Experiences of CCAC Brazilian cities to prevent and treat food waste
Five municipalities

RIO DE JANEIRO

SÃO PAULO

BRASILIA

CURITIBA

SANTOS
Recent Projects

➢ Stage 2: Workplans for Curitiba, Brazil
Project start: February 2017;
Project end: July 2018

➢ Stage 3: Implementation plan for São Paulo, Brazil
Project start: March 2018
Project end: June 2019
Organic waste

Communication
Stage 2: Workplans for Curitiba, Brazil

- **Two trainings delivered:**
  In March 2017 about the fundamentals of organic waste management & treatment;
  In May 2018 targeting decision-makers and technical staff on CCAC tools – OrganEcs and SWEET.
Stage 2: Workplans for Curitiba, Brazil

- Two CCAC tools with Curitiba data:
- SWEET = Baseline Scenario
Stage 2: Workplans for Curitiba, Brazil

- Two CCAC tools delivered with Curitiba data:
- SWEET = Baseline x Alternative scenarios
Stage 2: Workplans for Curitiba, Brazil

- Two CCAC tools delivered with Curitiba data:
- OrganEcs = Scenario 1

<table>
<thead>
<tr>
<th>GW (tpa)</th>
<th>FW (tpa)</th>
<th>Organic waste (tpa)</th>
<th>Composting W/O Forced Aeration</th>
<th>Composting With Forced Aeration</th>
<th>High-Tech Wet Anaerobic Digestion</th>
<th>High-Tech Dry Anaerobic Digestion</th>
<th>Average gate fee (USD/t)</th>
<th>gate fee for FW (USD/t)</th>
<th>gate fee for GW (USD/t)</th>
<th>comment</th>
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<td>$2.00</td>
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a) Composting without forced aeration: Capex $2.1 to $2.7 million
b) Composting with forced aeration using aerated static pile: Capex $4.4 million to $7.6 million
Stage 2: Workplans for Curitiba, Brazil

- Two CCAC tools delivered with Curitiba data:
- OrganEcs = Scenario 2

<table>
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<td>$18,00</td>
<td>$22,00</td>
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a) A composting facility with forced aeration using aerated static pile: Capex $6.9 to $12.1 million
b) Wet anaerobic digestion and composting facility where the digestate is composted and the liquid digestate used/spread on land: Capex $11.9 to $21.1 million
c) Dry anaerobic digestion and composting: Capex $11.2 to $19.7 million
Stage 2: Workplans for Curitiba, Brazil

- Two CCAC tools delivered with Curitiba data:
  - OrganEcs = Scenario 3

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<th>GW (tpa)</th>
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<th>Average gate fee (USD/t)</th>
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- A composting facility with forced aeration using aerated static pile: Capex $9 to $16 million
- Wet anaerobic digestion and composting facility where the digestate is composted and the liquid digestate used/spread on land: Capex $8.3 to $15.5 million
- Dry anaerobic digestion and composting: Capex $8.7 to $18.7 million
Stage 2: Workplans for Curitiba, Brazil

Roadmap:
- For Brazilian municipalities, presenting a “guide” to divert waste from landfilling – simple, but to the point!
- English and Portuguese versions
➢ Stage 2: Workplans for Curitiba, Brazil

- **Communication**: improve municipality actions and skills to achieve better results on MSW management system.
Stage 2: Workplans for Curitiba, Brazil

- Outputs:

  - Report on past communication & awareness actions for MSW management in Curitiba;

  - Regional workshop with 35 participants;

  - Handbook on communication & engagement for SW management (ESP/ENG/PORT);

+ Webinar for the South America network.
Stage 3: Financial Workplan for São Paulo, Brazil

Proposal for an overarching feasibility study for an Eco-Park Waste facility that integrates different technologies for the treatment/recovery of two waste streams: mixed waste from households and biowaste separated at source from large generators. The foreseen capacity is 1,250 tons/day.
São Paulo, Brazil

- General information: 4 million t/year of collected waste

<table>
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<tr>
<th>Facilities in operation</th>
<th>Avoided emissions from landfill with diversion of organic waste</th>
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<tr>
<td>Composting plant- Lapa</td>
<td>102,5 t CH4/year</td>
</tr>
<tr>
<td>Composting plant- Sé</td>
<td>102,5 t CH4/year</td>
</tr>
<tr>
<td>Facility to be implemented (2020)</td>
<td>Avoided emissions from landfill with diversion of organic waste</td>
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<tr>
<td>Ecopark</td>
<td>6,642 t CH4/year</td>
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With the implementation of Ecopark:
- 501.6 tons/day would be diverted
- Reduction of 7.7% of the landfill entrance volume
- It will be “saved” one day of landfill for every 13 days of operation of the Ecopark ≈ 1 year in 10 years
Stage 3: Financial Workplan for São Paulo

Activity 1: Technical Feasibility

Activity 2: Regulatory Environment

Activity 3: Financial Feasibility
Stage 3: Financial Workplan for São Paulo

Activity 1: Technical Feasibility

-Kick-off meeting and technical visits – OK
- Data compilation, site and waste characterization – ON GOING
➢ Stage 3: Financial Workplan for São Paulo

- Formal consultation the state-owned Metropolitan Water and Power Company (EMAE) – ON GOING
Five municipalities

- Closed the world’s 2nd largest dumpsite
- Integrating informal sector
Five municipalities

- Launching a biomethane plant – up to 50 t/day
- Donation of a shredder from the city of Cologne – green waste composting
Five municipalities

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- Newest city to join the MSWI
- Non-capital, champion in separate collection
- Some initiatives on food waste
- Starting some actions to fight marine litter

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Lessons learned

- **NETWORKING** is FUNDAMENTAL to scale up resources;

- Not much capacity building, but **CITY EXCHANGE PROJECTS** are a demand from BRA municipalities;

- **TIME** is a barrier for municipal staff dedication to projects;

- **COSTS** and **FINANCING** numbers get more attention than graphics.
The path ahead

- Resources scaled up by technical exchange between municipalities – tailored projects, learning from each other;

- Targeting people – new approaches looking to raise awareness and increase public engagement;

- Breaking financial barriers by partnering with private sector and internacional funds – pipeline for waste & resources management projects.
Obrigado!

Carlos RV Silva Filho

www.abrelpe.org.br