Recycling in Trinidad and Tobago

What are the issues affecting the establishment of this industry?

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KAIZEN Environmental Services (Trinidad) Limited
OBJECTIVES OF PRESENTATION

- Waste disposal in the Caribbean - Overview of Waste Collection Arrangement
- Waste disposal in the Caribbean - Overview of Recycling Initiatives
- Waste Classification in Trinidad and Tobago landfills
- What does recycling really mean?
- Waste Management legislation in Trinidad and Tobago
- Challenges facing the industry
  - Who is going to pay?
  - Small enterprise queries
  - Public input and responsibility
  - Government’s role
OBJECTIVES OF PRESENTATION

- Pillars of an effective recycling programme
- Possible solutions
  - Legislation
  - Economy
  - Social Aspects
  - Technical Aspects
- Case Study- Vancouver City
Waste Disposal in the Caribbean

Overview of Waste Collection Arrangement
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Jamaica</td>
<td>Public entity (NSWMA)</td>
<td>NSWA operates 8 disposal sites. None of these are sanitary landfills</td>
<td>2,406 tons daily (Riverton only)</td>
</tr>
<tr>
<td>Trinidad and Tobago</td>
<td>Public entities (SWMCOL), private contractors and THA</td>
<td>6 disposal sites. None are sanitary landfills</td>
<td>2000 tons daily</td>
</tr>
<tr>
<td>The Bahamas</td>
<td>Not available</td>
<td>9 disposal sites • 3 sanitary landfills • 5 non sanitary landfill • 1 open dumpsite</td>
<td>No data</td>
</tr>
<tr>
<td>Suriname</td>
<td>Public department (VOV)</td>
<td>Open dumpsite</td>
<td>No data</td>
</tr>
<tr>
<td>Haiti</td>
<td>Public entity (SMCRS)</td>
<td>Open dumpsite</td>
<td>1000 tons daily</td>
</tr>
<tr>
<td>Belize</td>
<td>Public entity (BSWaMA)</td>
<td>1 sanitary landfill</td>
<td>73 tons daily</td>
</tr>
<tr>
<td>Barbados</td>
<td>Public entity (SSA)</td>
<td>One sanitary landfill</td>
<td>300-400 tons daily</td>
</tr>
<tr>
<td>Guayna</td>
<td>Private Contractor on behalf of Ministry of Communities</td>
<td>One sanitary landfill</td>
<td>300 tons daily</td>
</tr>
<tr>
<td>St Lucia</td>
<td>Public entity (SLSWMA)</td>
<td>2 disposal sites • 1 sanitary landfill • 1 controlled dumpsite</td>
<td>130 tons daily (Deglos only)</td>
</tr>
</tbody>
</table>
Waste Disposal in the Caribbean

Overview of Recycling initiatives
<table>
<thead>
<tr>
<th>Country</th>
<th>Recycling Initiatives</th>
</tr>
</thead>
</table>
| Jamaica             | • Trade Regulation of 2013  
                    • Recycle Now Jamaica –reclaims consumer PET bottles  
                    • Jamaica Recycles: collects plastics, cardboard and paper for export                                                                 |
| Trinidad and Tobago | • National waste Recycling Policy 2015 results in Waste Recycling Management Authority  
                    • iCare Programme-EMA 2018(Recyclable Solid Waste Collection Programme)  
                    • Port of Spain recycling depot –SWMCOL                                                                                                       |
| The Bahamas         | • Material recycling Facility 2015  
                    • Plant processes 88 tons waste per hour                                                                                                         |
| Belize              | • Returnable Container Act (2009)-controls sale of beverage containers                                                                                   |
| Barbados            | • Returnable Container Act (1986)-controls sale of beverage containers  
                    • Sustainable Barbados recycling centre (SBRC)2009- diverts waste from land fill  
                    • SBRC resulted in 70% diversion of waste  
                    • Exports diverse recyclables                                                                                                                     |
WASTE CLASSIFICATION IN TRINIDAD AND TOBAGO LANDFILLS
### Type of Waste

<table>
<thead>
<tr>
<th></th>
<th>Beetham</th>
<th>Forres Park</th>
<th>Guanapo</th>
<th>Guapo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organics</td>
<td>32.0%</td>
<td>22.4%</td>
<td>21.7%</td>
<td>10.5%</td>
</tr>
<tr>
<td>Paper</td>
<td>21.4%</td>
<td>13.7%</td>
<td>18.0%</td>
<td>18.7%</td>
</tr>
<tr>
<td>Glass</td>
<td>8.7%</td>
<td>11.6%</td>
<td>10.3%</td>
<td>23.0%</td>
</tr>
<tr>
<td>Metals</td>
<td>2.8%</td>
<td>4.0%</td>
<td>6.3%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Plastics</td>
<td>16.0%</td>
<td>26.0%</td>
<td>19.1%</td>
<td>17.0%</td>
</tr>
<tr>
<td>Textiles</td>
<td>8.2%</td>
<td>7.8%</td>
<td>6.6%</td>
<td>8.6%</td>
</tr>
<tr>
<td>Beverage Containers</td>
<td>0.8%</td>
<td>1.3%</td>
<td>0.9%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Other</td>
<td>1.8%</td>
<td>2.7%</td>
<td>5.2%</td>
<td>5.5fh%</td>
</tr>
</tbody>
</table>


4 pounds of waste is generated per individual in Trinidad and Tobago

84% of the items collected are considered recyclable and could be diverted from the landfills

Costs the Government $321 million per year to manage this country's waste collection and disposal
What Does Recycling Really Mean?

Recycling is the diversion or “steering away” of materials from the waste stream.

Materials or resources can be processed into new materials and/or manufactured into new products, instead of being buried in landfills as trash.
Waste Management Legislation in Trinidad and Tobago

- Public Health Act of 1950
- Litter Act of 1973
- Trinidad and Tobago Municipal Corporation Act (1990) 1980 the Solid Waste Management Company Limited (SWMCOL)
- National Environmental Policy (NEP) of 2006 - aimed at providing a comprehensive framework for environmental management issues, including those related to hazardous and non-hazardous waste management
- Beverage Container Bill, 2012
- The National Integrated Waste Management Policy (NISWMP) of 2014 establishes the plan for managing the country’s waste in accordance with a hierarchy that minimizes landfilling, with an increased focus on reduction of toxicity and volume of waste, through reuse, recycling and source-separated organic waste management
- National Environmental Policy (NEP) of 2018- Third Draft
CHALLENGES FACING RECYCLING
WHO IS GOING TO PAY FOR IT?

- Can recycling be a sustainable small business opportunity?
- Is there a moral grounding that the public is willing to support and pay via taxes?
- Is it the government’s responsibility to pay to ensure the recycling initiative’s upkeep.
SMALL ENTERPRISE QUERIES

- Is it a sustainable industry?
- What is the cost attached to collection?
- What happens after collection?
- Is a market shift expected?
- Will the established market be heavily competitive?
PUBLIC INPUT AND RESPONSIBILITY

- Be informed – Resource Cons/ Energy Cons
- Dumping
- Convenience of transport of the recyclable household material to the recycling depot.
- Be committed to the recycling initiatives undertaken by the country?
- Provide feedback regarding the status of recycling in communities
- Outrage
- Become a Recycling Culture
GOVERNMENT’S ROLE

- The regulations that establishes rules and guidelines for recycling
- Collection and recycling efficiency targets for industrial and corporate entities and the public
- How can government make recycling more attractive to the industry and wider public?
- Encourage recycle product procurement - through reduced tariff, corporate tax relief
- How does the government develop and promote the concept that waste is a resource?
- Developing a national recycling culture
Pillars of a Good Recycling Programme

LEGISLATION

ECONOMY

WASTE RECYCLING

TECHNICAL ASPECTS

SOCIAL ASPECTS
POSSIBLE SOLUTIONS
Regulation and Enforcement to be bolstered

For a recycling program to work, having a large, stable supply of recyclable material is crucial along with a plan for diverting waste from landfills.

Legislative options can be used to create such a supply:

- **Mandatory collection** laws set recycling targets for corporations to aim for, usually in the form that a certain percentage of a material must be diverted from the area's waste stream.

- **Container deposit** legislation involves offering a refund for the return of certain containers (glass, plastics and metals).
Recycled product labelling When producers are required to label their packaging with amount of recycled material in the product and packaging, consumers are better able to make educated choices.

Bans on the disposal of certain materials as waste (oil, batteries, tires etc.) aims to create a viable economy for proper disposal of banned products.

Minimum Recycled Content mandates specify that a certain percentage of a new product must consist of recycled material.

Procurement policies earmark a certain amount of spending solely towards recycled products.
ECONOMY

- Waste should be seen as a resource
- Recyclables have become a commodity
- Recycling is well-known for its environmental benefits (resource conservation, energy conservation) but it should also make economic sense.
- Generators may earn revenue from the sale of recyclable material depending upon the specific material
- The avoided cost of disposal is the amount of money that is saved by not having to send waste to a landfill, incinerator or transfer station for disposal
Organic solid waste can be used as input for the production of biogas or transformed into fertilizer and solid conditioner through composting.

Waste can also be an input for the production of energy through waste to energy plants.

Recycling creates jobs at all levels of the economy.
SOCIAL ASPECTS

Convenience
- The presence of opportunity structures is seemingly important for securing high rates of recycling behaviour.

Knowledge Availability
- Recycling programmes should become part of the scholastic curriculum and also occur at a community level.
- The inclusion of audio along with graphic representation to accompany recycle bins in both private and public areas.
Technical Aspects

- Recyclable Product Design is vital to meet Future Recycling Targets
  - Review all the processes intervening in the design of a product and find solutions to reduce the impacts on the product’s life cycle
  - Life cycle analyses, in which all operations — beginning with raw material extraction, through processing and product use, and ending with disposal — provide a way to view the environmental efficiency of consumer products
CASE STUDY-

CITY OF VANCOUVER, CANADA
It’s time to shift our thinking about waste.

ZERO WASTE APPROACH FOR VANCOUVER

AVOID

REDUCE

REUSE

RECYCLE & ENERGY RECOVERY*

DISPOSE

*Recovering energy from organic materials such as food and, in the case of single-use items, compostable packaging
CASE STUDY - City of Vancouver

- Approximately 20 years ago the recycling initiative was started
- It started as an initiative supported by the provincial and federal government based on lack of viable and commercial land fill space and the subsequent need to find sustainable solutions
- The initiative started as a cost to the tax payers (federal and provincial)
- With time and the emergence of markets in China/Asia and the need for the recyclable commodity the industry is now lucrative and pays for itself
CASE STUDY - Greenest City Action Plan

Under the Greenest City Action Plan, the city set a target to reduce solid waste going to the landfill or incinerator by 50% from 2008 levels.

To achieve this goal, they committed to:

- Keep organics out of the landfill by supporting food scraps recycling through education and enforcement
- Reduce street litter and abandoned garbage in public spaces, including illegal dumping
- Implement a comprehensive litter management strategy
- Expand our Construction and Demolition Waste Diversion Strategy
- Support Metro Vancouver’s Zero Waste Challenge
CASE STUDY: What is the Zero Waste Challenge?

- Zero Waste 2040 is a long-term strategic vision for Vancouver to achieve the goal of zero waste by 2040
- Conserve resources
- Prevent waste of all types, including wasted food at all points between farm and table
- Compost inedible food or convert it into fuel
- Repair and maintain products and materials to extend their lives
- Share, reuse, and refurbish products and materials before recycling them
CASE STUDY: Progress Made From 2008-2016
A fully developed recycling and materials recovery sector would bring in additional revenues from the sale of recyclables and reduced waste for handling and disposal along with lower operational costs at landfill.