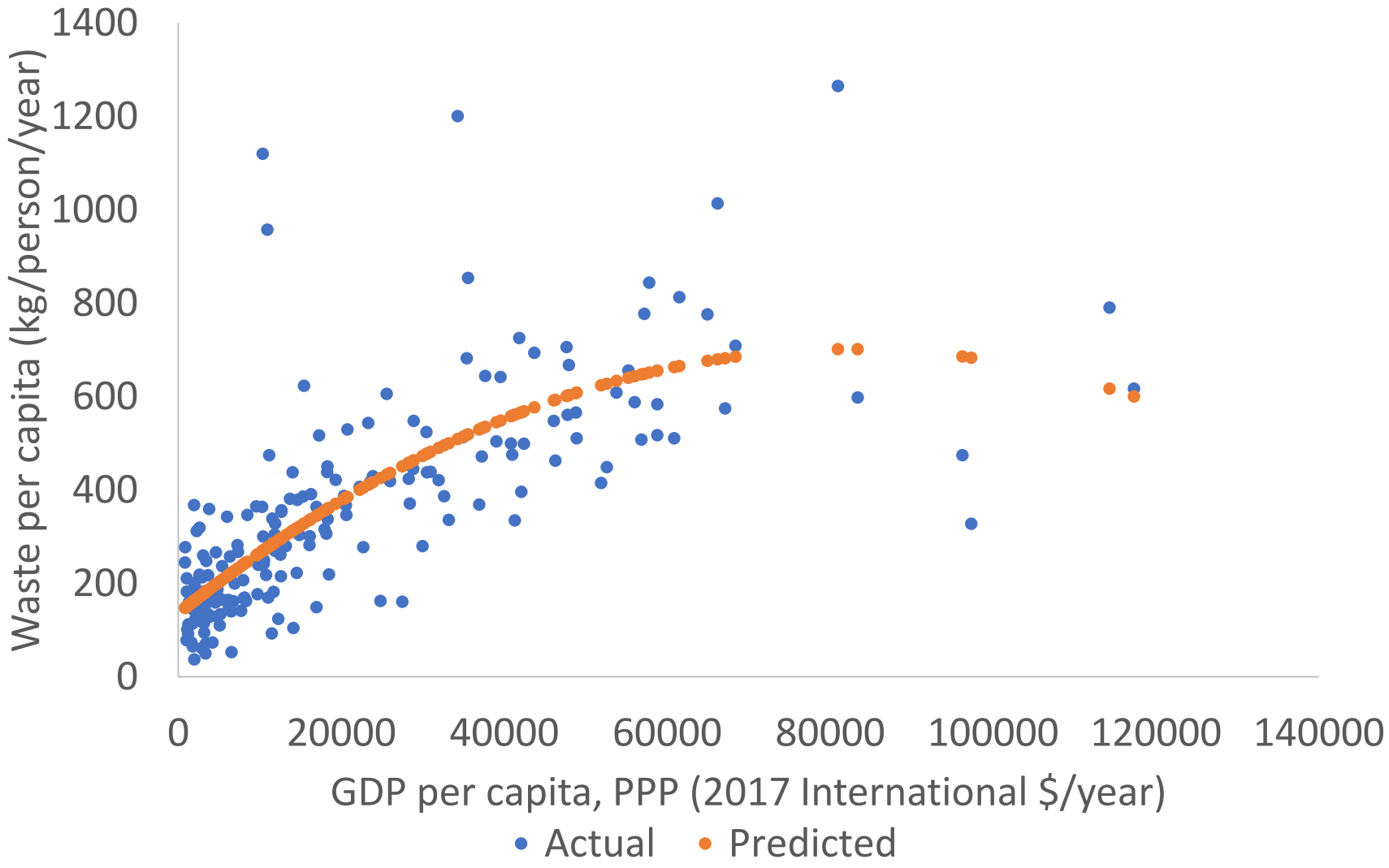


Sub-Saharan Africa and South Asia are the fastest growing regions

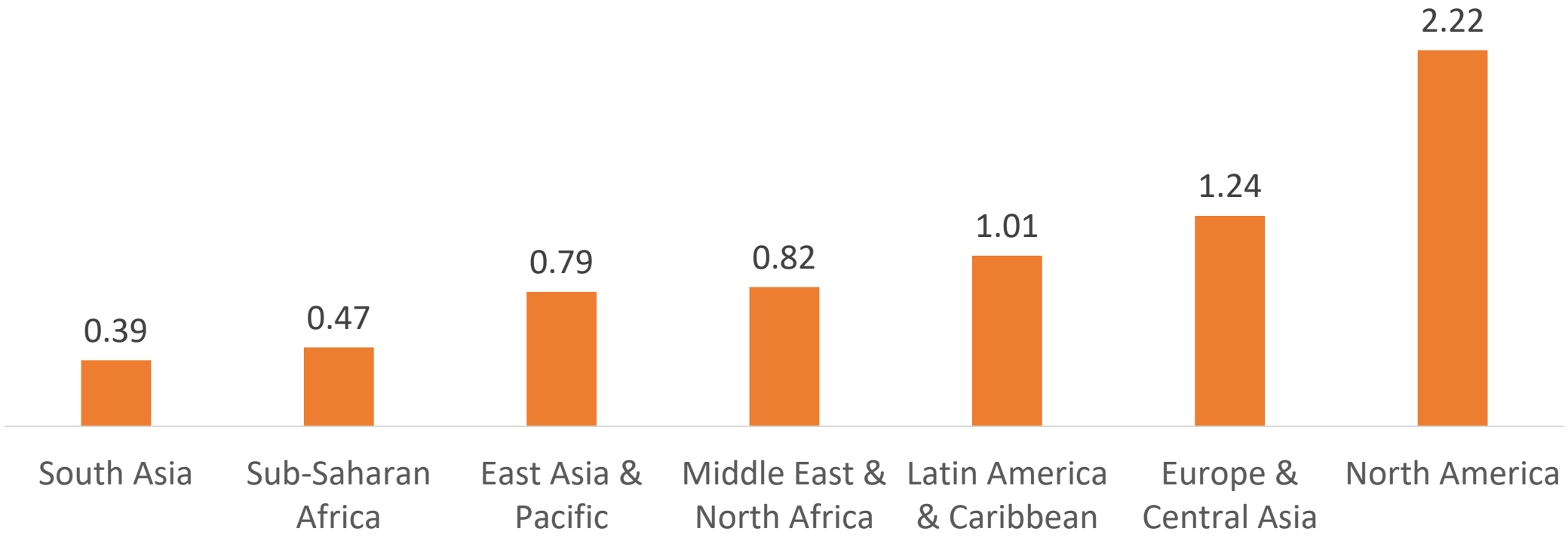


Projected Waste Generation
Millions of tonnes/year

Per capita waste generation increases with income initially and decreases at higher income levels



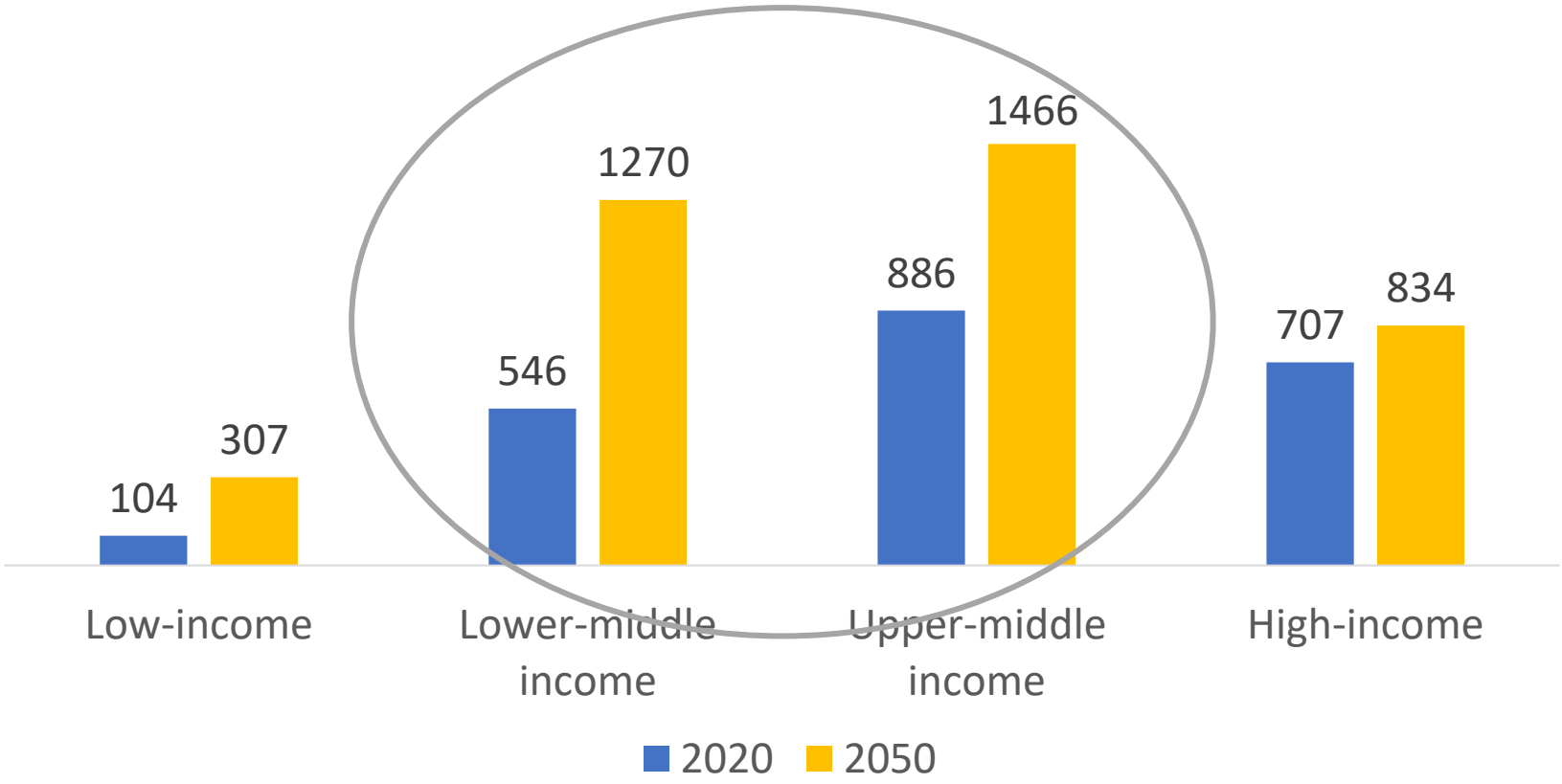
High income countries generate 32% of the world's waste with 16% of the global population



Projected Waste Generation (kg/capita/day)

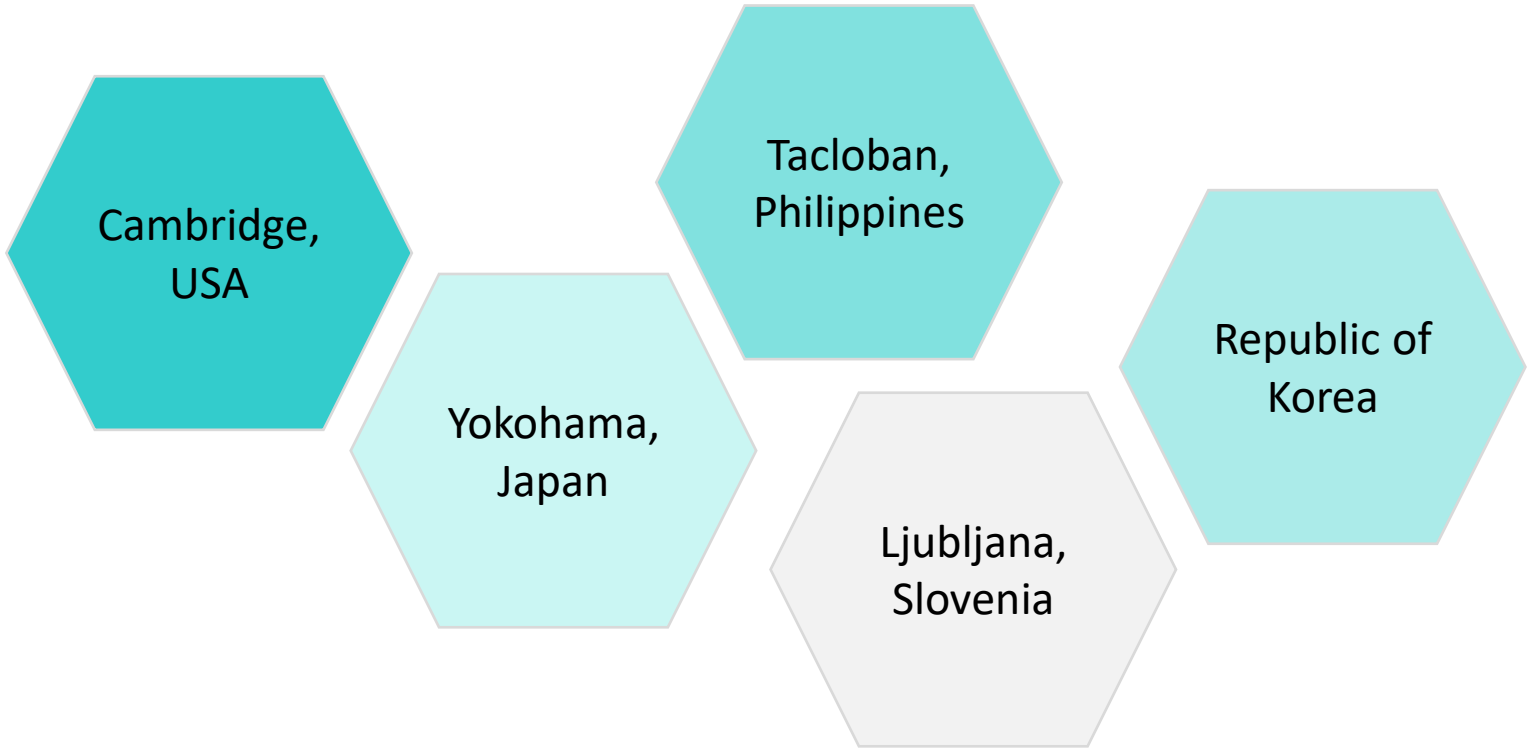
Average global waste generation is 0.79 kg/capita/day

Middle income countries driving growth in waste generation



Projected Waste Generation (millions of tonnes)

5 cases across regions and incomes were driven by different factors



- Waste reduced per capita ranged from 5-50%
- Residual waste reduction per capita ranged from 30-69%

Drivers:

Land scarcity | Resiliency | High costs

The enabling environments were multifaceted

Financial resources

Financial and operational incentives (high disposal fees)

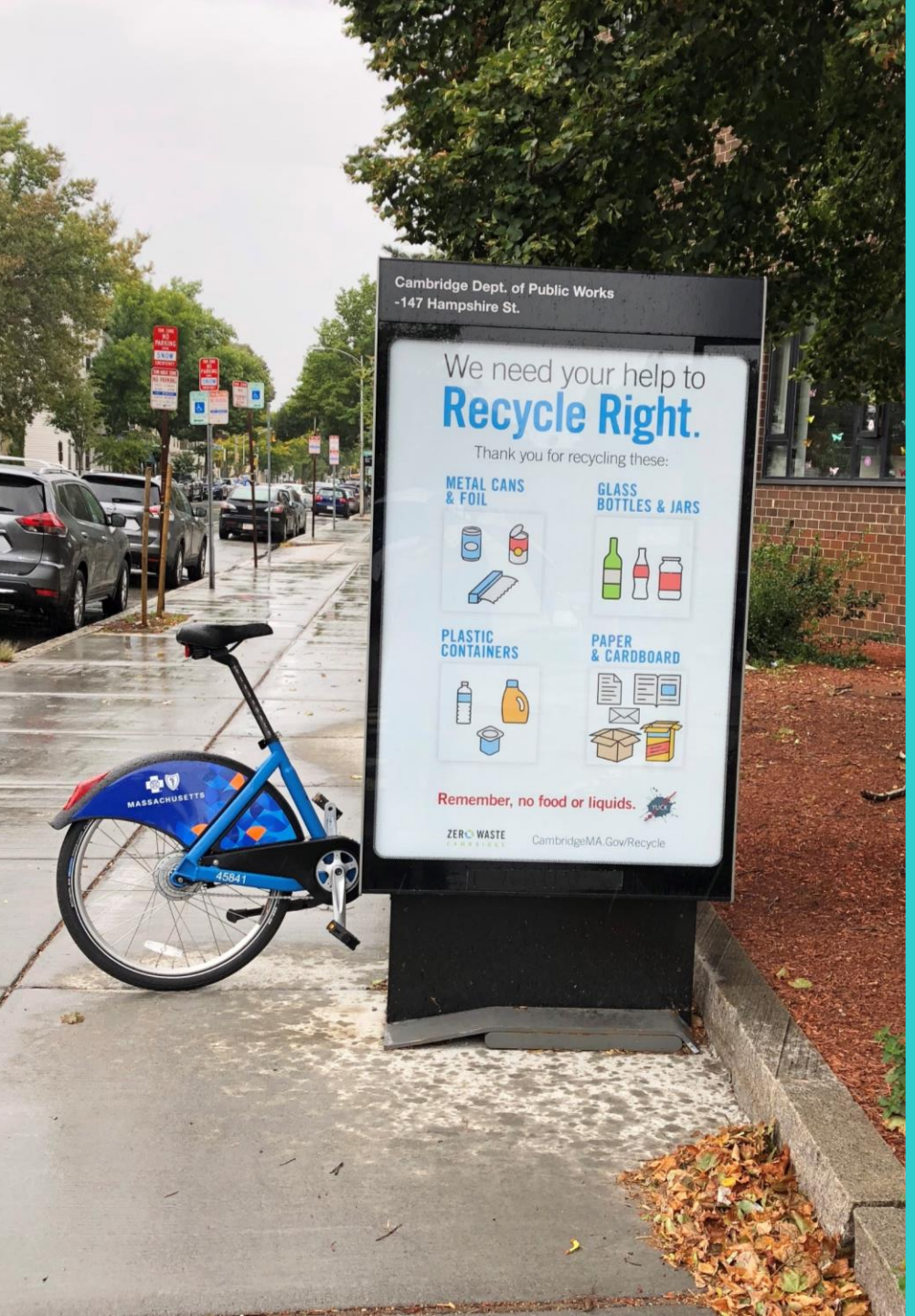
Strong national and local policies / regulations

Political will

Strong enforcement

Engaged citizens

Communications



Cambridge focused on source separation

~116,000 people
High-income country
10+ years

Interventions

- Expanding recycling and driving down contamination
- Diverting organic waste from landfills
- Promoting reduction and reuse

Results

- 30% reduction in residual waste, 2.4% in total city-managed waste (despite 3.2% increase in households served)
- 75% increase in organic waste volumes handled
- Recycling contaminated rates reduced to 6% against US average of 25%

Enablers

- Upfront investments
- Engaged citizens
- High disposal fees (>$110/tonne for landfilling)
- Supportive state level regulations

Tacloban wanted to be resilient

~250,000 people
Middle-income country
4 years

Interventions

- City-wide policies in partnership with neighborhood leaders
- Tailored community engagement and education
- Decentralize collection and sorting

Results

- 31% drop in landfill-bound waste
- Separation collection for ~70% of areas
- $375,000/year cost savings through lower transport costs & recyclable sales

Enablers

- Committed leadership
- Technical expertise from local NGO
- Collaborative funding model (donor grants & city funds)
- Forward-looking national solid waste management laws

Photos: GAIA Asia Pacific

Korea undertook national interventions

~50M people
High-income country
20+ years

Interventions

- Implementing volume-based pricing
- Mandating producer responsibility for collection and recycling
- Reducing and treating food waste

Enablers

- Financial incentives (high disposal costs, limited landfill area)
- Strong political will
- Well-designed national policies including EPR as well as clear roles and responsibilities for municipalities
- Citizen environmental awareness and compliance

Results

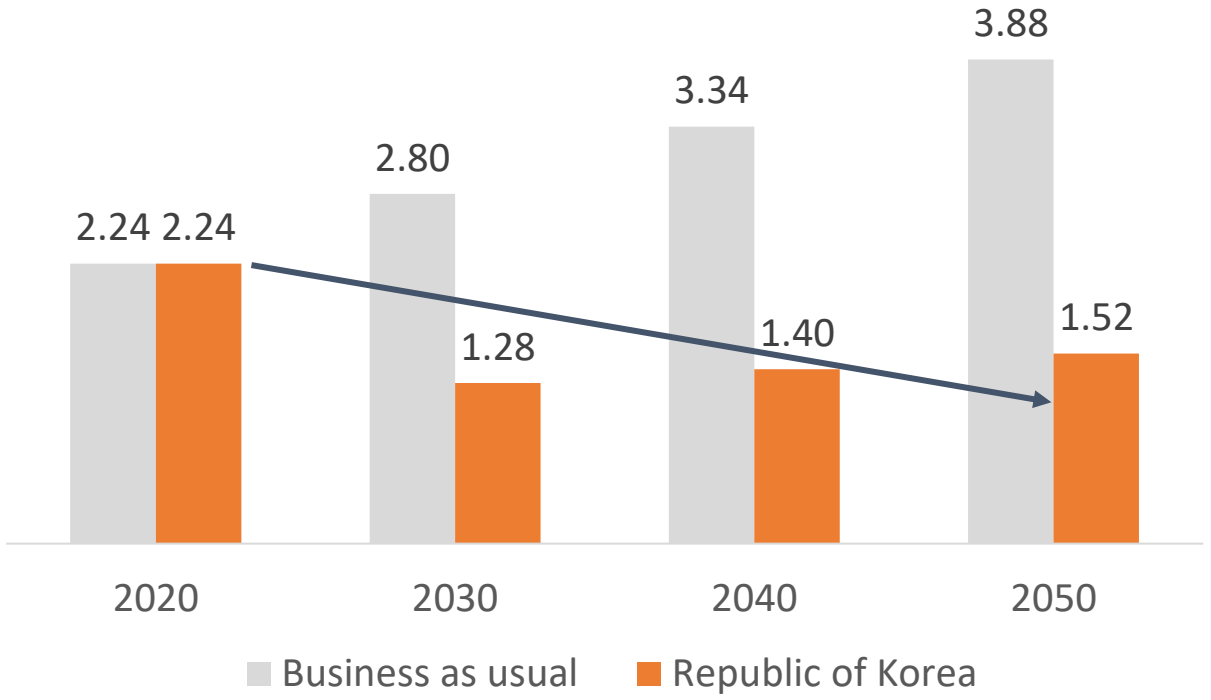
- Municipal waste generated declined 50% from 1990 to 2000
- Waste generation remained roughly similar even though GDP per capita nearly tripled since 2000
- Diversion rates now >60%
- Plastic recycling rate increased to 60% by 2015, food waste recycling to 95 in 2019

Key ingredients

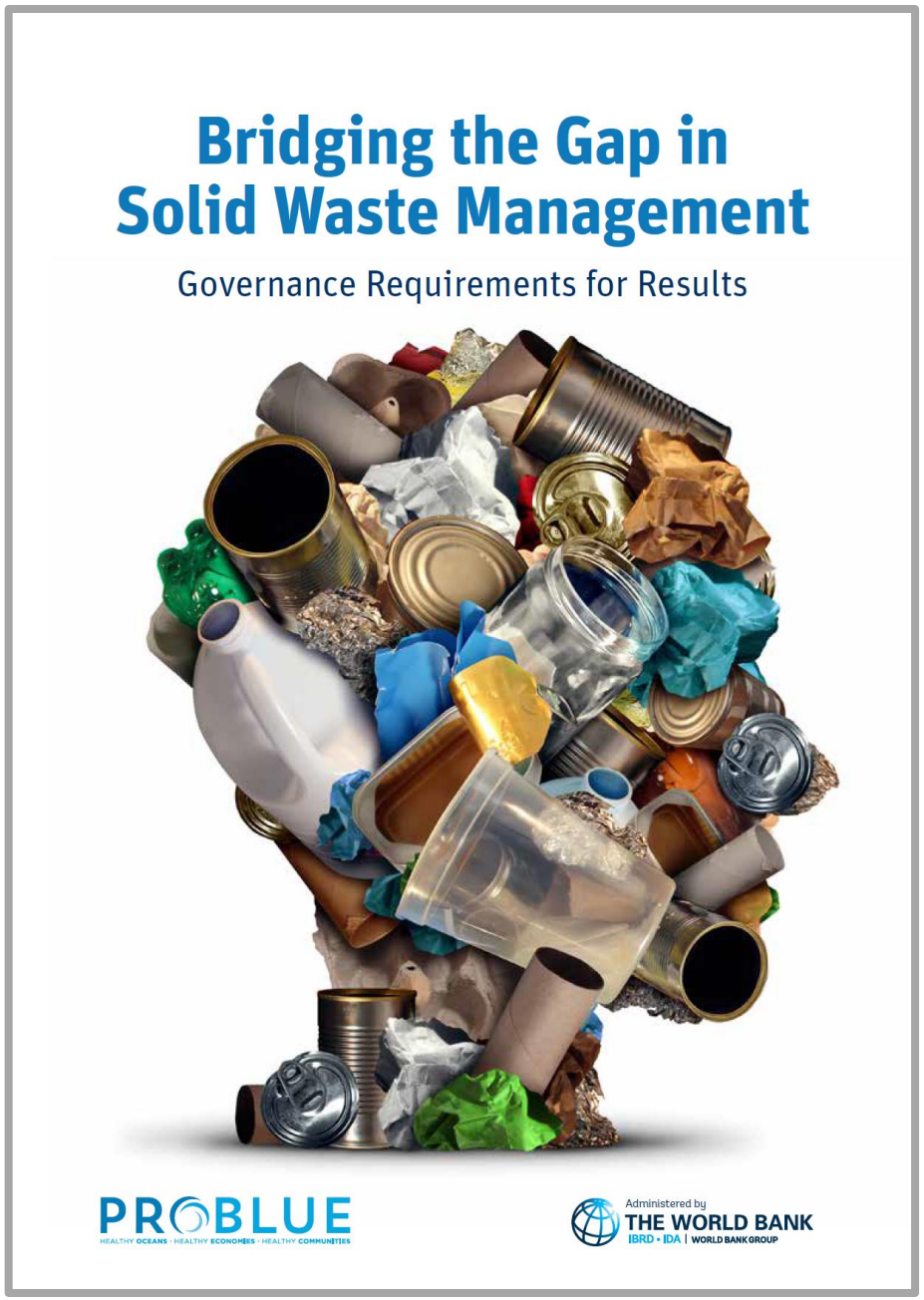
- Sound legislation and policies
- Clear responsibilities
- Enforcement mechanisms
- Financial incentives
- Strong citizen engagement
- Target setting and performance measurement
- Political will

What our world could look like…

If middle- and high-income countries had interventions achieving similar results as Korea, we would generate **only 68% of today's waste by 2050**



Waste generation (billions of tonnes)


Bridging the Gap in Solid Waste Management
Governance Requirements for Results
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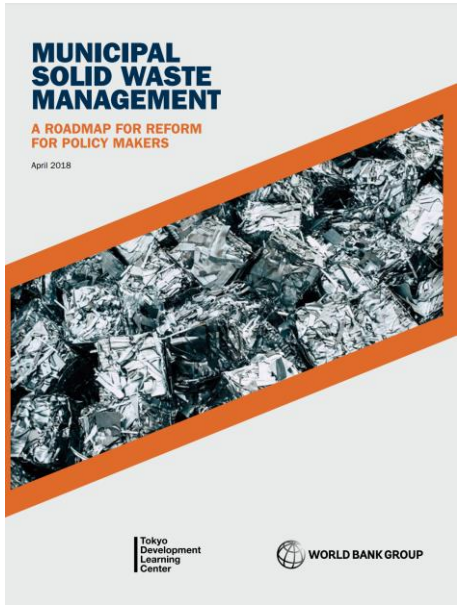
MUNICIPAL SOLID WASTE MANAGEMENT
A ROADMAP FOR REFORM FOR POLICY MAKERS
April 2018
Tokyo Development Learning Center
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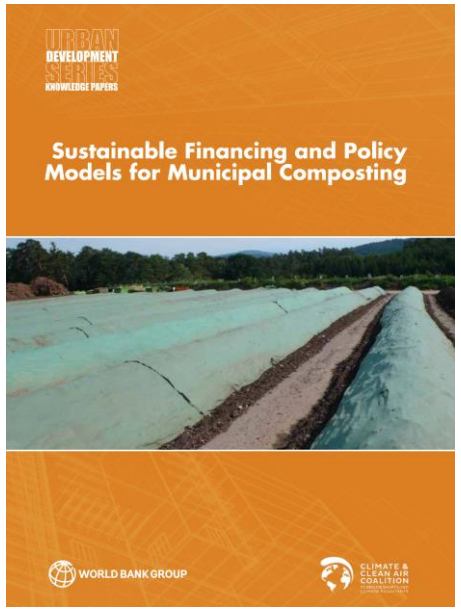
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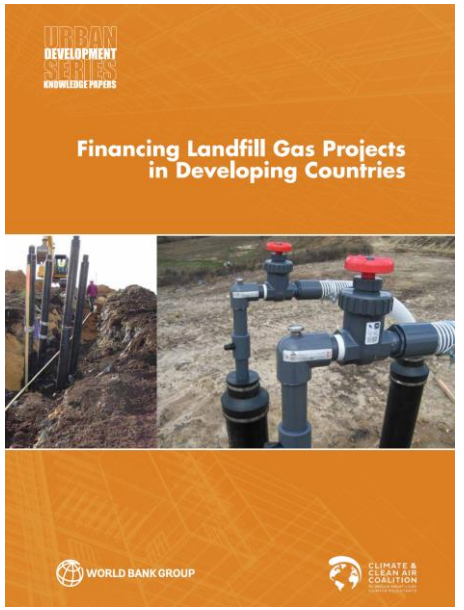
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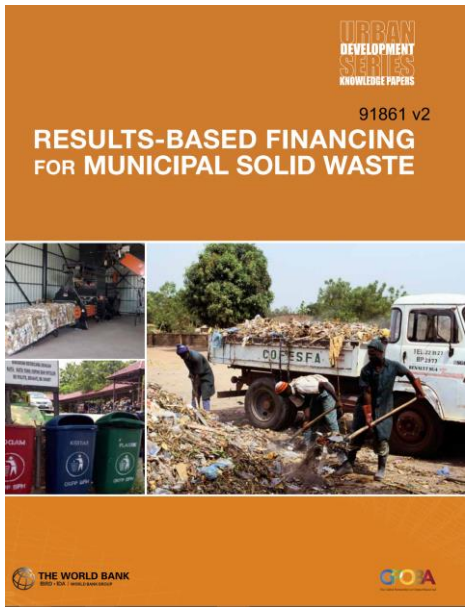
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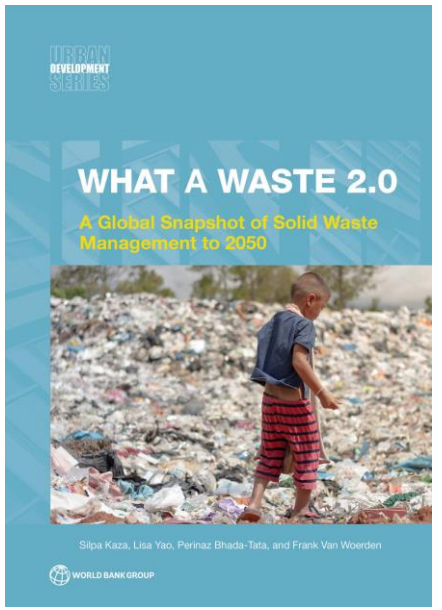
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WHAT A WASTE 2.0
A Global Snapshot of Solid Waste Management to 2050
Silpa Kaza, Lisa Yao, Perinaz Bhada-Tata, and Frank Van Woerden
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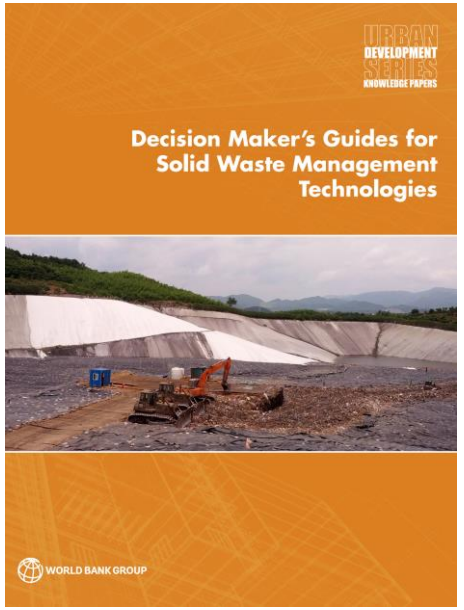
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