Living without sanitary sewers
the business of collecting fecal sludge
in four Latin American Cities

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Water and Sanitation Program – World Bank
• Modern Latin America: innovation and inequity
• The importance of entrepreneurs
• Addressing incentives
Modern Latin America

Innovation
Modern Latin America

Inequity
Modern Latin America

Trends in urban Sanitation Latin America

...focus on sewerage networks

... is FSM still relevant in Latin America?

Source: JMP 2012. Unicef/WHO
Modern Latin America

*Sewerage expansion does not match urban growth*

Increase in improved sanitation thanks to household investments

Fecal sludge management services market is growing!

**Annual growth of urban population using onsite sanitation facilities**

<table>
<thead>
<tr>
<th>Country</th>
<th>Annual Growth</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecuador</td>
<td>4.89%</td>
<td>2001-2004</td>
</tr>
<tr>
<td>Guatemala</td>
<td>4.10%</td>
<td>2002-2006</td>
</tr>
<tr>
<td>Paraguay</td>
<td>3.56%</td>
<td>1992-2004</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>2.30%</td>
<td>1993-2006</td>
</tr>
<tr>
<td>Peru</td>
<td>2.04%</td>
<td>1994-2007</td>
</tr>
<tr>
<td>Bolivia</td>
<td>0.84%</td>
<td>1992-2008</td>
</tr>
</tbody>
</table>

Source: author’s calculations based on JMP data

Managua

Guatemala City

Fecal sludge management services market is growing!
HDI and GDP per capita (PPP, U$)
### The importance of entrepreneurs: demand in cities

<table>
<thead>
<tr>
<th>City</th>
<th>Pop. (000’s)</th>
<th>Access to Drinking Water</th>
<th>Access to sewerage</th>
<th>Cost of latrine vs. monthly income</th>
<th>Difference in high and low charges</th>
<th>Monthly payment for desludge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Cruz, Bolivia</td>
<td>1,700</td>
<td>95%</td>
<td>39%</td>
<td>1.15</td>
<td>71%</td>
<td>2.57</td>
</tr>
<tr>
<td>Guatemala City, Guatemala</td>
<td>2,700</td>
<td>90%</td>
<td>87%</td>
<td>1.05</td>
<td>55%</td>
<td>8.10</td>
</tr>
<tr>
<td>Tegucigalpa Honduras</td>
<td>1,300</td>
<td>80%</td>
<td>70%</td>
<td>0.86</td>
<td>11%</td>
<td>13.57</td>
</tr>
<tr>
<td>Managua, Nicaragua</td>
<td>2,000</td>
<td>84%</td>
<td>39%</td>
<td>1.12</td>
<td>157%</td>
<td>7.92</td>
</tr>
</tbody>
</table>
The importance of entrepreneurs
### The importance of entrepreneurs: who are they?

<table>
<thead>
<tr>
<th>Number of collection companies</th>
<th>Santa Cruz, Bolivia</th>
<th>Guatemala City, Guate.</th>
<th>Tegucigalpa, Honduras</th>
<th>Managua, Nicaragua</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40</td>
<td>27</td>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of enterprise</th>
<th>Family-owned and sole proprietor</th>
<th>Family-owned, one int’l company</th>
<th>Family-owned and utility</th>
<th>Private firms and family owned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years in business</td>
<td>75% over 10 years</td>
<td>Ave. of 15 years</td>
<td>Ave. of 10 years</td>
<td>Ave. of 24 years</td>
</tr>
<tr>
<td>No. with business license</td>
<td>25</td>
<td>27</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>
The importance of entrepreneurs: tariffs and sales

<table>
<thead>
<tr>
<th>City</th>
<th>Min. Tariff (US$)</th>
<th>Max. Tariff (US$)</th>
<th>Ave. Min. Number of trips/day</th>
<th>Ave. Max. Number of trips/day</th>
<th>Annual Sales (all companies, US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Cruz</td>
<td>28.60</td>
<td>50.00</td>
<td>2.2</td>
<td>3.6</td>
<td>$911,486</td>
</tr>
<tr>
<td>Guatemala</td>
<td>77.90</td>
<td>181.80</td>
<td>1.25</td>
<td>2.75</td>
<td>$1,211,526</td>
</tr>
<tr>
<td>Tegucigalpa</td>
<td>157.90</td>
<td>252.60</td>
<td>0.67</td>
<td>1.83</td>
<td>$148,421</td>
</tr>
<tr>
<td>Managua</td>
<td>50.00</td>
<td>141.40</td>
<td>1.4</td>
<td>4.2</td>
<td>$239,545</td>
</tr>
</tbody>
</table>
Addressing incentives

THE CURRENT TREND

Management models focused on incentives to services providers

- Reduce haulage distance - decentralize treatment
- Charge for haulage vs. pay for discharge

AN ALTERNATIVE or COMPLEMENTARY APPROACH

Management models focused on incentives to households
Addressing incentives

REGULATORY AGENCY
- Approves water tariff increase
- Capacitating & Certification
  - Register as user of onsite san facilities
  - Give copy of bill of lading
  - Certificate of reception
  - Provide service
  - Pay for service
  - Signs bill of lading

UTILITY RUNNING THE TREATMENT FACILITY
- Reports on FS received
- Discharges FS
- Invoices
- Reports on FS received
- Discount on water bill

DWELLER
- Pay for service
- Invoices
- Signs bill of lading

HAULING SERVICES COMPANY
- Certificate of reception
- Pay for service
Addressing incentives

Authority for Supervision and Social Control of Water and Sanitation

Urban water coverage creates an enabling environment

Transform demand for FS collection services to environmental services through incentives

Overcome sector authorities limitations for supervision and control by…

Transform dwellers into supervision agents
Final challenges

How to reduce barriers for more entrepreneurship?

- Define the market (what and where)
- Provide a clear regulatory and policy environment

Look upstream (integrity of on-site solutions) as well as downstream (safe disposal and re-use)

Need to identify the right incentives
Final challenges

Broader Agenda

✓ Look at things differently

✓ Widen the discussion

✓ Recognize the importance of enabling environment

✓ Post-MDG agenda (make the invisible…visible)
Gracias