World Bank Financing: overview and innovative approaches to [methane] finance for solid waste

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Questions this presentation will answer

1. How does the World Bank provide financing?

2. What is the portfolio of WB SW activities?

3. What is Results Based Financing, and how is it different than conventional financing?

4. What are examples of RBF in the solid waste sector, and how might they lead to methane reductions?
What kind of funding does the WB provide to member governments?

- **Grants**

- **No-interest loans (“credits”)**

- **Low-interest rate loans**

  Recipients: National ( & sub-national) governments

IDA = International Development Association;
IBRD = International Bank for Reconstruction and Development
## Two development finance windows

<table>
<thead>
<tr>
<th>Category</th>
<th>IDA</th>
<th>IBRD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Established</td>
<td>1960</td>
<td>1944</td>
</tr>
<tr>
<td>Eligibility [GNI per capita]</td>
<td>&lt; $1,195</td>
<td>$1,195-$7,035</td>
</tr>
<tr>
<td>Members [nations]</td>
<td>172</td>
<td>188</td>
</tr>
<tr>
<td>Financial maturity loans [years]</td>
<td>35-40</td>
<td>&lt;30</td>
</tr>
<tr>
<td>Interest rate</td>
<td>0%;</td>
<td>Variable/fixed;</td>
</tr>
<tr>
<td></td>
<td>0.75% charge</td>
<td>market based</td>
</tr>
</tbody>
</table>
From where does IDA $ come?

IDA

$14.75B committed in FY2012; Replenished every few years

IBRD net income

IFC
How does IBRD raise money?

IBRD [AAA]

FY12: $20.6 B new loans committed; $506B+ loans approved since 1947

Bond issues
analytics*
- technical assistance
- studies (ESW)

investments
- GEF grants
- IBRD / IDA
- carbon finance
  - Specific investment loans
  - Development Policy Loans
  - Program for Results

* AAA = analytic and advisory activities; GEF is independent of the Bank, but Bank acts as implementing agency.
World Bank Solid Waste Activities 2002-12

Within loans, define:
- **Singular** – 100% SW
- **Major** – 50-100% SW
- **Minor** – <50% SW

**Investments**
- 68%

**AAA**
- 21%

**ESW**
- 11%
SW Investments Over Time: growing

Number of Projects Approved

Investment (Million USD)

Fiscal Year


Projects
Investment

ERLs, Avian flu
Ganga River Project ($210M)
Loans & grants: most have minor focus on SW

- Loans
  - Minor: 145 million USD (27 projects)
  - Major: 20 million USD (10 projects)
  - Singular: 10 million USD (40 projects)
  - GEF: 35 million USD (27 projects)
  - Grants (Other): 40 million USD (35 projects)
  - Carbon Finance: 277 million USD (277 projects)

- All Grants
  - Total: 277 million USD (10 projects)
Singular & major focus on MSW Growing

Size of bubble proportional to total $ spent on SW
Conventional financing model: we fund infrastructure

[inputs] → [infrastructure] → [output: service]
Results-based financing: we fund outcomes

[inputs] → [infrastructure] → [output: service]

[conditional on independently verified RESULTS; service provider reimbursed]
Examples: RBF instruments

**OBA**

**What:** Access to basic infrastructure; health or education services. Bridges affordability gap.

**Beneficiaries:** Poor communities

**How:** Outputs independently verified; service providers reimbursed

**CCT**

**What:** Incentive payment for desirable behavior

**Beneficiaries:** Poor households

**How:** Verified behavior change; HH given cash

**CF**

**What:** Payment for CO₂ emission reductions

**Beneficiaries:** Municipalities/ investors in project

**How:** Emission Reductions verified; CERs sold on C market

**Programmatic Instruments**

**What:** Triggered payments when results are achieved

**Beneficiaries:** Governments

**How:** Linked indicator disbursement
Ningbo: The Problem

Shortage of 1000 t/d by 2015
A solution: invest in diversion technologies

3300 t/d

Hazardous

Waste

[$80 M IBRD loan finances anaerobic digester, transfer stations, etc.]
A solution: invest in diversion technologies

3300 t/d

[Hazardous]

Organic

Recyclable

Waste

[shortage: 1000 t/d by 2015]

For these to be useful inputs, need effective source separation. How?
Incentivizing source separation in Ningbo

- **Households**
- **Neighborhood Residence Committees**
- **Government**
  - **Independent Verification**
- **Anaerobic Digestion**
- **Incinerator**
- **Landfill**

$\Rightarrow$
## The Challenge of SWM in Nepal

### Problems
- SWM is a critical service – health, environment, quality of life
- Increasing need due to expanding urban population
- SW fee collection difficult
- Fiscal constraints in municipal government
- System in low service quality and low cost recovery trap

### Project Objective
- *Increase cost recovery, financial sustainability, & service quality*
- Supporting investment to improve SWM service delivery
- ↑ citizens’ willingness to pay by showing value of ↑ quality
- Incentivizing policy decisions to ↑ beneficiary charging
Project Concept Summary

**Funding Model**

- $4.48 M Grant-based subsidies provided by GPOBA, **BUT**
- Payment **only** upon output verification - **municipalities take performance risk**

**Output**

- **Output**: Beneficiary Revenue collected through SWM fees in exchange for verified SWM services that meet satisfactory levels of quality

**How it Works**

- Services must meet technical standards (before any payment)
- Subsidy paid on basis of revenue collected from beneficiaries
- Transitional Subsidies
- Municipalities given discretion over how to deliver services
- Independent verification triggers subsidy payments
Financing tools for CCAC

Customized RBF/OBA design for CCAC city [work can be undertaken on additional cities subject to availability of funds]

Capacity building tools on financing for CCAC partners:
- Handbook on best practices in landfill gas financing
- Decision-makers guide to regulatory and financial aspects of composting
Take-away messages

The Bank provides financing to national governments, through both IDA and IBRD. A number of financing instruments are available.

From 2002-12, Bank has invested $2.9B in solid waste; portfolio is growing

RBF offers the potential to incentivize improved SWM, including source separation, which allows waste to be used as a resource (and reduces methane).
Thank you!

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BONUS SLIDES
MSW Production: 2012, 2025

Size of bubble proportional to total urban population

Data from Hoornweg 2012

Vergara and Lee, 2012
Minor focus projects bifurcated: big in EAP, ECA, SAR
Singular & major focus on MSW:ECA

Vergara and Lee, 2012
Singular & major focus on MSW:ECA

Focus on Solid Waste

Fiscal Year of Approval

Size of bubble proportional to total $ spent on SW

Vergara and Lee, 2012
Singular & major focus on MSW: MENA

Focus on Solid Waste

Fiscal Year of Approval

Size of bubble proportional to total $ spent on SW

Vergara and Lee, 2012
Singular & major focus on MSW Growing

Size of bubble proportional to total $ spent on SW

Vergara and Lee, 2012
Major Focus: ends of the value chain
Waste & Carbon Finance: LFG Focused

Bank has 147 registered CDM projects
30 are SWM
Majority are LFG

Compost 20%
Recycling 7%
Other 7%
LFG 66%
Analytic and Advisory Activities

133 activities
ESWs split between policy notes and reports
NLTAs are mostly how-to guidance
A concept: Diverting waste from landfills

Current: municipality collects 1100 t/d MSW; 800 t/d to landfill.

Would need 80 ha land for landfills by 2025

Objective: develop Intermediate Treatment Facility to divert waste from LF
A potential RBF Design

**Competitive bid process**

Bidders propose technologies to divert waste from LF
Bidders retain revenues from waste products
[recyclable materials, energy]

**Indicators**

Waste to LF
Quantity and environmental externalities of outputs
[including methane emissions]
Cost ($/ton)
Example: Carbon Finance

Kyoto: developed buy reductions in developing
Solid waste & carbon finance

Eligible { Methane abatement, LF [flaring, reuse] Methane avoidance [composting] }

Incentivizes GHG mitigation

**BUT**

With 627 registered projects, only 178 generating credits, usually below projections

- Projects not implemented
- Delays/failures in verification
- Low generation: Nova Gerar projected 670k ERs/yr; actual 80k ERs/yr
CF & SW: Future

Uncertainty:
- Negotiations for future int’l agreement?
- Emerging economies enter?

Emerging economies developing own market

New market mechanisms
- Design to be established
- Pilot: policy-driven approach, for SW sector or city