Argentina – City of Buenos Aires

MAIN INFORMATION

• Capital District
• Surface: 203 km²
• Divided in 15 departments
• Population: 3,063,728 hab.
• Population density: 15,070 hab/km²
• Population in the Metropolitan area: 17,541,141 hab.
• Greatest GGP (Gross Geographic Product) in Argentina.
Municipal Solid Waste Generation

3 million people live
3 million people move daily

+7,300 TPD

3,100 TPD – Construction and demolition debris
+90 TPD – Wood and organic
4,100 TPD – Household
Municipal Solid Waste Generation – Household Waste Composition

Recyclables 33%
Food Waste 43%
Pruning and Garden Waste 5%
Others 19%

Based on an ASTM 5231-92 “Standard Test of the Composition of Unprocessed Municipal Solid Wastes”
• **Zero Waste Law N° 1854/2005:** sets goals of landfill disposal for the following years: 2021: 2,919 TPD – 2025: 2,043 TPD – 2028: 1,168 TP. No recyclable or compostable materials can be sent to landfill by 2030.

• **Regulatory Decree N° 639/2007:** establishes the importance of organic waste hauling and collection for private generators such as supermarkets, restaurants, schools, large buildings, among others.

• **Regulatory Decree N° 128/2014:** defines *organic waste* as material capable of being composted - includes both plant and animal origin, like bones, meats, vegetables, fruits, shells.
<table>
<thead>
<tr>
<th>October 2015</th>
<th>September 2016</th>
<th>February 2017</th>
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<tbody>
<tr>
<td>Signs the Milan Urban Food Policy Pact</td>
<td>Signs the National Program of Food loss and waste.</td>
<td>Creates the Food Waste Program - Resolution Decree N° 126/SGRY</td>
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Strategies implemented by the City for Organic Waste Management

- Reduction
- Reuse
- Treatment
- Dispose
Reduction and Reuse: Food Waste Program

8.4 kg food waste per household per year

9,500 t food waste per year

180 MM USD/year

MAIN CAUSES

1. Expired products or quality lost
2. Inadequate conservation
3. Inadequate food preparation

Reduction and Reuse: Food Waste Program

70% state that food waste is a problem

BUYING FOOD

26% plans the menu beforehand

34% makes a weekly list

23% shops without planning

In situ treatment - Promoting household compost production

+300 composters given to schools and citizens

Composting workshops
**In situ** treatment – Garden Waste

**14 TPD**

Garden waste processed

**200 m³**

Compost produced each month

**Investment**

- CAPEX: None. Private investment.
- OPEX: 49 USD/t - 17.943 USD/month

(savings: 17 USD/t transport + landfill disposal + compost production)
In situ treatment – Garden Waste Compost
Household Waste: mechanical and biological treatment facility (TMB)

Waste hauling and collection
- 28,000 bins
- + 280 collection routes
- Daily service
- 6 private collection companies

Treatment
- 1,200 TPD
- + 600 TPD recovered
- In operation since 2012
- CAPEX: Private investment.
- OPEX: Tipping fee - 66 USD/ton recovered
In operation since 2015. Private and public investment. The City pays a fixed rate to the operator (112 USD/t). The pruning and collection service is done by each department (15). Before entering the facility there is a control point and a scale where the trucks are weighted. This allows traceability of the materials. This system is shared with the organic waste treatment facility.
Recycling Center: wood waste treatment

Treats over 53 tones per day of wood waste (average during 2019) – But during pruning season, the amount of waste treated increases up to 120 tones per day.

Main uses of product:

• **Structural material** for the composting process carried on in the organic facility;
• **Vegetation cover** for parks and gardens;
• Chipboard, munching, among others.
Recycling Center: organic waste treatment facility

In operation since 2015. It was created in a modular way to increase its capacity

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<th>Year</th>
<th>Capacity (TPD)</th>
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<tr>
<td>2015</td>
<td>10</td>
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<td>2017</td>
<td>20</td>
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<td>2018</td>
<td>30</td>
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Public investment (2.5 MM USD/reactor, New Zealand Technology). The City pays a fixed rate to the operator (112 USD/t). The collection is done by the Urban Hygiene Department.
Recycling Center: organic waste management

4 public routes integrated by 100 generators.

Public service done from Monday to Saturday.
The organic waste is delivered as loose material (bulky) or in transparent plastic bags. This allows several checkpoints before it arrives the organic facility.

Biodegradable bags are not used due to its costs and, because of our experience, it does not completely degrade during the whole process (more than 4 months).

Type of material: includes meat, chicken, raw vegetables and fruits - the amount received of each changes according the time of the year but it does not affect the process.
The selected material is mixed with pruning waste chip to reduce the humidity and to balance carbon: nitrogen relationship - requires 60% of food waste and 40% of pruning chips.

The amount of leachate generated at the begging of the project was more than that it was originally predicted so we have to rearrange facility. Nowadays part of the leachate is treated by a vermicompost pit (*Eisenia fetida*) and the other amount is taken to a sewage treatment company.
The reactor has: air injectors, temperature and CO₂ control system, eight blades for automatic material movement and air extraction. It is remotely controlled and most of the parameters are fixed.

The material remains inside the reactor for almost 14 days.
The final product can be used as an organic amendment.

Since 2015 we have worked with the National Government and the Nacional Service of Healthcare and Agronomical Quality to modify local regulations regarding compost produced from municipal solid waste. Finally, in January 2019 a new regulation was sanctioned and nowadays we are in process of inscription.
Next steps

**Composting facilities**
- Certify compost produced in the Recycling Center and in Chacarita.

**Promote in situ compost production**
- Compost in large buildings.
Thank You!

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